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Teaching Business Models: Introduction to The Special Issue

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Introduction

The business model concept has been widely adopted in a range of disciplines, including business administration, the humanities, engineering, and even the medical sciences. Its popularity can be explained by the fact that, at the strategic level, the business model explains how a firm creates, delivers and captures value (Teece, 2010), while at the tactical level, it specifies how a firm makes its products, services, or technologies attractive to customers and turns its offerings into financially successful outcomes (Casadesus-Masanell and Ricart, 2010). In this way, the business model builds a bridge between defining and realising value-creation and value-capture mechanisms through customer-firm arrangements that both generate value for the consumer and profits or other resources for the firm (Baden-Fuller et al., 2017).

Business-model design often starts with a feasible customer value proposition (CVP) that addresses essential customer problems. Similarly, a firm's resources and value-chain partners need to be aligned in such a way as to create and deliver the CVP as economically as possible. Establishing such complex linkages requires experimentation, and is not likely to be solely based on rational decisions. It may also stem from intuitive thoughts, courageous activities with unpredictable consequences, or emotional linkages to consumers. During this process, managers will also have to decide how and how much value to create for consumers, and how the captured value will be distributed between the firm and its partners in the value network.

Given the constant state of flux in consumer and market conditions, managers also need to refine, change, or even re-invent their business models, which encourages them to search for inspirational examples and successful 'recipes' on how to do business. As 'recipes', business models can provide templates for how the various elements of their business can be fruitfully put together, arranged, and combined (Baden-Fuller and Morgan, 2010). Business models can thus be copied, albeit with variation, in strategic elements such as markets, technologies, products, and customers. However, even minor changes to the recipe can change the business model and produce unexpected variation and innovation, or even result in a completely new business model, i.e. a new 'recipe' for firm

behaviour (Baden-Fuller and Morgan, 2010). For example, the emergence of digital platforms and the sharing economy has turned decades-old laws of competition upside down and challenged proven business 'recipes'.

For all these reasons, business-model thinking has become entrenched in the minds of entrepreneurs and managers, as a result of which, teaching business models has become important for a wide range of business disciplines such as strategy, entrepreneurship, and marketing. An informal survey of 40 strategy academics conducted by Markides (2015) showed that, although not entirely convinced about the novelty of the business model as a theoretical concept, 95% of the scholars used the business model concept in their teaching, and the remainder planned to do so in the future.

Various research contributions have offered insights into both the definitions and conceptualizations of business models, the processes and factors influencing business modelling (for a good literature survey see e.g. Zott et al., 2011; Schneider and Spieth, 2013; Gassmann et al., 2016; Foss and Saebi, 2017; Massa et al., 2017), and business-model design and reconfiguration challenges (Massa and Tucci, 2014). However, since business modelling has many practical aspects, educators also need to balance imparting such theoretical knowledge to their students with ensuring its applicability (Pfeffer and Sutton, 2000; Hogan and Warrenfeltz, 2003). As a result, business educators have gradually progressed from general teaching about business models to integrating hands-on business modelling in their courses (Piperopoulos and Dimov, 2015). Furthermore, since educators have diverse audiences and pursue different teaching objectives, they also create unique curricula and teaching approaches. This has led to diverse and valuable, yet dispersed, know-how on how to teach business models.

About this special issue

In order to provide a platform for sharing and disseminating educators' experience with teaching business models in various contexts and show-case innovative teaching methods, we organised Teaching Forums at Business Model Conferences in Venice, Italy, in 2017, Florence, Italy, in 2018, and New York, USA, in 2019. However, the very positive feedback and high degree of interest

in the approaches presented at these conferences made us aware of the need for a broader and more permanent platform for sharing knowledge and experience.

Together with the Journal of Business Models and former Editor-in-Chief Christian Nielsen, the idea for this special issue was born. In autumn 2018, we therefore invited educators from all over the world to submit application-focused short papers on proven formats and best practices for teaching business models, ranging from specific techniques or approaches to reflections on the usefulness of various frameworks. As a result of the many interesting papers we received, which varied widely in both content and nature, we decided to split the special issue into two volumes, the first of which contains 12 papers.

The papers in this first volume represent a great variety of teaching approaches. Each paper presents approaches or instruments that have been successfully used in either the classroom or in online teaching. Furthermore, the authors provide clear guidance on how to apply their approaches, describe in detail the course set-ups, and clarify the learning objectives. They share insights into the main pedagogical challenges of teaching business models, and offer tips and recommendations for implementation based on their experiences and observations. We hope that this special issue will not only fuel the debate on innovative teaching approaches in contemporary business education but also be of practical use for:

- young teachers looking for inspiration for their first course designs;
- experienced teachers looking for ways to improve their teaching;
- coaches and accelerator units trying to help founders and corporate entrepreneurs to master the art of business modelling.

Charles Baden-Fuller on the importance of business-model education

As the different approaches to business-model teaching show, the topics included have developed rapidly over the past twenty years. Therefore, we have also invited

Charles Baden-Fuller, one of the pioneers of business-model teaching and a much sought-after consultant, to review this development, talk about current business model challenges, and judge the relevance of this special issue for practitioners, students, and educators.

Charles, what do you see as the fundamental challenges of teaching students and practitioners about business models? Why is teaching about business models necessary?

I would like to emphasise that teaching to either students or executives about business models is really difficult. This is because the business model concept connects two different domains that are usually separated in companies and in the classroom, those of dealing with customers and their needs and wants, and those dealing with the processes of making and delivering products and services. Whilst one might think that the latter should be connected to the former, in actual practice the overlaps are minimal. And to make matters more challenging, most students and executives are happiest talking about the physical world of making and delivering things. Fewer have a good grasp of the complexities of identifying needs and wants and figuring out how to persuade people to pay.

The “design process” is clearly a valuable approach to the problem, but it is not a complete solution. The classical design process delves deep into the questions of “what does the customer want”, but it does not really explore critically “how much will the customer pay for what they want” and “is it better that some other actor pays?”

You mention the value of the design process. Could you elaborate on what is so special about teaching business models and why business-model teaching can add significantly to the design approach in today’s business world?

So, when asked what is it that is special about the teaching of business models, I emphasise the above points about making difficult connections between these two spheres of the emotional cognitive needs of customers and the physical world of products and services. This leads me to speculate that one of the competencies of working with business models is the competence of the design process – because the design process emphasises the importance of the connections between what a customer might want and how the product or service

should be designed. It has a clear set of guidelines for dealing with the problem.

However, the classical design process does not go far enough, because it does not deal with the issue of getting people to pay, which is another emotional and analytical challenge. When designing the business model we need to realise that the firm faces an important choice, does the user pay or does someone else pay? And, there are more choices, which is the better route to market, is it the fully integrated solution or a takeaway product. The underlying physical product may be the same in both cases, but the delivery mechanism differs. The current teaching of design does not engage with these important questions. So there are two approaches, one is to teach students and executives about design and make the necessary modifications, and the other is to start from scratch and not pretend there are simple solutions. And since it is not clear that one is better than the other, I tend to adopt both approaches, stressing their strengths and weaknesses.

Looking back on the development and importance of business models over the last two decades, has the teaching of business models become easier?

In some ways, the teaching of business models got easier over the past few years. First, the academic writing has evolved enormously. We have a much deeper understanding of the different business model types as evidenced by the appearance of many articles that deal with the complexities of platform economics. And in addition, the evidence of the complexity of the business model challenge is now evident all around us. The appearance of second-generation digital firms such as Netflix, Google and Facebook, that have displaced the previous giants of Kodak, Nokia, and Yahoo, and that there is a third-generation of firms – many of which are unicorns (valued at more than \$1 billions) – emerging has heightened students' awareness that the business model question is highly relevant and has non-trivial answers.

With these challenges in mind, what do you think is important for teaching business models? What is your approach?

I think we need to think broadly and deeply about this question. For me, the teaching of business models re-

quires addressing emotional, cognitive issues and also analytical issues. The first requires digging into issues of how to teach about cognition. This requires interactive teaching and challenging students. For the second, I am a fan of using BM typologies to emphasise that executives have to make choices. And I am also a fan of looking carefully at what actually works – rather than what we might think should work. Too many teach concepts such as the BM Canvas because it appears to give clear answers. But such tools can be deceptive and even dangerous. Human nature and the world around us is full of surprises. For this reason, I get my students to examine a range of newly formed firms competing in a variety of industries to realise how many different kinds of business models really exist and how they actually compete. The businessmodelzoo.com is a website that shows more than 100 unicorn companies, valued at around \$1 billion or more and that describes their business models. Students find this incredibly valuable for the challenge it poses.

A final question, and to put teaching about business models into a broader perspective, where should the topic of business models be in the curriculum?

Strategy as a profession is in crisis, because much of what we taught in strategy over the last 15 years is not robust for the new digital world. The old mantra that superior resources lead to superior results, is clearly invalid as a general statement. Better business model choice is an important moderator, this is because firms with superior business models have ousted firms with vastly superior resources but outdated models. Kodak, Nokia and Yahoo are important examples of firms that have got into crises not because they were not innovative or in charge of superior resources, but because they made the wrong business model choice. In contrast, a superior business model can allow a firm to assemble better resources and achieve an upward spiral of success.

In short, business models should be at the core of the strategy curriculum, and the profession needs to recognise that teachers of BM are at the forefront of strategy teaching, without them, strategy will die and be relegated to the dustbin.

Papers in this volume

The papers in this first volume address various aspects of teaching business-model design, innovation, validation and scale-up. The majority of the authors eschew the traditional lecture format and present creative ways to enable student interaction and group work with the help of digital tools and blended learning. They cleverly integrate elements of gamification and playfulness in their teaching formats, and present exciting ways to teach business modelling to specific audiences. Some take a holistic approach and develop courses aimed at teaching business model thinking in general, while others focus on a specific element, type or aspect of a business model.

Several papers offer insights into how Massive Open Online Courses (MOOCs) can be used for business-model teaching. The paper, *“Online courses on business model innovation for practitioners in SMEs”*, by Mark de Reuver, Martijn Cligge and Timber Haaker, presents best practices for disseminating business-model thinking to managers of small companies who have very hands-on, practical demands and limited time. The authors reflect on online functionalities and design principles of MOOCs for SME managers with heterogeneous (educational) backgrounds, and report on their experiences from the practical execution of the courses for a large group of international participants. The tools and frameworks of the MOOCs were designed to make it easier to convert business-model innovation concepts from theory to practice in diverse contexts, and included quizzes, assignments, creative brainstorming tools, interviews with real-life business owners, and some quantitative tools. The authors conclude that designing such courses requires a considerable amount of time and diverse expertise, as well as tight project management (de Reuver et al., 2019).

Alina Margolina and René Bohnsack’s paper, *“Teaching Business Models for New Ventures via Blended-Learning”* describes a sophisticated educational online platform to support the course in new venture creation. The blended learning format they present has a specific focus on tailoring online content to the classroom experience. During the course, participants are guided through a step-by-step process of translating an initial business idea into a working business model. The online steps include idea development, customer discovery and value-proposition

formulation, building a business model, strategy development, business implementation, and a business plan pitch, thus addressing both the value proposition and value capture elements of a business model. The authors conclude that, besides designing and logically structuring the online content of the course, the business-model development process as a whole still requires comprehensive instructor guidance and feedback (Margolina and Bohnsack, 2019).

In the paper, *“Using digital gamification in the context of business models”*, Jesper Chrautwald Sort and Holst explain how the introduction of gamification and blended learning in (Ridder et al., 2015) the course on new venture creation and business modelling produced a high degree of interaction and engagement among participants. Their online learning tool is anchored in the new venture creation process from the “idea/concept” stage to the “get-to-market” stage, and includes the possibility of getting ‘investors’ feedback’ by allowing students to buy or sell stocks in all venture creation projects on the platform except their own. According to the authors, the use of the stock market mechanism gives a better and deeper understanding of new venture projects based on criteria of validation, potential, and scalability. The authors also observe that, in order to achieve the learning objectives within a blended learning and gamification framework, instructors need to properly introduce it and follow up on its utilization during the entire educational process (Sort and Holst, 2019).

In their paper, *“Developing a Viable Business Model for Start-ups at the Gruendungsgarage”*, Christiana Mueller, Elisabeth Poandl, and Martin Glinik describe their interdisciplinary and inter-university teaching format, named *Gruendungsgarage* (GG). This format enables students and academic staff to translate their business ideas into viable business models for a start-up. GG follows an experience-based learning approach, where participants play active roles while gaining experience and reflecting on the various processes and outcomes involved. The participants are supported by a specially designed MOOC on the business model concept, but facilitators also support the actual design work on business models through in-depth discussions. According to the authors’ observations, discussions with mentors in particular had a big influence on the development of business models (Müller et al., 2019).

In their paper, *"Insights from Teaching Sustainable Business Models using a MOOC and a Hackathon"*, Niels Faber and Jan Jonker focus on the important question of how to introduce the notion of sustainability in business-model teaching. The authors offer interesting insights into creating a MOOC to help practitioner-learners develop a community-based business model. The MOOC is based on the principles of peer-learning, where participants are required to provide feedback on each other's work. According to the authors, it is more beneficial to run the MOOC in parallel with regular teaching and then design cross-connections between the two. The other teaching format they present, the Hackathon, is designed for third-year bachelor students across academic disciplines following a course on sustainable business modelling. The Hackathon requires students to work in teams playfully and interact intensively with teachers and practitioners inside and outside the classroom, and is designed to help them develop a sustainable business model and present it to a professional jury (Jonker and Faber, 2019).

While the articles mentioned above present approaches designed to teach business modelling holistically, the following two papers zoom in on specific decision-making aspects during the business modelling process.

"Cognitive Exploration Strategies and Collective Decision-making in Entrepreneurial Business Modelling", by Tassilo Henike and Katharina Hölzle, presents an approach to incorporating business-model thinking into a course on innovation management. The authors point to the importance of cognition and collective decision-making in entrepreneurial processes, and that students must therefore first learn cognitive exploration strategies and then apply them to decisions related to business models. Thus, students are asked to design their first business model for an existing service firm that has not yet defined a specific value proposition and has no value-capture mechanism. Besides business-model thinking, this approach encourages students to improve their cognitive flexibility, communication and argumentation skills (Henike and Hölzle, 2019).

Matthew Spaniol, Christina M. Bidmon, Anna B. Holm, and René Rohrbeck present *"Five strategic foresight tools to enhance business-model innovation teaching"*. Based on their experiences from running a course for

MBA students, the authors describe how they use strategic foresight (SF) thinking and tools to force managers to look beyond the existing business model of their company or industry. The authors find that the application of SF thinking can effectively overcome cognitive bounds and manager inertia that hamper the design of novel business models. Moreover, SF tools help students identify weaknesses and evaluate current business models, foresee possible future changes, and test the robustness of the new business models they develop. However, the authors also acknowledge that SF tools are more suitable for students with prior work experience, and that the correct use of the SF methods requires skilled instructors (Spaniol et al., 2019).

The third group of papers shows how educators can deal with particular audiences or constraints they encounter in their teaching environment.

In his paper, *"Squaring the circle: Business model teaching in large classroom settings"*, Daniel Szopinski examines the highly relevant question of how educators can convey an experiential approach such as business modelling to large audiences (200+ students). His didactic approach aims at creating an interactive, collaborative, and experience-driven learning environment, involving peer feedback and the use of digital tools. Through online interactions, students build, extend, and refine their business model knowledge. In the article, the author describes best practices for facilitating students' interaction in such a way that even large classes can work on real-life cases and receive in-depth sparring on their projects (Szopinski, 2019).

Reflection and switching lenses is also a central topic in Leandro Bitetti's paper, *"Activate business model learning through flipped classroom and backward design"*, where he describes how to "flip" the traditional lecture format to one where teachers become sparring partners, and how employing tools such as blogging can help students take a step back and discuss their point of view with peers and lecturers. Extensive feedback from lecturers, classmates and practitioners, video lectures, as well as a simulation of a strategy workshop, were also incorporated in the course on business-model innovation. The high level of student involvement ensured that, in addition to learning theoretical concepts, students were required to interpret the practical

implications of these concepts and develop an understanding of the barriers to business-model innovation (Bitetti, 2019).

Mika Yrjölä focuses on the potential of broadening marketing students' perspective on this subject by teaching the concept of value. In his paper, "*Teaching Value Propositions as Part of the Business Model*", he describes a teaching approach that focuses on equipping students with a language to develop, evaluate and manage an organization's CVPs and how the CVP relates to the organization's business model. Students also learn about the implications of CVPs for the design, management and organization of the business. By applying their learning to the development of a concrete CVP, the students engage in deeper-level thinking and learning, such as reflecting, applying, relating and arguing (Yrjölä, 2019).

The final two papers introduce specific tools and methods which educators can integrate into their business-model teaching.

Ryan Rumble examines why existing frameworks and canvases used in business modelling are overly two-dimensional. In his paper, "*The Startup Jungle: Four-dimensional business modelling*", he introduces a playful sandtable approach for business-model ideation that not only fosters learners' haptic and visual experiences but also includes a temporal dimension. The 'Startup Jungle' combines a metaphorical jungle

landscape with mapping a business ecosystem, modelling a new one, developing implementation strategies, considering consequences, and a scenario plan. The article describes how the tool can be applied in classroom settings, but it can also be used by entrepreneurs and incumbent organisations for business modelling and strategizing. However, the author also notes that the Startup Jungle requires much more preparation than alternative business modelling tools (Rumble, 2019).

Playfulness as a way to stimulate ideation is also a theme in the paper "*Booster Cards: a practical tool for unlocking Business Model Innovation*". Here, Peter Thomsen, Jesper C. Sort, and Kristian Brøndum present 71 "Booster Cards" that can be integrated into business-model teaching. These booster cards represent a set of business model patterns, or 'recipes', and build on the idea of analogical reasoning to overcome students' limited business-model design capabilities. Each card represents a specific configuration, contains a short description of the configuration, and a real-life example to further strengthen the analogy. The authors observe that using booster cards helps break the barriers of dominant logic, enable experimentation with various ideas, and provide a range of diverse alternatives for consideration (Thomsen et al., 2019).

We hope this special issue sparks a lot of new ideas for teachers of business modelling.
Enjoy!

References

- Baden-Fuller, C., Giudici A., Haefliger S. & Morgan M.S. (2017), "Business model and value: Analytical comparisons of scalable solutions and digital platforms"; working paper, Cass Business School, London, UK.
- Baden-Fuller, C. & Morgan M.S. (2010), Business models as models, *Long Range Planning*, Vol. 43, No. 2-3, pp. 156-171.
- Bitetti, L. (2019), Activate business model learning through flipped classroom and backward design, *Journal of Business Models*, Vol. 7, No. 3, pp. 100-110 .
- Casadesus-Masanell, R. & Ricart E.J. (2010), From strategy to business models and onto tactics, *Long Range Planning*, Vol. 43, No. 2-3, pp. 195-215.
- de Reuver, M., Cligge M. & Haaker T. (2019), Online courses on business model innovation for practitioners in smes *Journal of Business Models*, Vol. 7, No. 3, pp. 12-23 .
- Foss, N.J. & Saebi T. (2017), Fifteen years of research on business model innovation: How far have we come, and where should we go?, *Journal of Management*, Vol. 43, No. 1, pp. 200-227.
- Gassmann, O., Frankenberger K. & Sauer R. (2016), *Exploring the Field of Business Model Innovation*, Palgrave Mac-Millan, Switzerland.
- Henike, T. & Hölzle K. (2019), Cognitive exploration strategies and collective decision-making in entrepreneurial business modelling, *Journal of Business Models*, Vol. 7, No. 3, pp. 67-76 .
- Hogan, R. & Warrenfeltz R. (2003), Educating the modern manager, *Academy of Management Learning & Education*, Vol. 2, No. 1, pp. 74-84.
- Jonker, J. & Faber N. (2019), Insights from teaching sustainable business models using a MOOC and a hackathon, *Journal of Business Models*, Vol. 7, No. 3, pp. 57-66 .
- Margolina, A. & Bohnsack R. (2019), Teaching business models via blended-learning, *Journal of Business Models*, Vol. 7, No. 3, pp. 24-37 .
- Markides, C. (2015), Research on business models: Challenges and opportunities, *Business models and modelling (Advances In Strategic Management, vol. 33)*. Emerald Group Publishing Limited, pp. 133-147.
- Massa, L., Tucci C.L. & Afuah A. (2017), A critical assessment of business model research, *Academy of Management Annals*, Vol. 11, No. 1, pp. 73-104.
- Müller, C., Poandl E.M. & Glinik M. (2019), Developing a viable business model for start-ups at the gruendungsga-ge, *Journal of Business Models*, Vol. 7, No. 3, pp. 47-56 .
- Pfeffer, J. & Sutton R.I. (2000), *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action*, Harvard Business School Press, Boston, MA.
- Piperopoulos, P. & Dimov D. (2015), Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions, *Journal of Small Business Management*, Vol. 53, No. 4, pp. 970-985.

Ridder, H.-G., Hoon C. & McCandless A. (2015), The theoretical contribution of case study research to the field of strategy and management, *Research methodology in strategy and management*. pp. 137-175.

Rumble, R. (2019), The startup jungle: Four-dimensional business modelling, *Journal of Business Models*, Vol. 7, No. 3, pp. 119-130.

Schneider, S. & Spieth P. (2013), Business model innovation: Towards an integrated future research agenda, *International Journal of Innovation Management*, Vol. 17, No. 01, 1340001.

Sort, J.C. & Holst, P. M. (2019), Using digital gamification in the context of business models, *Journal of Business Models*, Vol. 7, No. 3, pp. 38-46.

Spaniol, M., Bidmon C.M., Holm A.B. & Rohrbeck R. (2019), Five strategic foresight tools to enhance business model innovation teaching, *Journal of Business Models*, Vol. 7, No. 3, pp. 77-88.

Szopinski, D. (2019), Squaring the circle: Business model teaching in large classroom settings, *Journal of Business Models*, Vol. 7, No. 3, pp. 89-99.

Teece, D.J. (2010), Business models, business strategy and innovation, *Long Range Planning*, Vol. 43, No., pp. 172-194.

Thomsen, P., Sort J.C. & Brøndum K. (2019), Booster cards: A practical tool for unlocking business model innovation, *Journal of Business Models*, Vol. 7, No. 3, pp. 131-142.

Yrjölä, M. (2019), Teaching value propositions as part of the business model, *Journal of Business Models*, Vol. 7, No. 3, pp. 111-118.

Zott, C., Amit R. & Massa L. (2011), The business model: Recent developments and future research, *Journal of Management*, Vol. 37, No. 4, pp. 1019-1042.

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Charles Baden-Fuller is the Centenary Professor of Strategy and leader of the Strategy Group at Cass Business School, City, University of London. Charles is one of the leading global thinkers on Business Models, and is particularly interested in business models from a managerial cognitive perspective. He has actively followed the growing importance of business models over the last twenty years. At Cass Business School, he developed the Business Model Zoo™, and is one of the pioneers of business-model teaching. Among other things, he is senior fellow at the Wharton School, University of Pennsylvania, former Editor-in-chief of Long Range Planning, Fellow of the Strategic Management Society, and Fellow of the Academy of Social Sciences.



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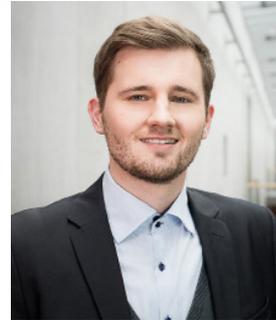


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Kirstin E. Bosbach is a corporate consultant at Bosch Management Consulting and works in the field of strategy definition, with a focus on digital lighthouse projects and digital business models. She is a PhD student at the Chair for Innovation Economics, Technical University Berlin, Germany, and holds a Masters degree in Organisational Innovation and Entrepreneurship from Copenhagen Business School, Denmark. Her research interests include corporate innovation, in particular corporate business model innovation and experimentation.





Online Courses on Business Model Innovation for Practitioners in SMEs

Mark de Reuver¹, Martijn Cligge², and Timber Haaker³

Abstract

We develop and evaluate five online courses (MOOCs) on business model innovation, tailored to small and medium sized enterprises (SMEs). Six design principles are found for such courses: regarding type and form of learning contents; time investments from participants; practical examples and tools; integration with daily practice; and participative learning.

Keywords: Business model innovation; Online learning; Massive Open Online Courseware

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Introduction

While knowledge on business model innovation is finding its way from academia to practice, small and medium sized enterprises (SMEs) are still lagging behind (Kesting & Günzel-Jensen, 2015). For large corporations and high-tech start-ups, business model innovation and tools are becoming a mainstream practice (e.g. Luttgens & Diener, 2016). This is largely thanks to practical tools that are emerging on the intersection of academia and practice, which make more elaborate ontologies and meta-models accessible (e.g. Strategyzer; BusinessMakeover.eu). Yet, small and medium sized businesses (SMEs) hardly change their business model, and if they do, they hardly follow any structured approaches or methods to do so (Bouwman, Nikou, Molina-Castillo & De Reuver, 2018).

Educating SMEs on business model innovation poses major challenges (see De Reuver, Athanasopoulou, Haaker, Roelfsema, Riedl & Breitfuss, 2016). SMEs are highly heterogeneous, ranging from start-ups to family firms. Education levels, learning styles, abilities and goals of SME owners and managers differ greatly as well. Low-tech SMEs typically have no direct ties to universities and would not look at university training to improve their business. Especially small business owners often lack time to study, and are generally happy to survive everyday problems rather than spending time on abstract business models.

The aim of this paper is to evaluate whether massive open online courses (MOOCs) can be a teaching method for bringing business model innovation to SME managers and owners. The main research question is: How to design an accessible MOOC on business model innovation for SMEs with heterogeneous (educational) backgrounds? The paper is based on a large project carried out by the authors in creating five MOOCs on business model innovation, provided via online learning platform Edx (www.edx.org). The MOOCs aim at understanding, designing, implementing and testing business models in an SME context. The courses provide a background on core concepts, explanation and illustration of tools for business model innovation through real-life cases, and application of learnings to the daily practice of the SME participant. In total, over 70,000 participants adopted the courses over the past two years worldwide, making our project, to the best of our knowledge, the most

encompassing and most widely adopted online training focused on business model innovation.

Our primary contribution is showing how online courses can be a teaching method for business model innovation. We take a design science research approach, which aims to provide prescriptive knowledge on how to design artefacts in order to realize a goal (Gregor, 2006). As such, our study provides a set of tested design principles on how to create online learning on business model innovation. A secondary contribution is to open education, as our approach is unique in bringing education that is normally restricted to learners with higher education backgrounds, to practitioners with diverse backgrounds.

In this paper, we describe how we developed the courses based on design principles derived from literature review on MOOCs and SMEs (Section 2.1). Next, we illustrate the setup and materials of the course (Section 2.2). After that, we use qualitative and quantitative evaluation data to assess the validity of the design principles (Section 3). Finally, we summarize the lessons learned, generalizations and next steps (Section 4).

Approach

Design principles underlying the course design

To construct our artefact (i.e. 5 MOOCs on business model innovation), we develop and apply design principles. Design principles are testable prescriptive statements on how to do something in order to achieve a goal (Gregor, 2006). After constructing the online courses and evaluating the results, we reflect on the validity and utility of the design principles as a means to generalize towards new knowledge (see Section 3).

MOOCs in general have been developed since around 2008. Hence, we draw upon literature on online learning and MOOCs in general to derive our design guidelines. In addition, we draw upon exploratory interviews with SMEs and SME advisers on the specific topic of business model innovation (De Reuver et al, 2016). Combined, these lead to six design principles, see Table 1.

Design of the online courses

The series of MOOCs consist of five instructor led courses, which were later transformed into self-paced courses. In principle, the courses can be taken in any

Design principle	Justification	Source
(1) simplify the material such that business owners with secondary education can comprehend it;	Since the courses are especially designed for a wide range of different types of SMEs (including business owners with secondary education) the course should also meet the level of secondary education.	Adapted from (Yousef, Chatti, Schroeder, & Wosnitza, 2014)
(2) limit the time to be spent on business model innovation course to 2-4 hours per week so that business owners with a limited amount of available time can still keep up with the course;	Business owners or other business-oriented stakeholders generally have a limited amount of available time. Therefore, the course should consist of small “chunks” which fit within the limited amount of available time.	Adapted from (Moon, Birchall, Williams, & Vrasidas, 2005)
(3) provide inspiring examples and intuitive tooling to make the assignments more relatable to the practical own context of business owners.	Inspiring examples help show what lessons are learned and how more theoretical concepts could be applied in the own context. By having a practical perspective, it becomes easier to refer to the participant’s own workplace and experience.	Adapted from (Margaryan, Bianco, & Littlejohn, 2015; Moon et al., 2005; Yousef et al., 2014)
(4) use video and images rather than text in order to ensure the understandability of the content for business owners with secondary education;	The MOOC should offer learners a variety of rich-media to capture their attention. Also, it is argued that business owners with secondary education can relate easier to videos and images than comprehensive (scientific) textual articles	Adapted from (Guàrdia, Maina, & Sangrà, 2013)
(5) have the learner apply the tools directly on his/her own business in order to provide immediate value and relevance;	Learning is promoted when learners apply their newly acquired skill to solve practical problems. It is argued that learning is further promoted when the newly acquired knowledge is applied to solve problems from the own context. Furthermore, this will directly show the value of the newly acquired knowledge.	Adapted from (Margaryan et al., 2015; Moon et al., 2005)
(6) facilitate collaborative learning and sharing of best practices through forum discussions and peer reviews in order to promote learning amongst the business owners.	Learning involves more than information provision; it requires practice, feedback, and guidance. Furthermore, research on collaborative learning states that learning is promoted when learners collaborate, provide and receive feedback on their performance and contribute to collaborative knowledge.	Adapted from (Guàrdia et al., 2013; Margaryan et al., 2015; Yousef et al., 2014)

Table 1: Design principles for the design of the MOOCs

random order. The series started with a relatively short and simple course, where the main topics of business model innovation were introduced. In subsequent courses the level of difficulty increased by discussing more advanced business model topics and tools¹.

¹ Courses are available via Edx, but here we provide the permanent links to the archived courses:

- <https://ocw.tudelft.nl/courses/value-business-models/>
- <https://ocw.tudelft.nl/courses/design-successful-business-model/>
- <https://ocw.tudelft.nl/courses/business-model-testing/>
- <https://ocw.tudelft.nl/courses/business-model-implementation/>
- <https://ocw.tudelft.nl/courses/business-model-metrics-advanced-tools/>

Course 1: The Value of Business models.

An introduction to business model innovation, and for instance the relation between business models and strategy. Using a simple card game, participants learn to rethink their business model in a playful way. The course also lays the basis for the follow-up courses.

Course 2: How to Design a Successful Business Model
Starting from a design thinking approach to business models, participants learn the major ontologies for business model innovation (i.e. Canvas, STOF, VISOR) in order to design their business models. In the second part of the course, participants focus on specific issues

such as partner involvement and value networks, as well as multi-sided business models

Course 3: Business Model Testing

Participants learn to evaluate their business model, for instance in the view of future environmental changes. Tools include business model stress-testing (Haaker et al 2017) and more generic business case calculations.

Course 4: Business Model Implementation

This course is about moving from a design for a new business model to actually implementing it in practice. For this, students learn tools such as business model roadmapping (De Reuver et al 2013).

Course 5: Business Model Metrics and Advanced Tools

This is the most advanced course, especially suitable for medium-sized firms. Topics include the integration of a new business model into the business and enterprise architecture of a firm, as well as agile working and the operating model. Also, attention is given to metrics that make explicit the performance of a business model.

The courses were bundled in a so-called XSeries, see Figure 1.

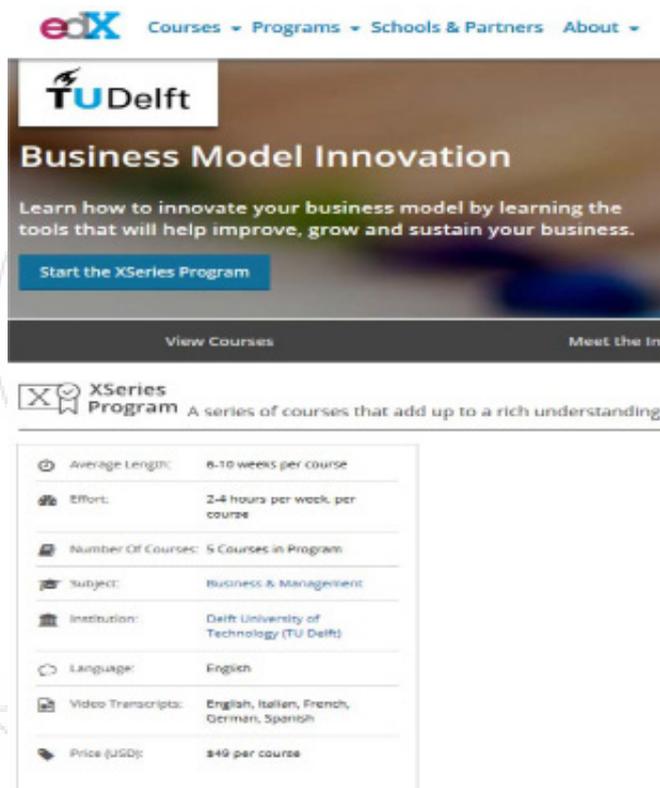


Figure 1: XSeries program as it was advertised.

Structure within each course

Every course had the same structure; 3-5 main blocks which sorted the main subjects of that particular course, see Figure 2. Each block contains around 5 sub blocks, comparable to lessons. Sub blocks could be an instruction, a case study or an assignment. Each sub block consisted of several units. Units could be in the form of an introduction video (discussing core concepts and examples), additional knowledge video (e.g. explaining a certain tool for business model innovation), a case video (in which a business owner explained their business and the application of certain tools), an assignment video (example answers of assignments were shown and discussed by the course team), a feedback video (where frequently asked questions of the learners where answered by the course team), explanation or introduction text, case questions, a quiz or a test (assignment). The sequence of units within a sub block usually started with an introduction video and related quiz, and was followed by a case video plus corresponding case assignment, own company assignment and finally a feedback video. Assessments ranged from self-assessment to peer review. Participants could ask questions and interact via a discussion forum. Teaching assistants monitored the discussion forum.

Videos were recorded in a professional studio. Video clips were typically less than 6 minutes. All videos and cases were provided in English and subtitled. Subtitles were translated into German, Spanish, Italian and French, assuming that SMEs would appreciate the

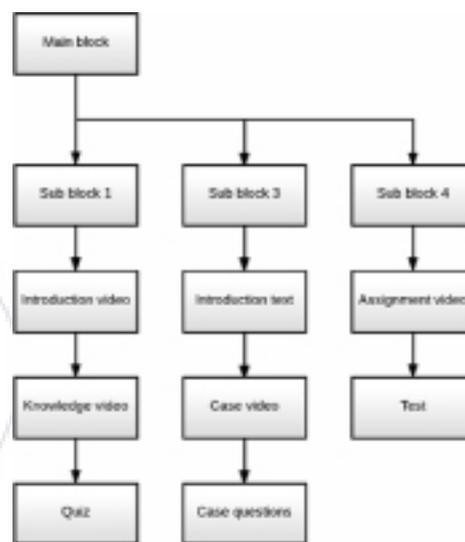


Figure 2: Structure of a typical course



Figure 3: Screenshot of online learning video

contents in their own language. A screenshot of a video is provided in Figure 3.

During the first year of giving the courses, three webinars were provided as well. The webinars were live discussions in a professional studio with the lecturers and with business owners. Through the webinars, tools were explained, and questions from participants were answered in a livestream.

Key Insights

In this paper, we base the evaluation on the first three of the five courses. In the time between launching the first course (fall-2016) and now (fall-2018), the three courses attracted 20,000, 24,000 and 10,000 participants respectively.

Promotion was created through the existing Edx channels (e.g. newsletters). A professional YouTube trailer was created. In addition, we went through over 30 SME organizations across Europe (e.g. chambers of commerce, business associations) giving those flyers and promotional messages. Participants were also attracted through an ongoing European project in which the tools were being developed, led by an external partner specialized in communication. One method particularly successful were Facebook campaigns tied

to the webinars, with some promoted messages receiving over 1,000 likes.

Around 1-2% of all participants purchase a certificate upon completion of the course. These figures are similar to other online courses provided through the Edx platform.

Evaluation approach

Two data sources were used to collect evaluation data of the course. A first source of data collection were the standard surveys as developed by the learning centre of the TU Delft (these surveys are available on request). At the beginning, in the middle and at the end of each course, respectively a pre-, mid- and post-evaluation survey was sent to the learners. These extensive surveys collected data on the background of each learner, and asked the learners a set of open and closed questions on several aspects such as their comprehension of the course, the workload of the course and the clarity of instruction texts and videos.

Learners were not obliged to fill in the surveys, nor were they obliged to answer every question of each survey. Therefore, the number of respondents differs per survey and per question of each survey. In total, over 103 respondents have filled in the surveys. Some learners provided their opinion on the course on the forum,

while others spontaneously sent e-mails to the course team, in which they provided and explained their opinion of the course. Therefore, a second source for data collection was the forum discussions and e-mails the course team received from the learners.

The combination of the results of open- and closed evaluation questions were used to assess whether the previously discussed design principles were fulfilled. Qualitative analysis was used to structure and summarize the answers to the open questions of the surveys, while quantitative analysis was used to analyse the answers to the closed questions, where often a Likert scale was used to collect the answers. For the qualitative analysis, three-level coding was used, where the higher-order level- one codes comprised of the main open-question. The level-two codes comprised overarching themes (such as several different quotes on the videos of the course) and the level-three codes comprised of more detailed quotes (such as comments on the quality of the videos of the course). An example of a coding network for the mid-survey for an open-question of the first course can be seen in Figure 4.

After the coding process was completed, relevant codes (i.e. codes that could be linked to the previously discussed design principles) were sorted on the design principles. For example, codes comprising of quotes on the comprehension of the videos, assignments quizzes etc.

were assigned to the first design principle, which states that the course should also be understandable for business owners with secondary education. After the codes were sorted on the design principles, for each design principle, quotes were selected which could be used as evidence if a certain design principle was fulfilled or not.

Evaluation results

Design principle 1

Most learners state that the courses are simple to follow and that the course material is clear and understandable. Less than 10% of participants found the courses too difficult.

“The combination of videos, quizzes and assignments make the course dynamic and enjoyable”

Some learners state that the course is too easy compared to other courses on the edX platform. In contrast, some learners acknowledge that the course is relatively simple and basic, but that this is not a problem; it is just a MOOC that facilitates basic knowledge on business model innovation. Several learners asked for more challenge and materials:

“The content was just a short overview. I hoped for some more insights. Background lessons were short [...] I was looking for some more instructions – how and why does it work.”

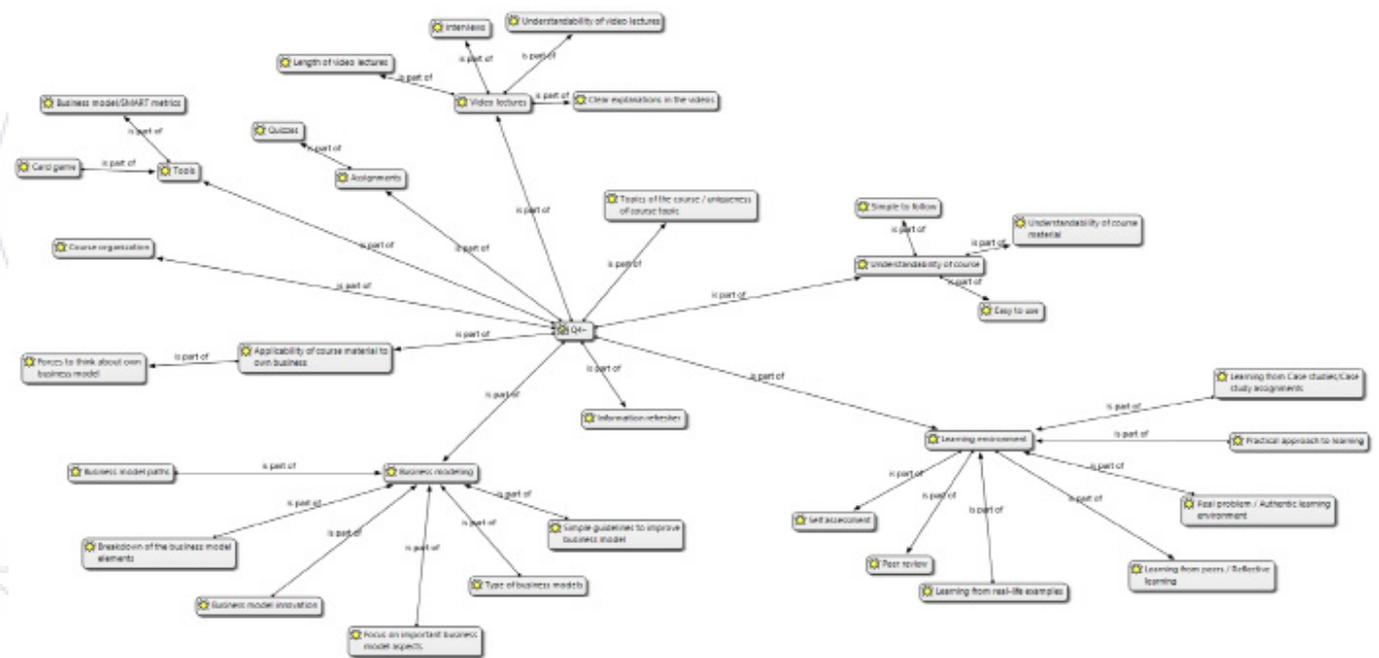


Figure 4: Example of coding network for qualitative evaluation data

For every course 35%-40% of the participants have a bachelor's degree and 30%-35% a master's degree, whereas 15% has only secondary education. These figures make it difficult to determine which type of learners was able to follow the courses easily. If around 60%-70% of the learners were able to follow the course easily (and sometimes even stating that the course was too easy) but had higher education, design principle one is not or only partly met. Nonetheless, the percentage of students that felt that the courses were too difficult is for all courses lower than 10%.

As suggestion for improvement, some learners state that the course also should include quizzes and assignments that are especially developed for more advanced learners. It might be a solution to still include some assignments with a more scientific perspective for learners who want to dive deeper into the concepts of business model innovation. Based on these findings, we slightly adapt the design principle:

Design principle 1a: Simplify the material such that business owners with secondary education can comprehend it

Design principle 1b: Offer additional materials as an optional add-on such that advanced learners find sufficient depth in the course

Design principle 2

Evaluation results show that, by splitting up the courses in small chunks, learners are still able to finish the courses in their limited amount of available time. Generally, there are not many learners that indicated they did not have enough time to finish the course. Learners on average felt that they had more hours available than they were expected to use in the course. In other words, learners that felt that the course was about right in terms of workload and duration. While most learners are nonetheless still able to finish the courses, they tend to neglect to participate in the forum discussions when they do not have enough time.

There are some learners who acknowledge the benefit of the increased flexibility of following an online course, however, other learners complain about the strict deadlines of the assignments and quizzes. They state that the strict deadlines do not fit in their daily agendas due

to for example unexpected changes of available time, which is something that occurs regularly as a business owner. This is illustrated by the following quotes.

"I missed out a deadline due to an unplanned business travel. It is totally understandable that the assignment is closed [...] However, for working people it would be helpful to get a second chance."

Future MOOCs that are developed for SME's could allow for a one-time postponement of the deadlines to meet the dynamic agendas of business owners. In addition, a notification or reminder system should help remember busy business owners to finish assignments in time. Based on these findings, we slightly adapt our design principle

Design principle 2a: Limit the time to be spent on business model innovation course to 2-4 hours per week so that business owners with a limited amount of available time can still keep up with the course

Design principle 2b: Make deadlines flexible such that business owners with an unpredictable time schedule can keep up with the course

Design principle 3

Evaluation shows that practical tools and case examples that fit SME's own context help learners to perceive the value of newly acquired knowledge. The tools, case studies and real-life examples are much appreciated by most learners. According to the learners, the combination of theory explanation and theory application through quizzes, assignments and interviews with real-life business owners in the case studies results in set of courses that has a very practical approach to learning. The tools participants like most are both creative brainstorming tools (i.e. business model card game, thinking hats) and quantitative tools (i.e. business model metrics). Some learners state that they will use the tools in their daily work from now on. The tools and frameworks of the course support this practical approach, by making it easier to apply the business model innovation concepts from theory to practice and the own context.

"I like to reflect my learning against practice. Actually working tools and frameworks are a really useful addition for this!"

No concrete suggestions were provided by the learners to improve the design of the MOOCs on this aspect. Again, a finding is that in the evaluation surveys, participants ask for more: more cases and more tools, even though each MOOC contained between 3 and 5 cases, and between 3 and 6 unique tools. Based on this supporting evidence, we retain our design principle:

Design principle 3: Provide inspiring examples and intuitive tooling to make the assignments more relatable to the practical own context of business owners.

Design principle 4

Videos and images make it easier for learners to acquire knowledge in a rather short period of time. Learners with a secondary education can relate well with visual formats. Besides some specific complaints on the audio or video quality of some video lectures, the videos lectures are generally evaluated positively by the learners. The videos are perceived as short and concise. Learners appreciate the instruction and assignment videos, stating that it is easy to follow and helps them understand the concepts of business model innovation.

"The instruction videos are very clear, which is important to help us understand the concepts of business models and how to apply it to our own company."

One specific group of learners state that merely video and images do not meet their demands. Therefore, future MOOCs for SME's can include additional (scientific) readings to meet these demands.

As suggestion for improvement learners state that more visuals (i.e. images or diagrams) could be incorporated in the videos. Also, a different setting for video recordings is suggested, such as video recordings on location of the interview for the case study videos. (In later stages of the course, some videos were recorded at the location of the interview). Based on these findings, we adapt our design principle:

Design principle 4a: Use video and images rather than text in order to ensure the understandability of the content for business owners with secondary education;

Design principle 4b: Provide additional learning resources in the form of (scientific) readings to meet the needs of advanced learners

Design principle 5

Learners frequently mention the applicability of the course material to the own context. They state that the tools and frameworks force them to think about their own business models, and that it gives them new insights into how they could improve their business model. The tools from the *businessovermaker.eu* platform give learners possibilities to reflect on their current business model and to highlight important areas for improvement. This demonstrates them how they could use these tools in practice, which should show the immediate value and relevance of the newly acquired knowledge.

"It really stimulated to work on my own business model"

Some learners acknowledge the immediate value and state that they might use the available tools in their daily job from now on. In light of the supporting evidence found, we retain our design principle:

Design principle 5: Have the learner apply the tools directly on his/her own business in order to provide immediate value and relevance;

Design principle 6

Learners often positively mention the value of reflective learning from peers through the peer assessments assignments. Whereas we were first hesitant to ask practitioners to share their business model ideas due to confidentiality concerns, in practice most participants are willing to do so. In addition to this, the forum discussions allow them to have discussions with peers on the topics as discussed in the lectures.

"The peer review is an excellent idea and helpful to see/read how others view my business idea"

As first suggestion for improvement, most learners state that for the peer assignments a quality control system should be implemented. This quality control system should guarantee more sufficient and detailed feedback from peers, while this is currently lacking in some cases. This system could give for example additional points to peer reviewers who give detailed and comprehensive feedback to their peers. Second, learners state that the forum discussions are sometimes difficult to follow, due to a lack of form structure and

organization. Based on the largely supporting evidence, we retain our design principle:

Design principle 6: Facilitate collaborative learning and sharing of best practices through forum discussions and peer reviews in order to promote learning amongst the business owners.

Discussion and conclusion

This paper demonstrated how open online courses can contribute in transferring academic knowledge on business model innovation to practitioners. We developed, tested and refined six design principles for business model innovation courses. We found that the initial design principles were useful in creating courses that are overall well appreciated by participants, and that are especially well accessible to SME managers and owners on diverse education levels. Our evaluation results do point out that there is also a need to offer more advanced, academic learning materials for those learners that are more advanced or looking for more challenge.

In terms of generalization, we must reflect on the enabling conditions that we had while developing online courses on this scale. The development took place within a larger research program on business model innovation, funded by the EU, through which access to tools and cases was abundant. We also had access to an existing MOOC delivery platform (i.e. Edx) with an existing base of users looking for online courses. Further, having a professional studio and video production process is a prerequisite. Even having these conditions, considerable efforts were needed. We had a course team comprising three lecturers, four teaching assistants and one educational advisor. Over the course of 15 months, around

1000 hours by the three lecturers have been invested in designing and creating the courses, and likely another 1000-1500 hours by teaching assistants in preparing materials and running the online course. These figures do not even include the resources for translating subtitles in four different languages, which were outsourced to a professional agency. A tight project management approach is needed to produce and deliver course materials in time and with a consistent quality.

In our project, next steps are currently ongoing. The MOOC environment has been archived, and a new version of the online learning courses has been created, in a so-called Professional Certificate Program (PCP). As the contents of the PCP courses are largely the same, this is a textbook example of the business model pattern 'versioning'. The value proposition of a PCP is, besides online learning, that this will boost the career of the participant. Main changes are that (1) the price of a certificate is increased to 99 euros per course; (2) recommendations from businesses have been added on the course homepage to showcase the impact of participating in the course on career in business; (3) grading and giving feedback for a selection of the assignments by the course team.

Another opportunity we are exploring is how to use the online courseware in a research program on business model innovation and tooling. For this, we are experimenting with having online course participants use one of the tools being developed in a PhD project, including a formal pre- and post-questionnaire to measure the impact of the tool on understanding of business models and idea generation. Methodological issues are still to be explored, especially as, compared to a controlled experiment, the researcher has little influence on who uses the tool in what context.

References

- Bouwman, H., Nikou, S., Molina-Castillo, F. J., & de Reuver, M. (2018). The impact of digitalization on business models. *Digital Policy, Regulation and Governance*, 20(2), 105-124.
- De Reuver, M., Bouwman, H., & Haaker, T. (2013). Business model roadmapping: a practical approach to come from an existing to a desired business model, *International Journal of Innovation Management* 17(01), 1340006.
- de Reuver, M., Athanasopoulou, A., Haaker, T., Roelfsema, M., Riedl, A., & Breitfuss, G. (2016). Designing an ICT tooling platform to support SME business model innovation: Results of a first design cycle. In Proceedings of the Bled eConference, Bled Slovenia.
- Haaker, T. Bouwman, H., Janssen, W., & de Reuver, M. (2017). Business model stress testing: A practical approach to test the robustness of a business model, *Futures* 89 (2017) 14-25.
- Daradoumis, T., Bassi, R., Xhafa, F., & Caballé, S. (2013). *A review on massive e-learning (MOOC) design, delivery and assessment*. Paper presented at the P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC), 2013 Eighth International Conference on.
- Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, 611-642.
- Guàrdia, L., Maina, M., & Sangrà, A. (2013). MOOC design principles: A pedagogical approach from the learner's perspective. *eLearning Papers*(33).
- Kesting, P., & Günzel-Jensen, F. (2015). SMEs and new ventures need business model sophistication. *Business Horizons*, 58(3), 285-293.
- Lüttgens, D., & Diener, K. (2016). Business model patterns used as a tool for creating (new) innovative business models. *Journal of Business Models*, 4(3).
- Margaryan, A., Bianco, M., & Littlejohn, A. (2015). Instructional quality of massive open online courses (MOOCs). *Computers & Education*, 80, 77-83.
- Moon, S., Birchall, D., Williams, S., & Vrasidas, C. (2005). Developing design principles for an e-learning programme for SME managers to support accelerated learning at the workplace. *Journal of Workplace Learning*, 17(5/6), 370-384.
- Siemens, G. (2013). Massive open online courses: Innovation in education. *Open educational resources: Innovation, research and practice*, 5, 5-15.
- Yousef, A. M. F., Chatti, M. A., Schroeder, U., & Wosnitza, M. (2014). *What drives a successful MOOC? An empirical examination of criteria to assure design quality of MOOCs*. Paper presented at the Advanced Learning Technologies (ICALT), 2014 IEEE 14th International Conference on.

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Teaching Business Models via Blended-Learning

Alina Margolina¹ and René Bohnsack

Abstract

Practice-oriented business model courses can be resource intensive and potentially entail a redesign of the curriculum. Blended-learning has been heralded as a solution for this problem. In this paper, the authors describe the design and content of a blended-learning business model course using an online Business Modelling Tool.

Keywords: Blended-learning, business model course, online platform

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Introduction

Developing innovative business models for new ventures is a vital capability that has to be mastered to maintain long-term competitiveness of firms. In fact, the failure to create a sound business model is a “top 20 reason” for start-ups to fail (CB Insights, 2018), and the lack of experience with developing new business models accounts for 16% of disrupted industries (KPMG, 2015). This leaves business schools with the challenge to help the new generation of students to not only acquire the necessary theoretical knowledge, but also to develop the capacity of ‘doing’. Having said this, many courses are already moving away from ‘traditional’ courses in business schools (e.g. teaching *about* business models) towards more practice-oriented approaches (e.g. *enable* and *practice* business modelling) (Piperopoulos & Dimos, 2015).

Taking a more practice-oriented approach for business models can mainly take two routes: teaching business model innovation in the context of existing organizations or business model development for new ventures. We focus on the latter, since it provides students with skills that are useful in a corporate and startup environment.

In the context of new ventures – i.e. as a startup or a project within a corporation – business model development is intrinsically linked to the entrepreneurial process. It requires a student to seize an opportunity and create a compelling value proposition (idea stage), find a paying customer (customer stage), consider a go-to-market strategy (strategy stage), and think about financial and practical implications (implementation stage). Put differently, a course on business models for new ventures needs to cover the value creation element (i.e. idea, customer) and the value capture element (i.e. strategy and implementation).

Yet, a practice-oriented course has pedagogical implications. In order to provide action, practice, experimentation, problem-solving and reflection, students need a new pedagogy based on active learning, learning by doing, mentoring, team work, and experiencing simulations of the real life. While this is sensible and viable in theory, in practice, this type of course can push the limits of classroom learning at a regular business school. Adequately implemented, it requires more resources, is more time intensive and potentially entails a redesign of

the overall curriculum. Since this is often not an option, this type of courses may become somewhat ‘half-baked’ and not encourage entrepreneurial intent in the end.

So is this setup a pipe dream? Maybe not. Blended-learning has been heralded as a solution for this problem. Blended-learning combines traditional classroom learning with e-learning. With blended-learning, teachers (or instructors) can cultivate a community, give feedback and motivate students in the classroom, and allow learner-centered, self-paced, and cost-effective knowledge transfer online. In addition, using gamified online modules can support instructors in teaching creative skills and a business model mindset (Byrge, forthcoming). As a matter of fact, blended learning has been proven to be more effective than either face-to-face sessions or online learning on its own (Graham et al., 2013). Hurray you may say, but not so fast. Effectiveness is only achieved if both online and offline components of the course are accurately aligned (McGee & Reis, 2012). This is a task, more difficult to achieve than it sounds in terms of content, structure and pedagogy. Particularly the synchronization between online knowledge transfer and classroom activities requires careful planning as well as engaging technology. Modern learning-management systems (LMS) provide the opportunity to upload blended-learning material such as templates, videos and quizzes. Yet, since LMSs cater for generic setups they miss to account for the idiosyncrasies of a practice-focused business model course, i.e. allowing a team-based and project focused process (at least in a user-friendly fashion), inclusion of the business model canvas and ability to track and compare the progress of each venture team.

Given the above mentioned challenges and opportunities, the authors of this paper set out to create a business model course for new ventures in a blended learning format with a specific focus on tailoring the online content to the classroom experience. The audience for the course were bachelor, master and executive students. First, because the subject lends itself to be suitable for these audiences, but also because we had the opportunity to test the effectiveness for all three audiences in practice.¹

¹ This setup has also been applied in company workshops and multi-stakeholder R&D projects, yet in this paper we focus on the context of higher-education courses.

Our learning objectives for participants were:

- build the capacity of developing viable and sound business models for new ventures and internalize the business modelling and venture creation process,
- build the capacity to work on a new venture in a team, give and receive feedback,
- build the capacity to use online tools in the business modelling process,
- build an entrepreneurial mindset.

In order to achieve this, we designed a curriculum from scratch with the learning objectives in mind. We were in the fortunate position to have the resources, time and freedom to create the best possible blended-learning course (from our perspective). Next to creating the structure and content, this included recording videos, inviting entrepreneurs and building on an online platform (at the time of writing this article called www.smartbusinessmodeler.com).

Clearly, the initial investment was high (6 months of preparation excluding software development). However, the result was a new blended learning format for business model courses that reduced classroom time by 50%, increased student satisfaction for millennials and executives alike, and nurtured entrepreneurial intent (most wonderful quote after the course “I had no idea that I could be this entrepreneurial!”). Also, after this initial investment, it can almost effortlessly be replicated given its digital character. It is freely available for instructors to use.²

The six-week course entailed in-class workshops and access to the content of the online platform. Optional are tailor-made videos and invited guests to the workshops. In the following, we describe the setup in more detail with a specific focus on the use, content and functionality of the online platform.

Blended-Learning Course: Business Modelling for New Ventures

The syllabus

The course was given to undergraduate, postgraduate and executive students in separate classes. 36 students

participated in the undergraduate course (3 ECTS), 75 students participated in the graduate course (3,5 ECTS), and 20 students participated in an executive course³. All courses were two-month long and structured in the following way: six in-class sessions were complemented with ten online units. Students needed to prepare the online units prior to the in-class sessions.

The course included the following six weekly sessions:

- Session 1 (Week 1): Idea design
- Session 2 (Week 2): Customer discovery
- Session 3 (Week 3): Value proposition development
- Session 4 (Week 4): Business model development
- Session 5 (Week 5): Strategy alignment
- Session 6 (Week 6): Business plan development and pitch deck design

Each session was three hours long, with 1.5 hours devoted to the explanation of the theoretical material provided via dedicated units in the online course, and 1.5 hours being a practical in-class session with the instructor. Online and in-class parts of the session were held on different days of the week, with a break of at least two days in between to give students time to work on the assignments explained at the end of each online unit. Students did not have to be in class to go through and complete the online part of each session, while the attendance of the in-class part was mandatory. In-class sessions were focused on answering questions about the online material, discussing cases and doing exercises for the week's topic, having students present their progress and give feedback.

At the beginning of the course, students were asked to form teams and think about a business idea they would like to work on during the course. The only criterion for the idea was that it had to address a societal problem (i.e. mobility, waste, social engagement). Inspiration was given in the form of a short talk on smart city trends. This step could be replaced with an inspirational talk on any other topic (e.g. circular economy, digital transformation, or digital technologies) or even by assigned business ideas.

During the course, students worked team-based on the assignments given per session (as described in the next

² Please contact the authors.

³ Due to its nature, the executive course had minor adaptations, yet not relevant to be reported in this paper.

section). Working on a specific idea and elaborating on it as progressing through the sessions helped students to not only learn about business modelling and venture creation but also understand how to apply the frameworks in practice by the end of the course. In the last session, each team had an opportunity to give a presentation and pitch their idea to an invited jury of entrepreneurs and experts in business model development. This session was framed as a ‘Shark tank’ session and included the requirement for the audience to invest a fictional budget in startups. This condition created a very interesting competitive vibe and was fun for everyone involved.

In terms of grading: this is of course rather flexible. In both undergraduate and postgraduate courses, we decided for a combination of a final test and grades for the assignments. The final grade of each student consisted of the following components: test grade (40% of the final grade), grade for assignments completed in teams (altogether, 30% of the final grade), grade for a business plan completed in teams (20% of the final grade) and grade for individual active in-class participation (10% of the final grade).

Use, content and functionality of the online platform

In the following, we describe the online steps along the venture process that were developed (see overview of the process below).

Students access the process online via a collaborative dashboard on the online business modelling platform

(see Fig. 2). The design is meant to be intuitive, motivating and efficient.

For each step, there is an online learning unit, essentially replacing the stand and deliver knowledge transfer of instructors in the classroom with short texts, videos and examples (see Fig. 3).

At the end of each unit, students receive an assignment. Each assignment relates to a step in the process. For each task, students receive a template, an example and additional explanations. All examples on the platform are based on Uber given that it is universally known and intuitive.

In the following, we describe for each step the most important tasks and their respective goal.

1. Idea

The first step, “Idea”, is intended to help students to structure their thoughts about the chosen business idea. Some of the tasks that are currently available on the platform in this section include the following ones:

- Visualisation of the idea using a **mood board**: this task helps the team to align on the key characteristics of the initial idea by creating a visual mood board.
- Development of a **press release**: this task, inspired by Amazon’s practice of requiring press releases before developing a new product or service, helps sharpen the initial ideas and thoughts

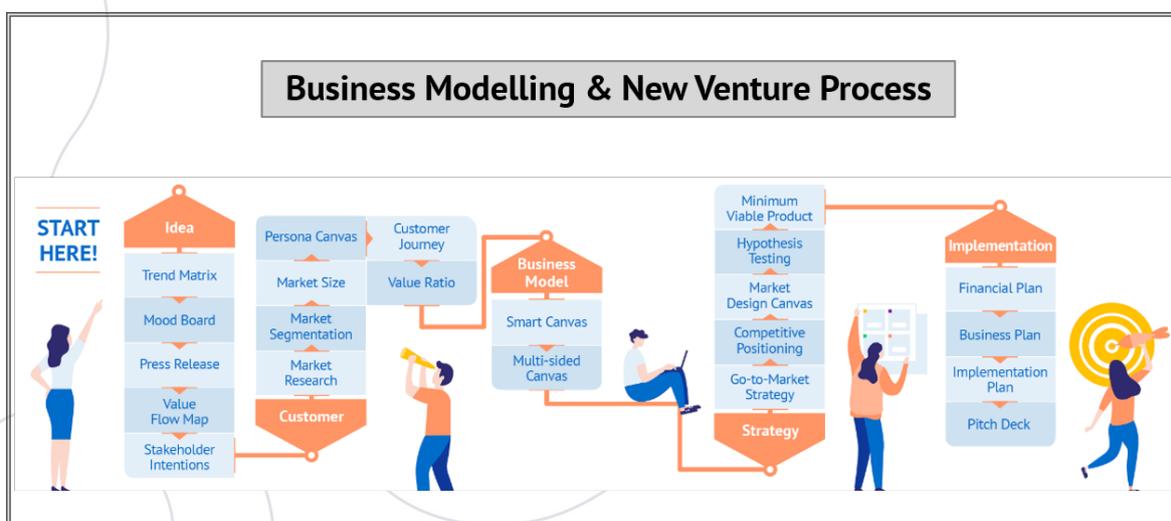


Figure 1: Idea development process via the online business modelling platform

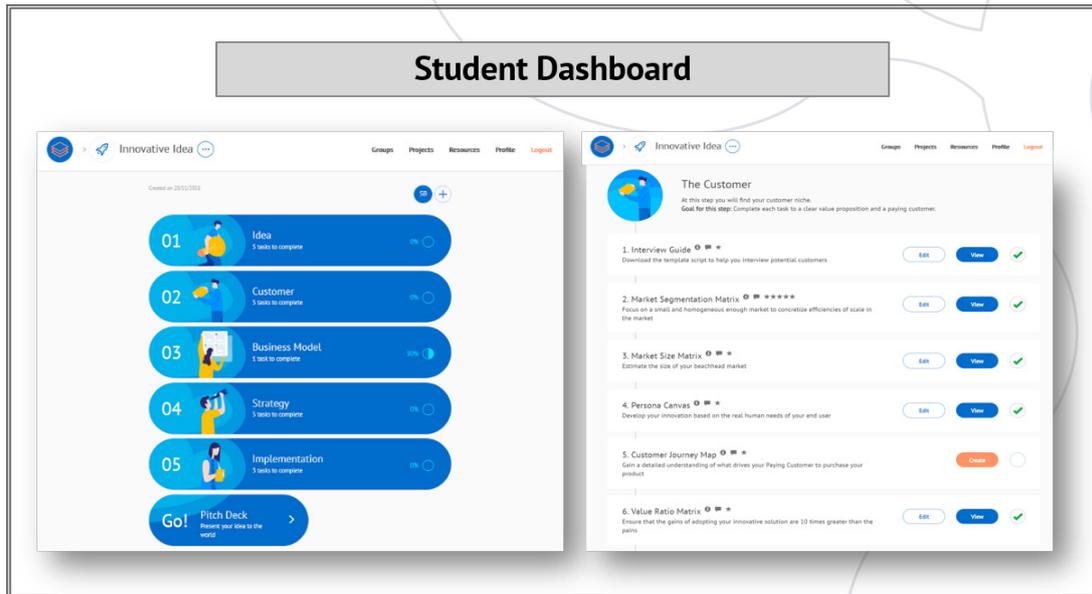


Figure 2: Dashboard on the online business modelling platform

about the target customer; the exact problem customers face; and how the proposed product/ service solves the identified problem.

- **Stakeholder identification and mapping:** in this task, the team analyses the relationships between different stakeholders directly involved in the development and delivery of the product/service to the potential customer. It also helps identify all the different parties indirectly affected by the implementation of the idea (i.e.

local community, environment). In this task, students can map the relations between these various stakeholders and consider the exchange of tangible and intangible values between them. What is more, in this step, teachers can implement sustainability elements, i.e. by encouraging students to do social and environmental value exchange mapping. This assignment is inspired by the Value Flow Model developed by Ouden and Valkenburg (2011).

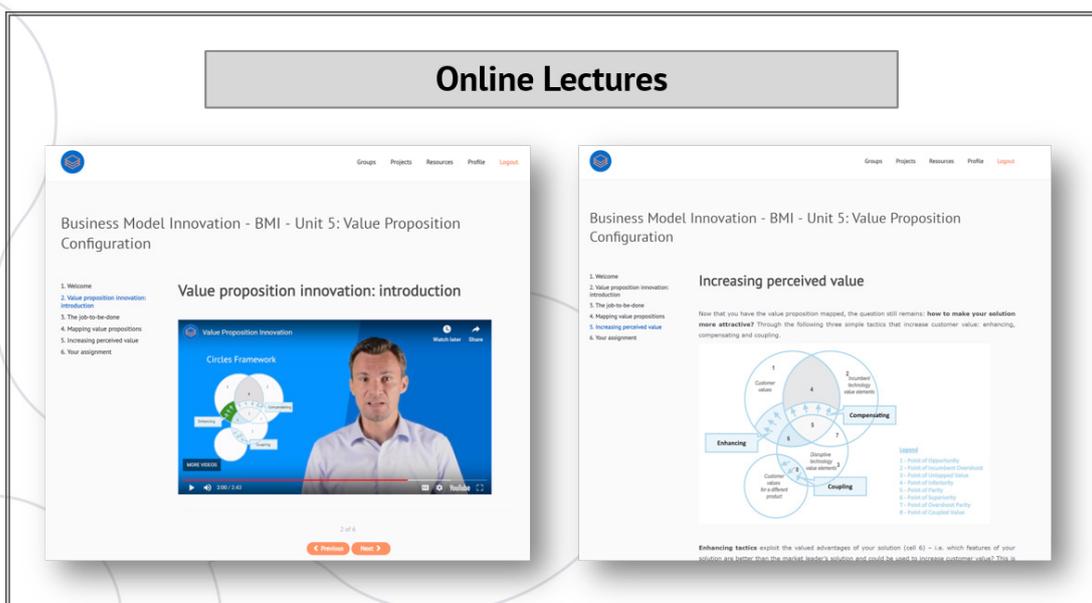


Figure 3: Online knowledge transfer via videos, texts and assignments

2. Customer

The second step, "Customer", is focused on helping students to explore the market potential, test their customer hypotheses and refine their value proposition based on the results. The goal of this step is to come to a clear understanding of who the users and who the paying customers for a product/service are, and what value the product brings to them. Some of the main tasks considered in this step are described below:

- Conducting **primary market research**: this task provides guidance on how to do a first-round of interviews with the potential customers to start validating hypotheses about the customer. The logic of this assignment is inspired by the techniques put forward by Blank and Dorf (2014) and Erik Ries (2011).
- Exploring the **market segments**: in this task, based on the results of the interviews, teams are guided through the process of identifying several potential market segments and making a first-round decision on which one can be considered as the most favourable one.
- Describing the **persona** of the target customer: after conducting several rounds of exploratory interviews, this task is an important step in summarising some of the key characteristics of the target customer, such as behaviour, attitudes, problems they experience and reasons to use the product/service. This assignment is an adaptation of the Persona Canvas used in the Lean UX methodology (Gothelf & Seiden, 2016).
- Evaluating the **value-ratio** that the potential product/service creates for the target customer: in this task, students are guided through the process of analysing the gains and pains associated with a product's acquisition and usage, and defining whether the gains substantially outweigh the pains.

3. Business model

The third step, "Business Model", is the one where all the previously considered and defined pieces come together to help prototype potential business models and ultimately define the most suitable one. The main tasks suggested for students in this section include:

- Prototyping **business models** using the smart business model canvas: in this activity, teams

use the **smart business model canvas** to ideate different alternatives to create and capture value with their business idea. By dragging and dropping post-its onto the business model canvas, the business model unfolds (Fig. 4). In this step, students optionally give monetary values to each post-it (this is relevant for the cash flow analysis in step 5). The layout of the Business Model Canvas is based on the layout developed by Osterwalder and Pigneur (2009).

- Furthermore, the teams can browse the **business model database** that aggregates business model patterns from several studies. Business model patterns are considered to be a valuable tool for business model ideation (Lüttgens & Diener, 2016). At the moment, the platform includes the following selection of pattern packs: an Essential Pack, a Digital Transformation Pack, a Circular Economy Pack, an Energy Pack and a Sustainability Pack. Studies on which these pattern packs are based include Remane et al. (2017), Lüdeke-Freund et al. (2019) and Lüdeke-Freund et al. (2017).
- Developing a **business model for projects with multiple stakeholders** being involved: this task is particularly relevant for students who are looking into tackling complex problems, where the participation of multiple stakeholders, such as government, municipalities, citizens and various technology providers, is vital for the success of the product/service. Such complex solutions can often be found in the energy, mobility, or health industries. The Multi-sided Business Model Canvas helps teams to understand which stakeholders must be involved in the development and delivery of the value proposition to the customer, which key activities and resources are required from each partner, what benefits can be derived by each party from the value proposition and how the relationships with the user are established and maintained.

4. Strategy

The fourth step, "Strategy", covers aspects that should be considered to further test the idea and analyse the context for the idea. In this section, the students are suggested to complete the following assignments:

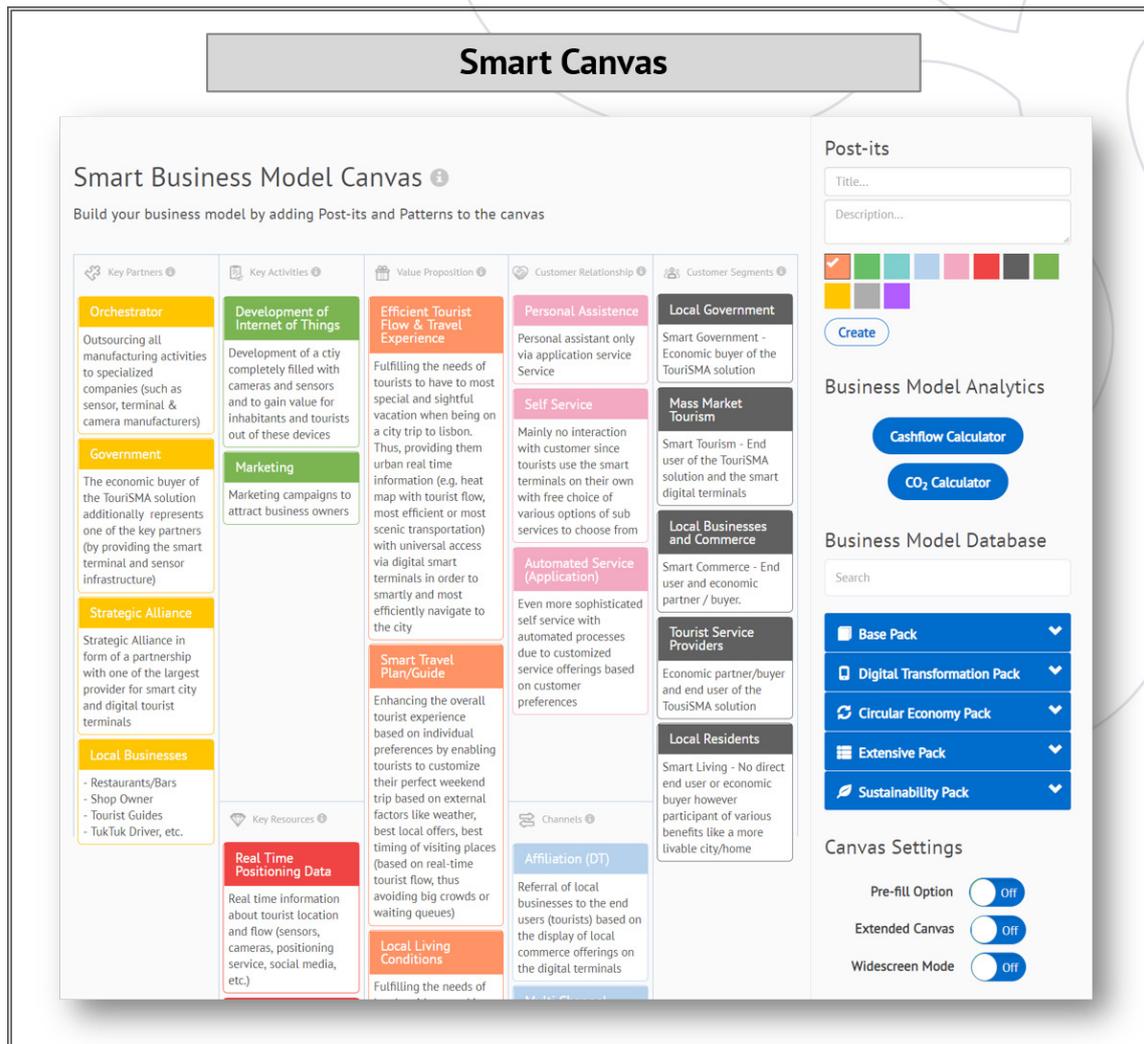


Figure 4: Smart canvas with business model database and link to cash flow analysis (adapted from Business Model Canvas layout by strategyzer.com)

- Defining a **go-to-market strategy** for the idea: this task focuses on defining how the visibility for the product/service can be created, how customers can be acquired and retained, and how they can be transformed into ambassadors of the product.
- Analysing competition and developing a **competitor analysis**: this task helps teams to establish their understanding of the competition and find a clear and compelling competitive position for their product/service in the market.
- Adapting the developed business model to **international markets**: in this task, teams can choose a foreign market and analyse how the developed business model fits the conditions of that market following several dimensions – political and legal conditions, user practices,

economic conditions and technology infrastructure. The outcome of this step is a clear understanding on how business model elements need to be adapted to fit the chosen foreign market.

- Testing business model assumptions and developing a **Minimum Viable Product**: in this task, teams define hypotheses their business model is based upon, and learn how to identify the critical features their Minimum Viable Product should include. The logic of this assignment is inspired by the methodology developed by Ries (2011).

5. Implementation

The fifth step, “Implementation”, is an important step that helps structure and sharpen the business idea, considering all the previous steps in the idea development process. The following activities are a part of this:

- Developing a **cash flow forecast**: in this task, students are guided through the process, which helps them to create a cash flow analysis for their product/service. The analysis assists teams in understanding the financial value of various revenue models and their combinations. Ultimately, teams can make a decision on the most suitable revenue model, based on the value each revenue model can potentially generate, taking into account a pre-defined set of assumptions. This is also assisted by the cash flow calculator included in the smart canvas. For each post-it, one can define monetary values, which then are automatically translated into a cash flow for the first year. Overall, integrating the cash flow analysis into business modelling activity helps students in understanding the importance of financial accounting and ultimately supports in making appropriate decisions (Roslender & Nielsen, 2018).
- Designing the **implementation** plan: this task helps teams to define the activities they will need to focus on in the first 90 days, if they decide to implement the developed idea in real life outside of the curriculum. The structure of this assignment is inspired by concepts Guy Kawasaki puts forward in his book “The Art of Start” (Kawasaki, 2004).
- Developing a **business plan**: teams can develop a succinct and clear business plan that can be presented to an investor. For team members, this step is essential for agreeing on and clarifying

various aspects of the business idea, particularly related to the paying customer, business model, required resources and financials.

6. Pitch

The final stage in the process consists of creating a pitch deck (Fig. 5). In this step, teams work on preparing a compelling presentation that would explain their ideas and outcomes. The pitch deck generator provides the structure and synchronizes information from previous tasks into the pitch deck. It is flexible in terms of design, content and selection of slides. The current version of the pitch deck consists of the following eleven slides: presentation cover, problem to be solved, solution to the problem, market size, business model explanation, go-to market strategy, competitor analysis, team, definition of a competitive advantage, the ask. The developed pitch deck can be presented directly via the website or downloaded as a PPT or PDF.

All in all, the idea development process covers the steps each team has to go through to define a viable and scalable business model.

Supporting educators with a blended learning backend solution

The online platform helps instructors to integrate and manage the above described process (or its adaptation) into their teaching activities and provides easy cohort management functionalities. Instructors can create multiple cohorts and are able to track how their

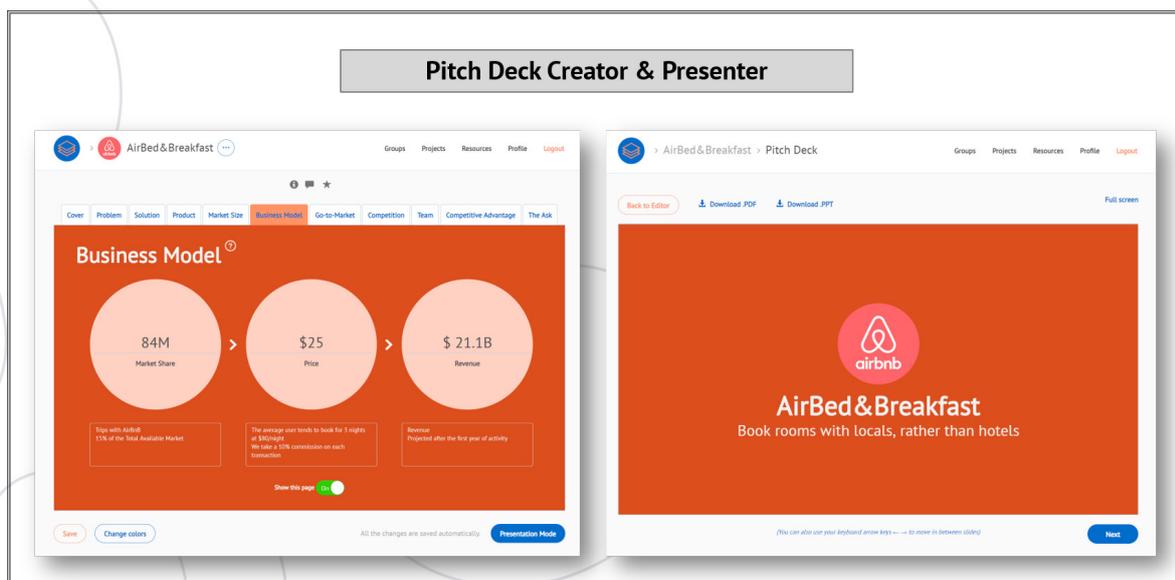


Figure 5: Pitch deck generator and live presenter

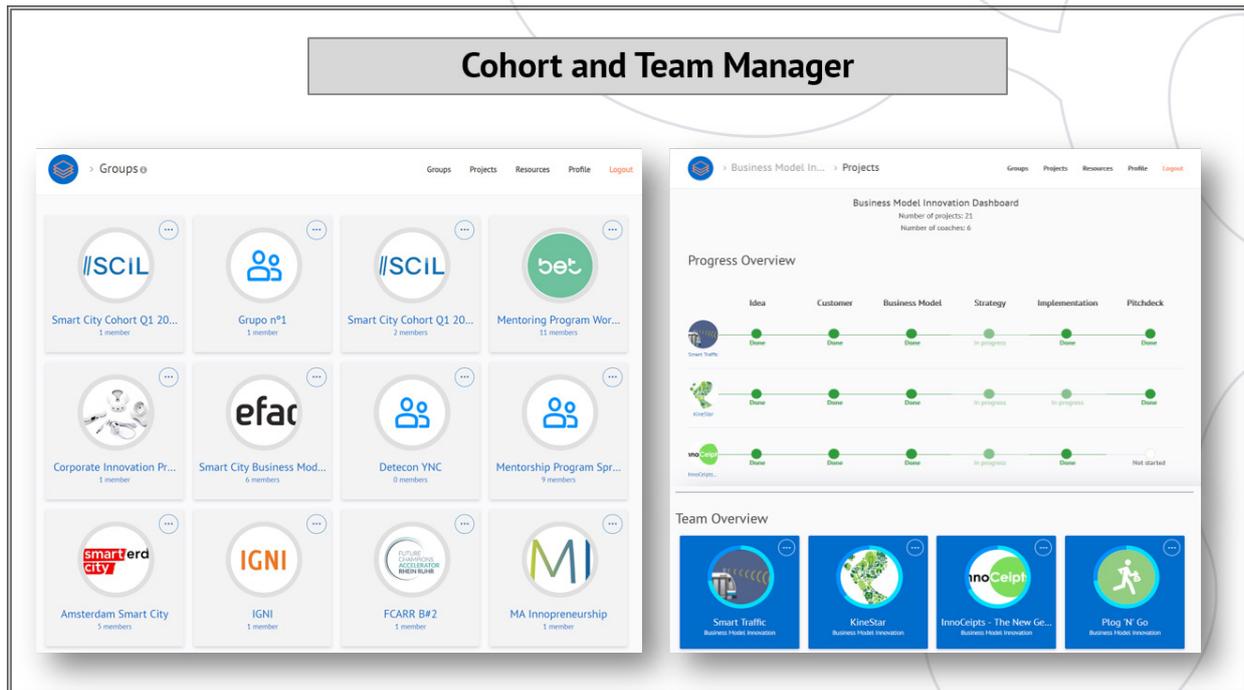


Figure 6: Cohort management (left) and overview of teams in the cohort (right)

students perform as they go along the idea development process (Fig. 6).

Instructors can access all assignments and content created by students (i.e. no more email flood or Dropbox mayhem), as well as comment on each step and their progress using the Message Board. This way teaching staff can easily see what their students struggle with and how to help them, making the teaching process in the online domain more personalised. In addition, the platform facilitates the process of grading the work performed by teams in the cohort. Educators can evaluate each task based on a five-star rating and provide grading justifications via comments, which become visible to students in the Message Board.

In addition, the platform allows educators to adapt the process of the aforementioned online course, which can consist of as many steps and units as needed. These online units can be dedicated to theoretical concepts that need to be explained to students as a part of the curriculum, or to the material already explored during the in-class session. Educators can add video content, graphs, images and links to the content of each online unit.

All in all, the described business modelling platform strives to help educators to make the delivery of a

blended learning approach to teaching business modelling and entrepreneurship an easier to perform task.

Feedback and Lessons Learned

The first iteration of the courses received very positive feedback from students who participated. After the completion of the respective courses, students were asked to fill in the online survey and provide their feedback on their learning experience. In total, 98 students participated in the survey. The results revealed that 82% of students found the online lectures very useful and helpful; 78% of students assessed the online case studies included in the online course as very helpful and useful; 70% of students found the online assignments in the idea development process as useful and helpful, with some improvements required; 65% of students found the submission process helpful (Fig. 7).

The first iteration of this blended-learning course also revealed several areas that need close attention and could be improved in the design of a similar blended learning course in the future. Firstly, six weeks (with four academic hours per week) is not always the ideal timeframe for the course, however this depends on whether ideas are given by the instructor (in that case it is suitable) or whether the students develop ideas

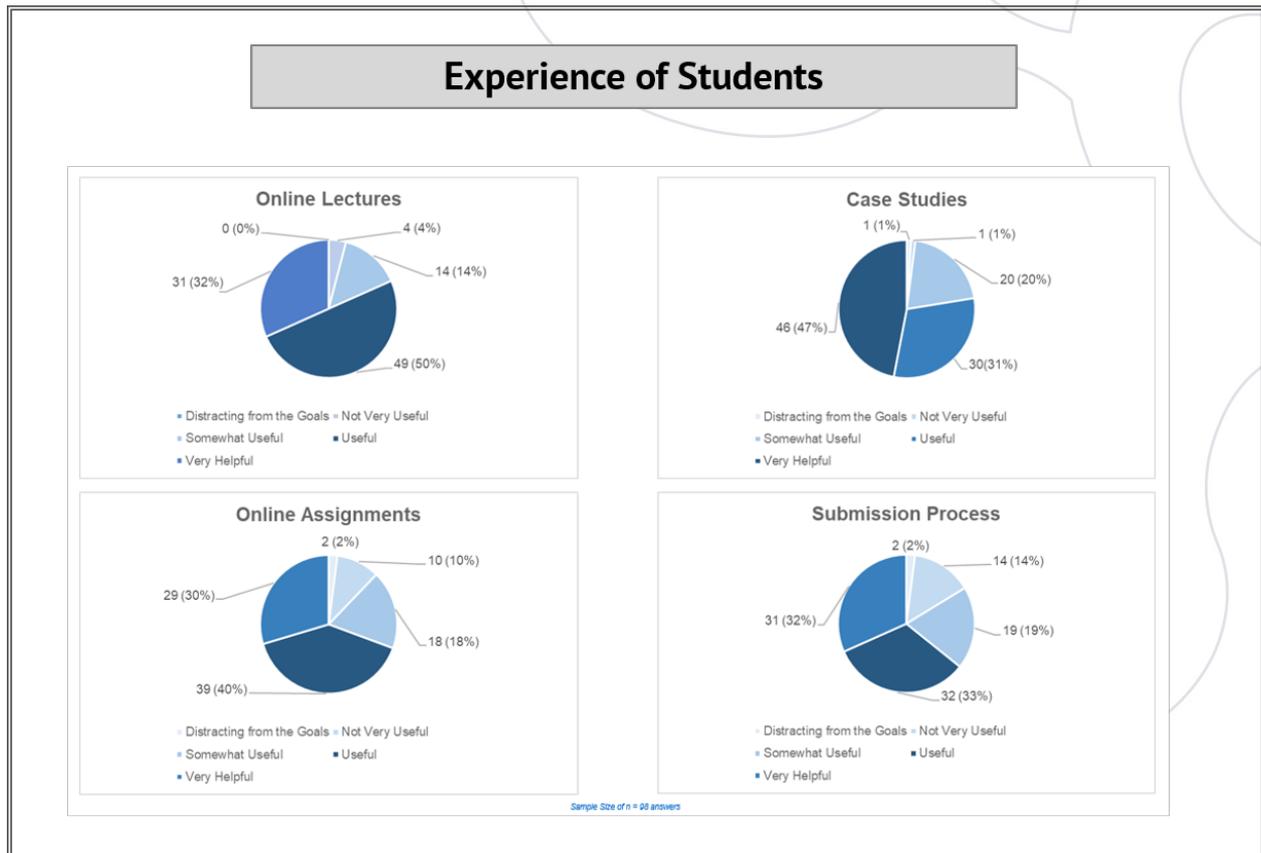


Figure 7: Results of a survey conducted among students

themselves (in this case more time is needed). In addition, the process described in this paper includes six steps and multiple assignments. Limiting time for the course to less than two months can have certain drawbacks (depending also on the additional course load of students), such as students not having enough time to work on each framework, and thus not being able to spend time on elaborating thoroughly on their results. Therefore, such a course might need to be extended to at least four months.

Secondly, an important aspect is related to communication and its consistency. In this iteration, online and in-class parts of each session were separated in time and space. To ensure that every student is aware about various organisational aspects of the course, homework and submission deadlines, it is important to clearly communicate the structure, conduct and deadlines of the course.

Conclusion

Teaching business model development for new ventures in a blended-learning setup is a challenging task

and necessitates harmonization of theoretical knowledge transfer with practical applications. What is more, the idiosyncrasies of a practice-focused business model course need to be kept in mind, i.e. allowing a team-based and project focused process, inclusion of the business model canvas in a digital format and the ability to track and compare the progress of each venture team over time. The suggested blended-learning course in combination with the online platform can help educators to address this aspect, aligning online and in-class lectures with each other.

The after-course evaluation suggests that an online business modelling platform, such as the one described in this paper, can assist teachers in designing and structuring more effective online content on the topic of business model innovation and entrepreneurship. Comprehensive guidance through the entire idea development process and the feedback system can help guide students and teams when they are outside of the classroom. By providing novel tools and content, students can discover original ways of creating and capturing value with their ideas. The ambition of the platform is

not only to help students to ideate but also to assist them in making a decision on which business model has the most potential to become successful. In the future, this may even be supported with artificial intelligence.

However, we need to highlight that the results described in this paper were based on the experience in one academic institution. Another limitation is the fact that the same instructors conducted all the courses. This means that their teaching experience, professional, and personal backgrounds might have influenced the results. Therefore, more trials need to be conducted in various teaching settings. In addition, the application of the methodology and the online business modelling platform in practice should be validated in different cultural settings as well (e.g. in the Global South). The teaching team is planning to address these limitations in their future research activities by conducting more trials with educational institutions around the world, allowing teaching staff to adapt the online module on the described online business modelling platform to their teaching needs and their students' skills and capabilities. Thus, interested instructors of business model courses as well as entrepreneurship courses are invited to integrate the platform into their curriculum.

References

- Blank, S. & Dorf, B. (2012), *The Startup Owner's Manual: the Step-by-step Guide for Building a Great Company*, K&S Ranch.
- Byrge, C. (Forthcoming), "Teaching a business model mindset using gamified online creativity training", *Journal of Business Models*.
- CB Insights (2018), "The top 20 reasons startups fail", available at: <https://www.cbinsights.com/research/startup-failure-reasons-top/> (accessed 28 April 2018).
- Gothelf, J. & Seiden, J. (2016), *Lean UX*, O'Reilly Media.
- Graham, C., Woodfield, W., & Harrison, J. (2013), A framework for institutional adoption and implementation of blended learning in higher education, *The Internet and Higher Education*, Vol. 18, pp. 4-14.
- Kawasaki, G. (2004), *The Art of the Start: the Time-tested, Battle-hardened Guide for Anyone Starting Anything*, Portfolio.
- KPMG (2015), "5 insights & predictions on disruptive tech from KPMG's 2015 global innovation survey", available at: <https://www.forbes.com/sites/louiscolombus/2015/11/08/5-insights-predictions-on-disruptive-tech-from-kpmgs-2015-global-innovation-survey/#224de63a3cbb> (accessed 28 April 2018).
- Lüdeke-Freund F., Carroux, S., Joyce, A. & Massa, L. (2017), "Sustainable business model pattern language - 45 patterns to support sustainability-oriented business model innovation", in *proceedings of the 2nd International Conference on New Business Models in Graz, Austria, 2017*, pp. 47-49.
- Lüdeke-Freund F., Gold, S. & Bocken, N. (2019), A review and topology of circular economy business model patterns, *Journal of Industrial Ecology*, Vol. 23, No. 1, pp. 36-61.
- Lüdeke-Freund F., Bohnsack R., Breuer H. & Massa L. (2019), Research on sustainable business model patterns: status quo, methodological issues, and a research agenda, in Aagaard, A. (Ed.), *Sustainable Business Models*, Palgrave Macmillan, pp. 25-60.
- Lüttgens, D., & Diener, K. (2016), Business model patterns used as a tool for creating (new) innovative business models, *Journal of Business Models*, Vol. 4, No. 3, pp. 19-36.
- McGee, P. & Reis, A. (2012), Blended course design: A synthesis of best practices, *Journal of Asynchronous Learning Networks*, Vol. 16, No. 4, pp. 7 - 22.
- Osterwalder, A., & Pigneur, Y. (2009). *Business model generation: A handbook for visionaries, game changers, and challengers*. Amsterdam: self-published.
- Ouden, den, P. & Valkenburg, R. (2011), "Balancing value in networked social innovation", in *proceedings of the Participatory Innovation Conference (PINC2011) in Sønderborg, Denmark, 2011*, University of Southern Denmark, Sønderborg, pp. 303-309.
- Piperopoulos, P., & Dimov, D. (2015), Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions, *Journal of Small Business Management*, Vol. 53, No. 4, pp. 970-985.

Remane, G., Hanelt A., Tesch, J.F. & Kolbe L. M. (2017), The business model pattern database – A tool for systematic business model innovation, *The International Journal of Innovation Management*, Vol. 21, No. 1, pp. 1-61.

Ries, E. (2011), *The Lean Startup*, Random House USA.

Roslender, R. & Nielsen, C. (2018), Accounting Through the Business Model, *Journal of Business Models*, Vol. 6, No. 2, pp. 78-83.

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Using Digital Gamification in the Context of Business Models

Jesper C. Sort¹ and Peter Martin Holst²

Abstract

The use of blended learning and gamification to enhance motivation and learning by the students is a recent and increasingly important topic in teaching. This paper will give an example of how gamification was implemented in an entrepreneurial course using business models as the primary structure.

Keywords: Business models, Gamification, Education

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Introduction

Universities and higher educations have a strong focus on teaching entrepreneurship (Sexton & Upton, 1987; Fiet, 2001; Hindle, 2007) and as this special issue is emphasizing business models (BM) is likewise becoming an increasingly taught topic. Furthermore, the two topics are often parts of the same courses. Discussions have occurred in the educational context whether or not teaching should focus more on e-learning and the use of digital media mixed with traditional learning also called blended learning (Garrison & Kanuka, 2004; Conole 2008). The reasons for introducing blended learning is, for instance, to elevate student motivation based on the interactive capabilities of internet communication technology (Swan, 2001) and to promote critical thinking and higher-order learning (Garrison & Kanuka, 2004). This paper will give insights on how digital gamification was introduced and effects the feedback between students by a peer-feedback approach where students place 'money' on each other's business model ideas.

The approach has been applied to the 3rd semester elective 30 ECTS course on master's level called New Venture Creation (NVC), where the students work with applied entrepreneurship and develop a scalable business model throughout the course. The course, in general, follows the Lean start-up approach inspired by Ries (2011); Blank and Dorf (2012) and Blank et al. (2014) and has a strong focus on business models as the structure of the business development.

One of the issues experienced in the course was how to make the students more interactive and involved in each other's projects. The issue regarding interaction, in this case, can be seen as a twofold problem with an underlying correlation. The first part is related to the students mainly working on their own new venture project, and even though the groups are split into clusters giving presentations within the clusters, they lack the motivation to keep track of what the other groups are working on. The second part, related to the first part, is the students lack of engagement in each other projects inhibiting knowledge transfer between the students. The strength of knowledge transfer has been shown in other studies (Fiet, 2001; Siegel and Wright, 2015) where knowledge transfer is key in promoting idea development and broadening the student's competencies. The lack of knowledge transfer, in this case, would

be related to sharing insights, cross-venture-development and constructive feedback between groups and furthering ideas and critical thinking within the groups.

The issue of lacking interaction and knowledge transfer was sought mitigated by the introduction of an online gamification tool. Gamification has proven to foster more interaction in classrooms and among students (Iosup and Epema, 2014). Hence the introduction of gamification through should give students incentives to interact, provide peer feedback and knowledge share more with each other. Peer assessment or feedback is a process where students evaluate achievements of their peers (Topping *et al.*, 2000). The feedback becomes a strategic learning process, where the students learn formative assessment as well as a tool for reflection (Cheng and Warren, 1999; Venables and Summit, 2003) Especially, the function of feedback and peer feedback have shown the ability to improve students' projects (Li *et al.*, 2010).

This paper will explain how the introduction of gamification and blended learning was introduced to NVC via an online gamification tool which would enable the ambition of more interaction between groups. The gamification was introduced through the learning-platform PeaQs¹, which is a newly developed online platform that combines well-known elements from crowdfunding platforms like Kickstarter.com and a stock market mechanism that assigns real-time shares/currency to the new venture projects as they are developed and displayed on the platform.

Approach

This section will explain the context and design of the course before going more into depth with how the gamification was introduced and the effects on the feedback and knowledge sharing between the students.

Course design

The implementation of blended learning and gamification needs to be thought into the course curriculum, and considerations need to be made as to how it fits the general learning style and flow of the course. For

¹ It should be noted that the author from AAU has no ownership or stake in the company behind PeaQs.

the NVC course that focuses on applied entrepreneurship and BM, it was essential to find a tool that could accommodate the learning points in the applied entrepreneurship such as communication, validation and scalability. Furthermore, the class flow and “language” in the class is inspired by the Lean startup approach (Blank et al., 2014); hence the tool should also accommodate this terminology.

The learning tool introduced on the NVC course is called PeaQs (<https://peaqs.com/>) and the webpage state it resembles “Kickstarter meets Shark Tank”. The selection of this learning tool in form of a gamification platform was primarily based on the assumption that it was fitting with the course flow and learning objectives regarding applied entrepreneurship and focus on BM. Furthermore, the platform had elements that promote interaction between the students and across groups, which was part of the initial problem related to the course.

The platform is divided into 4 distinct phases, where the students need to upload various information pertaining their new venture creation. As default the 4 phases follow a chronological flow from “idea/concept” to “get to market”. A phase is characterized by a

starting and ending date, where students are required to enter specific information, defined by the teacher, into the system. Furthermore, when a phase starts the students can buy/sell stocks in all venture creation projects on the platform except their own. Before the platform can be used, the administrator (being the course administrator, lecturer or course coordinator) needs to review the different phases and align these with the class flow and learnings objectives of the course. This is done by assigning own headlines to the various phases and templates and by adjusting the time brackets for when the phases shall become accessible to the participating students.

Following the structure of the NVC course, the platform was split into four separate phases: Phase 1) called ‘Concept’, phase 2) ‘Business case’, phase 3) ‘Product description’, and phase 4) ‘Get to market’ (see Appendix 1 for elaboration). These phases correlate with the learning objectives and stages of the course. All phase-headlines and topics within each phase can be edited to make an optimal fit to course learning objectives. The following sub-section will introduce how the learning tool was introduced and how the gamification effected the process.

Appendix 1: Elaboration of each phase and the platform in the NVC course

The first stage of the course, the students would first identify a problem and an idea for a solution; they want to work with throughout the course. This corresponds to the ‘concept phase’ being the first phase in PeaQs, where the students have to describe the idea/concept and write their team profile.

Following this phase, the second phase ‘business case’ goes more into depth with the product-market fit, minimal viable product (MVP) and different customer segments. The NVC students at this point are working with MVP in the lectures and validating the various features and ideas surrounding the product/service and identifying the right value proposition on a general level. This shows the ambition of alignment between the information needed in the phase on the platform and the content the students are lectured during this stage of the course.

The third phase is ‘product description’ which relates to working with the value proposition and how to address and target the customer segments, thus generating revenue. The headlines here are focused on specifying the value proposition, towards specific customer segments and how to reach them. This relates to the themes the students are working on during this stage of the course, such as customer journey, how to get/keep/grow customers and how to generate revenue from their value proposition.

The fourth and final phase ‘get to market’ revolves around the partnerships and infrastructure the idea will need to succeed. This correlates with the students at this stage who are working on key activities, key resources, key partners and cost structure in BMC terms.

Gamification and Process

Before the students were invited to work on the PeaQs platform, an introduction was given to the students regarding the relevance of the learning tool and the ambition of introducing the tool. Following this explanation, the students all had to create a profile on the platform that allows for group business development on one side and individual investment with a game currency on the other. After the students have created their personal profile, they can form groups according to the groups they are working in. Every student in the group can now add text, pictures, films and graphs to describe and update their project when required according to the phases.

From here on the concept is fairly 'plug-and-play'. In each phase, the students are guided towards what

information they need to produce, insert and upload. The figure below illustrates what the page looks like when information has been uploaded in the concept phase. In this instance, the group is working with a project called "RAMP", and they have uploaded a picture with their logo and some ideas of features together with a description of the project. Furthermore, in the top right corner, it is possible to follow the stock price development for this specific project. If this screenshot was taken right at the introduction all stocks would be valued at 100; this screenshot is taken shortly after, where it is noticeable that the stock price has fluctuated somewhat due to other students buying/selling RAMP stocks.

Once the groups have updated and published their project/business case on the concept page, this is reflected on the asset/product page as well as the

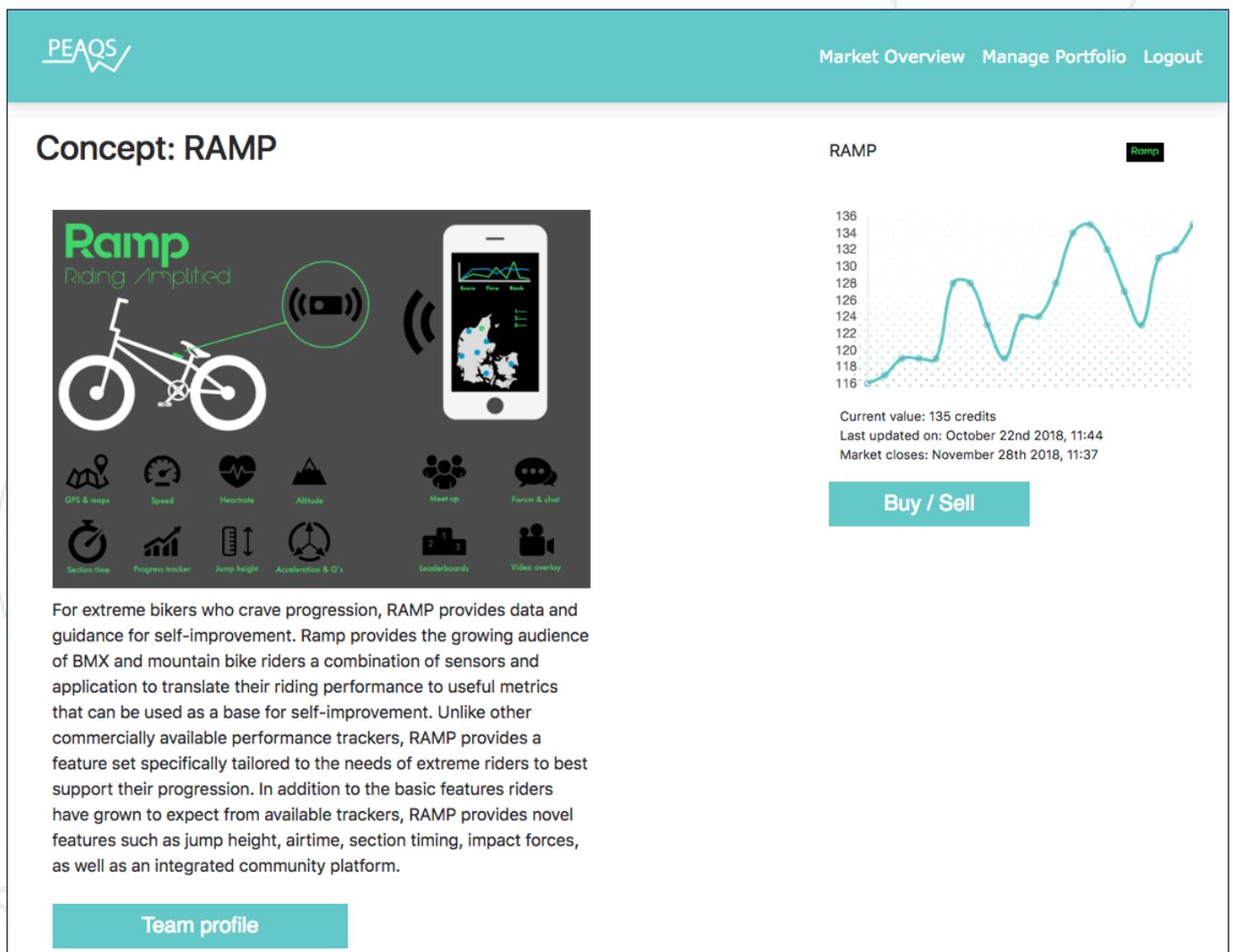


Figure 1: Screenshot from an individual project page with concept description and stock price.

common market page, which is the overview page (see figure 2). On the market page, all students can see all projects on the platform pertaining to their course. At this point each student can use his/her online currency to buy stocks in the projects they find most promising. As the investments are occurring the prices on each project/stock will start to rise/fall depending on the overall interest in the stock.

students can see the development in stock prices for each project and furthermore a top 10 ranking of the best performing projects as well as the top 10 investors. Below this, the students can browse each project/business case to identify which project/case they find most promising and want to invest their currency into.

Gamification and peer feedback

As previously mentioned, one of the challenges in this course was to create more feedback and especially peer feedback. From the initial development of the course

Figure 2 below illustrates the market page or “stock exchange”. In the top part of the market page, the

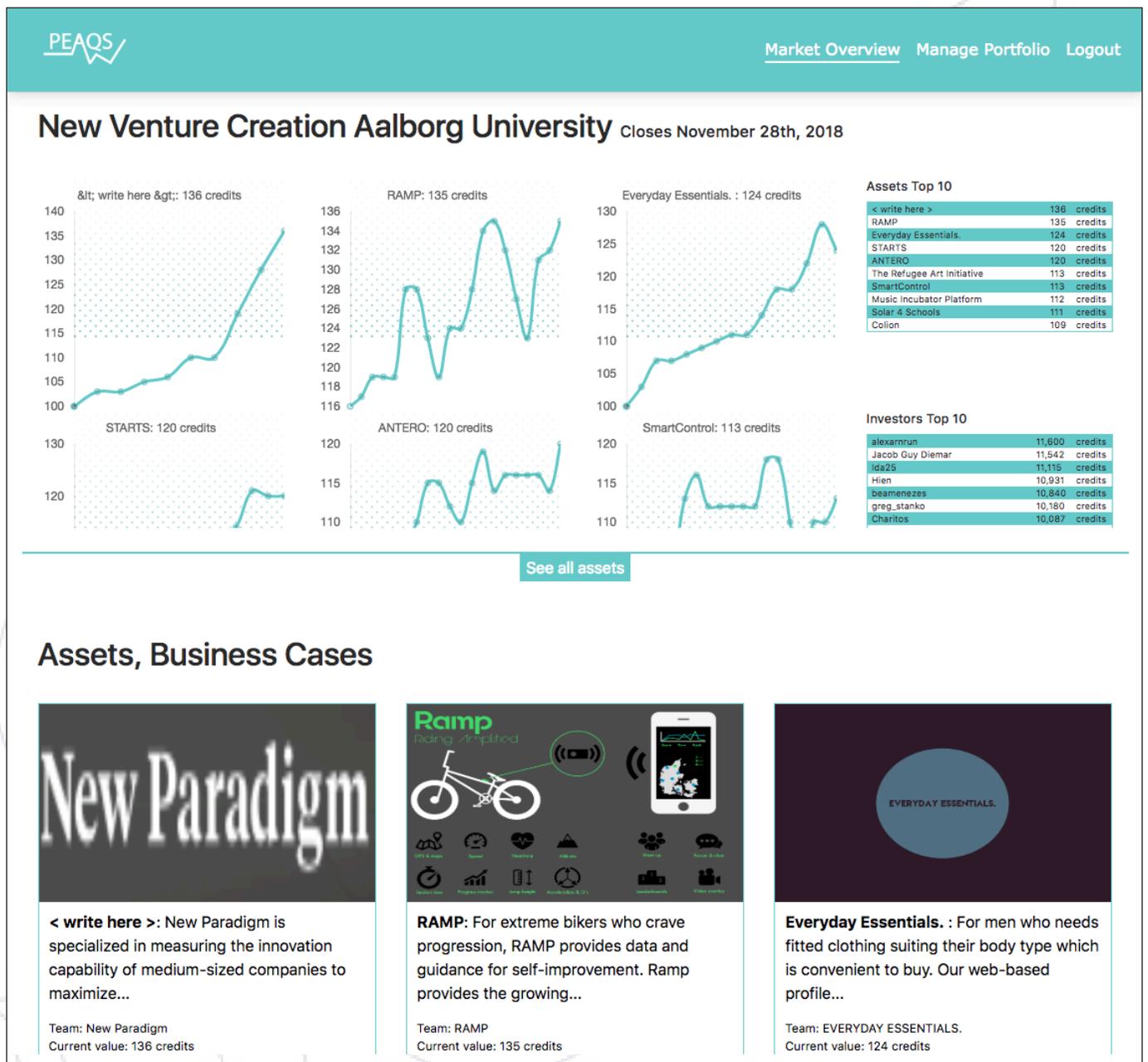


Figure 2: Screenshot from the “stock exchange” overview

weekly presentations were implemented as 10 minutes “what have you learned” presentations, where the supervisors can give feedback to the students. This session was also intended to act as way for the students to give peer feedback to each other; however, this rarely happened. This led to introducing the blended learning and gamification aspects into the engagement into the weekly “what have you learned” presentations and feedback.

This implementation of gamification through the “stock exchange” enabled the students to reflect on what the other groups had uploaded and further to help them reflect upon their own information upload. During the weekly “what have you learned” pitches, the peer feedback improved, as more fellow-students had read up on the other projects and hence were able to give more constructive feedback. Furthermore, the students would more often engage in discussion concerning their own investments and the other investments before and after the formal pitches, showing a higher degree of interest in each other projects than previously observed in the course.

In this manner, the students showed a higher degree of critical thinking, and a greater level of knowledge transfer than during regular presentations without the gamification mechanisms.

Furthermore, the supervisors would in plenum with all students discuss why some projects were performing better than others. This was done to increase both the knowledge sharing but also the quality of the peer feedback. E.g. the students quickly learned that it was important to be short and precise in their formulations and more importantly; be understandable as the better the “peer students” understood the project, the better the quality of feedback.

In the final week of lectures in the course the best project/case on the platform receives an award indicated for achieving the highest stock price, which also implicitly translates into the best peer review. This is done to motivate and provide incentives to the students to continuously update their projects and furthermore buy/vote on the projects they feel should be the “winner” for having the best business idea. This part is

optional, and the whole leaderboard can be removed from the learning tool, if not suitable for the learning objectives of the course. This “award” is not part of the final grading of the students, but is done to motivate the students.

Key Insights

Introducing a blended learning platform, in this case PeaQs, was quite straightforward, and the students had virtually no issues with understanding and engaging in a digital learning and gamification platform. Furthermore, the students understood the relevance and found interest in the use of an online platform underpinning the strength of blended learning and gamification. This is in line with what research into blended learning suggests when describing the implementation of gamification as “promising” (Iosup and Epema, 2014).

It is also worth mentioning the quality of discussions among the students propelled by the question of what information they should prioritize and upload into the system. They engaged in discussions regarding how to condense their ideas into, e.g. 150 characters. In other words, the ability to convey a problem, present their solution and the associated value proposition in a short and precise manner. Furthermore, as students dived into the development of their projects/business cases of their peers, a loop of reflection and inspiration took place, inclining them to improve and refine their projects. This showed signs of a higher degree of knowledge transfer (Siegel and Wright, 2015), increase in the quality of the projects (Li *et al.* 2010) and is furthermore in line with research showing positive learning outcomes of blended learning (Garrison & Kanuka, 2004).

A potential negative side, which the coordinator/lecturer needs to be aware of, is the motivation provided by the gamification. If not appropriately introduced and followed-up during the process, students might go for the prize of winning the ‘competition’ rather than using the stock market mechanism to leverage a better and deeper understanding of the projects on the platform. A few of the students addressed this to the coordinator, as they were not sure how they should spend their currency on the platform. This triggered a

need for further explanation regarding how the students, in the context of the course, should evaluate and invest. The criteria for the new venture creation course being validation, potential and scalability. These criteria are some of the key elements of Lean start-up and the course learning objectives in general. In short, it is crucial that the students understand the learning objectives within a blended learning and gamification framework, or else the gamification incentive can end up disrupting the learning outcomes.

The notion of implementing gamification with a virtual currency also showed an interesting effect among the students, as they were very keen on learning how they could grow their portfolios and optimize their investing approach. The teacher could potentially choose any “currency” or other types of stimuli to engage the students. The choice of “money” as a currency here, was in line with the entrepreneurial theme of the course and a setting familiar to most students. In addition, the platform and choice of currency demonstrated the motivating impact of gamification in classrooms (Iosup and Epema, 2014). However as written above, should be aligned with the learning goals and objectives of a specific course.

The ‘stickiness’-factor of the stock market mechanics keeps students engaged in the platform’s gamification but also emphasized the need for countermeasures to avoid a day trading scenario. The students could become too engaged with the pure performance part optimizing their portfolio and hence not consider the feedback needed for the weekly sessions. Such behavior of not truly using critical thinking to give quality peer feedback can lower or disrupt the benefits of peer feedback (Li *et al.* 2010). Addressing the concern of students adopting a day trading² approach, a cap to trading was introduced into the trading algorithm. This cap dictates that a student can only make one transaction (either buy or sell) per stock for every game phase. This initiative sharply reduced any speculative mindset but still left plenty of incentive to scrutinize other projects/cases on the platform (and hence enable peer feedback) and also invest wisely.

² Day trading is determined by frequent buying and selling of a single or a limited number of stocks only to optimize an investment portfolio.

The direct effect the blended learning and gamification had on the projects and presentations are difficult to measure, and the supervisors stated, that it might have had an impact, but it was hard to pinpoint if it was the platform or other factors that made the students more engaged. However, and more importantly so, no students uttered any discouragement or feelings of demotivation in using the platform. As stated previously the introduction of the gamification which enable more and better peer feedback, which was observed during the course. Albeit not being able to provide any direct cause and effect in this paper; the higher degree and quality of peer feedback should have a positive impact on the students and projects in accordance with previous research (see e.g. Venables and Summit, 2003; Li *et al.* 2010).

It should be noted that the peer feedback in this paper was not directly a part of the final grading. This could potentially be incorporated that the students had to do peer feedback orally or written and would be part of the grading. In the current context, the University only allow us to expect involvement and interaction during the course and a student can be expelled from the program for having an attendance lower than 75%. But this measure is not affecting the grading. However, the feedback from the supervisors and censors at the exam indicate that the students, which have been involved in the peer feedback during the course are more knowledgeable and in line with the learning goals often leading to better grades.

Discussion and Conclusion

The problem discussed in this paper is the lack of interaction and knowledge sharing often seen in the context of entrepreneurship and business model teaching. This paper illustrates how some of these hurdles can be mitigated by introducing a blended learning digital platform that has a stock exchange mechanism to serve as a means of gamifying peer feedback and project evaluation. The ambition was to achieve more interactions and enhance knowledge sharing among students, improving their project quality and ultimately elevating their understanding of the subject matter – all in line with the learning objectives of the course. This is important to note as the introduction of a new tool/approach otherwise can become a somewhat fragmented experience (Fiet, 2014).

The problem regarding the interaction and peer feedback between groups was improved using the platform, and the students found the concept of the platform and within this, the investing aspect to be a motivating factor – which is a positive element to any all teaching approach. Furthermore, the interaction and peer feedback increased knowledge sharing among the students, which lead to further input and idea development and enhance critical thinking towards project improvement in line with previous research (Venables and Summit, 2003; Li *et al.* 2010). All supervisors saw a gamification platform such as the one described above as a good opportunity to stimulate peer feedback and knowledge sharing among groups and to help motivate the students.

The experience also showed the importance of explaining the students why a new learning tool should be implemented in the course and how to go about using it. It might be intuitive for students and supervisors alike to use, but they will need to be informed on how to use it in relation to the learning objectives of the course at hand. This paper showcases an example where the students need instructions regarding how they should invest and what parameters they should apply to their investment decisions. Otherwise a “free market” approach might lead to suboptimal solutions and speculative day-trading behavior. As stated earlier, this was avoided by introducing a set of evaluation criteria based on the learning objectives, a technical update to the platform introducing a day trading cap and finally the feedback from supervisors.

In conclusion, introducing gamification, peer feedback through a blended learning approach has proven itself to be a positive contribution when teaching BM and entrepreneurship. The online gamification platform improved the interaction, peer feedback and knowledge sharing among students and also furthered the motivation to improve their projects/cases and to apply critical thinking to their learning process. The approach also strengthened the student’s skills and capabilities in regards to the learning objectives of the course that stress communication and critical thinking.

References

- Blank, S., & Dorf, B. (2012). *The startup owner's manual: The step-by-step guide for building a great company*. BookBaby.
- Blank, S., Engel, J., & Hornthal, J. (2014). *Lean LaunchPad: Evidence-Based Entrepreneurship Educators Guide*.
- Cheng, W., & Warren, M. (1999). Peer and teacher assessment of the oral and written tasks of a group project. *Assessment & Evaluation in Higher Education*, 24(3), 301-314.
- Conole, G. (2008). Capturing practice: the role of mediating artefacts in learning design. In Lockyer, L., Bennett, S., Agostinho, S. & Harper, B. (Eds), *Handbook of Research on Learning Design and Learning Objects: Issues Applications and Technologies*, 187-207. Hersey PA: IGI Global.
- Fiet, J. O. (2001). The theoretical side of teaching entrepreneurship. *Journal of business venturing*, 16(1), 1-24.
- Garrison, D. R. & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education*, 7, 95-105
- Hindle, K. (2007). Teaching entrepreneurship at university: from the wrong building to the right philosophy. *Handbook of research in entrepreneurship education*, 1, 104-126.
- Iosup, A., & Epema, D. (2014, March). An experience report on using gamification in technical higher education. In *Proceedings of the 45th ACM technical symposium on Computer science education*, 27-32
- Li, L., Liu, X., & Steckelberg, A. L. (2010). Assessor or assessee: How student learning improves by giving and receiving peer feedback. *British journal of educational technology*, 41(3), 525-536.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.
- Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Books.
- Siegel, D. S., & Wright, M. (2015). Academic entrepreneurship: time for a rethink?. *British Journal of Management*, 26(4), 582-595.
- Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, 22(2), 306 - 331.
- Sexton, D. L., & Upton, N. B. (1987). Evaluation of an innovative approach to teaching entrepreneurship. *Journal of small business management*, 25(1), 35-43.
- Topping, K. J., Smith, E. F., Swanson, I., & Elliot, A. (2000). Formative peer assessment of academic writing between postgraduate students. *Assessment & evaluation in higher education*, 25(2), 149-169.
- Venables, A., & Summit, R. (2003). Enhancing scientific essay writing using peer assessment. *Innovations in Education and Teaching International*, 40(3), 281-290.

Developing a Viable Business Model for Start-ups at the Gruendungsgarage

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Abstract

Developing a viable business model is crucial when founding a start-up. We present a teaching approach based on business model development in the context of the *Gruendungsgarage*. Following a blended learning approach, the business model was developed with the aid of a MOOC, a business model workshop and follow-up activities.

Keywords: Business model development, entrepreneurship, blended learning

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Introduction

The scientific interest in the development of business models has been high for quite some time. A discussion regarding the importance of integrating business model development and business model frameworks has recently intensified, and especially their roles as central elements of entrepreneurship education (Snihur *et al.*, 2018). Business models are “an architecture for how a firm creates and delivers value to customers and the mechanisms employed to capture a share of that value” (Teece, 2018, p.1). Their graphical representation, for example, with the aid of the Business Model Canvas (BMC) (Osterwalder and Pigneur, 2010) supports entrepreneurs, allowing them to communicate and discuss topics with potential partners and investors more efficiently (Trimi and Berbegal-Mirabent, 2012). In entrepreneurship education, the business model is presented as an important concept, as the focus shifts from writing business plans to developing business models by trial and error (Snihur *et al.*, 2018). In the *Gruendungsgarage* (GG) initiative, the development of the business model by trial and error also represents a central element. The objective is to achieve a viable business model, i.e., a business model in which all elements have been well-developed and aligned (Sharma and Gutiérrez, 2010) both with one another and the external environment (D’Souza *et al.*, 2015; Malmström and Johansson, 2017).

The GG initiative is an interdisciplinary teaching format that can be used to support start-up projects at an early stage before they have been founded. Participating teams usually enter the GG with a (often vague) business idea that they develop into a viable business model during their time in the GG so they can start their own venture company. The development of the business model is an essential step when founding a company, which takes place shortly after the start-up projects are entered in the GG. Using a blended learning approach, participants are asked to develop an initial version of a viable business model that can be used as a means of communication and discussion (Trimi and Berbegal-Mirabent, 2012) and which facilitates a successful founding process. This business model is refined as the participating teams gain experience (Zalewska-Kurek *et al.*, 2016) during the GG.

Based on several years of practical experience, our goal in this paper is to describe *the development of a viable*

business model based on a blended learning approach in the context of the GG. For this reason, the GG is explained to provide an understanding of the context, but a strong focus is placed on the business model development approach. Furthermore, key insights into the development process are provided through a discussion of the experiences made, challenges encountered and further applications of the teaching approach.

Approach

In this section below, the concept of the GG is explained, the didactic concepts of the GG and the business model teaching approach are described and the business model teaching approach is explained in detail.

The concept of the Gruendungsgarage

The GG is an interdisciplinary and inter-university teaching format that has been developed to support students (at the bachelor’s, master’s and doctoral level) and academic staff, helping them transform their business ideas into viable business models during the program and preparing them to found the start-up. For one semester, participants are supported by university staff who have expertise in entrepreneurship, mentors who have practical experience in these areas and GG alumni who have successfully founded a start-up. The program is officially begun with a kick-off event, during which the team members get to know their assigned mentors and sign target agreements. The core competencies of the assigned mentors need to complement the nature of the specific entrepreneurial venture in order to fulfill the needs of each individual team. Therefore, it is recommended to form a large, heterogeneous pool of mentors who have a wide range of entrepreneurial relevant skills. The mentors in the GG to date have had expertise in business model development, online and growth marketing, intellectual property rights and legal and tax matters.

After the kick-off event, three main phases begin (see Figure 1). The first two weeks of the initiative are generally characterized by a start-up phase during which the teams begin developing the first draft of their business model. The second phase is characterized by a variety of workshops. After six weeks, the teams present a progress report and their initial results in an intermediate presentation. The third phase is the mentoring and

coaching phase that extends over the whole semester. During this phase, the aim is to refine the teams' first business models. At the final presentation which takes place at the end of the semester, the teams present their business models to representatives from business, science and politics, investors, business angels and people from the regional start-up scene.

The didactic concepts

The teaching and learning concept of the GG is based on an *experience-based learning approach* (Williams-Middleton *et al.*, 2014). According to Fayolle and Gailly (2008), "entrepreneurship education is driven by experience more than by systematic teaching approaches" (Williams-Middleton *et al.*, p. 2). Although the classical learning concept is still used in individual theoretical units in GG workshops, *learning-by-doing* is applied predominantly (Pittaway and Thorpe, 2012), because it is considered that participants will only gain experience "by doing, talking, and sensemaking" (Williams-Middleton *et al.*, p. 2) as well as by making mistakes and failures (Pittaway and Thorpe, 2012). Participants of the GG, therefore, play active roles while gaining experiences and reflecting on processes and outcomes. Each workshop and discussion provides the participants with new insights, allowing them to develop their own business ideas and business models. During this time, the teams are encouraged to reflect on their business models. As part of this process, teachers serve as facilitators to foster creativity, which is important in entrepreneurship education (Snihur *et al.*, 2018). Facilitators

also take on roles as counselors, guides, or role models and are asked to support entrepreneurs while they develop their ideas and constantly revise them (Azim and Al-Kahtani, 2014). Scientific staff and mentors in the GG serve as facilitators, and these requirements apply fully to them. Although they have different backgrounds, most of them have experience running a business and/or teaching. The facilitators involved in the business model development have theoretical knowledge and expertise in the practical development of business models, the ability to apply the BMC, critically analyze it and provide appropriate feedback and suggestions for improvements.

The business model teaching approach included in the GG has been modified several times over the last few years as insights and feedback from the participants have been considered and implemented. Thus, the final didactic concept is based on the *blended learning* concept (Garrison and Kanuka, 2004; Lalima and Dangwahl, 2017). Blended learning consists of a combination of face-to-face learning in classrooms combined with online learning experiences (Garrison and Kanuka, 2004; Lalima and Dangwahl, 2017). Among others, the concept incorporates traditional classroom teaching, group discussions, online learning with the aid of videos or audio files and even virtual classrooms (Lalima and Dangwahl, 2017). This concept seems to be a suitable didactic concept that can be used to support the business model teaching approach in the GG because participants can 1) independently familiarize themselves

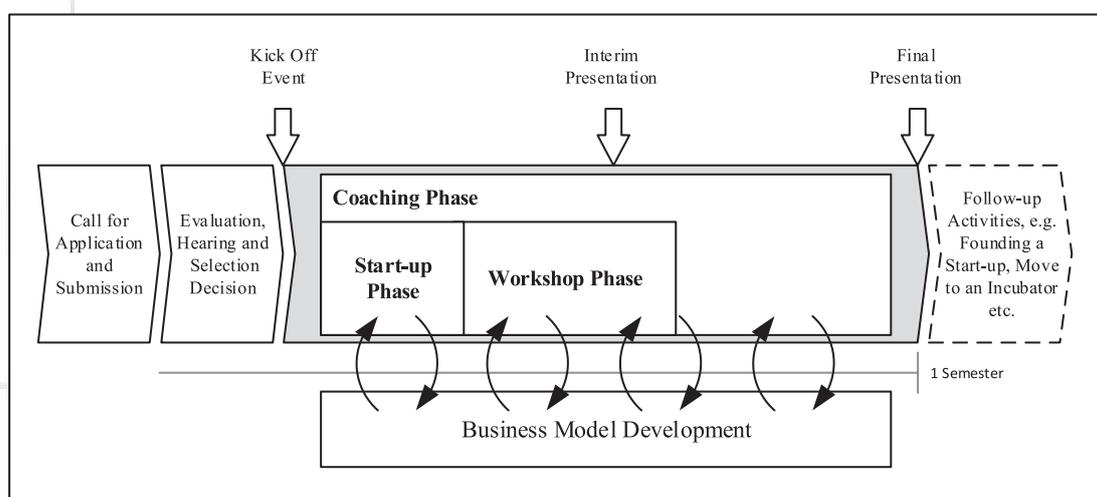


Figure 1: Structure of the GG (based on Vorbach, 2017)

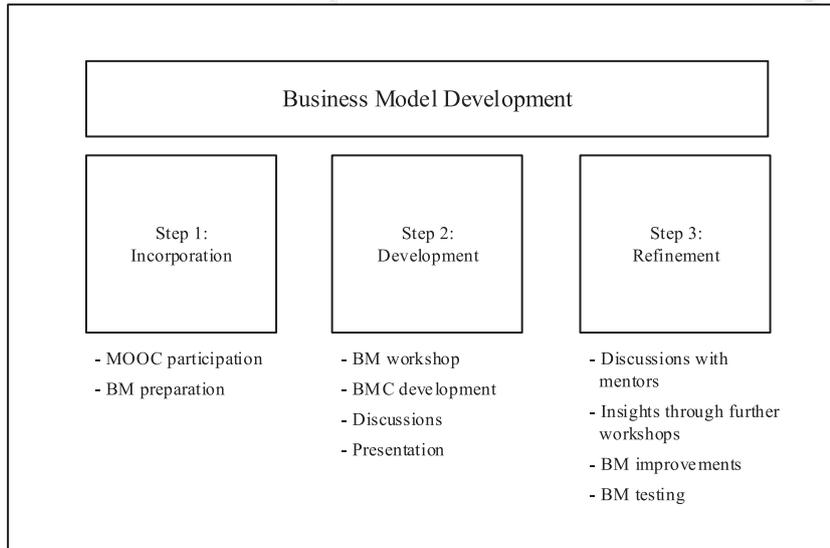


Figure 2: Business model development teaching approach

with the main principles of business model development, 2) prepare an initial draft of their business model at home and 3) mainly use face-to-face learning in the classroom to take part in in-depth discussions, clarifying questions related to business model development and further improvements.

The main learning objective of taking the business model approach is that participating teams should understand the importance of developing a viable business model before they found a business. Furthermore, participants must learn how to describe a business model with its interacting elements, identify well-known business model patterns, learn how to apply these and understand how business models can be designed and tested. In addition, participants create business models based on their own business ideas and refine them on the basis of discussions that take place during the plenary sessions and feedback received from the instructors.

The business model development teaching approach

The business model development is scheduled at the beginning of the GG to teach participants, on the one hand, the basics of business models and their creation and, on the other hand, to provide participants with the opportunity to refine their business models with support from experienced mentors and facilitators during the GG. This support is important because activities related to boundary-spanning and setting up

the organizational structure are important events that occur during the early stages after a business has been founded (Trimi and Berbegal-Mirabent, 2012). The business model can serve as a useful mechanism to provide this support (Zott and Amit, 2007).

The participants enter the GG with a (often vague) business idea; they often have not yet clearly defined their models. By taking our business model development approach, the participants become familiar with the business model concept and learn how to develop a business model. In this way, participants can develop a business model using this approach and improve its viability with the input received in other workshops and from mentors.

The detailed teaching approach used during the business model development is presented in Figure 2 and consists of three steps: 1) incorporation, 2) development and 3) refinement. In the following section, these three steps are explained in detail.

Step 1 - Incorporation

In the first step, participants should become aware of the basic processes associated with developing a business model. Based on the blended learning approach, we decided to develop a Massive Open Online Course (MOOC) to familiarize participants with the business model concept, teach them how to generate a business model and encourage them to think about the business model based on their initial business idea. In a MOOC, lectures

are open to a broader audience rather than only the students enrolled at a particular university. The digitalization and associated technical possibilities enabled in MOOCs allow students to learn both independently and collectively online and manage their own time (Toven-Lindsey *et al.*, 2015). The MOOC *Startup-Journey: Business Model Generation* lecture needs to be attended by all participants of the GG. The MOOC was developed at the Graz University of Technology and is available free of charge via the iMooX.at platform. No prior knowledge is needed to attend the MOOC, which includes a total of ten videos divided into four units: 1) Business Model Patterns and Framework (definitions and basic information about business models), 2) Customer Value (unique selling propositions, customer value as well as methods (e.g., design thinking, empathy map, moodboard, kano model, journey mapping, mockups, wireframing, prototyping)), 3) Business Model Generation (instructions on and examples of how to fill in a BMC and analyses of prior participants' canvases) and 4) Experience Reports (interviews with start-up founders, dos and don'ts when working on a BMC and how to sell the business model briefly in a pitch). Each of the videos in the units has a length of 15 to 30 minutes and ends with a short quiz to evaluate the individual learning progress. Related links in the MOOC provide the students with access to further information. Two additional assignments encourage the participants to reflect on and apply the knowledge gained by designing a BMC for a case company, for which a possible solution is also provided. The overall objective of creating the MOOC was to provide the participants with fundamental information on how to develop a business model, theoretical knowledge and practical examples.

By the end of the incorporation step, the participants had gained an understanding of the business model concept and how to develop a business model. In the case of the GG, the teams independently developed a version of a business model based on their own business ideas. This process is described in the next step.

Step 2 - Development

A four-hour workshop is subsequently held to place a focus on the further development and fine-tuning of the participants' business models in a face-to-face setting. At this business model workshop, the participants' goal is to complete the development of their business models, usually with the aid of the BMC

(Osterwalder and Pigneur, 2010). According to Trimi and Berbegal-Mirabent (2012), the BMC provides a useful tool for entrepreneurs, as its use 1) allows the visualization of the business model elements and reflection on the content, 2) enhances communication with different stakeholders and facilitates discussion, 3) forces the entrepreneur to consider every business model element individually but also the model as a whole and 4) fosters creativity and innovation.

At the beginning of the workshop, a short theoretical lecture to business model development is presented to repeat and complement basic information provided in the MOOC; a discussion follows, and questions can be asked. The theoretical lecture on business models includes information on the process of business model development, business model patterns, the BMC as well as best-practice examples. A brief introduction to the concept of Value Proposition Design (Osterwalder *et al.*, 2014) supplements the theoretical foundations and encourages further study. Most of the theoretical aspects that have already been presented in the MOOC are only explained in detail if questions remain. After the lecture, the working and discussion phase starts. During this phase, the participants continue to work on their business models and consult the facilitators to have more in-depth discussions. The main topics discussed are the interactions among the business model elements and the effects of alterations in individual elements. The target groups for the products or services offered are often not sufficiently defined (too broad) or the key activities and key resources are not clearly differentiated during the process. Depending on the participant's background and business idea, different challenges arise. For example, participants that lack economic knowledge need help identifying costs or recognizing economic correlations between the BMC elements.

At the end of the workshop, all teams briefly present their BMC and give each other feedback. This serves to stimulate further improvements of the business model during the final step of the GG process.

Step 3 - Refinement

The refinement step of our business model development approach comprises all activities that follow the workshop. These activities include discussions between the participants and their mentors about the

developed business model and the continuing refinements of the BMC, made during additional workshops held as part of the GG. These workshops and coaching sessions can give participants new perspectives on their developed business models, as they learn about design thinking, personas, marketing, tax issues and other topics of interest. With the help of these new insights, the participants can then further develop and improve their business models. Furthermore, participants begin to conduct customer surveys or test their business models in other ways to develop a viable business model by the end of the GG.

Key Insights

Two facts present the facilitators with a challenge regarding the business model teaching approach: 1) The business ideas of participants who enter the GG are at different stages of maturity. This means that some participants present vague, but interesting ideas that can only be developed into business models if a great deal of effort is invested. Other participants have already developed the initial drafts of their business models and understand the business model concept. 2) Participants have different backgrounds. This means that team participants can have engineering backgrounds and enter the GG with a technological business idea (for example, a small hydroelectric power station). Teams of students with medical, educational, or economic backgrounds are also working in the GG on ideas, such as starting up an online pastry shop and confectionery. Technicians that lack economic backgrounds are especially unaccustomed to dealing with business model aspects. Despite these two challenges, the facilitators need to convey the same knowledge to all team members.

The feedback that has been received from the GG participants directly after the workshop has always been positive. In addition, we asked participants of the GG volume XI to describe their experiences working with the BMC. We also asked them to describe the impact that the workshop and the mentoring had on their business ideas and business models. The results revealed that the participants considered the level of difficulty of the GG to be rather low due to the comprehensive framework of the BMC, which provided them with a good overview. Participants described that the individual building blocks of the BCM and examples helped them to create their

own business models. Most participants considered the description of the value proposition to be straightforward, as the value proposition basically reflected their business ideas. Many of the participants had more difficulties describing the financial aspects (cost structure and revenue streams). They were not often able to support their revenues and costs with numbers and could not describe these building blocks in detail. For this reason, many assumptions had to be made by the participating teams. The majority of the participants mentioned that especially the consultations with mentors had a strong impact in the development of their business model.

Although participants prepared for the face-to-face workshop using the MOOC to develop their business model, they had some difficulties completing the BMC in the workshop. We noticed that some participants seemed to be overwhelmed by detailed information. The task became more challenging for them when they had to consider more highly detailed information and ask the facilitators more questions. These findings revealed that the challenge is not to lose sight of the “big picture” of the BMC and to proceed in a clearly structured manner.

Overall, the evaluation results of the business model teaching approach were positive. The participants appreciated having the opportunity to become familiar with the theoretical concept of business models using the MOOC at their own pace and under their own conditions. They also valued the examples they were given, which helped them think about their own business ideas and prepare for the business model workshop. This allowed participants to use the time in the workshop more effectively to refine their BM and discuss any ambiguities with the facilitator or other participants.

Discussion and Conclusions

The business model has emerged as an important teaching content in entrepreneurial education, which can be used to turn entrepreneurial opportunities into realities (Trimi and Berbegal-Mirabent, 2012; Snihur *et al.*, 2018). To take full advantage of these opportunities, we developed a business model development teaching approach based on the blended learning concept that supports GG participants while they develop a viable business model. The main tool used to develop

and visualize the business model was the BMC, which has proved to be a useful graphical tool for clearly mapping the main elements of a business model (Osterwalder and Pigneur, 2010). Although we teach participants how to further develop and refine their BMC in a clearly structured way, the participants sometimes face difficulties while initially working with it. This is because they become overwhelmed by detailed information and, therefore, are unable to view their model as a whole or do not know how to identify certain business model elements because their business idea is at an early stage of development.

We noticed that participants benefited from the discussions that took place in the mentoring sessions as part of the refinement step of the business model development. Due to the different maturity stages and natures of the business ideas, changes and improvements to the business models varied due to the influence of the mentors and the workshop. Thus, we were not surprised to note that the business models that had been developed by the end of the GG sometimes deviated significantly from the business ideas that had been submitted initially. Some teams entered the GG with well-developed ideas and business models, while other teams altered their original business ideas during the GG process. This process is congruent with learning-by-doing (Pittaway and Thorpe, 2012) and emphasizes the importance of seizing opportunities while developing an individual business model (Teece, 2010). While it is essential to alter the business model at an early stage (Rydehell and Isaksson, 2016), as Shirky (2008) highlighted for technological start-ups, both participants and mentors found it challenging to completely change the initial business idea. In the GG, we observed this type of complete change most frequently for web-based and service-based business ideas, but less frequently for hardware-based product ideas.

The blended learning concept used in the business model development approach can easily be applied in other classroom settings. The approach has already been implemented in two other courses at the Graz University of Technology: Entrepreneurship and Process Management. The Entrepreneurship course is organized in the form of a seminar and lasts for one week. The business model development teaching approach is embedded in the course during that week, whereby students are presented with additional topics and given additional tasks, such as writing a business plan. The course has been developed to teach students the basics of entrepreneurship rather than how to found a company. We predict that students will apply to join the GG at a later stage and present their own ideas. In the Process Management course, students work on a provided business idea. The course lasts an entire semester, during which students link their business models to the process maps of companies. What makes the GG unique is the fact that workshops and mentoring sessions are combined. This offers participants the opportunity to develop business models based on their business ideas over a longer period of time and receive professional support that can help them eventually found their own venture.

We use the format of the blended learning concept within a MOOC to teach business model development, but this concept can also be implemented in other settings or without developing a MOOC. For example, teachers could provide learning materials on business model development via a digital platform or e-mail with instructions and assignments that help prepare the students for the face-to-face workshop. Providing examples of the BMC, case studies, or related links to videos that are freely available online would also support the participants' preparation and learning outcomes.

References

- Azim, M. T. & Al-Kahtani, A. H. (2014), Entrepreneurship education and training: A Survey of Literature, *Life Science Journal*, Vol. 11, No. 1s, pp. 127-135.
- D'Souza, A., Wormann, H., Huitema, G. & Velthuijsen, H. (2015), A business model design framework for viability; a business ecosystem approach, *Journal of Business Models*, Vol. 3, No. 2, pp. 1-29.
- Fayolle, A. & Gailly, B. (2008), From craft to science: Teaching models and learning processes in entrepreneurship education, *Journal of European Industrial Training*, Vol. 32, No. 7, pp. 569-593.
- Garrison, D.R. & Kanuka, H. (2004), Blended learning: Uncovering its transformative potential in higher education, *Internet and Higher Education*, Vol. 7, No. 2, pp. 95-105.
- Lalima & Dangwal, K. L. (2017), Blended Learning: An Innovative Approach, *Universal Journal of Educational Research*, Vol. 5, No. 1, pp. 129-136.
- Malmström, M. & Johansson, J. (2017), Practicing Business Model Management in New Ventures, *Journal of Business Models*, Vol. 5, No. 1, pp. 1-13.
- Nieuwenhuizen, C., Groenewald, D., Davids J., Rensburg L.J. & Schachtebeck, C. (2016), Best practice in entrepreneurship education, *Journal of Problems and Perspectives in Management*, Vol. 14, No. 3, pp. 528-536.
- Osterwalder, A. & Pigneur, Y. (2010), *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*, John Wiley & Sons, Hoboken, New Jersey.
- Osterwalder, A., Pigneur, Y., Bernarda, G. & Smith, A. (2014), *Value Proposition Design: How to Create Products and Services Customers Want*, John Wiley & Sons, Hoboken, New Jersey.
- Pittaway, L. & Thorpe, R. (2012), A framework for entrepreneurial learning: A tribute to Jason Cope, *Entrepreneurship & Regional Development*, Vol. 24, No. 9-10, pp. 837-859.
- Rydehell, H. & Isaksson, A. (2016), Initial Configurations and Business Models in New Technology-based firms, *Journal of Business Models*, Vol. 4, No. 1, pp. 63-83.
- Sharma, S. & Gutiérrez, J.A., (2010), An evaluation framework for viable business models for m-commerce in the information technology sector, *Electronic Markets*, Vol. 20, No. 1, pp. 33-52.
- Shirky, C. (2008), *Here comes everybody: The power of organizing without organizations*, Penguin, New York.
- Snihur, Y., Lamine, W. & Wright, M. (2018), Educating engineers to develop new business models: Exploiting entrepreneurial opportunities in technology-based firms, *Technological Forecasting & Social Change*, DOI: [10.1016/j.techfore.2018.11.011](https://doi.org/10.1016/j.techfore.2018.11.011).
- Teece, D.J. (2010), Business models, business strategy and innovation, *Long Range Planning*, Vol. 43, No. 2/3, pp. 172-194.
- Teece, D.J. (2018), Business models and dynamic capabilities, *Long Range Planning*, Vol. 51, No. 1, pp. 40-49.

Toven-Lindsey, B., Rhodas, R.A. & Lozano, J. B. (2015), Virtually unlimited classrooms: Pedagogical practices in massive open online courses, *Internet and Higher Education*, Vol. 24 (2015), pp. 1-12.

Trimi, S., & Berbegal-Mirabent, J. (2012), Business model innovation in entrepreneurship, *International Entrepreneurship and Management Journal*, Vol. 8, No. 4, pp. 449-465.

Vorbach, S. (2017), "Lecturing Entrepreneurship at Graz University of Technology. The Case of 'Gruendungsgarage'", paper presented at the 20th International Conference on Interactive Collaborative Learning (ICL), 27-29 September 2017, Budapest, Hungary.

Williams-Middleton, K. W., Mueller, S., Blenker, P., Neergaard, H. & Tunstall, R. (2014), "Experienced-based learning in Entrepreneurship Education - a comparative study of four programmes in Europe", paper presented at the Research in Entrepreneurship and Small Business (RENT) XXVIII, 19 November-20 November, Luxembourg, available at: http://publications.lib.chalmers.se/records/fulltext/203607/local_203607.pdf (accessed 28 November 2018).

Zalewska-Kurek, K., Kandemir, S., Englis, B.G. & Englis, P.D. (2016), Development of Market-Driven Business Models in the IT-Industry. How Firms Experiment with Their Business Models?, *Journal of Business Models*, Vo. 4, No. 3, pp. 48-67.

Zott, C. & Amit, R. (2007), Business Model Design and the Performance of Entrepreneurial Firms, *Organization Science*, Vol. 18, No. 2, pp. 181-199.

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Insights from Teaching Sustainable Business Models Using a Mooc and a Hackathon

Jan Jonker and Niels Faber

Abstract

We provide two teaching approaches, developed to teach sustainable business modeling to Bachelor and Master students. First, we present a MOOC on developing "new business models" focusing on practitioners in society. Second, we describe an approach in which students develop sustainable business models using a Hackathon as the teaching format.

Keywords: Sustainable Business Models, Circular Economy, Social Inclusivity, MOOC, Hackathon.

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Introduction

This contribution reports on two courses concerning teaching sustainable business modeling (e.g., Boons and Laasch, 2019; Raith and Siebold, 2018) each crafted around a specific didactical approach. The first course, 'New Business Models - working together on value creation,' concerns a Massive Open Online Course (MOOC; Mazoue, 2013) at Master level that enables the provisioning of teaching on a global scale and thus reaching out to a broad audience. The second, 'sustainable entrepreneurship,' is a Bachelor level course shaped around the Hackathon model (Cobham *et al.*, 2017), which focuses on intensive learning with a limited audience, over a short period. Both courses are driven by the desire to strengthen the impact of our teaching efforts regarding the vital topic of business modeling for sustainability transitions.

The MOOC is designed in an instructional mode, inviting learners to translate the teachings into their ideas and practices. The Hackathon emphasizes active group-based learning and demands learners to apply the taught material in the products they create. The MOOC focuses on helping practitioner-learners to develop a community-based business model. We will provide a brief description of the history of this course, highlight the design, and provide figures about its use since its launch in May 2016.

The second course on sustainable business modeling aims to educate third-year Bachelor students from across academic disciplines how to develop a sustainable business model within seven weeks. In recent years, we have experimented with a variety of classical didactical models. Now we have made the transition to a combination of lectures and tutorials, leading to a 24-hour teaching Hackathon.

In both courses, we use three types of sustainable business models (BMs), namely: (1) platform (Tukker & Tischner, 2006), (2) community-based (Jonker, 2014), and (3) circular (Jonker *et al.*, 2018). Platform BMs are using the surplus capacity of assets (e.g., cars standing still 80-90% of the time, or self-generated energy wasted). Community-based BMs take shape around communities engaging in collective value-creation (e.g., neighbors starting energy, mobility or food cooperative). Circular BMs organize value-preservation

when closing material loops. From our research since 2013, we state that these three BMs cover around 80% of the archetypical business models concerning sustainability.

In the following sections, we provide insights into these two courses at hand. The next section subsequently presents the courses and, per course, we will discuss (1) its history, (2) the course design, (3) what parameters have been used to give shape to the selected didactical approaches, (4) the effects of the chosen approaches on teacher-learner interactions, (5) the learning effects we have obtained and, finally, (6) a discussion on points for improvement. We will finally provide some critical insights from our experiences, followed by conclusions and discussion.

Course 1: Business Models for the Circular Economy MOOC

Approach

Course organization

In this course, students systematically explore and build their own New Business Model. Key is creating a community around a value-proposition. Regularly, a community-based business model is based on five building blocks. These building blocks are: (a) principles, (b) design structure, (c) offer, (d) community and finally (e) created values. Together, they constitute the Clover Leaf Business Model (Jonker, 2015) that guides students through the development of their own viable and valuable business model.

Based on the Clover Leaf Business Model, six design steps have been formulated that help the student through the MOOC (Mazoue, 2013; see figure 1 for the landing page of the MOOC). These steps are: (1) introduction to the course, (2) the concept of the WEconomy (Jonker and Faber, 2015), (3) the business model design using the Clover Leaf Model, (4) principles and the value proposition, (5) community-building, and (6) assessing the value that is created. These six steps are explicated in a course book and illustrated in a series of YouTube clips. For each step, a systematic elaboration in five to seven steps is provided in these clips. Besides, a wide range of publicly available material (text and visual) to each of the design steps is added.

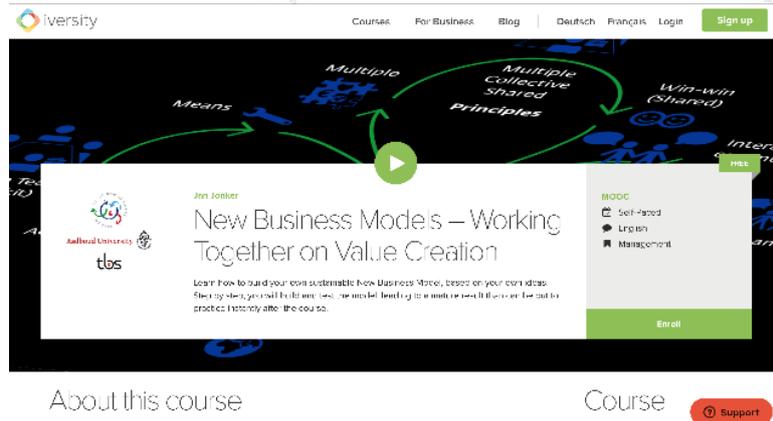


Figure 1: Screenshot landing page MOOC

Didactical design parameters

The course builds on the principles of peer learning (Boud *et al.*, 2014). Students enrolled in the same course utilize each other’s know-how and experience. This materializes in the various assignments that are handed out throughout the course. To progress, students are required to provide feedback on each other’s work. The MOOC platform facilitates this through discussion forums and a digital workspace. Peer learning enables the students to gain insight into what others are doing regarding the same assignments and to receive feedback on their work in progress. Step by step, participants build and test their model, leading to a mature result that can instantly put into practice. To demonstrate this applicability, students need to make a short YouTube video clip of their final result.

Teacher-student interactions

The basic design of this MOOC is such that it can run in a stand-alone mode. This design parameter has been selected since the MOOC intends to reach out to a global audience. Given this context, direct interaction between student and teacher is a costly and complicated feature. In the design stage of the MOOC, the idea of a weekly, interactive webinar has been explored. Eventually, this function was eliminated because it was rendered infeasible to gather a global audience at the same time.

Furthermore, because the MOOC is self-paced, students are at different levels of their learning journey and consequently face a variety of challenges at the same time. Instead, we implemented a weekly mailbox that students may use to submit questions about their specific issues. Additionally, the MOOC offers a

continuous, mixed stream of information consisting of new videos, weblinks, written material, et cetera. This additional material aims to be proactive to the questions they might raise.

Thus far, 8,500 students have started the MOOC for three years. In developing the course, we had hoped to reach out to 10,000 students in the first year, based on estimations provided by the MOOC platform provider. The result of reaching ‘just’ 8,500 students for three years is somewhat disappointing. To our knowledge, the enrollment has not yet led to any drop-outs due to lack of interaction or information. As far as we know, approximately ten percent has completed the entire MOOC. Also, this was below expectations. We had hoped to be able to issue a more significant number of certificates to participants. These figures provide little insight into the way participants use the MOOC.

Key-insights

When we began to design the MOOC, we were naively optimistic due to a lack of understanding of the complexity and integration of this entails. Practically, this meant that designing on various levels (videos, content, assignments, linguistics, illustrations, additional materials, et cetera) and continuously going back and forth in order to encompass the entirety of this instrument of teaching has been challenging and time-consuming. In hindsight, it would have been more efficient to design the basic layout of the MOOC with experienced people. Such collaboration would have brought in the necessary knowledge and skills early in the process and would have resulted in framing this design process ‘through the eyes of MOOC-design requirements.’

A second observation has been that we experienced a steep learning curve regarding the translation of the written text to videos and visuals such as schemes and animations. Considering the average length of a video clip of 90 to 120 seconds, messages must be brought back to their bare essence in order to be comprehensible. The same applies to animations. While a plethora of software applications are available to create animations, it is not immediately clear which style best suits the messages we aim to bring to the intended audience. The further the process of MOOC realization advances, the more prominent the entanglement of videos, animations, and other sources of information become. This demands the constant checking of coherence between all parts of the MOOC. Videos and other materials that have been produced at an early stage may need to be remade when progressing further.

Third, we deliberately designed the MOOC to operate independently of face to face teaching efforts. The consequence is that teacher-student interaction has been reduced to the absolute minimum. While this leads to an efficient process of using the MOOC itself, the live interaction with users is lost. As a consequence, the feeling of how students engage with the teaching material is missing even though they are regularly asked to provide feedback. This implies that it becomes nearly impossible to realize what the learning effects are for the participants and how they ultimately use the results.

Points for improvement

The positive experiences thus far with designing and executing this MOOC also show that using a specific technology quickly leads to the phenomenon of the 'elephant in the room.' In this case, the elephant is the technology that is very demanding on the cognitive, educational, and creative efforts of both the teacher-designer as well as the students. The technology continually stimulates the drive to add features, materials, side-steps, et cetera to the core for the learning experience. In retrospect, a piece of valuable advice is to keep the design simple. The current MOOC consists of almost 40 videos and animations, all of which are aligned towards the goal of designing your own, sustainable business model. To go through all of this material in a relatively short period, answering all of the questions, and fulfilling the complete series

of assignments is demanding. Despite this, a MOOC should be supplemented with national or local webinars, lectures, and workshops.

Furthermore, a gathering of people that have completed the course at a given moment in time would be an exciting feature. Last but not least, digital connectedness of people and the potential this brings to learning experiences have not been explored. Participation to the MOOC creates a dedicated global network of which the richness has not been utilized.

Reflecting on the development and use of the MOOC, we cannot deny it all started naively and intuitively. The efforts in making a professional MOOC are substantial. Still, we have reached a substantial number of students, globally, in a relatively short period. Our advice is to design a MOOC in parallel to regular teaching and build in cross-connections between these. This takes away some of the instructional parts of teaching. These then may be replaced by workshops in which students are invited into in-depth debates on their work in the MOOC, emphasizing more active and engaged teaching.

Course 2: Hackathon Sustainable Business Modelling

Approach

Course organization

The course 'sustainable entrepreneurship' consists of two stages, (1) preparation and (2) execution in which students work in teams. The preparation stage consists of a series of lectures and tutorials that run for six weeks. These provide students with all theoretical, conceptual, and practical information they require in order to develop a sustainable business model around a practical case. For every year, a variety of organizations is invited to provide live challenges on which students may work during the course. The practical case concerns a challenge that is provided by one or more sponsors. The case of 2018 came from a waste management organization, which provided a challenge on a specific fraction of dry household waste non-biotic, consumer waste stream. Sponsors are invited into the classroom to host guest lectures on the practical and organizational specificities of the case at hand. In this preparatory stage of the course,

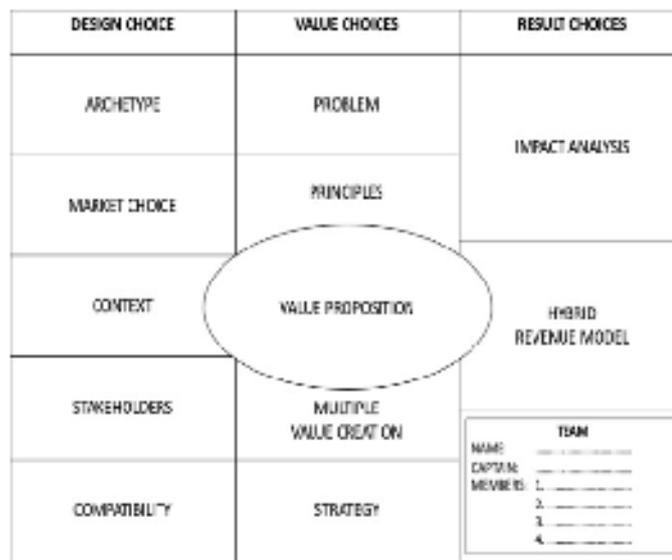


Figure 2: Business Model Template

students already make initial choices regarding their final business model. The execution stage is a 24-hour Hackathon (Cobham *et al.*, 2017). In this limited time frame, students develop their business model, using a predefined format (see figure 2). Support was offered by a group of external experts covering a variety of domains relevant to the case at hand, and the involved teachers during the whole of the Hackathon. Teaching assistants provided operational support (e.g., student administration, ushering the Hackathon venue, logistics of food and beverages), during both preparation and execution stage. The product student teams deliver consists of (1) the actual sustainable business model design shaped according to the provided business model template, and (2) a document in which they elaborate their choices and how these are aligned. The two combined are labeled the 'learning portfolio.'

Background

This course builds on a long teaching experience on the subject of sustainable business modeling. It began in 2011 and has been developed further in three stages. During the first stage, the course was set up as a conventional weekly design. It was provided as an elective in which third-year bachelor students were introduced to sustainability concepts from a management and business perspective. Students from all faculties of Radboud University Nijmegen (The Netherlands) were able to enroll without having any prior knowledge of these subjects.

After four years, during which popularity had been moderate, we made the first course-design changes. This led to a course in which students were invited to develop their sustainable business models in pairs for seven weeks. Every week, students attended thematic lectures followed by a tutorial in which they applied this theme in their business model the next day. Students were allowed to choose any business model as long as they were able to argue how this contributed to various aspects of sustainability. The exam consisted of a report on the developed business model using a strict format accompanied by a 90-second video clip explaining the content of the business model to a broad audience. This helped students to understand the notion of dissemination. These video clips were peer assessed in-class during a Beauty Contest. Students were invited to cast their votes on the various videos leading to a top three. This change of didactics quickly led to the affluence of students compared to the previous setup.

The last and third redesign has been realized most recently during 2018. We kept a compressed and iterative structure of lectures and tutorials while keeping the primary assignment of developing a sustainable business model. We added the 24-hour Hackathon at an off-grounds location at the end of this series. The off-ground location allows us to offer a dedicated teaching environment from which students cannot 'escape' and continuously are in the vicinity of their fellow students

and teachers. At the location, we arranged for digital infrastructure, around the clock catering, and took considerate care of health and safety aspects. During the Hackathon, students were not only supported by the involved teachers but also by a pool of specialists from various disciplines related to the case at hand. A digital, visual, and physical structure was created to enable teams to raise issues. The structure enabled allocation to the appropriate specialist and ensured being able to address these issues as quickly as possible to keep the momentum of the development process. This was reinforced by using a giant time clock ticking away the seconds and minutes of the 24-hour adventure. The expected outcomes of each of the teams of the Hackathon were explicitly stipulated. The end of the Hackathon was announced with the sound of a horn, forcing students to cease all activities. A jury of five independent specialists was brought in to assess each of the team results. A rubrics template was used to make an assessment in which the outcomes were announced in a festive plenary meeting. The top three winners received an award. The Hackathon and, thus, the course was officially closed with a festive dinner. The costs involved in this setup require substantial additional sponsoring. This last redesign was made such that the study-load matched the number of credits and teaching hours.

Didactical design parameters

From the beginning of the course, students worked in teams of four to five persons to create their sustainable business models. The creation of those teams has explicitly been part of the didactical approach of the course. Students needed to choose team members, a team captain, a name, and a mascot. The team captain was made responsible for internal team coordination and communication. The challenge for the individual team members was to take upon themselves a role outside of their comfort zone. Each team had to design and provide a presentation of the developed business model using the BMT and supported by a 90-second video clip. The team decided how to present the results to the jury. The presentation was strictly limited to a ten-minute time frame.

Regarding the contents of the course, instead of allowing any business model to be accommodated, a central theme (and material) was determined upon which

students had to elaborate a business model. Three different archetypes of sustainable business models were allowed: (1) platform, (2) community, and (3) circular. For each of these types, ample documentation and teaching were provided. To guide the process of developing a sustainable business model, the BMT, was developed, including elaborate instructions. Also, the elements of this BMT were systematically addressed in the various lectures followed by several previous assignments. During the actual Hackathon, the BMT served as the guiding framework for developing the sustainable business model. At an earlier stage, students received precise written and oral instructions on the BMT and were offered the chance to experiment with its various building blocks.

We consider the Hackathon - based on teams of students working with the BMT - as a didactical instrument that was put to use to enable the smooth design of a sustainable business model. Crucial in the process leading towards the Hackathon was the creation of a collective, level playing field based on shared knowledge, teaching, and experiences. This and the choice for a specific constrained each team to develop a focus on one of the specific sustainable business model archetypes. Furthermore, this offered students a natural pathway to in-depth and content-wise elaboration on the challenge they faced. As a result, all sorts of possible side steps could not be avoided (this was even encouraged by the teachers); however, students quickly realized when they were approaching an impasse.

Teacher-student interactions

In contrast to the earlier described MOOC, this elective relies strongly on intensive teacher-student interactions inside and outside (i.e., during the Hackathon) of the classroom. During the six weeks of teaching, students develop a variety of relationships (a) amongst each other, (b) with the core teachers, and (c) with the specialists during the Hackathon. To maintain independence, the jury was not part of the teaching corps. Dedicated software was used (i.e., Slack) in addition to conventional teaching software (i.e., Brightspace) to facilitate communication within teams and between teams and specialists. This was provided in addition to regular teacher-student interactions during classes and was supplemented with dedicated consulting-hours.

Key-insights

The Hackathon model has shown itself as a powerful didactical approach. Specifically, when applied to a design challenge, it fosters creativity while a clear focus is developed step-by-step. Furthermore, students are guided by an increasing set of rules, conceptual models, time frames, social pressures (especially between-team competition), and the growing collective ambition to win. Two to three weeks into the teaching process, these competitive and social dynamics visibly come into play. Students begin to understand that the offered approach is a different concept compared to traditional teaching.

Second, collaborating with an external, non-profit organization brought in-depth knowledge about specific practices and the actual case into the classroom. This led to practitioners teaching in the classroom and sharing their experiential knowledge. The core-team helped the practitioners prepare their contributions and sort out their references. The latter is explicitly needed since this is not commonplace for practitioners. This amalgamation of core-teachers and practitioners resulted in a coherent set of assignments that became tangible to students. In this way, they experienced how theory and practice are intertwined in a current, real-life case.

Third, although ample instructions on the BMT had been provided, and students were offered the possibility to practice, it was realized that this was insufficient. When the results were presented at the end of the Hackathon, and more in particular when they handed in their final assignments, it became apparent that the aligned use of the different BMT building blocks did not meet expectations. The BMT consists of a set of building blocks that only make sense when they are used coherently. We observed that certain elements of the BMT, in particular compatibility (i.e., the connection to existing arrangements in practice), impact analysis (i.e., the expected impact of the business model in environmental, social, and economic senses), and the use of a hybrid revenue model (i.e., the simultaneous use of a various values), were difficult for the students to grasp. Hence, there was little coherence on the elaboration of these specific building blocks. As a result, most assignments were in this respect, incomplete.

Points for improvement

The teaching we describe covers eight years. During these eight years, we changed the entire course design twice. From traditional teaching via pairwise business model development to a structured team-based approach framed by a Business Model Template. During this process, we moved from a more descriptive approach towards an (inter)active design approach. We also moved from frontal classroom teaching to an amalgamation of teamwork, frontal teaching, consulting hours, workshop, and learning through making a video clip. This led to a reorientation of the teaching model and the adjoining assignments. Compared to a conventional approach, the teaching systematically began to serve as stepping-stones towards the pressure cooker model brought about in the Hackathon. The experiences thus far provide ample justification to continue with this approach. The elaborate evaluation among students generally demonstrates keen appreciation for the offered elective. Students indicate that, despite their various backgrounds, they are facilitated in developing a sustainable business model to the best of their abilities. The period of seven weeks is perceived as an appropriate time frame (although not all students agree on this).

In retrospect, we have five observations. First, we have witnessed an unbalanced use of the provided resources (with a slight preference for sources used during lectures). Second, more time and effort need to be invested in not just explaining the BMT but also gaining experience with its different building blocks. This implies we will use the time allotted to the workshops to systematically discuss and practice the various building blocks of the BMT and their alignment. For example, we introduce the idea of hybrid revenues, provide examples, and then have the students exercise the design of their hybrid revenue model and pinpoint the alignment with the remainder of the BMT. Third, the screening of specialists involved in the Hackathon is crucial for the value of the information offered to students and, as such, the success of this part of the course. Fourth, the communication devices that were used correctly for public interaction with specialists need to be embedded in the entire course design. Fifth and finally, despite the practical and financial implications, a site-visit to an operational business model would aid students to grasp what is at stake.

Conclusions, recommendations, and discussion

Looking back, a first observation is that our adventures of teaching sustainable BMs and (re)designing our courses was initiated in 2013. In the beginning, the gist of the courses was not in the didactics but the contents. More, in particular, it started in an ill-defined, if not obscure, need to redefine existing BM logics. The BMs we focus on contributing to a transition of the economy towards more sustainability, circularity, and inclusivity. We consider this important not only as academics but moreover as engaged citizens who want to educate young thinkers and workers. This is crucial since it is this logic that drives our research and, consequently, our teaching. Our experiences with the MOOC and the Hackathon are that the use of both models is heavily sponsor-dependent. Additional funds are required to initiate and continue such didactics.

We conclude that it takes considerable time, effort, and creativity to design and test a course on a topic that defies mainstream economic and BM thinking until it is more or less stable. Even when workable-ready, continuous work is needed. Implementing this course in existing teaching contexts is not warmly received by colleagues. Second, designing a MOOC that is not physically institute-bound has resulted in a stream of criticism from the existing institutional order. Accepted revenue models and didactical approaches insufficiently fit the MOOC teaching model. It deviates from a controlled classroom situation in which the 'talking head' has full control of the educational content and program.

In contrast, a MOOC requires trust, stimulates extensive collaboration between participants, and operates from

the premise that 'stealing knowledge' is a good thing. As a result, a massive number of people participate freely in a type of 'action learning' (e.g., Argyris and Schön, 1978; Vail, 1996). A third conclusion that we draw regarding the teaching is that introductory lectures and workshops are a prerequisite for the success of the Hackathon. Students are systematically confronted with the content that is core to it. The developed Business Model Template plays a crucial role that guides students through the content. Four, sponsorships offer the possibility to bring in real life cases represented by people with names and faces. Real actors enter into the classroom; students intuitively sense the authenticity of the matter at hand. Our fifth and conclusion are that, in both cases, we have witnessed that learning in collaboration is not the only key in our didactical approach but also has a lasting impact on their way of thinking and acting in their daily, professional lives.

In the near future, we would be pleased if the link to the world outside of the classroom is reinforced. New societal concepts that are rooted in the Community of Practice (COP; Wenger, 1998) such as Urban Living Labs, Innovation Work Centers, Regional Hubs, et cetera foster this collaborative learning process. As a result, we suggest the diminishing of classical, classroom teachings and instead favor the reinforcement of situated learning based on theory while addressing the complexities of practice. In hindsight, we conclude that a MOOC can stimulate learning on a global scale, while the Hackathon allows for the intensification of face-to-face learning. The choice between these depends on (1) available means, (2) educational setting, (3) resources available, (4) envisaged outreach, and (5) skills and capacities of the educational team. A clear-cut checklist cannot be provided in this respect.

References

- Argyris, C., and Schön, D. A. (1978). *Organisational learning: A theory of action perspective*, Addison-Wesley, Reading, MA.
- Boons, F., and Laasch, O. (2019). Business Models for Sustainable Development: A Process Perspective. *Journal of Business Models*, Vol. 7, No. 1, pp. 9-12.
- Boud, D., Cohen, R., and Sampson, J. (2013). *Peer learning in higher education: learning from & with each other*, Routledge, London.
- Cobham, D., Gowen, C., Hargrave, B., Jacques, K., Laurel, J., and Ringham, S. (2017, March). "From hackathon to student enterprise: an evaluation of creating successful and sustainable student entrepreneurial activity initiated by a university hackathon", in EDULEARN17 Proceedings, IATED, Barcelona, pp. 789-796.
- Faber, N., and Jonker, J. (2018). At your service: how can Blockchain be used to address societal challenges, Treiblmaier, H. & Beck, R., *Business transformation through Blockchain*, Palgrave-MacMillan, London, pp. 209-232.
- Jonker, J. (eds.) (2014). *New Business Models. Creating Value Together*, St OCF 2.0, Doetinchem.
- Jonker, J., and Faber, N. (2015). "Framing the WEconomy: exploring seven socio-economic trends that enable shaping a transition towards sustainability", working paper. Institute for Management Research, Radboud University Nijmegen, Nijmegen, summer 2015.
- Jonker, J., Kothman, I., Faber, N., and Montenegro Navarro, N. (2018). *Organizing for the Circular Economy: a workbook for developing circular business models*, OCF2.0, Doetinchem.
- Jonker, J. (2016). "New Business Models – Working Together on Value Creation", Available at <https://iversity.org/en/courses/new-business-models-working-together-on-value-creation> (accessed 11 November, 2018).
- Mazoue, J. G. (2013). "The MOOC Model: Challenging Traditional Education", *Educause Review Online*, 28 January, available at <https://er.educause.edu/articles/2013/1/the-mooc-model-challenging-traditional-education> (accessed 15 May, 2019).
- Raith, M. G., and Siebold, N. (2018). Building business models around sustainable development goals, *Journal of Business Models*, Vol. 6, No. 2, pp. 71-77.
- Tukker, A., and Tischner, U. (2006). Product-services as a research field: past, present and future: reflections from a decade of research, *Journal of Cleaner Production*, Vol. 14, No. 17, pp. 1552-1556.
- Vail, P. (1996). *Learning as a way of being: strategies for survival in a world of permanent white water*, Jossey-Bass, Hoboken (NJ).

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Cognitive Exploration Strategies and Collective Decision-Making in Entrepreneurial Business Modelling

Tassilo Henike^{1*} and Katharina Hölzle²

Abstract

Our Business Model (BM) teaching approach helps students to understand three essential dimensions of cognitive exploration strategies and to experience negotiation strategies in groups for designing a first BM. Didactically, it follows Kolb's Experiential Learning Cycle, including individual paper and case study preparations as well as collective discussions and decision-making.

Keywords: cognition, exploration strategies, entrepreneurial business modelling

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Introduction

Uncertainty is a constituting characteristic of entrepreneurial processes. Especially in the early stages of a new venture, entrepreneurs have endless possibilities with unpredictable consequences (Malmström & Johansson, 2017). One crucial phase in this process concerns decision-making about what mechanisms should be used for exploiting an opportunity (Shepherd, Williams, & Patzelt, 2015). These exploitation mechanisms base on founders' mental business models (BM), i.e., belief structures of reasons why as well as procedures how various actors engage in focal business interactions (cf. Doz & Kosonen, 2010).¹ Possible configurations of these structures are manifold, yet (in particular novice) entrepreneurs are additionally challenged as they commonly have limited resources prohibiting prolonged experimentation (Sosna, Treviño-Rodríguez, & Velamuri, 2010). Further, they cannot rely on prior entrepreneurial experiences and experienced partner networks that could aid in decision-making for a promising first BM. Thus, entrepreneurs need to strongly rely on their cognition (Sosna et al., 2010). Given these challenges, we aim to teach students what cognitive exploration strategies exist, how these strategies are related to BM innovation or imitation, and how collective decisions emerge in teams (cf. Rydehell & Isaksson, 2016).

Cognitive exploration strategies are individual strategies of how information is gathered and interpreted for finding solutions and decision-making. In our BM class, students learn and experience the impact of three dimensions of cognitive exploration strategies on BMs: strategic orientation, analogical or combinatory problem solving, and intuitive or factual reasoning (cf. Henike, 2019). To teach the impact of these dimensions on the BM development process, we use a combination of individual learning, inquiry-guided class discussions, individual expeditionary learning for one specific case, and group discussions of this case following Kolb's and Kolb's "Experiential Learning Cycle" (2005). This learning cycle helps students to learn the essential BM concepts. It also helps to reflect on how their behaviour, in terms of cognitive exploration strategies as well as

group negotiations, impact BM decisions (cf. Hogan & Warrenfeltz, 2003).

Our BM teaching approach is part of a three-month advanced master class on "Innovation Management" taught in English at the University of Potsdam, Germany.² The class regularly consists of 50 students from business administration and management of information systems majoring in innovation management and entrepreneurship. Each week, we concentrate on one specific theme of innovation management taught in a two-hour lecture and two-hour exercise. For every lecture, we provide mandatory readings and related questions. Case studies for individual and group preparations supplement exercises. Exercise groups regularly consist of four to five students. Given this setting, we teach the impacts of cognitive exploration strategies and group negotiations on BM innovation in one week in the middle of a semester.

In the next sections, we describe in more detail our teaching approach and learning methods, the objectives and procedure of our BM teaching approach, and required materials. In the end, we reflect on our experiences in regards to student evaluations and success in achieving our teaching objectives. We finish with a short discussion emphasising how teachers can modify our approach to other learning objectives or teaching conditions.

Teaching Approach and Methods

Our BM teaching approach is inspired by Kolb's and Kolb's "Experiential Learning Cycle" (2005). The learning cycle requires high self-motivation and practical experiences for achieving long-term learning outcomes. The learning process includes constant conflictual movements between reflection and action, existing and new knowledge, as well as implicit understanding and the ability to comprehensibly explicate this understanding (Kolb & Kolb, 2005). Teachers support individual learning processes by providing feedback to students' beliefs, ideas, and ways of thinking. They create a setting where the use of different methods respect the individual differences in learning (Kolb & Kolb, 2005).

¹ We differentiate between mental business models and implemented business logics or exploitation mechanisms as this differentiation helps to better discuss related cognitive or implementation challenges.

² For inspiration, we provide our full teaching materials in the online appendix to this article.

Consequently, our teaching approach uses a combination of four methods.

First, our teaching approach starts with individual learning. In this stage, we provide students with academic articles so that they make sense of most common definitions and concepts on their own. Own preparation allows students to tap into new themes at their own pace and based on their existing knowledge. Second, we use the classroom for inquiry-based learning. Inquiry-based learning is an approach that motivates students to think and openly articulate their opinions based on questions posed (Bell, Urhahne, Schanze, & Ploetzner, 2010). By collecting varying opinions and moderating discussions, teachers motivate students to recognise conceptual differences almost autonomously. Discussions require students to explain what they have already learned in their preparation. At the same time, teachers' and fellow students' questions show how much they have already understood abstract concepts aiming to close the knowing-doing gap (cf. Pfeffer & Sutton, 2000). Third, we ask our students to apply this knowledge to specific contexts. In this phase of expeditionary learning, students better understand the usefulness and limitations of theoretical concepts. At the same time, they are motivated to go on an individual expedition and to find their own solutions to problems (Outward Bound, 1998). In the fourth stage, students discuss in groups the solutions from their learning expedition. This exchange of individual experiences fosters collective learning and reflection (Loewenstein, Thompson, & Gentner, 2003). In sum, our learning cycle helps students

to understand concepts, their applicability, and how different behaviours can result in different outcomes (cf. Hogan & Warrenfeltz, 2003). Figure 1 summarises our teaching approach, aspired learning cycle, and four methods used.

BM Teaching

In our class, we focus on one specific kind of BM innovation. This kind of BM innovation is the design of a first BM in an entrepreneurial context (Ahokangas & Myllykoski, 2014; Massa & Tucci, 2014). We use the four different phases of the learning cycle to teach the following objectives:

- how entrepreneurial BM design challenges are different from existing BM reconfiguration challenges,
- what cognitive exploration strategies exist,
- how they impact decisions to design a first BM, and
- how negotiation strategies unfold in the process of collective decision-making

Stage 1: Individual BM learning

For proper preparation, we start our BM week by prompting students to read "A Critical Assessment of Business Model Research" (Massa, Tucci, & Afuah, 2017). This review article introduces students to the varying perspectives existing in BM research, cognitive and implementation challenges, and reflects why there is increasing practical and theoretical interest for BMs since the beginning of the Information Age.

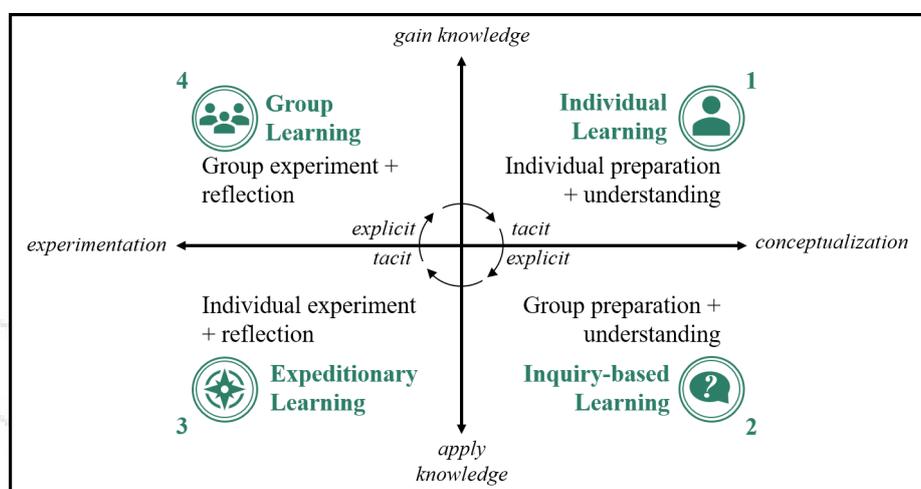


Figure 1: Teaching approach

Accordingly, we ask our students to concentrate on the following questions:

- What are definitional/conceptual differences (related to BMs) discussed in the article?
- Why are BMs important from a practical and theoretical perspective?
- Why and when are BMs sources for innovation?
- What external and internal factors do challenge firms' BMs in the 21st century?

Stage 2: Inquiry-based BM learning

In the lecture, we start with a brief history of quotes from famous researchers to emphasise that Schumpeter, Drucker, or Porter have discussed the fundamental idea behind BMs decades ago (cf. Casadesus-Masanell & Zhu, 2013). We contrast these quotes with recent examples like Alibaba or Uber to start discussing what has changed in the 21st century. At that point, we move to a discussion with students of what BMs are and whether they are attributes of individuals or entities like firms, universities, et cetera. For greater clarity, we introduce a differentiation between a mental BM, i.e., abstraction from reality or beliefs (cf. Doz & Kosonen, 2010), and an implemented business logic. This differentiation helps in the discussion to reflect upon cognitive (e.g., number of BM alternatives, inability to calculate consequences, Massa & Tucci, 2014) and implementation challenges (e.g., higher customer power, increased fluidity in firm interactions, partner selection). In sum, proper preparation and class discussion teach students that the challenges of designing a first BM for a new venture are different from the challenges of reconfiguring existing BMs in incumbent firms or adding a new BM to an existing portfolio of BMs (cf. Massa & Tucci, 2014). Students learn that central challenges are the definition of an appropriate value proposition, creation and capture mechanism (Teece, 2010). Further, they learn that both, copying existing BMs or designing new BMs, have proven to be reliable sources for designing a first BM (Casadesus-Masanell & Zhu, 2013)—at the same time, increasing the difficulty for decision-making.

Stage 3: Expeditionary BM learning

After the lecture, we ask the students to apply their knowledge to a real case. They must design a first BM for an existing service that has no specific value proposition and value capture mechanism yet. The service is

called Errorfarealerts and provides information about online error fares of flights. An algorithm crawls the Internet for these error fares and informs registered people by e-mail free of charge (cf. an extended description in the supplementary materials). A possible error fare could be that a flight only costs \$59 instead of \$590.

As we want students to collect additional information about the service, industry, other BMs, we invite them into a computer lab. Further, we provide a word processing program for taking notes. The time limit for the in-class completion of this individual assignment is 60 minutes. Afterwards, students have an additional week to rethink the task before they must submit reflection reports.

The central task for students is to comprehensively document all steps taken during their processes of developing a BM for Errorfarealerts. To support documentation, we ask students to answer the following questions/requirements within their reflection reports:

- Be as precise as possible with your description and give reasons for decisions that you have made during the process. Reflection report should be around three pages long.
- What were your first thoughts and steps when starting with the task?
- Did you consider different business models during the process? If so, which ones did you consider for the task, and why did you consider them?
- Which, in your opinion, is the most appropriate business model for Errorfarealerts and why?

Students can earn with their reports at a maximum six points that add to their final grades (for the whole class 100 points are the maximum). This requirement additionally motivates students to make accurate descriptions. We make these questions and requirements available before our computer lab session via an online-learning platform (Moodle).

At the beginning of our computer lab session, we introduce students to the case of Errorfarealerts. We present the service to the whole class via a short video (Errorfarealerts, 2016). Afterwards, students can individually look for further explanations on their homepage

(Errorfarealerts, 2018). They can also use the Internet to look for additional information that helps them to design an appropriate value proposition and value capture mechanism. During their expeditions, students will encounter several tensions at the interface of technological, competitive, legislative, and ethical issues (cf. Thursby, Fuller, & Thursby, 2009). For instance, students need to decide on their own, whether it is ethical to make a profit based on others' mistakes.

Stage 4: BM learning in groups

The individual expeditions and reflections serve as an introduction for our main teaching objective, i.e., understanding what cognitive exploration strategies exist and how they impact BM decisions. In the group exercise—that takes two hours, we ask students to exchange the reflection reports with their group members. We ask group members to read the reflection reports and mark text passages according to the three dimensions of cognitive strategies that we introduce before. In the end, students will understand how different approaches in each dimension have impacted their group members' BM decisions. The three dimensions consist of the following aspects:

1. Strategic Orientation (Gatignon & Xuereb, 1997): beliefs about whether competitive, customer or technological orientation is the driving force for BM designs:
 - focus on competitive similarity or differentiation
 - focus on customer convenience or inconvenience
 - focus on internal technological potential or fit the external environment
2. Problem-solving (Gazzaniga, Heatherton, & Halpern, 2015): the process of generating a solution based on:
 - similar content or context analogies
 - adding or changing elements of existing patterns (conceptual combination)
3. Reasoning (Gazzaniga et al., 2015): point of judging to derive a conclusion based on:
 - intuitive proof (own feelings or imagination)
 - factual proof (own knowledge, external statistics or comments)

By reading the reflection reports, group members will recognise a great variety in possible value propositions and value capture mechanisms for Errorfarealerts' BM.

Some students may recommend imitating BMs from travel agencies or to expand the BM to other kinds of online fares like shopping. Other students may recommend cooperating with flight providers to reduce their failure rates. The group discussions will reveal that these differences are mainly related to different strategic orientations. Focussing strongly on the customer will lead to BMs that are free of charge for customers and subsidised by advertisements or partner provisions. However, focussing on what customers do not like may encourage students to reject advertisements. Focussing strongly on the competition leads to imitations or strengthens considerations of how to be different from competitors. Another possibility is to focus on the technology itself. Accordingly, students will consider the legislative situation or imitability of the technology. Students may argue that imitation of the algorithm is easy or that error fares only appear randomly. That is why these students will recommend targeting airline companies and help them to correct these error fares.

As the suitability of the different BM solutions is unknown, students will also learn that the strategies to generate solutions and reasons to recommend a BM differ from student to student. Some students will only feel safe in decision-making when they have outweighed different alternatives and collected different facts. Others will only feel confident after imagining possible consequences in the future or considering currently famous examples like Spotify. This variance will spur intense discussions in the groups about the BM that the group will finally recommend. These intense discussions animate students to think about negotiation strategies so that each group can recommend one BM. These negotiation strategies could be the joint development of a BM integrating aspects from all group members, solution enforcement due to existent group roles (e.g., the group leader makes the final decision), or no final decision resulting in severe group conflicts. These negotiation activities will show students how important the sharing of fundamental values and definition of group roles is for entrepreneurial teams. In the last 20 minutes of the exercise, one group presents their solution and discusses with the other groups what BM alternatives are possible, what cognitive exploration strategies they have used, and how differences in these strategies affected the other groups' final decisions.

Teaching subject	Teaching objective	
	concepts	application
individual	<p>1. <i>individual preparation</i></p> <ul style="list-style-type: none"> • When/Where? before the lecture • What? 4 questions raised • Material? Massa et al. (2017) 	<p>3. <i>individual expedition</i></p> <ul style="list-style-type: none"> • When/Where? computer lab or homework (1 week in total) • What? individual BM design + reflection report • Material? case description + access to additional information sources
group	<p>2. <i>class discussion</i></p> <ul style="list-style-type: none"> • When/Where? in class, Tuesday (week 1, two h) • What? BM innovation challenges, central BM elements • Material? lecture slides + moderated class discussion 	<p>4. <i>group negotiation</i></p> <ul style="list-style-type: none"> • When/Where? in class, Wednesday (week 2, 1h) • What? collective solution + discussion • Material? individual group discussions + final class discussion

Table 1: Summary of BM Teaching Approach

In sum, this BM teaching approach puts students in a real-life situation and increases their understanding of how to search for different BM designs bridging doing and knowing (Pfeffer & Sutton, 2000). At the same time, it shows how difficult it is to make decisions in uncertain situations. Table 1 summarises our BM teaching approach and the material needed.

Student Evaluations and Success of BM Teaching Approach

Student evaluations and personal feedbacks on our BM teaching approach are extraordinarily positive. In general, students widely appreciate the situation of being confronted with a real-life challenge and the possibility to discuss their solutions with others. Furthermore, as we combine conceptual issues with practical applications, students better understand the contributions and limitations of concepts (e.g., what possibilities do we have to create a value proposition?). For the specific BM case, most students enjoy working on this case as they quickly understand the service's purpose and immediately see personal learning outcomes. At the same time, the case requires students to reflect on their position as a potential customer or business owner leading to different decisions. From time to time, students are also amazed when they read others' solutions recognising the immense possibilities.

Overall, the students get a good overview of the different cognitive exploration strategies and understand them quickly. At the same time, however, we also see

that the more possibilities are presented, the uncertainty among students increases whether they have made the right BM decision. That is why students like to discuss their solutions with others because they often need to find additional support for their BMs when they do not feel very confident.

We have made excellent experiences with our BM teaching approach and would recommend this approach for settings with a short time span (1 week) and classes with up to 50 students. Beyond the teaching of thematic BM issues, the concept helps students to improve their cognitive flexibility and their teamwork competencies. They need to switch between conceptual ideas, case-specific practical concerns and the benefits as well as costs of different BM alternatives. It helps them to acknowledge the benefits of reflecting on their beliefs and building lines of reasonable argumentation. This also has positive implications for the group process. Students learn to effectively communicate within groups, understand other students' lines of argumentation, and how to reach consensus.

Limitations and Adaptability

Limitations of this teaching approach may be the workload involved as students need to spend much time on individual preparation, writing reflection reports, and collecting information. Furthermore, there is no overall right solution for what BM will be the best solution for the case of Errorfarealerts. This fact may frustrate some students; however, the clear objective of this concept is

to train students to deal with uncertainty and to understand how decisions emerge. Moreover, our concept focusses specifically on cognitive challenges and neglects implementation challenges. That means that, although students have cognitively developed an appropriate BM, we do not dive further into challenges of executing this BM like negotiating with partners and investors, raising financial resources, or interacting with customers. We also do not specifically address social BMs.

We have also applied the case study in other settings with less time for teaching and with different groups of students. Therefore, we will shortly describe how our teaching approach could be modified. First, when time is limited to a single two-hour session, the case could be introduced to a whole class asking students to think about single BM dimensions spontaneously. This question will help to uncover varying possibilities and to discuss further the problems of creating linkages between dimensions and their complex interdependencies (cf. Massa, Viscusi, & Tucci, 2018). Second, mostly in executive teaching, the case could be used as an inspiration to reflect upon the BMs of their own companies. Challenges could be discussed in how this case provides a

pattern for innovating the own BM or what challenges would arise if an existing company implements this BM. Third, this entrepreneurial case could be contrasted with a case of an incumbent company to discuss different challenges of both situations (e.g., how decisions in the past constraints future BM decisions). Fourth, visual BM tools like the BM Canvas (Osterwalder & Pigneur, 2010) or BM pattern cards (Gassmann, Frankenberger, & Csik, 2014) could be used to support students in thinking and communicating BM solutions. In group discussions, the focus could shift to discuss the strengths and weaknesses of visual BM tools.

Conclusion

Overall, we are very satisfied with the learning outcomes of our students and, equally important, students also acknowledge the positive effects of this concept. We recommend this BM teaching approach to teachers and students interested in the fields of entrepreneurship, strategy, and innovation management as well as in the subjects of cognitive challenges, cognitive exploration strategies, and dynamics of group discussions.

References

- Ahokangas, P., & Myllykoski, J. (2014). The practice of creating and transforming a business model. *Journal of Business Models*, 2(1), 6–18.
- Bell, T., Urhahne, D., Schanze, S., & Ploetzner, R. (2010). Collaborative Inquiry Learning: Models, tools, and challenges. *International Journal of Science Education*, 32(3), 349–377.
- Casadesus-Masanell, R., & Zhu, F. (2013). Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic Management Journal*, 34(4), 464–482.
- Doz, Y. L., & Kosonen, M. (2010). Embedding Strategic Agility. *Long Range Planning*, 43(2-3), 370–382.
- Errorfarealerts (2016). *Error Fare Alerts - How it works*. Retrieved December 06, 2018, from https://www.youtube.com/watch?v=dyM_vV4jFLM.
- Errorfarealerts (2018). *Homepage*, from <https://www.errorfarealerts.com/?lang=en>.
- Gassmann, O., Frankenberger, K., & Csik, M. (2014). *The business model navigator: 55 models that will revolutionise your business*. Harlow, England, London, New York, Boston, San Francisco: Pearson.
- Gatignon, H., & Xuereb, J.-M. (1997). Strategic Orientation of the Firm and New Product Performance. *Journal of Marketing Research*, 34(1), 77–90.
- Gazzaniga, M., Heatherton, T., & Halpern, D. (2015). *Psychological Science* (5th ed.). New York: Norton.
- Henike, T. (2019). *Imitate or Deviate? How Cognitive Safety Impacts Entrepreneurial Business Modelling*. Accepted paper for presentation at the 79th Annual Meeting of the Academy of Management. Boston, USA.
- Hogan, R., & Warrenfeltz, R. (2003). Educating the Modern Manager. *Academy of Management Learning & Education*, 2(1), 74–84.
- Kolb, A. Y., & Kolb, D. A. (2005). Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning & Education*, 4(2), 193–212.
- Loewenstein, J., Thompson, L., & Gentner, D. (2003). Analogical Learning in Negotiation Teams: Comparing Cases Promotes Learning and Transfer. *Academy of Management Learning & Education*, 2(2), 119–127.
- Malmström, M., & Johansson, J. (2017). Practicing Business Model Management in New Ventures. *Journal of Business Models*, 5(1), 1–13.
- Massa, L., & Tucci, C. L. (2014). Business Model Innovation. In M. Dodgson, D. M. Gann, & N. Phillips (Eds.), *The Oxford Handbook of Innovation Management* (pp. 420–441). Oxford: Oxford University Press.
- Massa, L., Tucci, C. L., & Afuah, A. (2017). A Critical Assessment of Business Model Research. *Academy of Management Annals*, 11(1), 73–104.
- Massa, L., Viscusi, G., & Tucci, C. L. (2018). Business Models and Complexity. *Journal of Business Models*, 6(1), 59–71.

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Outward Bound (1998). *Guide for planning a learning expedition*. Dubuque: Kendall Hunt Publishing.

Pfeffer, J., & Sutton, R. I. (2000). *The knowing-doing gap: How Smart Companies Turn Knowledge into Action*. Boston, USA: Harvard Business School Press.

Rydehell, H., & Isaksson, A. (2016). Initial Configurations and Business Models in New Technology-based firms. *Journal of Business Models*, 4(1), 63-83.

Shepherd, D. A., Williams, T. A., & Patzelt, H. (2015). Thinking About Entrepreneurial Decision Making. *Journal of Management*, 41(1), 11-46.

Sosna, M., Treviño-Rodríguez, R. N., & Velamuri, S. R. (2010). Business Model Innovation through Trial-and-Error Learning. *Long Range Planning*, 43(2-3), 383-407.

Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43(2-3), 172-194.

Thursby, M. C., Fuller, A. W., & Thursby, J. (2009). An Integrated Approach to Educating Professionals for Careers in Innovation. *Academy of Management Learning & Education*, 8(3), 389-405.

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Five Strategic Foresight Tools to Enhance Business Model Innovation Teaching

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Abstract

We discuss our lessons from 8 years of teaching business model innovation to executives in our part-time MBA program. We examine how strategic foresight tools are particularly useful to help students to overcome the cognitive bounds that inhibit business model innovation and discuss the considerations of using student-owned live cases.

Keywords: Strategic foresight; business model innovation; MBA teaching; live cases; cognitive bounds

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Introduction

This paper reflects upon 8 years of teaching business model innovation (BMI) to executives in the part-time MBA program at Aarhus BSS. Executives who return to the classroom for part-time MBA education are different from other business school students. They have accumulated on-the-job experience, have gained in-depth knowledge of their industries, and thoroughly comprehend the business models of their organizations (Garvin, 2007). For teachers, this provides opportunities for deeper discussions of the subject matter. For example, in our part-time MBA course on BMI, we use live cases from students' organizations to apply the lessons. These discussions are motivating and rewarding for students. In fact, many students sign up for the course because they are concerned about the future performance potential of their organizations' business models. However, teaching BMI to executives is not without challenges. Having worked in their organizations for years, such students have often developed hardened cognitive frames that make it challenging to see how their business model could be different. "*This would never work in my organization*" is a common remark that teachers encounter.

In our teaching approach, we have therefore decided to equip students with the tools and methods of strategic foresight to systematically reduce cognitive bounds to BMI. Strategic foresight is particularly suitable for this task, given its focus on learning, exploring uncertainty, and decision making (Vecchiato, 2012; Rhisiart, Miller and Brooks, 2015). Strategic foresight provides a rich toolbox for identifying, observing, and interpreting, the factors that induce change; determining possible organization-specific implications; and triggering appropriate responses (Voros, 2003; Rohrbeck, Battistella and Huizingh, 2015). Strategic foresight methods and processes are generally aimed at (1) identifying key factors that drive change in an organization's environment, (2) simulating and understanding the impact of potential futures, and (3) deriving actions that can improve an organization's long-term competitiveness. Examples of strategic foresight methods include trend audits, scenario planning, backcasting, and roadmapping (Popper, 2008; Gordon, 2010; Rohrbeck, 2013; Spaniol and Rowland, 2019). By including such methods, we aim to overcome executives' cognitive bounds to BMI.

Research has established that business models must be "changed, refined and innovated on a systematic basis if companies aim to survive and stay competitive over time" (Nielsen *et al.*, 2019: 9) However, path dependencies and lock-in effects make it difficult for executives to detect the need to explore new business models and implement the necessary changes in their organizations (Tripsas and Gavetti, 2000; Chesbrough, 2010; DaSilva and Trkman, 2014). For example, managers fear negative consequences for their current businesses and are hesitant to move away from business models that still yield profitable returns (e.g. Chesbrough, 2010; Günzel & Holm, 2013; Sosna, Trevinyo-Rodríguez, & Velamuri, 2010). Research on strategic decision-making, and strategic foresight in particular, has provided further explanations for the origin of such managerial resistance. Gavetti (2012) describes three obstacles that managers must overcome to detect and exploit new business opportunities:

- The *rationality bound* results from dominant representations shared across an industry or sector: Managers attend to the world around them and fail to recognize more distant and radically innovative business opportunities.
- The *plasticity bound* results from inertia, which can have cognitive or physical roots: Firms might fail to act on opportunities because they fail to see how they could, or they might lack the resources or capabilities to address a new opportunity.
- The *shaping-ability bound* describes the inability to legitimize needed action: Managers fail to secure the necessary buy-in of stakeholders, such as board members or investors, on a new course of action.

Overcoming these bounds in the minds of our executive students motivates the curriculum design for the BMI course at Aarhus BSS. In the following section, we describe our course's structural setup and introduce five strategic foresight methods that, in our experience, have proven to be particularly helpful for overcoming executives' cognitive bounds to BMI. We limit our discussion to these lesser-known tools, and, to the likely dissatisfaction of many readers, make mere mention of the more established tools and techniques, such as dual BMs and BM roadmapping (Markides and Charitou, 2004; De Reuver, Bouwman

and Haaker, 2013). We conclude with a few reflections on the feasibility of our approach in other settings.

Course Context and Structure

Our part-time MBA students are typically middle-level managers in their 40s preparing for upper-management roles. The primary reason they choose the BMI course is the search for knowledge, approaches, and tools to solve strategic challenges and lead change efforts in their organizations. Consequently, our BMI course is designed to achieve three core learning outcomes: (1) Being able to describe and assess any business model using systematic tools, (2) making cognitive leaps towards novel business models, and (3) ensuring transferability—that participants can select from across a portfolio of tools and apply the appropriate ones to overcome the three cognitive bounds and drive BMI in their organizations.

The BMI course is a semester-long elective that includes in-class instruction modules at the beginning and end of the course. Each module lasts 2 days, and class sizes range from 15 to 30 participants. Day 1 draws from Osterwalder and Pigneur (2010), supplemented with discussion on the importance of creating strong narratives about a company’s BM.[INSERT FOOTNOTE 1 HERE] Day 2 introduces, demonstrates, and has students work with two strategic foresight (SF) tools, the trend audit and stress test, to identify weaknesses in current business models. The principles of innovating

BM complete the first in-class module. Days 3 and 4 are designed to expand the innovation toolbox and identify creative solutions for BM challenges. Here, we use additional SF tools, namely science fiction, design thinking, and forecasting future markets, to explain how to create quantitative estimates about market sizes in the future. On the last day, students learn how to evaluate BMs, work with dual business models, and prepare for implementation. Figure 1 below shows the structure of the course.

On the first day of in-class teaching, the class is divided into groups of 4–6 students and each student is asked to describe their employing organizations’ business model to the group. Students then select one group member’s organization to serve as the live case that they will work on for the duration of the semester. Groups are checked to avoid that colleagues or students from competitor organizations are together and to ensure a diversity of backgrounds. We ensure that the cases selected are neither those of CEOs – as they are already in highly bounded role – nor are those of start-up organizations, because the cognitive bounds may not have been sufficiently hardened. The case “owner” serves as an authority and proxy for application simulation, and the information she or he provides forms the platform for applying the methods and tools that the group members learn throughout the course. It is within this particularly challenging environment of student-owned live cases that the strategic foresight methods must overcome cognitive bounds, break away from path dependency, and unstick cognitive inertia.

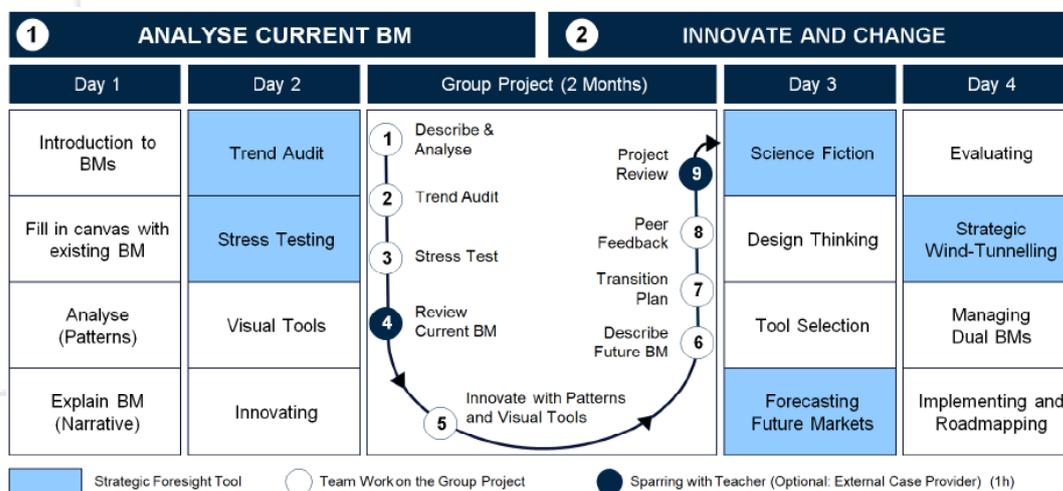


Figure 1: Course structure

The group must produce a report of no more than fifteen pages that consists of three parts: (1) A description and stress test of the current business model, (2) proposed innovations to the business model, and (3) a transition plan for implementation. Students are provided with a template to guide the project work for the next two months. The 2-month project phase is split into 9 steps. The first three steps (describe and analyse, trend audit, and stress test) produce three outputs: (1) The current BM represented as a canvas and a narrative, (2) a list of stress factors, and (3) a stress test map. Each group's output is presented to- and reviewed by- the instructor(s) in a 1-hour session. Steps 5-7 (innovate, describe future BM, propose transition plan) occupy the students for the following 4 weeks, with each participant allocating 20-25 hours to the project.

To improve the knowledge of other students' cases and to intensify reflection on the assignment, the output from these steps is added to the first part of the project, and the whole project is subjected to a peer-feedback review in which comments and suggestions for improvement are provided by individual students based on a rubric provided by the instructors (Reinholz, 2016). The peer-feedback criteria include transparency in the description of the current BM, analysis of challenges, convincing new value proposition, consistency of new BM, feasibility of development and transition plan, clarity of report, and overall feasibility of the proposed BMI.

Following peer feedback, a final 1-hour review session with the instructors completes the project work. To intensify the learning experience of defending the new BM, we often invite colleagues of the case owner or external case providers to join the review sessions, i.e. Steps 4 and 9.

During the second two-day in-class module, an instructor delivers a "best of" presentation that consists of a compilation of elements (images) selected from across the interim reports of all groups in an attempt to "raise the bar" of the expected quality of the final reports.

While instruction is concentrated during the four teaching days, the main learning outcomes—and the knowledge transfer in particular—are realized through the group project. We have observed that the success

of the project depends heavily on the suitability of the live case. The main two criteria for choosing a case are that it has a medium level of complexity and that it is possible to identify a clear value proposition and customer(s). We prefer to include both for-profit and non-profit/governmental cases to broaden in-class discussions and deepen the learning outcomes. Students are, as a consequence, better prepared to use the methods and tools in different contexts and can comprehensively reflect on their application and usefulness. Below, we elaborate on the five strategic foresight methods that are taught in the class and explain how they are applied for BMI.

Five Strategic Foresight Tools Applied to Business Modelling

The five strategic foresight tools that we use are based on our experiences as instructors, and play a crucial role in expanding the solution space that participants consider when innovating their business models. Collectively, they aim to overcome the cognitive bounds associated with the failure to change BMs—the rationality, plasticity, and shaping-ability bounds (see Table 1).

Trend audit (assessment)

To execute the trend audit, groups are tasked to identify 3-5 trends that are driving change in the larger industry or sector in which the case is situated. The challenge here is to look beyond the scope of the current business, by anticipating 3 or more years into the future. After a brainstorming session to create a list of candidate trends, those that are deemed particularly important to the business model are selected and subjected to a "trend audit" that consists of four questions (Gordon, 2010):

- What are the driving forces that create and sustain the trend?
- What enables, catalyses, or supports the drivers of the trend?
- What inadvertently stands in the way of the trend, slowing it down?
- What or who is working to actively block the trend?

The trend of digitalisation, for example, can be thought of as driven by the human need for social connection and

pressures to increase productivity; these may encounter friction in the form of legacy software and dominant products in the market. Counter-cultural movements to urge people offline also work against this trend.

The trend audit establishes an understanding of the complexity inherent in the larger contextual environment in which the case, in a first attempt to persuade students to embrace a wider perspective on external forces that will shape the BM in the future. The trend audit provides the material and shared language to construct and make explicit hypothetical statements about futures (Rowland and Spaniol, 2015).

Business model stress testing

To stress-test the current business model, we apply an approach loosely based on Haaker, Bouwman, Janssen, and de Reuver (2017) that assesses a BM's robustness in the medium term (5 years) and in the long term (10 years). Groups are tasked to assess how each building block would perform under the conditions of the trends (stress factors) that they identified as being salient to their case. Students assign colours to BM elements that reflect the viability, or the "level of stress", that affects the BM elements. This results in a visualization that shows how the current, well-functioning business model will increasingly fail as trends unfold their disruptive force (see Figure 2 below).

The output from the stress test creates a sense of urgency, which, in a real situation, is imperative to create buy-in among upper management and other relevant stakeholders. In class, it allows group members to consolidate complex discussions about the robustness of their existing BM. It also facilitates a focused

discussion on how the pending failure of the BM can be linked to individual building blocks.

Science fiction

In this step, we use science fiction vignettes, images, and states of the future to help students think through radically different frames. They may be dystopian or utopian in nature and often involve an exaggeration of current technological capabilities. These images challenge the status quo and current mental models by inciting fear or optimism, and reframe our conceptualization of "how things work" (Peper, 2017).

In class, examples of technological innovation sparked by science fiction novels are given, and students are lectured on the power of storytelling and imagining oneself in a distant reality. A group exercise is undertaken to create a business model for a problem described for a fictitious future society. We use passages from science fiction novels and invite students to prototype a business model for a future use case (Schwarz and Liebl, 2013).

Science fictioning broadens students' horizons and search scope, allowing them to move outside existing mental frames, and lays the foundation for non-incremental innovation. The utility of a mobile phone that allows the captain of the Star Trek ship *Enterprise* to stay in contact with his crew when he is on another planet is obvious to fans. In organizations, these science-fiction inspired visions can play the role of powerful catalysts that consolidate and refines BMI initiatives across technical and marketing units, as well as top management. In other words, science fiction, strategic foresight, and BMI can be brought into

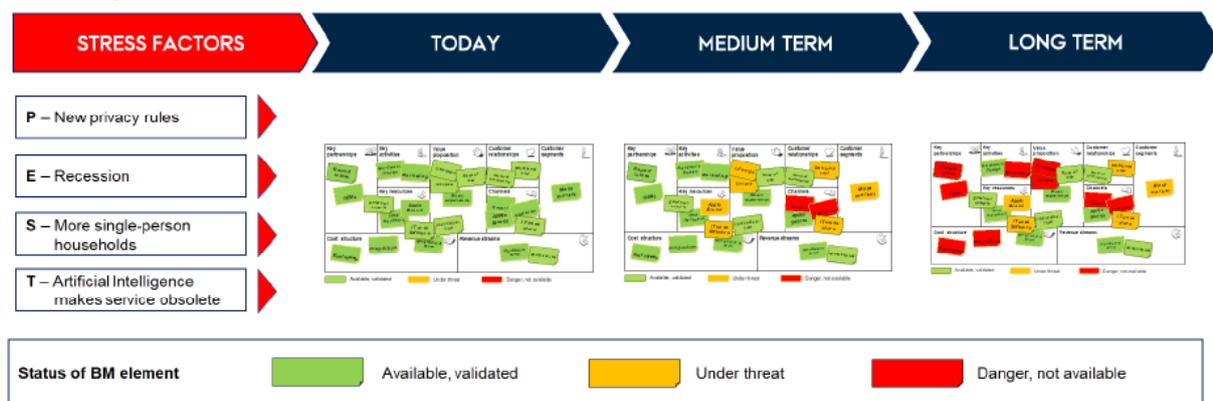
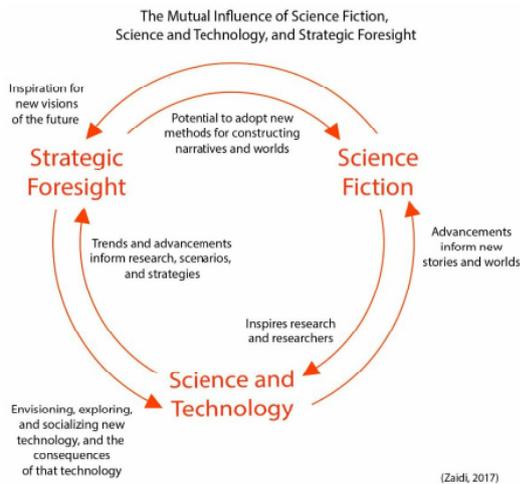


Figure 2: Exemplary output of the BM stress testing

a mutually reinforcing relationship through this technique (Zaidi, 2017).



Forecasting future markets

The forecasting future markets block teaches students how to create quantitative estimates about market sizes. The groups are tasked with forecasting the commercial viability of business models by first creating a value formula and estimating the values for the variables. We explain different approaches to estimate calculations (e.g. Fermi's approximate calculation of the number of piano tuners in Chicago) and various ways of running estimate calculations (top-down, bottom-up, and explicit estimates). We aggregate these calculations using the principle of triangulation to produce to a future market forecast. In the classroom, groups work to forecast the market for a fictitious product before its launch in Europe, after which the groups compare their market potential estimates (in number of sold units). As a result, they are equipped with a method for making assumptions and forecasting the future market potential of their project's new business model.

BM Wind-Tunnelling

Strategic wind-tunnelling builds upon, but goes beyond, the stress test. The metaphor comes from the testing of plane designs in controlled environments—in front of a large fan—where wind and other weather conditions are blasted at a prototype until the wings fall off or other structural failures occur.

Wind-tunnelling requires a set of scenarios, each of which describes a different future state of the operating environment. It is important that the scenarios

cover all plausible futures and that they are sufficiently distinct from the status quo without becoming unrealistic (van der Heijden, 2005). Again, we leverage outputs from the trend audit and identify branching points in the trends that could result in different outcomes and implications. Different outcomes from multiple trends are combined to provide base elements from which the scenarios can be constructed (see also Van der Heijden, 1996).

Wind-tunnelling is undertaken in a role-play activity in which one advocate explains why the BM will perform well in a given scenario, and the other team members explain how and where failure might occur. This can be seen as a lean version of scenario-based business wargaming (Schwarz, Ram and Rohrbeck, 2018). This is repeated for each scenario while changing the roles of advocates and adversaries, who act as stand-ins for management, investors, and colleagues in the case organization. This process provides a time-efficient to check on the robustness of a BM under various conditions and from various perspectives.

Discussion and Conclusion

One of the major obstacles in BMI is the difficulty of breaking free from cognitive bounds due to managers' deep embeddedness in the daily life of the existing organizations and their business model logic (Gavetti, 2012). Even when managers are confronted with the task of BMI in the relatively safe environment of an MBA class, they find it difficult to move beyond obvious rationalizations. This state of cognitive lock-in, or cognitive inertia, is clearly observed by the course instructors in those students working on the cases from their own organizations. Managers' hardened cognitive frames make it difficult to evolve beyond their current business models and ideate novel business models. In real-life situations, this also prevents managers from overcoming the threefold cognitive bounds (Gavetti, 2012). One design principle of the course is the use of visualizations that can be expected to help in collaboration, but are also associated with decreased creativity and willingness to adopt new BMI ideas (Eppler and Hoffmann, 2012). We therefore also adopted a second design principle to apply strategic foresight tools where creativity and out-of-the-box thinking are particularly necessary. The impact

Tool	Purpose	Impact on Bound*			Learning Outcome
		RB	PB	SAB	
Trend audit	Increase awareness of the need to change the current business model	✓			Learn how to systematically scan the environment for changes and assess their impact on BMs
Stress testing	Assess the impact of trends on the current BM and the robustness of the new BM		✓		Learn how to use visualizations to help decision-making
Science fiction	Open students' perspective and broaden the solution scope		✓		Learn how to use mental images to induce change and motivation to move
Forecasting future market potential	Reduce anxiety related to having to develop fully-fledged business plans			✓	Learn how to develop estimates quickly and systematically enhance forecast quality
Strategic wind-tunnelling	Engage the leadership team in checking the robustness of BMs		✓	✓	Learn how to use novel tools in a decision-making arena

*RB= Rationality Bound; PB= Plasticity Bound; SAB= Shaping-Ability Bound

Table 1: Summary of Strategic Foresight Tools and Their Impact

of the SF tools on cognitive bounds and learning outcomes is summarized in Table 1.

Unlike other approaches, strategic foresight provides a toolbox of methods that can be expected to broaden the solution-search scope and offer a systematic framework for exploring distant strategic options (Gavetti and Menon, 2016; Lehr *et al.*, 2017). They complement the classic BMI tools of design thinking and the use of analogies, and are guided by instructors in the knowledge transfer process to enhance the likelihood of successful implementation. We therefore foresee the continued combination of various BMI tools with future-oriented strategizing approaches to expand the BMI horizons and cut across BMI process phases to have a bigger impact on strategy development in general (Wirtz and Daiser, 2018).

Over the years, we have also learned that groups with complex cases (e.g. regulated industries, high-tech service providers with interrelated offers, and governmental agencies) face more difficulties than groups with easier cases, such as a company that manufactures one consumer product or provides a single service. With difficult cases, executive students often need to be urged during the process or sparring sessions to

suspend their disbelief for the sake of the group and to complete the assignment, regardless of whether the actual BMI will be implemented. The challenge of overcoming mental models is aggravated by using student-owned live cases. However, we still prefer to present this challenge in the classroom rather than leaving it to the participants to attempt implementation alone when back in their organizations.

For students who are working on other students' live cases, it is important to provide space to envision and plan how implementation could happen in their own organizations. By making their anticipated difficulties explicit in plenum, students can exchange implementation ideas to which the instructor can provide guidance. At the end, instructors pose questions to the class to foster reflection for increasing the likelihood of successful implementation, such as:

- Which tools will (and will not) be attempted;
- Why (why not);
- When (and when might timing be suitable); and
- Who (and who not) to include.

For the oral exam, students are asked to start with a five-minute reflection, and many of them choose to

reflect on such implementation considerations in their organizations.

We would, however, advise teachers to reflect carefully on the feasibility of running these exercises with students who have no prior work experience. Another consideration is that our propositions might work best for smaller classes or classes where the primary teacher is supported by teaching assistants. Interim reports, sparring sessions, and clear guidelines on how to structure group reports have proven to be fundamental for success of the course—because not only the tools and techniques are foreign, but also because students appreciate the attention and the instructor can address any problems the students face. Additionally, the in-class facilitation skills of the instructor(s) are important to ensuring the correct use of foresight methods (Rohrbeck, 2014; Rowland and Spaniol, 2017). Thus, we recommended this approach in settings and structures where instructor(s) are acquainted with strategic foresight methods and have the opportunity to work closely with the groups throughout the course.

Our motivation to incorporate foresight into BMI teaching stem from the experience of teaching MBA students and executives. However, what we described in this article may not be limited to this audience. Strategic foresight tools have emerged and matured in practice before their assignation by academics to the rational, evolutionary, processual, or other paradigm of strategic management, where the tools serve to mediate and discipline strategic conversations (Lehr *et al.*, 2017). Our aspiration is not only that learning takes place in the classroom, but that students put the tools to work in their organizations to create better strategies. As we move forward, we are delighted when past students return to us with their BMI success stories, which we proudly present to the newest cohort.

¹ Here we use the video of Charles Baden-Fuller, https://www.youtube.com/watch?v=_AB1s4pc48k

References

- Chesbrough, H. (2010), Business Model Innovation: Opportunities and Barriers, *Long Range Planning*, Vol. 43, No. 2, pp. 354–363.
- DaSilva, C. M. & Trkman, P. (2014), Business Model: What It Is and What It Is Not, *Long Range Planning*, Vol. 47, No. 6, pp. 379–389.
- Eppler, M. J. & Hoffmann, F. (2012), Does method matter? An experiment on collaborative business model idea generation in teams, *Innovation*, Vol. 14, No. 3, pp. 388–403.
- Garvin, D. A. (2007), Teaching executives and teaching MBAs: Reflections on the case method, *Academy of Management Learning and Education*, Vol. 6 No. 3, pp. 364–374.
- Gavetti, G. (2012) PERSPECTIVE—Toward a Behavioral Theory of Strategy, *Organization Science*, Vol. 23, No. 1, pp. 267–285.
- Gavetti, G. & Menon, A. (2016), Evolution Cum Agency: Toward a Model of Strategic Foresight, *Strategy Science*, Vol. 1, No. 3, pp. 207–233.
- Gordon, A. (2010), A DEFT Approach to Trend-Based Foresight, *Foresight*, Vol. 17, pp. 13–19.
- Günzel, F. & Holm, A. B. (2013), One Size Does Not Fit All – Understanding the Front-End and Back-End of Business Model Innovation, *International Journal of Innovation Management*, Vol. 17, No. 1, pp. 1–34.
- Haaker, T., Bouwman, H., Janssen, W., & de Reuver, M. (2017), Business model stress testing: A practical approach to test the robustness of a business model, *Futures*, Vol. 89, pp. 14–25.
- van der Heijden, K. (1996), *Scenarios: The Art of Strategic Conversation*. Chichester: John Wiley & Sons.
- Lehr, T. Lorenz, U., Willert, M., & Rohrbeck, R. (2017), Scenario-based strategizing: Advancing the applicability in strategists' teams, *Technological Forecasting and Social Change*, Vol 124, pp. 214–224
- Markides, C. & Charitou, C. D. (2004), Competing with dual business models: A contingency approach, *Academy of Management Perspectives*, Vol 18, No. 3, pp. 22–36.
- Nielsen, C., Lund, M., Montemari, M., Paolone, F., Massaro, M., & Dumay, J. (2019). *Business Models: A Research Overview*. Routledge, Oxford.
- Osterwalder, A. & Pigneur, Y. (2010), *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. New Jersey: Wiley & Sons.
- Peper, E. (2017), Why Business Leaders Need to Read More Science Fiction, *Harvard Business Review*, Online, July.
- Popper, R. (2008), How are Foresight Methods Selected?, *Foresight*, Vol. 10, No. 6, pp. 14–17.
- Reinholz, D. (2016), The assessment cycle: a model for learning through peer assessment, *Assessment & Evaluation in Higher Education*. Routledge, Vol. 41, No. 2, pp. 301–315.

- De Reuver, M., Bouwman, H. & Haaker, T. (2013), Business model roadmapping: A practical approach to come from an existing to a desired business model, *International Journal of Innovation Management*, Vol. 17, No. 1, pp. 1-18.
- Rhisiart, M., Miller, R. & Brooks, S. (2015), Learning to use the future: developing foresight capabilities through scenario processes, *Technological Forecasting and Social Change*, Vol. 101, pp. 124-133.
- Rohrbeck, R. (2014), Trend Scanning, Scouting and Foresight Techniques, in Gassmann, O. & Schweitzer, F. (Eds.), *Management of the Fuzzy Front End of Innovation*. Wiesbaden: Springer, pp. 59-73.
- Rohrbeck, R., Battistella, C. & Huizingh, E. (2015), Corporate foresight: An emerging field with a rich tradition, *Technological Forecasting and Social Change*, Vol. 101, pp. 1-9
- Rowland, N. J. & Spaniol, M. J. (2015), The future multiple, *Foresight*, Vol. 17, No. 6, pp. 556-573.
- Rowland, N. J. & Spaniol, M. J. (2017), Social foundation of scenario planning, *Technological Forecasting and Social Change*, Vol. 124, pp. 6-15.
- Schwarz, J. O. & Liebl, F. (2013), Cultural products and their implications for business models: Why science fiction needs socio-cultural fiction, *Futures*, Vol. 50, pp. 66-73.
- Schwarz, J. O., Ram, C. & Rohrbeck, R. (2018), Combining scenario planning and business wargaming to better anticipate future competitive dynamics, *Futures*, Vol. 105, pp. 133-142.
- Sosna, M., Treviño-Rodríguez, R. N. & Velamuri, S. R. (2010), Business Model Innovation through Trial-and-Error Learning: The Naturhouse Case, *Long Range Planning*, Vol. 43, No. 2-3, pp. 383-407.
- Spaniol, M. J. & Rowland, N. J. (2019), Defining scenario, *Futures & Foresight Science*, Vol. 1, No. 1, e3.
- Tripsas, M. & Gavetti, G. (2000), Capabilities, cognition, and inertia: Evidence from digital marketing, *Strategic Management Journal*, Vol. 21, No. 10-11, pp. 1147-1161.
- Vecchiato, R. (2012), Environmental uncertainty , foresight and strategic decision making : An integrated study, *Technological Forecasting & Social Change*, Vol. 79, No. 3, pp. 436-447.
- Voros, J. (2003), A generic foresight process framework, *Foresight*, Vol. 5 No. 3, pp. 10-21.
- Wirtz, B. W. & Daiser, P. (2018), Business Model Innovation Processes: A Systematic Literature Review, *Journal of Business Models*, 6(1), pp. 40-58.
- Zaidi, L. (2017), *Building Brave New Worlds: Science Fiction and Transition Design*. OCAD University.

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Squaring the Circle: Business Model Teaching in Large Classroom Settings

Daniel Szopinski¹

Abstract

Business model innovation is typically taught in small seminars at universities. Teaching this intrinsically task-oriented subject to a large number of students is a challenge. In this paper we address this challenge by proposing an experiential and interactive approach to teaching business models in a large classroom setting.

Keywords: Business model teaching, peer assessment, experiential learning

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Introduction

The business model concept has garnered great interest not only in research and practice (Massa *et al.*, 2017) but recently also in education and, as such, forms an integral part of university curricula. Business model innovation (BMI) courses at universities are typically delivered in the form of small seminars, which provide a learning environment more suitable to student participation and the interactive teaching required for the development of business models. Indeed, business model development is seen as a highly creative as well as a collaborative task (Eppler *et al.*, 2011). Teaching BMI should therefore not only convey the business model concept itself, but also how to think and act as an entrepreneur. Creativity forms an important prerequisite for this (Hamidi *et al.*, 2008). To teach BMI in large classroom settings can therefore present a challenge due to the high number of students (e.g., courses with more than 200 students). Specifically, the following three challenges arise for university lecturers while teaching BMI in a large classroom setting:

Challenge 1: How to develop and implement a university course on BMI in a large classroom setting?

To recreate an interactive, collaborative, and experience-driven learning environment in a large classroom setting is inherently difficult, at least if approached with traditional teaching methods. We were determined, however, to tackle this challenge as we did not want to restrict the number of students able to enroll on that course.

Challenge 2: How to enable students in large classroom settings to apply BMI methods?

For students it is important to experience the challenges posed by BMI. Hence, incorporating experiential knowledge (Bojovic *et al.*, 2018) and learning, by enabling students to apply BMI methods, was one of the main objectives for developing this teaching approach.

Challenge 3: How can students in large classroom settings present their business models and receive concrete feedback?

Receiving feedback early and often is essential for validating business models. Another key objective for the

teaching approach was therefore to enable students to give and receive constructive feedback on each other's business models.

This paper describes a teaching approach developed to address these challenges and which has been successfully piloted in a large classroom setting. In addition to traditional lectures, the newly developed didactic approach comprises an innovative video-based peer feedback approach which draws on experiential learning (Kolb 1984). Students work collaboratively in small teams, with each team independently undertaking three consecutive assignments, involving the development of business models. By providing an opportunity "learning by doing" (Hogan and Warrenfeltz, 2003) this teaching approach seeks to close the so-called knowing-doing gap (Pfeffer and Sutton, 2008). Here, *knowing* refers to the knowledge that students acquire in the lectures about BMI, and *doing* to the application of that knowledge in different, consecutive assignments. Altogether more than 500 students in 170 teams have experienced this teaching approach. This paper shows that business model teaching is feasible in a large classroom setting and describes the potential for it being taught – at least partly – in an interactive way. As Peter Drucker once said about entrepreneurship education: "The entrepreneurial mystique? It's not magic, it's not mysterious, and it has nothing to do with the genes. It's a discipline. And, like any discipline, it can be learned" (Drucker, 1985, p. 18). It is in this spirit that this paper seeks to contribute a novel approach to business model teaching to help embed the still comparatively young concept of business models in university education.

A Business Model Teaching Approach in Large Class Room Settings

Learning objectives and outcomes

The purpose of the developed teaching approach is to enable students to systematically analyze and innovate business models. Therefore, the teaching approach aims to impart knowledge at mainly three different levels: (1) factual and conceptual knowledge (i.e., students' knowledge of BMI), (2) procedural knowledge (i.e., students can apply methods for BMI), and (3) transferable knowledge (i.e., students can generalize

from context-specific knowledge and apply this to new contexts). Particularly (1) and (2) are levels of knowledge which originate in education research and are found to be conducive to developing learning objectives of strategy courses (Grant and Baden-Fuller, 2018). In addition to the three main different levels of knowledge, the teaching approach partly includes further levels of knowledge, albeit to a much lesser extent. For example, it imparts metacognitive knowledge by training students to not become too attached to their first business model idea, and affective knowledge by providing guidelines for giving and receiving feedback on business models that is not emotion-led or emotionally charged.

The implementation of these learning objectives for students “is much more than knowing the theories and the analytical tools of the strategy theorists” (Grant and Baden-Fuller, 2018, p. 332) and also applies to business model competency and its teaching. Grant and Baden-Fuller (2018) identify five core skills required for strategy-making: judgment, insight, intuition, creativity, and social skills. Bearing in mind that this teaching approach is designed for an undergraduate course, the following skills are complementary to the learning objectives described above and at a level that is appropriate for an undergraduate course. This means that, applied to this particular context, students should be empowered to develop the following skills: to evaluate business models (judgment), to gain a deep understanding of the potential customers’ pains and gains; to identify the underlying forces that drive the viability of a business model (insight); to retrieve experiences (for example from previous assignments) to be able to assess which parts of a business model did or did not work (intuition); to generate innovative business models (creativity); and to communicate a business model to others, as well as listen to and understand someone else’s business model (social skills). Our teaching approach seeks to create a basis for students to acquire these skills, bearing in mind their different levels of knowledge.

The proposed teaching approach aims to enable the following learning outcomes based on the previously defined learning objectives: Students will be able to (1.1) explain what the business model concept is, and why and when it is needed, (1.2) explain

why hypotheses/discovery-driven planning is often more effective than a capital value-based approach in the development of innovative business models, (2.1) apply the methods for BMI taught in the course, individually and in a team, (2.2) decide in a given case which of the methods taught in the course should be applied, and in which order, (3.1) confidently present the central characteristics and limitations of a business model they developed, and (3.2) present their own assessment of the quality of a business model in a discussion.

Experiential learning and peer feedback

The teaching approach developed in response to these challenges implements the aforementioned learning objectives. The learning outcomes are facilitated by means of a didactic approach that involves experiential learning and peer feedback. Experiential learning is “the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 41) and entails four distinct, consecutive and recursive steps: Experiencing, reflecting, generalising, and applying. In a nutshell, and oversimplifying a bit, experiential learning emphasizes process over outcomes, continuous (re)creation of learning over one-time learning, includes both objective and subjective learning experiences, and understands learning as a prerequisite to understanding the nature of knowledge (and vice versa) (Kolb, 1984; Kolb and Kolb, 2005). By using elements of experiential learning, the teaching approach aims to impart to students how to cope with uncertainty and changing environments (Hogan and Warrenfeltz, 2003; Kolb and Kolb, 2005) – just like managers who have to learn primarily through trial and error (Hogan and Warrenfeltz, 2003; Bojovic *et al.*, 2018) – and respond to new information and feedback effectively (Hogan and Warrenfeltz, 2003; Fust *et al.*, 2018).

To recreate a dynamic learning environment, the teaching approach also draws on the concept of peer feedback which is defined as “a communication process through which learners enter into dialogues related to performance and standards” (Liu and Carless, 2006, p. 280). The approach explicitly leverages peer feedback among learners in the form of detailed comments by peers (Liu and Carless, 2006). Peer feedback thus offers greater potential for learning

by enabling students to (1) actively manage their own learnings, (2) reflect on their learning through giving and receiving internal and external feedback, (3) improve their self-assessment, (4) engage in the process of understanding the subject matter, (5) get more feedback from different people in a short time, and (6) extend their learning by being encouraged to communicate to others what they know or understand (Liu and Carless, 2006).

In order to contextualize experiential learning and peer feedback for BMI, the developed teaching approach consists of weekly lectures and three different, consecutive assignments (see Figure 1).

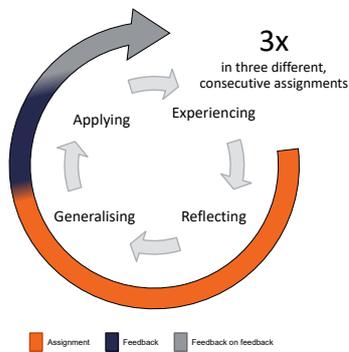


Figure 1: Experiential learning for business model teaching (based on Kolb, 1984).

Weekly lectures

Weekly lectures form the basis of the teaching content and consist of seven chapters delivered in eleven lectures, imparting factual, conceptual as well as procedural knowledge on BMI. At the beginning of each lecture students are provided with a recap from the previous lecture and with the goals of the current lecture. Afterwards the content is presented (for an overview see Table 1). At the end of each lecture students are given a summary and a list of mandatory and optional readings. The weekly lectures are supplemented by guest lectures that allow students to consider BMI in practice from three different perspectives: start-ups, established firms, and consultancies. The guest lectures are intended in response to the issue of “academia vs. business incongruence” describing the need for a direct dialogue between students and experienced entrepreneurs who face challenges and endure failures as part of their daily professional life (Kolb and Kolb, 2005).

Chapter	Students will know...
1 Introduction	...what this lecture is about
2 Description 2.1 Business models 2.2 Value propositions	...what a business model is and how to describe it
3 Ideation	...how to generate ideas for innovative business models
4 Evaluation and refinement 4.1 Lean innovation processes 4.2 Online experiments 4.3 Prototyping and usability 4.4 Crowdsourcing	...how to evaluate ideas and how to refine them for market entry
5 Communication	...how to convincingly communicate ideas to decision makers
6 Implementation	...how to manage software projects for implementing your ideas
7 Management	...how to manage a business model after successful market entry
Guest lectures from the relevant perspectives in business practice: start-ups, established firms, and consultancies	

Table 1: Course outline overview.

Assignments with video-based feedback from peers

In addition to the weekly lectures, experiential learning and peer feedback are combined in three different consecutive assignments (for a semester schedule see Figure 2). In these assignments students apply the methods for BMI introduced in the weekly lectures. Each assignment consists of a development phase (lasting two weeks) during which students work on their assignments (which corresponds to *experiencing* and *applying* in experiential learning), and an evaluation phase (lasting two weeks) during which students provide and receive feedback (which corresponds to *reflecting* and *generalizing* in experiential learning). In case of shorter teaching terms and depending on the general workload of students during the semester, we were able to shorten the duration of the evaluation phase (e.g., three days for feedback and two days for feedback on the feedback) without any drawbacks. The course is generally attended by students from diverse disciplinary backgrounds. Thus, students are able to

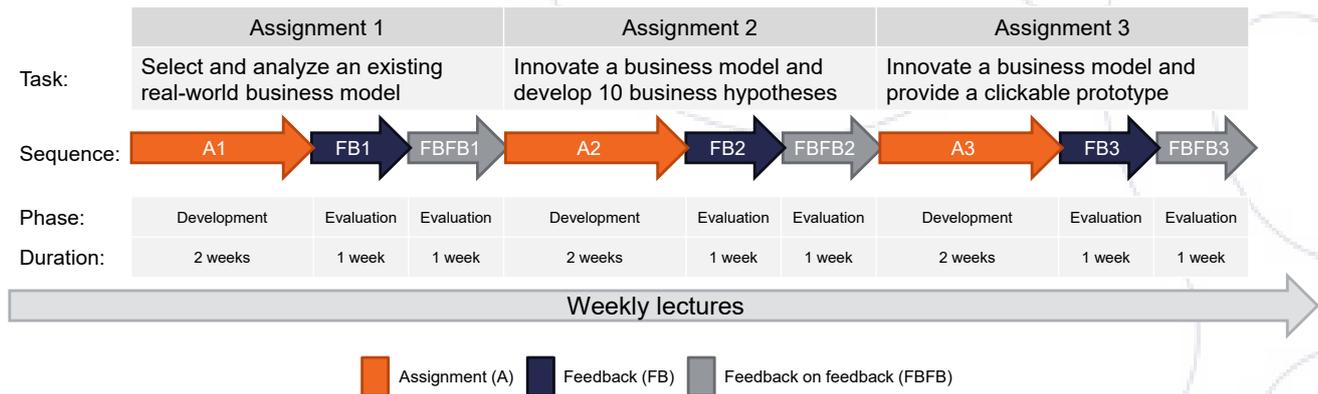


Figure 2: Semester schedule.

review, summarize, clarify, provide feedback, diagnose errors, and identify knowledge about or deviations from business model concepts from a wide range of disciplinary lenses. Through these social interactions they can build, extend and refine their business model knowledge (Lin *et al.*, 2001). Passing all three assignments is a prerequisite for exam participation and thus, students who fail to submit one or more assignments/feedback are not admitted to the exam. Students work on the assignments in teams of two or three.

In the development phase students work on assignments to learn to analyze existing and new (self-developed) business models. The concrete tasks within the three assignments differ, but always include visual and shorthand textual descriptions of a business model and a presentation given by all members of the team. Students are tasked to present their business model in about 5-10 minutes and to video record the presentation. In all three assignments the students learn how to use the Business Model Canvas (Osterwalder and Pigneur, 2010) and the Value Proposition Canvas (Osterwalder *et al.*, 2014) for the idea generation, documentation, communication and analysis of business models.

In assignment 1, the teams select and analyze an existing real-world business model of their choice. This business model should be digital, meaning that a digital component enables the implementation of the business model, for example through a website such as the AirBnB platform, or a mobile app such as WhatsApp messenger. In assignment 2, the teams innovate that particular business model (i.e., revise the business model through new, creative business models). In this way, students generate business models with

different approaches (e.g., business model patterns by Gassmann *et al.* (2014)). Afterwards, each team selects its best idea for which they identify and prioritize the ten most crucial business hypotheses. In assignment 3, the teams revise their innovated business model again and additionally develop a clickable prototype. Without coding an entire mobile app or website, students can simulate the digital component of their business model with a clickable prototype using, customizing, and linking predefined sketches and mockups. Clickable prototypes allow to understand the most important functions and demonstrate the general look and feel of a mobile app or website. This makes it possible to test business models (e.g., through customer interviews) and reduce the time needed to build, measure, and learn something about business models (Blank, 2013; Ries, 2011).

The evaluation of the assignments consists of two steps. Whereas in step one students mutually provide feedback on the assignments of other teams, in step two, teams who have received that feedback provide feedback on that feedback (for an overview of the assignment procedure see Figure 3). For each peer feedback the teaching approach is implemented in a formative, anonymous (strictly speaking single-blind, as the video presentation reveals the student's faces, but not their names or study programs), and asynchronous way which allows the students to take on multiple roles (i.e., that of receiving and providing feedback) in addition to their conventional role as learner (Lin *et al.*, 2001). Providing feedback requires students to reflect on their individual as well as their collective contribution and at the same time gives each individual student – as well as the whole cohort of students – a certain degree of responsibility.

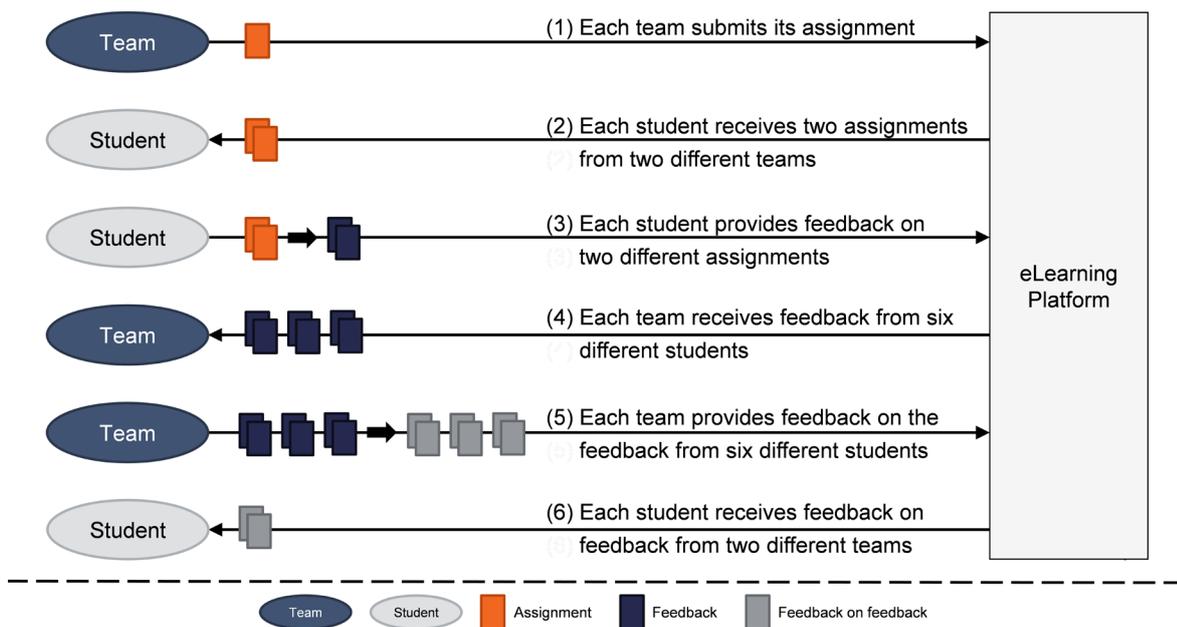


Figure 3: The process of an assignment which is processed three times.

This reflection allows for deeper student learning to take place (VanSchenk Hof *et al.*, 2018). Modelled on the procedure of academic conferences and journals, students are randomly assigned to the teams they have to evaluate (Lin *et al.*, 2001).

In a first evaluation step students provide and receive feedback to increase their knowledge of, and competence in assessing, three different aspects: (1) content (e.g., is the business model understandable?), (2) method (e.g., is the Business Model Canvas applied correctly?), and (3) presentation style (e.g., is the language clear and the slides are not just read out?). In this way, students learn to evaluate business models along criteria such as creativity (i.e., novelty and usefulness), potential popularity, feasibility, customer’s purchase interest of the value proposition, validity of business hypotheses and the quality of how teams convey their business model and make it tangible (e.g., through visualizations and clickable prototypes). Students are given best practice guidelines and examples of high- and low-quality feedback. For each of the three different levels the teams are rated numerically and with a shorthand textual comment. Moreover, to encourage students to provide constructive feedback, those who are among the 25% best rated teams receive a bonus in form of an extra point for the exam (Lin *et al.*, 2001).

The feedback is sent back to the teams who can use the feedback to learn what worked well and what did not work well and use it to revise the team’s business models in the next assignment.

In a second evaluation step, students provide and receive feedback on the feedback they have provided to assess how effective and helpful their feedback was. This is done with an overall rating of the feedback, consisting of a mandatory numerical rating and an optional shorthand textual comment. This allows students to learn how to provide and receive feedback and generally learn about the nature of feedback. In principle, peer feedback is suitable for different types of feedback, such as corrective feedback, reinforcing feedback, didactic feedback, and suggestive feedback (Tseng and Tsai, 2007). Introducing peer feedback takes time, as students need to adjust to the non-teacher-centered elements of the teaching approach and switch roles. Furthermore, students’ perception of learning outcomes is usually contingent on the traditional role allocation of learner and teacher (Garnjost and Brown, 2018). The structure of the development and evaluation phase should therefore help students to get used to these didactic concepts.

In addition to a detailed introduction on how to provide helpful feedback, the university lecturers intervene

when outliers are identified, based on the feedback to the feedback as well as a review of randomly selected feedbacks. After each evaluation step, the university lecturers verify a sample of the feedback given and select examples of high and low quality that are anonymized before they are presented and discussed in the lecture.

Digital tools

Digital tools¹ are necessary for the implementation and scalability of the teaching approach and student support. The digital tools are intended to meet the “technology challenge” which refers to the need for recognizing and applying digital tools in entrepreneurship education (Kuratko, 2005).

To make it easier to visualize their business models and the collaboration within the teams, each team is given its own working space in a digital whiteboard application called “RealtimeBoard”². This is a marked-leading digital whiteboard application currently used by over 2 million users worldwide in small and large companies (e.g., Netflix and Cisco).

To record their presentations, teams use PowerPoint as part of Microsoft’s “Office 365 Education”, which is a user-friendly feature to video record presentations, and usually available for free to universities. PowerPoint-templates have proven to be useful and are made available to students for their assignments. They provide a rough structure and ensure that all presentations remain comprehensible for undergraduates. It is important to clearly explain to students that the task is not about producing a professional video with fancy camera angles and effects, but aimed at delivering a short and concise presentation to help them effectively communicate their business models.

Furthermore, the prototyping application “Marvel”³ is used to support students in assignment 3 to quickly and efficiently develop a clickable prototype. Here, clear statements about the scope (e.g., number of screens) of the prototype have proven to be useful. Otherwise,

¹ For an overview of software-based business model development tools see Szopinski *et al.* (2019).

² The software provider of “RealtimeBoard” grants free licenses for educational institutions at <https://realtimeboard.com/education/>.

³ The software provider of “Marvel” offers a free version, the functionality of which is sufficient for the development of a clickable prototype at <https://marvelapp.com/>.

some students may lose themselves in the technical implementation. It is important to explain to students that it is not about creating a perfect prototype, but one with which they can test their business models.

Finally, communication with the students is implemented via a university eLearningPlatform on which students can access guidelines and constantly updated FAQs for each digital tool. The eLearningPlatform also provides lecture slides, task descriptions for the assignments, a glossary, the course schedule as well as a “question box” for students to ask questions to university lecturers outside of contact time.

Discussion and conclusion

The main conclusion was that we were able to successfully meet all the challenges set out at the beginning. Although the number of students is unusual for a BMI course (more than 200 per course), students developed creative as well as widely differing business models and worked on them with great interest (for examples see Figure 4). Also, students really took their role as feedback providers, giving detailed and constructive feedback on the presentations. Another advantage is that, apart from the ideas they developed themselves, students assessed at least six completely different business models developed by other teams. Furthermore, both the digital whiteboard application and the development of the clickable prototype were experienced as helpful, including by students from study programs with little or no IT-focus.

To enable us to reflect on the application and derive tips for further improving business model teaching, we collected feedback from the course evaluation. This included students pointing out that they find it difficult to evaluate business models given that there is not one ideal business model. This not only applies to BMI courses, but also to courses in entrepreneurship (Kuratko, 2005) and strategy (Grant and Baden-Fuller, 2018) more generally. Crucially, for this kind of course and when linked with the video-based peer feedback, being able to cultivate a non-threatening course climate and a collaborative atmosphere (Lin *et al.*, 2001; Liu and Carless, 2006) is perceived as an important prerequisite by students so they can critically and openly discuss business models amongst each other. Another feedback from the course evaluation concerns the

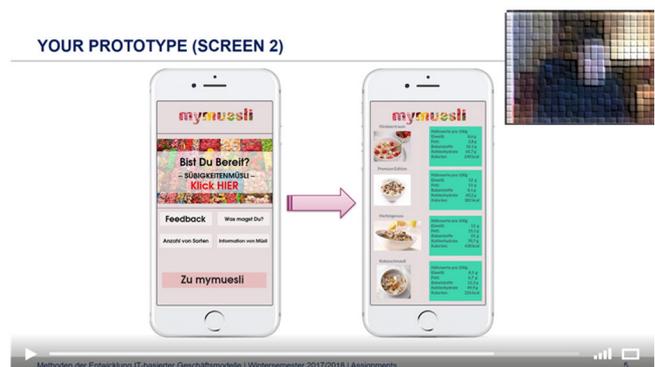
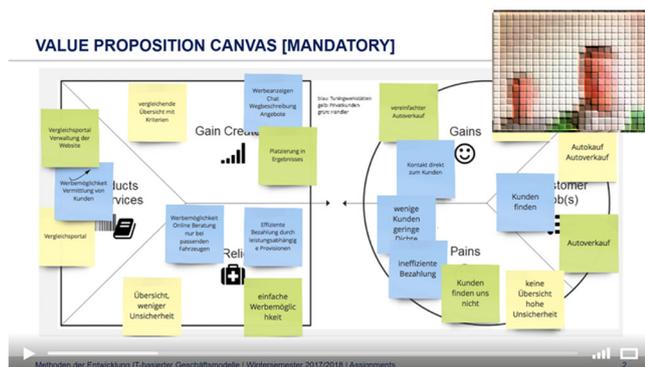
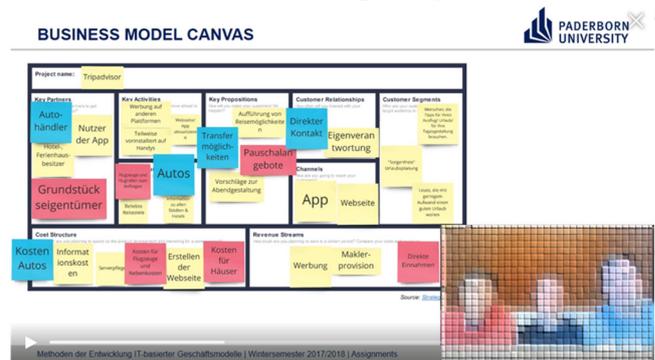


Figure 4: Examples from the video presentations.

allocation of students into teams. In the first year, in order to foster interdisciplinary collaboration within the teams, students were randomly allocated to teams. This was changed in the second year, when one third of the students were asked to randomly assign themselves to a team, and the others formed and registered teams of their own. Furthermore, especially at the beginning of the first assignment, students often doubt that other students – as opposed to teachers – can provide valuable feedback. Here it helps to describe the feedback process in full and to take the students' concerns seriously (VanSchenk Hof *et al.*, 2018).

With this experience report we aim to make a contribution to business model teaching, in particular where BMI is to be taught in a large classroom setting. We would also like to demonstrate that the assignments and the video-based peer feedback are experiential in that they allow students to directly apply methods for BMI and provide them with concrete feedback on their own business models. With our teaching approach we seek to document and share our experience and thereby promote the teaching of BMI in universities.

This teaching approach could be further (and continuously) developed in the following ways: it could be

evaluated through higher education didactic research, and extended by introducing new insights from BMI research. For example, university lecturers may extend the teaching approach through self-regulated learning. This didactic concept would enable students to make conscious, informed, and independent decisions about their personal learning objectives and outcomes. This is suitable for university lecturers who have students with a high affinity for entrepreneurship and prefer to monitor, adjust, and control their learning activities themselves (e.g., Fust *et al.*, 2018). Additionally, university lecturers may refine the video-based peer feedback, for example, through social video annotation as is commonly used in teacher training (e.g., Rich and Hannafin, 2008). Here different students can provide feedback on the same video presentation and relate to each other's feedback. Furthermore, videos are not evaluated as a whole, rather, different students can select multiple portions of a video presentation and formulate feedback to these portions in written or spoken form. Finally, given the rate of progress of business model research, the question arises which new insights to integrate into university curricula, and the timeliness and manner of their integration. Our teaching approach makes a contribution to BMI education in universities, thus giving a growing number of students the opportunity to learn about and experience BMI.

References

- Blank, S. (2013), "Why the lean start-up changes everything", *Harvard Business Review*, Vol. 91, No. 5, pp. 63-72.
- Bojovic, N., Genet, C. and Sabatier, V. (2018), "Learning, signaling, and convincing. The role of experimentation in the business modeling process", *Long Range Planning*, Vol. 51, No. 1, pp. 141-157.
- Drucker, P.F. (1985), *Innovation and entrepreneurship*, Harper & Row, New York, New York, USA.
- Eppler, M.J., Hoffmann, F. and Bresciani, S. (2011), "New business models through collaborative idea generation", *International Journal of Innovation Management*, Vol. 15, No. 6, pp. 1323-1341.
- Fust, A.P., Jenert, T. and Winkler, C. (2018), "Experiential or self-regulated learning. A critical reflection of entrepreneurial learning processes", *Entrepreneurship Research Journal*, Vol. 8, No. 2, p. 399.
- Garnjost, P. and Brown, S.M. (2018), "Undergraduate business students' perceptions of learning outcomes in problem based and faculty centered courses", *International Journal of Management Education*, Vol. 16, No. 1, pp. 121-130.
- Gassmann, O., Frankenberger, K. and Csik, M. (2014), *The business model navigator: 55 models that will revolutionise your business*, Pearson, Harlow, United Kingdom.
- Grant, R.M. and Baden-Fuller, C. (2018), "How to Develop Strategic Management Competency. Reconsidering the learning goals and knowledge requirements of the core strategy course", *Academy of Management Learning & Education*, Vol. 17, No. 3, pp. 322-338.
- Hamidi, D.Y., Wennberg, K. and Berglund, H. (2008), "Creativity in entrepreneurship education", *Journal of Small Business and Enterprise Development*, Vol. 15, No. 2, pp. 304-320.
- Hogan, R. and Warrenfeltz, R. (2003), "Educating the modern manager", *Academy of Management Learning & Education*, Vol. 2, No. 1, pp. 74-84.
- Kolb, A.Y. and Kolb, D.A. (2005), "Learning Styles and Learning Spaces. Enhancing experiential learning in higher education", *Academy of Management Learning & Education*, Vol. 4, No. 2, pp. 193-212.
- Kolb, D.A. (1984), *Experiential learning*, Prentice-Hall, Englewood Cliffs, New Jersey, USA.
- Kuratko, D.F. (2005), "The emergence of entrepreneurship education. Development, trends, and challenges", *Entrepreneurship Theory and Practice*, Vol. 29, No. 5, pp. 577-598.
- Lin, S.S.J., Liu, E.Z.F. and Yuan, S.M. (2001), "Web-based peer assessment. Feedback for students with various thinking-styles", *Journal of Computer Assisted Learning*, Vol. 17, No. 4, pp. 420-432.
- Liu, N.-F. and Carless, D. (2006), "Peer feedback. The learning element of peer assessment", *Teaching in Higher Education*, Vol. 11, No. 3, pp. 279-290.
- Massa, L., Tucci, C.L. and Afuah, A. (2017), "A critical assessment of business model research", *Academy of Management Annals*, Vol. 11, No. 1, 73-104.
- Osterwalder, A. and Pigneur, Y. (2010), *Business model generation: A handbook for visionaries, game changers, and challengers*, Wiley, Hoboken, New Jersey, USA.

Osterwalder, A., Pigneur, Y., Bernarda, G. and Smith, A. (2014), *Value Proposition Design: How to create products and services customers want*, Strategyzer series, Wiley, Wiley, Hoboken, New Jersey, USA.

Pfeffer, J. and Sutton, R.I. (2008), *The knowing-doing gap: How smart companies turn knowledge into action*, Harvard Business School Press, Boston, Massachusetts, USA.

Rich, P.J. and Hannafin, M. (2008), "Video annotation tools. Technologies to scaffold, structure, and transform teacher reflection", *Journal of Teacher Education*, Vol. 60, No. 1, pp. 52-67.

Ries, E. (2011), *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*, Crown Business, New York, New York, USA.

Szopinski, D., Schoormann, T., John, T., Knackstedt, R. and Kundisch, D. (2019), "Software tools for business model innovation. Current state and future challenges", *Electronic Markets* to appear.

Tseng, S.-C. and Tsai, C.-C. (2007), "On-line peer assessment and the role of the peer feedback. A study of high school computer course", *Computers & Education*, Vol. 49, No. 4, pp. 1161-1174.

VanSchenk Hof, M., Houseworth, M., McCord, M. and Lannin, J. (2018), "Peer evaluations within experiential pedagogy. Fairness, objectivity, retaliation safeguarding, constructive feedback, and experiential learning as part of peer assessment", *International Journal of Management Education*, Vol. 16, No. 1, pp. 92-104.

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Activate Business Model Learning Through Flipped Classroom and Backward Design

Leandro Bitetti^{1,2,*}

Abstract

The paper presents a teaching experience in a master course about business models following a pedagogical approach, which combines flipped classroom and backward design to facilitate the development of students' competencies. The results confirm this method is effective, though it requires a significant shift in both lecturers' and students' roles.

Keywords: Flipped Classroom; Backward design; Competency-based learning

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Introduction

This article aims to present a teaching experience based on the flipped classroom approach, integrated with backward design in a course on business models and business model innovation. The course is labelled “Advanced Strategic Management II”. It consists of a course of the Master of Science in Business Administration with Major in Innovation Management at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). Developing a course about business models is not a matter of selecting the right contents only. Actually, the most critical decision for instructors is about the teaching method to implement. The educational panorama has evolved a lot, with a rise of innovative models such as MOOCs, online university programs, and blended learning. The web has increased the access to information while lowering the cost to access it (Nizet *et al.*, 2016). In the case of the business model subject, the web provides academic online courses for free or through a relatively small fee via online learning platforms like Coursera, edX, and FutureLearn among others. In the same platforms, students can enrol in full business model online programs offered by well-known universities. There is also an increase in online courses given by professionals and consulting firms. In this fiercely competing panorama, higher education may be asked to reconfigure its role from an exclusive place of knowledge transfer to a facilitator role, consistently with the competency-based learning (Burke, 1989; Tardif, 2006). Given that the information is widely distributed, lecturers may be suggested to use the time of the classroom for practical activities, while leaving out-of-class the knowledge acquisition, through videos, readings, etc. The latter is the core idea of the flipped classroom approach.

Following the competence-based perspective, the flipped classroom is an assembly of several educational practices under the approach of active learning (Akçayir and Akçayir, 2018; Bergmann and Sams, 2012; Cecchinato and Papa, 2016). Bonwell and Eison (1991: 19) define active learning as any teaching methodology, which “involves students doing things and thinking about the things they are doing”. In other words, students are directly active in their learning process. Active learning fosters students’ performance as the synthesis of 1’200 meta-analyses by Hattie (2015: 80) reveals. Many of the highest ranked are principles of the

flipped classroom approach, such as “classroom discussion”, “reciprocal teaching”, “feedback”, “problem-solving teaching”, “interactive video methods”, and “small group learning”. Six decades earlier, Dale (1954) revised its “Cone of Learning”, which already showed how people remember more by practicing than by reading or by listening. The latter does not mean that educators should stop asking students to read, but a mix between theory acquisition and practice contributes solving the knowing-doing gap (Pfeffer and Sutton, 2000).

The pedagogical approach presented in this article consists in the combination of flipped classroom and the “backward design” (Wiggins and McTighe, 1998), which is a consistent method with flipped classroom (Hurtubise *et al.*, 2015). The goal of the study is to assess whether the approach is an appropriate methodology to teach and learn business models and business model innovation. The rationale behind the study is supported by the importance for entrepreneurs and managers to develop competencies related to business models. In fact, Zott and Amit (2010) explain that “business model thinking” has been an important priority that contributed to Inditex corporate success. At the same time, “thinking in terms of business model” has been reported as one major challenge when dealing with the ideation of new business models (Frankenberger *et al.*, 2013). An educational program that aims to train future managers or entrepreneurs should be aware that business model related competencies are important but difficult to build. For this reason, teaching theoretical aspects of business models and business model innovation only is not sufficient. Schneckenberg *et al.* (2017) assess business model innovation as a process where decision-makers need to deal with uncertainty.

Approach

This section presents how the approach implemented applies these two models, after providing the theoretical background of both briefly.

The flipped classroom

The basic idea of the flipped classroom is essentially an overturning of the educational logic. Lecturers move before the class the acquisition of knowledge through readings, videos, audios, etc., while in class there is the practice of what learned at home through

discussion and complex problem-solving activities. These classroom activities are often done in small groups under the supervision of the lecturer who acts as a facilitator of the learning process (Bergmann and Sams, 2012; Cecchinato and Papa, 2016; Lage *et al.*, 2000). Bergmann and Sams (2012) argue that there are significant changes in both out-of-class and in-class activities. The activities performed at home are considered equal in terms of time spent, but different at a conceptual level. In fact, two main changes are introduced in class. The first is about the revision and the discussion of the activity performed at home. In the traditional classroom, lecturers go over the concepts taught the previous sessions, and grade in class the homework provided. In the flipped classroom, the revision activity becomes a validation for the lecturer of the knowledge acquired by the students at home. The second is about the amount of time provided to the practice, which allows to increase the complexity of the task and assist students in its fulfilment. In class, students benefit from the tutoring of the lecturer, and from the presence of peers (Hung, 2015). Concerning out-of-class resources, lecturers have to make a choice about the key concepts to focus on in the video, as the latter is shorter than the usual lecture. For this reason, it is imperative to understand the educational goals at the very beginning of the instructional design. The method of backward design provides operational guidance to lecturers interested in designing courses with the approach of the flipped classroom.

The backward design

The “backward instructional design model” has been coined by Wiggins and McTighe in 1998, who criticized the traditional approach in education design. The latter consists of the design of a curriculum by beginning with the selection of the topics and the reading list of the lectures. On the contrary, according to the backward design, once the lecturer identifies the core competencies students should develop, the design continues with the determination of the pieces of evidence the lecturer needs to collect in order to prove the achievement of the competencies aimed (Wiggins & McTighe, 1998). Lecturers need to select the different types of assessment (e.g. tests, quizzes, projects, etc.) to evaluate students’ learning performance. Only after these reflections, it is possible to proceed to the planning of the contents and the teaching methodologies

most consistent to contribute to the identified competencies development.

The course planning and implementation

The module of “Advanced Strategic Management II” is offered in the second semester of the first year of the Master of Science in Business Administration at SUPSI. The master program’s mission is to develop the “change agents” of tomorrow: professionals capable of managing innovation projects by understanding and answering to emerging customers’ needs, in a sustainable way through a systemic approach. The master is a consecutive part-time program conceived to allow students to gain working experience. Every year the master program enrolls 25-30 students only. The course of “Advanced Strategic Management II” is at its third edition. The pedagogical approach of the course has always been the flipped classroom. In these three editions, some changes occurred. First, the business model literature has exploded and continues to grow in these last years (Massa *et al.*, 2017) and this contributes to a continuous update of the contents, as well as the cases brought in class to practice. Second, some improvements were made in pedagogical terms. Students’ feedback highlighted the key critical aspects of the method, such as the length of the videos and the fact that they worked in groups with low interaction within the class during and after the practical activity. For these reasons, videos have been shortened, while a course blog, moderated by the lecturer, has been implemented. The blog allows students to exchange thoughts with peers and with the lecturer also after the lecture. The blog is a tool that facilitates students’ revision, by benefitting from the lecturer’s feedback.

Prior to the introduction of the course presented in this article, business models and business model innovation have been taught within the traditional classroom approach by other lecturers, always during the first year of the master program. When students arrived at the second year, they followed a practice-oriented course about innovation management. The lecturer acknowledged a lack of prerequisite competencies in terms of business modeling. Given the uncertain and complex nature of innovation projects, the present course was redesigned in order to implement a mixed approach between theory and practice. In fact, entrepreneurship education claims that theory and practice have to be

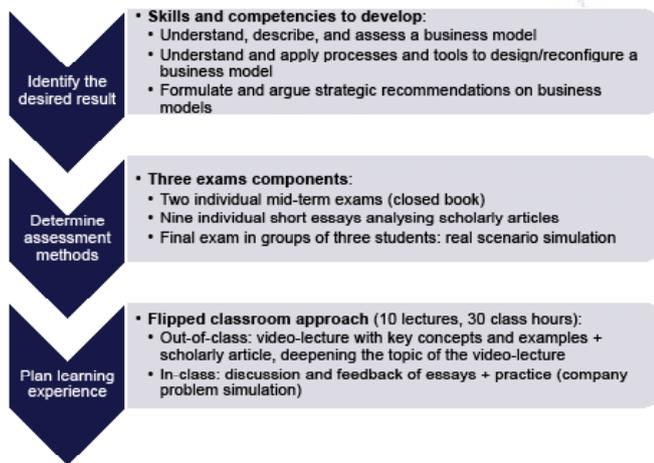


Figure 1: Backward design of the course “Advanced Strategic Management II”

seen as a continuum (Neck *et al.*, 2014). The flipped classroom has been a natural choice to allow both theory acquisition and competencies development.

The presented approach concerns the latest edition of the course. Figure 1 illustrates the three key steps of the course’s backward design following the process described by Wiggins and McTighe (1998).

The desired result of the course is to develop a holistic approach to understand the strategic issues of an organization, and to design a structured process to solve these issues. To achieve this goal consistently, “business model” is used as the unit of analysis along the entire module, as it provides a “systemic view” on firms (Massa *et al.*, 2017). In terms of business model and business model related competencies, the course aims at developing the understanding, the description and the assessment of a business model, and the understanding and the application of processes and tools for business model innovation. The ultimate goal of the course is to train students to formulate and argue strategic recommendations on business models.

Once identified the students’ competencies to develop through the course, three various types of assessment have been determined. The first is a traditional written individual exam to test the knowledge of students. In fact, in order to express a competence, a student needs to consolidate its knowledge (Abeysekera and Dawson 2015; Tardiff, 2006). As a second summative assessment, students have been asked to prepare a weekly

individual short essay concerning a brief discussion of the theoretical concepts. To achieve the course’s goals in terms of competencies, students need to understand theoretical concepts, but most importantly they need to interpret the practical implications of these concepts. The questions asked for the essays could be summed up with: “what does this theory mean in practice?”. The translation from theory to practice is not so easy to achieve. For this reason, the assessment is performed weekly, also to monitor the students’ improvement due to lecturer’s feedbacks, the feedbacks from classmates, and the practice done in class. The operationalization of this kind of assessment within the course consists of the writing of an essay of 100 words to be posted on the course’s blog at least one day before the lecture. Prior to the lecture, the lecturer comments each post with personal feedback. The third and most important assessment is about a simulation of a strategy workshop on business models. Tardif (2006) asserts that a realistic task is considered the ideal context to assess students’ competencies. This edition’s final exam is the result of a continuing fine-tuning process, involving colleagues, education experts and “business model” lecturers, also met at The Business Model Conference in 2018. Actually, a competency-based assessment is particularly challenging to design (Tardif, 2006). The first edition of the course involved a simulation in group about four competing companies that dealt with the necessity to innovate their business model. In the second edition, the exam consisted of an open-book case study performed individually, where students were asked to criticize a strategic report written by a consultant for a company. For this edition, a more “in-action” assessment has been experimented to simulate a real scenario even closer. In practice, students have been provided with a realistic situation of a company’s actual business model with some additional information (competitive analysis, innovation goals, perceived threats, etc.), and they were asked in groups of three to prepare a strategy workshop. Students had to interpret the challenge provided to them and design an activity that lasted 30 minutes. The day of the final exam the same groups of students performed their designed activities to a team of faculty members, who acted as company members. The lecturer role was to assess how students conducted the workshop. In detail, the consistency of the activity proposed and their ability to manage the activity, by applying tools learned in class, have been assessed. This assessment is



Figure 2: Structure of the course “Advanced Strategic Management II”

a sort of a big match for students, where students have to mobilize all the resources they developed along the course. In order to allow students to play a good match, a meticulous training program has to be designed.

In terms of contents, both in-class and out-of-class education have been organized, over ten lectures. The first five lectures cover basic concepts of business models and business model innovation, while the last five lectures deal with most advanced and in-depth topics. As represented in Figure 2, out-of-class activities consist of a weekly video-lecture to be watched and a scholarly article to be read and discussed before the class day. In-class activities entail the discussion of the essays written by the students about the scholarly article read, and a simulation, a role play or a real case resolution. These practical activities are often co-developed and co-conducted with local companies the author collaborates with in research projects.

All the out-of-class activities are available at the beginning of the course to students via the course platform. The video-lecture has almost always been a screencast of a personal presentation recorded personally (i.e. a record of a slides-based presentation and the lecturer's voice in background). More increasingly, videos prepared by other lecturers all over the world have been selected, through the educational platforms like Coursera, edX, FutureLearn, and other websites¹. Besides the authoritativeness of the lecturers and the higher quality of videos, this tactic also allows differentiating the point of views on the topic of “business models”.

¹ In the latest edition of the module many resources have been selected by www.businessmakeover.eu

In addition to the video, a scholarly article is provided to deepen their knowledge of the week's specific topic.

When students arrive in class, the lecture begins with the discussion of the essays. In this activity, the lecturer is less active. The lecturer's primary role is to assess how students argue their essays and actively co-consolidate the knowledge they acquired through the out-of-class activity. Voluntary students initiate the discussion by sharing their thoughts about the article and the topic in general. Then, some students are asked by the lecturer to share a particular subject of their essays, which will be useful for the following case. In fact, the goal of this section of the lecture is to deepen the theoretical basis in order to facilitate the execution of the practical activity. Then, a real case, a simulation, or a role play is launched by the lecturer or by a local firm. For example, the lecture about “Value Proposition Design” debates the “Jobs to be done theory” (see Christensen *et al.*, 2016) and the “Value Proposition Canvas” tool (Osterwalder *et al.*, 2014). In class, students dealt with a local entrepreneur who had challenges in terms of its value proposition. Students played a role-play to develop an improving value proposition, after having applied the jobs to be done theory through the value proposition canvas.

After the activity, groups are asked to prepare and publish their results on the blog. The last minutes of the lecture there is a very important wrap up conducted by the lecturer in order to clearly explain the linkages between out-of-class and in-class activities. This is an extremely useful moment for students, that allows them to never miss the entire course overview and the link between theory and practice as structured in the course program as presented in Table 1.

Lecture	Topic of the lecture	Goal of the lecture	Practical activity description
1	Introduction to innovation strategy	Understand the different forms and typologies of innovations	Discussion on innovation typologies and examples
2	Introduction on Business Models (BM)	Describe and assess a BM	Local company BM description and evaluation of key trends impact
3 - 5	Introduction on business model innovation (BMI) – basic concepts	Understand the meaning and the process of BMI	Case study on reconstructing the BMI process followed by a local company Case study to understand the BMI feasibility, sustainability, and viability
6	The complexity and uncertainty of BMI	Understand the role of BM components and architecture in BMI, its antecedents and its consequences	Case study of local companies that engaged in modular vs architectural BMI
7	Enablers and barriers of BMI	Understand key moderators of the BMI	Case study to understand how different phenomena affected the (in)success of BMI
8	Value proposition design (VPD)	Understand customers' jobs-to-be-done and design an innovative value proposition	Simulation of a focus group with consumers and VPD of a local startup (role play)
9	Digital BM	Understand how digital BM create, deliver, and capture value, and disrupt the traditional industry logics	Case study of a local multi-sided platform to understand and assess its BM and industry implications
10	Strategic responses to digital disruptors for incumbents	Understand how incumbents could react in response to the emergence of digital disruptive BM	Simulation of a decision-making process of an incumbent to react to a digital BM

Table 1: Description of the lectures' goals and relative practical activities

Key Insights

After three editions of the course, results indicate that the flipped classroom approach combined with the backward design is an effective approach to develop business model related competencies. The final assessment proved that students mastered competencies to design a business model innovation workshop, consistently with the specific situation of the case provided to them. The study assesses that these results could have been possible thanks to the pedagogical approach used. In the context of the present study, the topic of business model is quite new for students and it is also complex from a conceptual point of view. Moving before the class all the acquisition of theoretical concepts through videos and giving students the time to absorb the theory allowed them to develop business model related competencies with the right pace. In particular, students had time to understand and deepen the theory behind the business model construct. Then, in class, students

realized the complexity of a business model. Instead of “filling the boxes” of the business model of a fake company, bringing to them a real situation made them develop a critical attitude towards a company's business model. This outcome is more difficult to achieve also through only practice-oriented programs. In fact, balancing theory and practice by giving the right timing for both is essential. The flipped classroom methodology was crucial to develop an understanding of the barriers to business model innovation. Showing to the students some cognitive challenges (as in Frankenberger *et al.*, 2013) has been an important prerequisite to interview an entrepreneur and understand in practice some barriers he faced during the business model innovation process. Students understood concretely how to solve some cognitive challenges that prevent business model innovation. The study shows the same results with the value proposition design lecture. Besides knowing technically how to describe a job to be done, students understood how difficult

is that task in reality. In all this, the lecturer plays the delicate role of keeping the silver thread all along the course.

The study reports the same positive outcomes with other flipped classroom experimentations. Consistently with Akçayir and Akçayir (2018), the impact on students' performance in the assessments is particularly positive. Both knowledge-based and competency-based exams report low rates of failures (i.e. one student per year) and lasting results as confirmed by other lecturers in the subsequent courses. In terms of engagement and motivation students actively participate and engage with positive energy. When the lecture takes place, nonattendances are very rare and even the shyest students are delighted to discuss with peers. The flipped classroom environment makes the student feel comfortable to share their point of view with peers and with the lecturer (Akçayir and Akçayir, 2018).

Moreover, students' perceptions confirm the effectiveness of the approach. Every year a focus group is conducted with some voluntary students to ask them some suggestions to improve the course and specific insights about their satisfaction, in a very open and honest environment, once grades have already been communicated to them. Students feel more competent after the course. They appreciate the fact that the approach taught them a mindset and a process to be able to understand and solve complex business problems. The yearly anonymous course evaluations confirm these perceptions. In the first two editions, students gave positive feedback to the course (a mean of 3.8/4 the first year, and of 3.9/4 the second year, while the evaluation of the third year is ongoing). Further comments of the course evaluations show that students were surprised about the workload that did not increase compared to other traditional classes. Additionally, students confirmed that the flipped classroom approach constrained them to study every week. This allowed them to perform and learn better in class. Thus, they spent less time preparing for the written exams and the final assessment.

One last key insight is about lecturer personal satisfaction. This approach revolutionized how teaching activity is conceived: it is challenging but much more rewarding and stimulating.

Discussion and Conclusion

As the competitive landscape has changed, it is lecturers' responsibility to guide students to develop significant managerial competencies about business models to help companies to stay competitive (Zott and Amit, 2010), and to facilitate business model innovation processes (Frankenberger *et al.*, 2013). The flipped classroom combined with the backward design is a mindset that allows business model lecturers to enhance students' competencies. Even if it is not a brand-new approach and some convergence about advantages and pitfalls is reported in the literature, it is still difficult to warrant generalizability (Akçayir and Akçayir, 2018; Hung, 2015). Both literature and the author's experience highlight some potential issues in implementing this approach. These challenges are both in general and in the specific context of a course on business models. Here, the article discusses the main obstacles and possible solutions.

First, besides the technicalities of the backward design and of the flipped classroom, lecturers should be aware that this approach requires a shift in both lecturer's and students' roles. Along the course, it is imperative to provide frequent feedback to inform students about their development (Bergmann and Sams, 2012). The use of a blog, as in the present study, facilitates the continuous feedback process. Moreover, flipped teachers have to verify if students performed the activities expected in preparation of the lecture and if they understood the concepts. Scholarly literature provides many examples such as online quizzes, clickers, Q&A, discussion boards, etc. (Abeysekera and Dawson, 2015; Lage *et al.*, 2000; Vaughan, 2014). For those who are inspired by the present approach, but worried about the time needed, Hurtubise *et al.* (2015) suggest that the flipped classroom could be implemented also in a small educational unit as a single lecture. Technically speaking, this is possible but pay attention to the fact that students need to become gradually familiar with the approach to benefit from its advantages. In fact, students are not always used to active approaches in learning. Most lectures are still "talk and chalk" and when students shift courses and encounter a flipped lecture, confusion may arise as both lecturer's and students' roles change. Moreover, the most frequently cited pedagogical challenge reported by Akçayir and Akçayir (2018) is a poor students' preparation prior to

the lecture. For this reason, the most important task to perform at the beginning of a flipped classroom course is to explain the “rules” and the value of the approach and to be clear on its implications. A useful tactic to use is to bring other students’ feedbacks and perceptions about the approach to lower the preconceptions such as the fact that flipped classroom means increased workload.

Second, there is a general worry about the application of the flipped classroom approach in large class sizes. The master’s in business administration at SUPSI is characterized by a small number of participants. Of course, this facilitates the implementation and conduction of active learning approaches. Nevertheless, there are different effective flipped classroom experiences in courses with a high number of participants (Butt, 2014; Davies *et al.*, 2013; Hung, 2015). In these cases, it is important to carefully determine the in-class activities in order to ensure active tutoring (e.g. more lecturers in class, increased peer work, use of digital technologies, and virtual coaching). As it is easy to imagine, large class sizes increase the complexity of flipped classroom management, also because of infrastructure requirements (Akçayir and Akçayir, 2018).

Third, business model and business model innovation are complex topics. In the flipped classroom approach,

theoretical concepts are acquired by students alone. Even if the classroom activity will complement students’ knowledge, it is important for instructors to carefully select or produce the conceptual resources (e.g. videos, articles, etc.). Students claim they would benefit from more guidance at home in the flipped classroom approach (Akçayir and Akçayir, 2018). The model works if the lecturer is able to build a consistent program. In the present case, the course has been split in two: basic concepts on business model and business model innovation (i.e. lectures from 1 to 5), and advanced concepts (i.e. lectures from 6 to 10). Even if some advanced concepts would be useful to come before in time, the first lectures aimed at developing some basic skills and understanding of the topic.

To conclude, this article explains in detail an innovative teaching approach, by presenting the process followed, the adjustments done, the assessment methods, and the contents of the course. Business model instructors can adapt the approach according to their own necessities and design an effective and engaging educational program. In fact, replication of the method is possible. The article contributes to the innovation management education literature, by shedding lights on how the right mix and allocation of time between theory acquisition and practice activity fosters the development of students’ competencies.

References

- Abeysekera, L. & Dawson, P. (2015), Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research, *Higher Education Research & Development*, Vol. 34, No. 1, pp. 1-14.
- Akçayir, G. & Akçayir, M. (2018), The flipped classroom: A review of its advantages and challenges, *Computers & Education*, Vol. 126, pp. 334-345.
- Bergmann, A. & Sams, J. (2012), *Flip your Classroom: Reach every Student in every Class every Day*, International society for technology in education, New York.
- Bonwell, C. C. and Eison, J. A. (1991), *Active Learning: Creating Excitement in the Classroom*. 1991 ASHE-ERIC Higher Education Reports. ERIC Clearinghouse on Higher Education, The George Washington University, One Dupont Circle, Suite 630, Washington, DC 20036-1183.
- Burke, J.W. (1989), *Competence-based education and training*, Falmer, London.
- Butt, A. (2014), Student views on the use of a flipped classroom approach: Evidence from Australia, *Business Education & Accreditation*, Vol. 6, No. 1, 33-43.
- Cecchinato, G. and Papa, R. (2016), *Flipped Classroom: un nuovo modo di insegnare e apprendere*, De Agostini, Novara.
- Christensen, C. M., Hall, T., Dillon, K., & Duncan, D. S. (2016), *Competing Against Luck: The Story of Innovation and Customer Choice*. Harper Collins Publishers, New York.
- Dale, E. (1954), *Cone of learning, Audio-Visual Methods in Teaching* (revised), Holt, Rinehart & Winston, New York.
- Davies, R.S., Dean, D.L. and Ball, N. (2013), Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course, *Educational Technology Research and Development*, Vol. 61, No. 4, pp. 563-580.
- Frankenberger, K., Weiblen, T., Csik, M. and Gassmann, O. (2013), The 4I-framework of business model innovation: A structured view on process phases and challenges, *International journal of product development*, Vol.18, No. 3/4, pp. 249-273.
- Hattie, J. (2015), The applicability of Visible Learning to higher education. *Scholarship of Teaching and Learning in Psychology*, Vol. 1, No. 1, pp. 79-91.
- Hurtubise, L., Hall, E., Sheridan, L. and Han, H. (2015), The flipped classroom in medical education: engaging students to build competency, *Journal of Medical Education and Curricular Development*, Vol. 2, pp. 35-43.
- Hung, H. T. (2015), Flipping the classroom for English language learners to foster active learning, *Computer Assisted Language Learning*, Vol. 28, No. 1, pp. 81-96.
- Lage, M.J., Platt, G. J. and Treglia, M. (2000), Inverting the classroom: A gateway to creating an inclusive learning environment, *The Journal of Economic Education*, Vol. 31, No. 1, pp. 30-43.
- Massa, L., Tucci, C. L. and Afuah, A. (2017), A critical assessment of business model research, *Academy of Management Annals*, Vol. 11, No. 1, pp. 73-104.

Neck, H. M. Greene, O. G., Brush, C.G. (2014), Practice-based entrepreneurship education using actionable theory. In M.H. Morris (Ed.), *Annals of Entrepreneurship Education Pedagogy*, Edward Elger Publishing, Northampton, MA, pp. 3-20.

Nizet, I., Galiano, O. and Meyer, F. (2016), Vers un cadrage théorique pour comprendre la classe inversée, in Dumont, A. and Berthiaume, D. (Eds.), *La pédagogie inversée*, De Boeck Supérieur, Louvain-la-Neuve, Belgium, pp. 39-50.

Osterwalder, A., Pigneur, Y., Bernarda, G., Smith, A., (2014), *Value proposition design. How to create products and services customers want*. Wiley, Hoboken.

Pfeffer J. and Sutton, R. I. (2000), *The knowing-doing gap: How smart companies turn knowledge into action*, Harvard Business School Press, Boston.

Schneckenberg, D., Velamuri, V. K., Comberg, C., and Spieth, P. (2017), Business model innovation and decision making: uncovering mechanisms for coping with uncertainty. *R&D Management*, Vol. 47, No. 3, pp. 404-419.

Tardif, J. (2006), *L'évaluation des compétences*, La Chenelière, Montréal.

Vaughan, M. (2014), Flipping the learning: An investigation into the use of the flipped classroom model in an introductory teaching course, *Education Research and Perspectives*, Vol. 41, No. 1, pp. 25-41.

Wiggins, G. and McTighe, J. (1998), What is backward design? in *Understanding by Design*, Merrill Prentice Hall, Upper Saddle River, NJ, pp. 7-19.

Zott, C. and Amit, R. (2010), Business model design: an activity system perspective. *Long range planning*, Vol. 43, No. 2/3, pp. 216-226.

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Teaching Value Propositions as Part of the Business Model

Mika Yrjölä¹

Abstract

This paper outlines and discusses one approach for teaching business students about the role of value propositions as an important part of any organization's business model. The course-wide approach is organized around understanding, creating and capturing value. The approach involves traditional teaching, interactive discussions, group work, pitching, and peer evaluation.

Keywords: customer value proposition, business model, teaching

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Introduction

Often marketers (and marketing students) are accused of focusing too much on customers and market research and not having the concepts and skills to communicate with other functions, outline the strategic or operational implications of marketing decisions, and demonstrate the value of marketing (Klaus et al., 2014). For instance, marketers are stereotypically adept at spotting new consumer trends, but might have a hard time describing how those trends might affect the organization's strategy and business model. This might reduce marketing's influence in the organization (e.g. Day and Moorman, 2010; Whitler et al., 2018), which might lead to the organization becoming irrelevant in the eyes of its customers, missing important external threats and opportunities, and ultimately losing its ability to operate in the marketplace (Day and Moorman, 2013; Klaus et al., 2014). Conversely, organizations that are more in line with actual customer needs tend to have superior financial performance (e.g. Hortinha et al., 2011; Shah et al., 2006; Whitler et al., 2018).

Building on the above discussion, our goal in teaching marketing has been to improve future marketers' strategic and operational capabilities outside the typical narrow perspective of marketing as a function. This paper describes an approach in which students learn how to develop, evaluate and manage an organization's customer value propositions (CVPs), and how the CVP relates to the organization's business model. They also learn what implications CVPs have for the design, management and organization of the business. As Payne and Frow (2014) report in their study of over 200 companies, many practitioners use the term 'value proposition' in their everyday discussions, but less than ten per cent of these companies formally develop, communicate and leverage CVPs in their business models.

The approach outlined in this paper gives students the concepts and the language needed to interact with other members of an organization at the strategic level. This approach has successfully been applied three times in its entirety as a course (Table 1) and one part of it has been used two times as an introduction to value creation on another course. Student feedback has been very good, averaging between 4.0...4.5 /5.

Marketing Management and Organization	
Course name	
Level	Bachelor
Credits	5 ECTS
No. of students	35-45
Learning outcomes	After the course, students should be able to develop, evaluate and manage an organization's customer value propositions (CVPs). They should understand the role of the CVP in a business model and what implications CVPs have for the design, management and organization of the business.

Table 1: Course information

The rest of the paper is organized as follows. First, the approach, including its phases and contents, is outlined. Second, key insights are presented. Finally, a summary and conclusions conclude the paper.

The Approach

This approach is designed keeping in mind with the principle of streamlined teaching: the learning outcomes are communicated to the students at the start of the course, and the contents, teaching methods, evaluation criteria and learning climate of the course are in line with these outcomes (Biggs, 2003; Biggs and Tang, 2011). By reading scientific articles, discussing CVPs and business models in class and in groups, and by applying this learning through developing a concrete CVP, the students will engage in deeper level thinking and learning, such as reflecting, applying, relating and arguing (Biggs and Tang, 2011).

The approach for teaching business students about CVPs and business models consists of seven phases (Table 2). The largest part of the approach is a group assignment. Each group of 4-5 students takes two roles: first, they are the marketing team tasked with developing a new CVP for a local firm of their choosing (a presenting role), and second, they act as potential funders of the CVP (an opponent role). Local firms are chosen, because the students might find potential employers this way, and the firms' representatives

Phase	Description	Themes and concepts	Materials
1 Introduction to customer value and customer value propositions	Traditional lecture and discussion based on the articles.	- dimensions of customer value - value propositions - points of difference, points of parity	Articles: Anderson et al., 2006; Rintamäki et al., 2007
2 The understanding, creating and capturing value framework	Brief lecture + 60-minute group work + discussions of work	- business model - outside-in and inside-out thinking	Articles: Johnson et al., 2008; Yrjölä et al., 2018 Book: Day and Moorman, 2010
3 Canvassing	Students work outside the classroom	- customer profiles - CVP elements	Book: Osterwalder et al. 2014
4 Pitching	Each group presents a 5-minute pitch. Each group selects another group as their potential funding target.	- crystallizing the idea	
5 Feedback	2-3 weeks before the presentation, the students submit their work in its current form and receive short feedback from both the teacher and their opponent group.	- characteristics of a good CVP	
6 Presentation	Each group has 20 minutes to present their solution using any visuals/media they wish. After each presentation, the opponent group can use 5 minutes to ask further questions or comment on the presentation.	- communicating the CVP and business model changes to potential funders/ gatekeepers	
7 Evaluation	The students receive a short evaluation from their opponents (potential funders) and a detailed evaluation and grade from the teacher.	- fit of CVP and business model	Article: Day, 2007 Book: Day and Moorman, 2010

Table 2: Phases of the teaching approach

might be available to comment on the final solutions. Further, this gives the students a concrete case to work on (in my experience, students have found it easier to improve on a concrete case rather than start from a general/abstract case).

The first two phases introduce the key concepts, tie in CVPs with business models through value creation, and orient the students toward the group work. Especially the 60-minute group work around the understanding, creating and capturing value framework

has proved to be useful in sparking the imagination and helping the students get started on their group assignment (Table 3). When introducing the concept of CVPs to students, I have found it most useful to start from customer value and different dimensions of customer value (e.g. economic, emotional, symbolic). After students have read the first articles at home, the classroom discussion starts by discussing how a company might create economic value (e.g. low prices, discounts, value for money), how other companies might create functional value (e.g. convenient

	Creating value:		
	Understanding value: What are the concrete benefits and sacrifices? What is the CVP?	Which business model elements (e.g. resources, partnerships, and processes) support the CVP?	Capturing value: Which BM elements (e.g. cost structure, revenue model) are needed to capture value?
Economic value
Functional value
Emotional value
Symbolic value

Table 3: The understanding, creating and capturing value exercise

opening hours, easy product comparisons, fast shipping) and so on (e.g. Rintamäki et al., 2007). Then the lectures naturally move on to CVPs and business models. The second phase ends with a 60-minute group work where each group is given a value dimension (economic, functional, emotional or symbolic) and an industry (e.g. fashion, consumer electronics, retail), and the task is to answer the questions in Table 3 related to understanding, creating and capturing value. (One could also try this exercise with different value dimensions and more nuanced levels, such as metrics, but then I would advise giving the students more time. In the book by Day and Moorman, 2010, there is an excellent table that could be made into such an extended exercise: "Table 4-1 Customer value leadership strategy, organization, and metrics", p.80).

The third phase, canvassing, is about developing an initial solution for the assignment case using the book *Value Proposition Design* (Osterwalder et al. 2014; also available as an e-book). The students follow the four steps and techniques outlined in the book, but also benefit from what has been learned during phases one and two. From experience, I do not recommend using the book alone without prior theoretical knowledge as the book's simplistic and 'comic book' -like feel might leave the students confused and unmotivated.

In the fourth phase, pitching, the groups present their initial solutions in a bite-size way and then each group selects another group as their 'potential funding target'.

The pitches last 5 minutes each and consist of three points: 1) what is the chosen company?, 2) why does its CVP need to be redesigned?, and 3) what does the initial solution look like? The five-minute time limit is absolute: once the time is up, the audience applauds, and the group must make room for the next presenters. This forces the students to crystallize their work and reflects practices in business conferences. (Pedagogically, there are two benefits to the pitching exercise. It gives a chance to check how far the students are in their canvassing work and correct any major misunderstandings, and the pitching is also a control measure since it means each group should have started working on their solution.)

The fifth phase, feedback, involves the groups submitting a work-in-process version of their solution to the teacher and to their potential funders (opponents). In a week's time, they receive short written feedback from both, consisting of suggestions and ideas for improving and presenting their solution. The opponents are especially requested to think about what makes a good value proposition. For instance: is the target customer segment clearly defined and does the CVP answer its specific needs? how are the key benefits marketed and demonstrated to customers? is the proposed CVP likely to be profitable (e.g. in terms of pricing, growth, costs)? can the current business model deliver on the CVP and what changes need to be made?

During the sixth phase, each group has 20 minutes to present their solution using any visuals/media they

wish. While many groups end up having a typical PowerPoint or Prezi presentation, some groups have creatively used music, costumes and videos to engage the audience. After each presentation, the opponent group can use five minutes to ask further questions or comment on the presentation. On some occasions, I have invited the chosen firms' representatives (e.g. managers, CEOs) to comment on the final solutions. In their presentations, the students are asked to address the following questions:

- Why should the case organization develop a new CVP?
- How the new CVP has been developed?
- What are the objectives and contents of the CVP?
- How should the organization's business model be changed to be aligned with the CVP?
- Which metrics should be used to evaluate the new CVP?

Finally, the seventh phase is the evaluation of the group work. Based on the presentations, the opponent groups give short oral and written evaluations. The opponents evaluate their potential funding target using the Real-Win-Worth-it screen (R-W-W), originally developed by Dominick Schrello (Day, 2007). The R-W-W consists of three main parts with each part having sub-questions (Table 4). I have found it a good template for peer

Area of evaluation	Sub-questions
Real: Is the market and the solution real?	Does the CVP answer a real customer need? Is the target customer segment large enough? Can the organization deliver on the CVP?
Win: Is the CVP competitive and can the organization deliver on it?	Is the CVP likely to be unique and superior to competition? Can the organization sustain the CVP over time?
Worth it: Is the CVP profitable and strategically logical?	Are there opportunities for growth? Are the revenues likely to be greater than costs? Are the risks acceptable? How does the CVP fit with the organization's business model and strategy?

Table 4: Real-Win-Worth-it Screen for peer evaluation of the CVP solution (modified from Day, 2007)

evaluation, since it is simple enough, yet guiding the students' attention to key themes of the course.

Finally, the teacher evaluates the assignments on a scale from one to five. The criteria are:

1. demonstrating understanding of the relevant aspects and use of course materials (e.g. articles)
2. being able to make arguments for the chosen contents of the CVP
3. presentation of the solution (including visuals, structure, language)
4. being able to document and reflect on the development and learning process (e.g. showing how the ideas have been modified along the way, using photographs to show which ideation methods have been used)
5. demonstrating unique, critical or constructive perspectives.

In line with the principle of streamlined teaching, these criteria are communicated to the students at the start of the course (Biggs, 2003; Biggs and Tang, 2011).

Key Insights and Reflections

The described teaching approach is motivated by a goal to improve future marketers' strategic and operational capabilities outside the typical narrow perspective of marketing as a function, especially teaching business students about the role of value propositions as an important part of any organization's business model. After applying the approach three times in its entirety as a course and two times as an introduction to value creation on another course, I have made the following observations:

- working on concrete cases is good way to teach about CVPs and business models that might otherwise remain quite abstract,
- comparisons to other industries/other cases help free students' the imagination,
- sometimes it is good to restrict the amount of time to present (or the space for writing) to force the students to crystallize their arguments, and
- applying multiple teaching methods can, at best, lead to deeper levels of thinking and learning (Biggs and Tang, 2011).

Thus, the approach can provide students with business skills, intra- and interpersonal skills, and leadership skills (Hogan and Warrenfeltz, 2003).

Summary and Conclusion

The purpose of the method discussed in this paper was to teach business students about the role of the CVP in a business model and what implications CVPs have for the design, management and organization of the business. This approach was designed with the principle of streamlined teaching (Biggs, 2003; Biggs and Tang, 2011), and it consists of seven phases:

1. Introduction to customer value and customer value propositions
2. The understanding, creating and capturing value framework
3. Canvassing
4. Pitching
5. Feedback
6. Presentation
7. Evaluation

This approach has multiple advantages. Firstly, by using concrete cases and having an active opponent, the students learn that a change in a company's CVP will require changes in its business model (e.g., Johnson et al., 2008). Secondly, the students learn valuable, transferable skills such as group work, argumentation and presentation (e.g. through canvassing, pitching and giving feedback). Thirdly, the group work is especially relevant here since only rarely are CVPs and business models designed and developed alone. Fourthly, the students receive feedback often: (1) verbal feedback on their pitch, (2) short written feedback at the halfway point of the course (both from the teacher and their opponent group), (3) peer evaluation after presenting their final solution, and (4) a written evaluation from the teacher.

In terms of limitations and requirements of the approach, the class size is one important consideration – this approach is difficult to scale. In my view, the 45-student limit is a maximum, since after that the teacher's workload increases and the amount of attention each student and student group receives diminishes. Secondly, and partially related to the previous point, the teaching and interaction culture needs to be open and motivated. While creating or changing a classroom culture is difficult, I would advise the teacher to try to adopt an exploratory/ inquiry orientation to teaching (Vehviläinen, 2014). This means asking the students open questions, such as “why do you think company A's CVP works?”. Thirdly, group work as a teaching method inherently has risks in terms of freeloading, group dynamics, and making sure everyone learns something. Fourthly, this approach will only work if the students have enough knowledge of the basics and concepts of marketing and management, since the traditional lecture part is quite limited. It would be interesting to see this approach applied on an MBA course, where the managers themselves arguably have the required subject knowledge and experience and could, ideally, work on developing CVPs for their own organizations (Hogan and Warrenfeltz, 2003).

In the future, the various article and book materials can be changed, or new ones added. For instance, there exist various competing conceptualizations of customer value dimensions and the components of CVPs. The concluding presentations (phase 6) could also be made as videos. The videos, ideally, would be under ten minutes in length. The students should be instructed to upload their videos on YouTube under the privacy setting of 'unlisted', meaning that only those with the direct link will see the video and it will not appear in any search results. Then the links could be shared on an online learning platform, such as moodle, for other students to view. This is also another solution for the scalability problem, since these videos could be viewed from home.

References

- Anderson, J. C., Narus, J.A, and van Rossum, W. (2006), Customer value propositions in business markets, *Harvard Business Review*, Vol. 84 No. 3, pp. 90–9.
- Biggs, J. (2003), *Teaching for quality of learning at university* (2. edition). Suffolk, UK: Open University Press and the Society for Research into Higher Education.
- Biggs, J. and Tang, C. (2011), Teaching according to how students learn. In J. Biggs and C. Tang, *Teaching for Quality Learning at University*. Open University Press, pp.16-30.
- Day, G.S. and Moorman, C. (2010), *Strategy from the outside in: Profiting from Customer Value*. McGraw-Hill.
- Day, G.S. and Moorman, C. (2013). Regaining customer relevance: The outside-in turnaround. *Strategy & Leadership*, 41(4), 17–23.
- Day, G.S. (2007), Is it real? Can we win? Is it worth doing, *Harvard Business Review*, Vol. 85 No.12, pp. 110-120.
- Hogan R., and Warrenfeltz R., (2003), Educating the Modern Manager. *Academy of Management Learning & Education*, Vol. 2 No. 1, pp. 74-84.
- Hortinha, P., Lages, C., and Lages, L. F. (2011), The trade-off between customer and technology orientations: Impact on innovation capabilities and export performance, *Journal of International Marketing*, Vol. 19 No. 3, pp. 36–58.
- Johnson, M. W., Christensen, C. C., and Kagermann, H. (2008), Reinventing your business model, *Harvard Business Review*, Vol. 86, pp. 50-59.
- Klaus, P., Edvardsson, B., Keiningham, T. L., and Gruber, T. (2014), Getting in with the “In” crowd: how to put marketing back on the CEO’s agenda, *Journal of Service Management*, Vol. 25 No.2, pp. 195–212.
- Osterwalder, A., Pigneur, Y., Bernarda G. and Smith, A. (2014), *Value Proposition Design: How to Create Products and Services Customers Want*. John Wiley & Sons, Inc. USA.
- Payne, A., and Frow, P. (2014), Developing superior value propositions: a strategic marketing imperative. *Journal of Service Management*, Vol. 25 No. 2, pp. 213-227.
- Rintamäki, T., Kuusela, H., and Mitronen, L. (2007), Identifying competitive customer value propositions in retailing, *Managing Service Quality*, Vol. 17 No. 6, pp. 621–634.
- Shah, D., Rust, R. T., Parasuraman, A., Staelin, R., and Day, G. S. (2006), The path to customer centricity, *Journal of Service Research*, Vol. 9 No. 2, pp. 113–124.
- Vehviläinen, S. (2014), *Ohjaustyön opas. Yhteistyössä kohti toimijuutta*. Helsinki: Gaudeamus.
- Whitler, K.A., Krause, R., and Lehmann, D. R. (2018), When and How Board Members with Marketing Experience Facilitate Firm Growth, *Journal of Marketing*. Vol. 82 (September), pp. 86–105.
- Yrjölä, M., Kuusela, H., Neillimo, K., and Saarijärvi, H. (2018), Inside-out and outside-in mental models: a top executive perspective, *European Business Review*, Vol. 30 No. 5, pp. 529-553.

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The Startup Jungle: Four-dimensional Business Modelling

Ryan Rumble¹

Abstract

The *Startup Jungle* is a four-dimensional business-modelling tool used in Masters level entrepreneurship education. It combines a metaphorical jungle landscape with the dynamics of interplay to map business ecosystems, model new ones, develop implementation strategies, consider consequences, and scenario plan.

Keywords: Business model; serious game; ecosystem

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Introduction

New business model (BM) tools have rarely departed from the assumption that such tools should be flat; that is, paper-based or digital. In this paper, I argue that many of the limitations of contemporary BM tools stem from their materiality rather than their content; including their ability to represent complex interrelations, to consider implementation rather than desired outcome, and to investigate multiple scenarios. As an alternative, this article presents a four-dimensional BM tool called *The Startup Jungle*, which addresses these issues.

Flat modalities

Contemporary BM tools – canvases, cards, apps, etc. – generally model businesses in two-dimensions. There are many advantages to these kinds of methods. They have an elegant simplicity, making them easy to comprehend. They are also practical to transport and reproduce. However, it is unclear whether this two-dimensional straightforwardness is ideal in all business modelling situations.

Our reliance on two-dimensional learning materials is being questioned both within (Rumble & Mangematin, 2015) and beyond the business sphere. Roger Kneebone, professor of surgical education at Imperial College, London, recently lamented that new students lack basic competences, reasoning that: "A lot of things are reduced to swiping on a two-dimensional flat screen" (Coughlan, 2018). The unintended consequences of digitalization raise the question: When might it be more prudent to move beyond flat modalities to more hands-on approaches?

Three-dimensional modelling

The use of three-dimensional tools in design, pedagogy, and strategizing is not without precedent. Architects build 3-D miniatures of their plans to express their vision to non-specialist audiences and to investigate features not apparent in blueprints. Medical examiners use dollhouse murder scenes to train forensic investors (Miller, 2005). Child psychiatrists utilise models to facilitate communication with their patients. Militaries use three-dimensional terrain models known as *sand tables* to identify obstacles and opportunities that otherwise might go unnoticed, devise complicated tactics, and communicate them with relative ease (see figure 1).

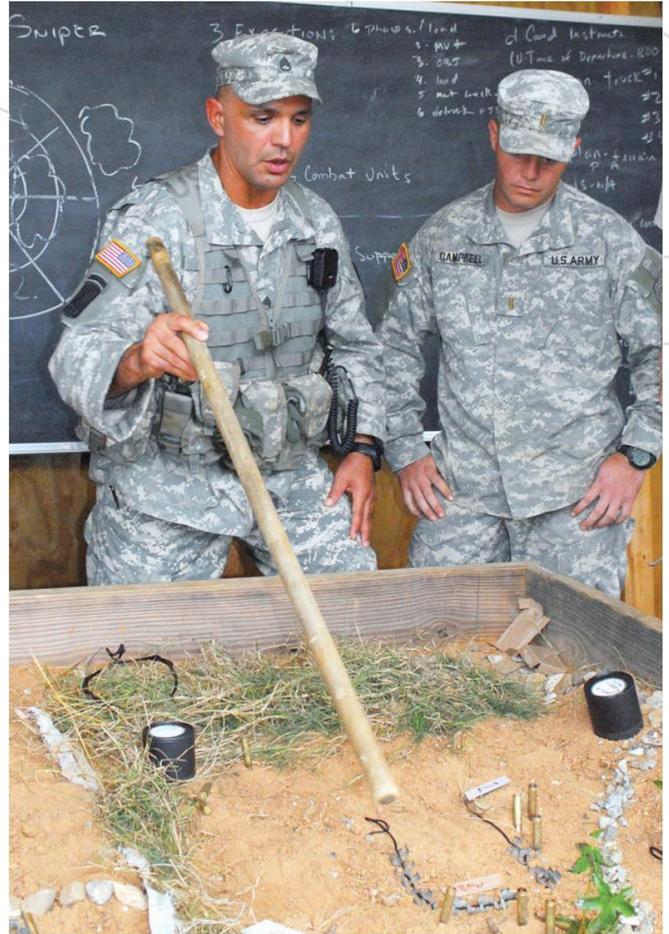


Figure 1: Contemporary use of a sand table by the US Army (credit: Cheryl Rodewig)

Sand tables have a long history dating back to Stone Age and are still used today, even by technologically sophisticated military organisations (Smith 2010; Weiner, 1959).

Such models are able to represent a great deal of information that would take pages of text to convey. Users can survey and revisit this information rapidly and with little cognitive effort. If a picture is worth a thousand words, how many more a three-dimensional model?

Models are representations of interconnected elements; the manipulation of one affects others. Through the manipulation of these elements, modellers investigate 'what could/would happen'. This is what makes models useful as tools of enquiry, rather than simply a means of codification (Morgan, 2012). The use of 3-D models makes such modification and investigation simple and intuitive.

Time, the fourth dimension

Implemented BMs have a tendency to evolve over time in response to dynamic environments (Demil & Lecocq, 2010; Wadin & Ahlgren, 2019). Previous tools have attempted to capture this time element by creating snapshots of a BM at different time points, in a process called 'versioning' (Fritscher & Pigneur, 2009). However, versioning is not without its limitations.

First, it rarely takes into account how the stakeholders might react to a BM, or how one BM constrains or enables future iterations. As an alternative to versioning, sand tables rely upon the 'dynamics of interplay' to represent time. Here, decisions have consequences, which reconfigure the range of alternatives at different time points (Weiner, 1959). With each movement, the modeller changes the state of play; new threats and opportunities emerge altering the range of possible future decisions, thus capturing a more path dependent process.

Second, whereas versioning depicts various end-states, the act of physically moving pieces around the board encourages the user to focus on what they will need in order to create those end-states. Thus, versioning articulates ideal situations, while the dynamics of interplay focuses on execution.

Third, it can be taxing to recreate multiple scenarios from scratch using the versioning method. The dynamics of interplay allow the modeller to simulate multiple future states in rapid succession. Additionally, modellers can devise new scenarios with sand tables in the time it takes to reposition a few models. As Smith (2010, p.7) notes:

"Though the visual representation provided the initial value of the practice, the map or playing board on which multiple options could be compared proved to be even more powerful. These tools allowed leaders and their staff members to compete against each other or against historical records in an attempt to determine which ideas would be the most effective".

Incorporating insights from sand tables

The Startup Jungle was developed as a four-dimension tool enabling students to conceptualize, study, and communicate BMs. The tool was created by Hans Alveros and further developed by the author, and it is regularly

employed in the *Knowledge-based Entrepreneurship* Master's programme at the University of Gothenburg.

The tool was designed to incorporate insights from modelling in other fields, principally by adapting the military sand table concept to create a metaphorical business landscape. The sand table elegantly expresses temporality through sequential repositioning of figures, eliminating the need to create multiple canvases. Expressing change through repositioning also ensures that modifications in the model are explicit and obvious, rather than implied by differences between canvases.

The Tool

The Startup Jungle is a teaching and strategizing methodology used in entrepreneurship education¹ centred on a jungle landscape (symbolizing a business ecosystem) and various animal models (signifying different stakeholders). The tool corresponds to the inter-organizational perspective of business modelling, and users are encouraged to conceptualize business model innovation as a process of integrating internal and external actors across value networks (Normann & Ramirez, 1993; Kringelum & Gjerding, 2018). The objective of the tool is to get users to position these animal actors on the landscape to convey business ecosystems metaphorically. Users do this for several reasons:

1. To sensemake and communicate their understanding of their ecosystem (Gioia & Chittipeddi, 1991)
2. To reconfigure their ecosystem into new BMs
3. To experiment with and investigate their ecosystem.

Jungle theme

The canvas's jungle theme is not simply aesthetic. First, it distances the tool from any militaristic associations that users may have with sand tables.

Second, the jungle metaphor frames the business environment as an ecosystem, the dominant metaphor used in academia (cf. Moore, 1996). Metaphorical

¹It has also been adapted for corporate strategy sessions. Due to word count limitations, this article only discusses its pedagogical application. More information can be found at: <https://www.brainspotexecutive.se/startup-jungle/>

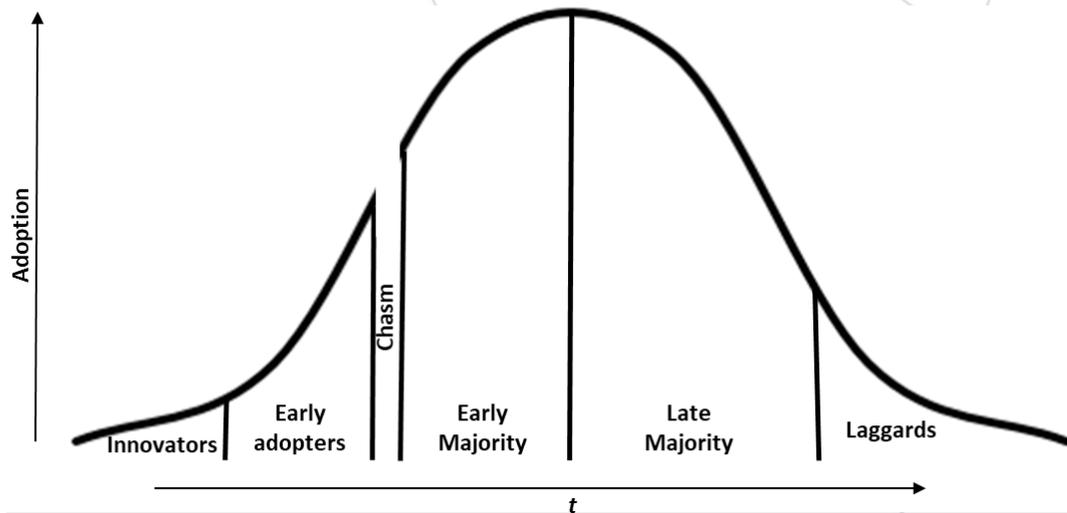


Figure 2: Moore's chasm model

framing significantly influences individuals' perceptions and decisions (Thibodeau & Boroditsky, 2011).

Third, the jungle setting gamifies the tool. Metastudies have empirically demonstrated that serious games are more effective for learning than conventional techniques (Wouters et al., 2013).

Fourth, the jungle landscape acts as a boundary object, encouraging users to speak in a common language of chimpanzees, lions, and sloths. Tactics can be explained with both visual and verbal clarity; e.g., users can communicate complex financial strategies by straightforwardly repositioning animals and resources next to one another.

The landscape

The layout of the landscape is metaphorically embedded with management theories (distinguishing it from the *Lego Serious Play* method). We felt that the incorporation of theory into the landscape was important in order to help users recognise the external environment is not a 'white space', but is subject to socio-economic structures and mechanisms of which they should be aware.

First, there is the river, which represents the diffusion of a product/service to different customer segments. Rogers (2003) described the diffusion of innovations as driven by different types of customers at different time points, each with different needs. Moore (2014) developed this idea by empirically identifying a 'chasm'

between early adopters and the early majority that most innovations fail to cross (figure 2).

This is represented in the landscape as a twisting river (see figure 3, point a), signifying the product/service will need to pivot throughout its product lifecycle to appeal to different customer segments. There is a break in the river (point b), indicating the aforementioned chasm, as well as 'break-even island' (point c) and 'profitability lake' (point d), drawing on the insight from the product-lifecycle that products/services tend to remain unprofitable until a threshold of customers came be acquired.

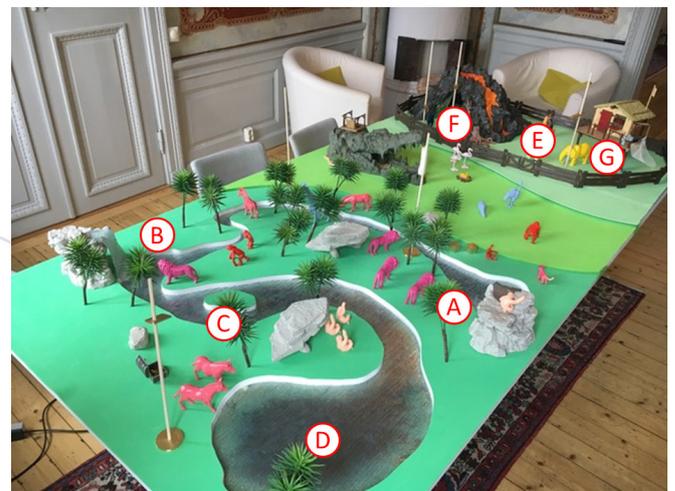


Figure 3: The Startup Jungle landscape

Second, there is the firm, represented by the encampment (point e). The encampment is subdivided to represent internal divisions; for example, R&D volcano (point f) and executive hut (point g). Cross-departmental collaboration can be represented by moving actors within the firm. The firm is fenced but gated, representing the semi-permeable barrier between the firm and its environment. During a strategy session, users can signify the need for certain internal actors to 'get out of the building' by positioning them outside this fence. Alternatively, the incorporation of external actors into internal operations can be signified by bringing these actors within.

The animals

The animal models serve as metaphors for different stakeholders (see figure 4). Customers are divided into subgroups representing each of Roger's adopter categories. This is an important distinction since it is not uncommon for entrepreneurship students to conceptualise target customers as generic whole, without considering the sequential nature of new customer adoption. Customers are signified with the following animal models:

1. **Chimpanzees (early adopters):** Curious consumers who are interested in novelty. Less-risk adverse than the majority and willing to buy innovative products/services that are still undergoing product development.
2. **Lions (Early majority):** More cautious consumers. Enjoy hunting down novelty but more risk-adverse than chimpanzees. Will tend to wait until the value of the product/service is more developed.
3. **Zebras (Late majority):** These consumers tend to follow the herd. Not interested in novelty, but see the value enjoyed by earlier customer groups and (eventually) follow suit.
4. **Sloths (Laggards):** Very little interest in keeping up with the latest trends in this market. Often persuaded by the less-enthusiastic Zebras.

Additional animals are included to represent other stakeholders. While we do make some recommendations about which animals typify which stakeholders, there are no compelling reasons why students should not define their own associations, giving them the freedom to assign the range of actors based upon their own situation and selecting the animal metaphor that most resonates with them. Key stakeholders to



Figure 4: A brass resource token (centre) flanked by animal models representing different customer groups

consider are partners, suppliers, investors, governing bodies, and competitors.

Resources tokens

The tool also has chunky brass tokens to represent resources (figure 4). The weight, colour, and size of these tokens is deliberate, since larger, heavier objects tend to be perceived as having more value (Alban & Kelley, 2013; Jostmann et al., 2009), psychologically nudging users not to treat them lightly. Their golden colour also alludes to their value.

Method

The method outlined below describes how the author employs the tool in the *Methods of Practical Entrepreneurship 2* course. Students in this course work in small groups to develop real business ideas from a concept to pre-incubation (teachers could also use the tool for historical/hypothetical case studies). The purpose of the workshop is to enable students to consider how their business ideas can create and capture value through stakeholder interaction over time.

A typical classroom session takes three hours, divided into the following stages:

1. Icebreaker stage (20 minutes)
2. Opening stage (40 minutes)
3. Strategizing/scenario stage (100 minutes)
4. Closing stage (20 minutes).

The tool requires a facilitator on its first use to explain the methodology and coach students throughout the session (once familiar with the tool, students should be able to self-coordinate). The facilitator should place the landscape on a large table somewhere where users can stand around it.

I have never had a student express scepticism towards using the tool (quite the opposite). Nevertheless, some students might see the jungle setting and discount the tool as frivolous. It may be prudent to emphasize at the start of the session that professional organizations use similar methods routinely for serious purposes, as noted in the introduction.

Icebreaker stage

The session should begin with a hands-on icebreaker, encouraging students to interact comfortably with the tool. One simple icebreaker is a variation of the river-crossing puzzle. Here, four animals – the chimp, the lion, the zebra, and the sloth – are placed on one side of the river and students are given the task of getting all the animals to the other side. The animals must cross by a boat that only the chimp can operate, and this boat only allows the chimp to take one passenger at a time. However, certain animal combinations must not be left on one side of the riverbank without the chimp's supervision: the lion will eat the zebra, and the zebra will trample the sloth. The group now has the responsibility of solving this puzzle as a team.

In order for the icebreaker to encourage familiarity with the tool, each member is assigned an animal that only they can touch, so they must collectively interact with the landscape. Students should be encouraged to solve the problem through trial-and-error by physically interacting with the model, rather than trying to solve it verbally or mentally.

Opening stage: Sensemaking the current business situation

First, the layout of the canvas is explained. It helps if students are already somewhat familiar with theoretical concepts embedded in the design (e.g., product life-cycles, customer types). If they are Masters students, they likely already understand most of these concepts. If not, I would recommend that students are at least briefed on them before the session. Students may wish

to label key areas of the board or certain animals using sticky notes if they have trouble remembering what these represent.

Next, the facilitator introduces animals sequentially. The customer groups are explained first. It is fairly common for students not to have considered the segmentation of the target market(s) by time to adoption, and so students are given a moment to discuss who their early adopters are, then their early majority, and so forth. Facilitators should encourage students to hold up each model and ask the question: who is our [chimpanzee]? This physical interaction with the models and the framing of the question helps students to associate the model with the actor it represents.

After the students have identified each customer segment, they are then asked to position them on the board based upon where they perceive each group currently exists on this landscape. It is common for the chimpanzees to be positioned at the start of the river, the lions further down by the chasm, the zebras by breakeven island, and the sloths towards the end of the river, signifying the customers' respective position along the product lifecycle. However, students may have exceptional reasons to position them elsewhere. For instance, if the early adopters are co-developing the product, they may place the chimpanzee inside the firm.

The positioning of the animals is ultimately metaphorical so there is no 'correct' placement. What is important is that the students collectively understand *why* they have placed a model where they have. This is achieved by getting the students to explain why they are positioning stakeholders where they are as they are doing so. The tool's value ultimately derives from its ability to help students to sensemake and sensegive (Gioia & Chittipeddi, 1991; Weick et al., 2005), and not in their adherence to where to facilitators think each model belongs.

Nonetheless, the facilitators do have a vital role here in asking questions. If a certain placement looks peculiar (e.g., placing laggard sloths at the start of the river), they should ask the students to clarify why. Clarification helps in two ways: first, it draws students' attention to implications that they might have overlooked or misjudged (Rumble & Minto, 2017). Second, if the

unusual positioning of an actor was purposeful, it gives the student an opportunity to communicate their reasoning to the team.

Once the customers have been positioned, students then start positioning other key actors relevant to their business. Again, the positioning of actors is at the discretion of the students. They may, for example, conceive of financiers being inside the firm where such investors are actively providing advice to the firm, or outside if investors have a hands-off role. Next, they can identify key resources and position resource tokens where they believe those resources lie (e.g., finance next to investors, IP next to a licence holder).

Once the landscape is populated, the students are asked to reflect upon what insights they can gain from it. They may notice that certain actors seem isolated from one another. Alternatively, the facilitator may notice this and ask the students if they believe this signifies something. The question may itself encourage the students to create signification for this that was not there before.



Figure 5: Repositioning animal figures to model a new business

Strategizing/scenario stage

The facilitator now asks the students to reposition the stakeholders in order for their planned business concept to work. This may include identifying key partners (if they are not already on the landscape, they can be added) and positioning them within or adjacent to the firm, or sending out representatives to customer groups, or bringing actors within the firm (see figure 5).

This continues sequentially to explore how the BM might evolve at different stages of the new venture, including how decisions at one time enable/restrict later decisions, or how stakeholders might react to decisions. At an early stage, students will probably focus on the early adopter chimps, while later stages include the majority customer groups or new constellations of partners and financing.

This strategizing stage has the added advantage in that it gets students to consider not just their planned BM evolution, but also what activities they have to do and relationships they have to form in order to make it a reality. During this stage, the facilitator can ask students a number of questions: how will other actors respond to this new situation? How might you make this happen in the real world? These questions help the students consider the implications, threats, and opportunities of such an arrangement. Asking these questions early on tends to result in students asking themselves these questions at later stages without prompting by the facilitator.

In addition to mapping and strategizing, the tool can also be used for scenario planning, asking questions such as what happens if the product does not appeal to the [lion]? The stakeholders and tokens can be repositioned to represent these scenarios. In practice, there are no sharp distinctions between strategizing and scenario planning. Students tend to reposition, question, and reposition again throughout the session without much prompting by the facilitator.

Closing the session

It is important to close the session formally so students can summarize what they have learnt. The facilitator can do this by asking the students to exhibit their insights to the rest of the class; repositioning and verbally explaining their current situation, followed by their BM strategy.

Key Insights

In classroom settings, I have observed the tool to be helpful in the achievement of several learning outcomes:

1. Sensemaking the current business ecosystem
2. Identifying customers based upon adoption
3. Awareness of issues involved in new venture creation: chasm, resource allocation, competitor positions, etc.
4. Business modelling using a network perspective
5. Considering staged implementation strategies and their feasibility (cf. Wirtz & Daiser, 2018)
6. Scenario planning

The first significant challenge with the tool is also one of its key strengths; namely its materiality. The tool was costly to produce (making the landscape, purchasing the animals models, etc.) and bulky to transport. One solution we developed was to create a printed version of the landscape that could be easily transported and cheaper to replicate (which is useful when running multiple sessions simultaneously; see figure 5). A more frugal option is drawing a simple landscape on an A0 sheet of paper. The animal models could be replaced with cheaper alternatives, including Lego or chess pieces.

Second, students can be reluctant at the start of the session to handle the animals and resource tokens, talking over the canvas rather than interacting with it. To tackle this issue, we monitored the icebreaker sessions carefully and reminded students to move the pieces whenever we noticed them trying to solve the problem verbally. A catchphrase we oft repeated was 'don't tell me, show me'. Any reluctance eventually dissipated during the main strategy session.

Third, the tool is constantly in flux. Students continuously position, question, and reposition stakeholders. Therefore, movements are not automatically logged. We overcame this issue by asking students to take photos at key moments and label them appropriately (e.g., 'scenario 3'). However, such images would not be readily understandable to others not present at the session without supplementary explanation. Whilst the tool is useful at facilitating discussion *in situ*, it is less able to convey meaning outside of a workshop.

Videoring the sessions could also be useful. I got permission to film students interacting with the tool during one session (available at <https://vimeo.com/306352237>). The students in the video are developing a new e-book business and are using the tool to identify a neglected customer group (represented as a chimpanzee) by querying its relationship to Amazon (represented as a hippo), whom they interpret as a main competitor. They then devise a strategy to co-create with this customer, expressed by repositioning the chimpanzee model inside the firm.

Fourth, although most teams understood what they were expected to do, one of the smaller teams needed further coaching to guide them through the process. In classroom settings, there are often multiple groups using canvases for different business ideas simultaneously, and it may not be possible to assign a permanent facilitator to each group.

Students' response

Some days after using the model, students anonymously rated their perceived usefulness of the tool from one (*very unuseful*) to five (*very useful*). 54% rated it *very useful*, 31% *useful*, and 15% *undecided*, resulting in a 4.4 average. No student rated it *unuseful* nor *very unuseful*. Students rated the tool more much more highly than other entrepreneurial activities, such as creating a group charter (3.3 average).

The perceived value of the model went beyond the assigned workshop. When one of the groups acquired a new team member, they asked to borrow the tool again in order to explain their BM to them. Afterwards, I received this email:

"I tried to do it the same way we did during the actual workshop, first laying out where all of our customers are today in relation to [our business idea] and where we want them to be in the future. Unlike the workshop though I was the one putting out all the animals to show [the new team member] how I am thinking about our customers and explaining each customer as I put them on the mat.

Thank you for letting us borrow the game, it helped me order some of my own thoughts regarding our customers!"

Conclusion

The Startup Jungle is an attempt to apply best practices from modelling in other domains to business modelling by adapting the sand table concept to metaphorically represent a business ecosystem. The method described above captures how the tool can be applied in classroom settings, but it is also being used by entrepreneurs and incumbent organisations as a new way of interpreting, business modelling, and strategizing.

Practically, the Startup Jungle requires much more preparation than alternative business modelling tools. However, the overall positive response from the students and their claims that it helped them identify and plan for contingencies they had not considered before should be enough to convince some educators that four-dimensional modelling is a worthwhile investment.

References

- Alban, M. W. & Kelley, C. M. (2013), Embodiment meets metamemory: Weight as a cue for metacognitive judgments, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol. 39, No. 5, pp. 1628-1634.
- Coughlan, S. (2018), "Surgery students 'losing dexterity to stitch patients'", available at: <http://www.bbc.com/news/education-46019429> (accessed 05 November 2018).
- Demil, B. & Lecocq, X. (2010), Business model evolution: in search of dynamic consistency, *Long Range Planning*, Vol. 43, No. 2-3, pp. 227-246.
- Fritscher, B. & Pigneur, Y. (2009), "Supporting business model modelling: A compromise between creativity and constraints", in England, D., Palanque, P. & Vanderdonckt, J., & Wild, P. J. (Ed.), *International Workshop on Task Models and Diagrams for User Interface Design in Brussels, 2009*, Springer-Verlag, Berlin, Heidelberg, pp. 28-43.
- Gioia, D. A. & Chittipeddi, K. (1991), Sensemaking and sensegiving in strategic change initiation, *Strategic Management Journal*, Vol. 12, No. 6, pp. 433-448.
- Jostmann, N. B., Lakens, D. & Schubert, T. W. (2009), Weight as an embodiment of importance, *Psychological Science*, Vol. 20, No. 9, pp. 1169-1174.
- Kringelum, L. & Gjerding, A. N. (2018), Identifying Contexts of Business Model Innovation for Exploration and Exploitation Across Value Networks, *Journal of Business Models*, Vol. 6, No. 3, pp. 45-62.
- Miller, L. J. (2005), "Frances Glessner Lee: Brief life of a forensic miniaturist: 1878-1962", *Harvard Magazine*, September-October, available at: <https://harvardmagazine.com/2005/09/frances-glessner-lee-html> (accessed on 05 November 2018)
- Moore, G. A. (2014), *Crossing the Chasm* (third edition). HarperCollins Publishers Inc., New York.
- Moore, J. F. (1996), *The Death of Competition: Leadership & Strategy in the Age of Business Ecosystems*, HarperBusiness, New York.
- Morgan, M. S. (2012), *The World in the Model: How Economists Work and Think*, Cambridge University Press, New York.
- Normann, R. & Ramirez, R. (1993), From value chain to value constellation: Designing interactive strategy, *Harvard Business Review*, Vol. 71, No. 4, pp. 65-77.
- Osterwalder, A. & Pigneur, Y. (2010), *Business model generation: a handbook for visionaries, game changers, and challengers*, John Wiley & Sons, Hoboken, NJ.
- Rogers, E. M. (2003). *Diffusion of Innovations* (fifth edition), Free Press, New York.
- Rumble, R. & Mangematin, V. (2015), Business Model Implementation: The Antecedents of Multi-sidedness, in Baden-Fuller, C. & Mangematin, V. (Ed.), *Business Models and Modelling (Advances in Strategic Management)*, Vol. 33, Emerald Group Publishing Limited, pp. 97-131.
- Rumble, R. & Minto, N. A. (2017), How to use analogies for creative business modelling, *Journal of Business Strategy*, Vol. 38, No. 2, pp. 76-82.

- Smith, R. (2010), The long history of gaming in military training, *Simulation & Gaming*, Vol. 41, No. 1, pp. 6-19.
- Thibodeau, P. H. & Boroditsky, L. (2011), Metaphors We Think With: The Role of Metaphor in Reasoning, *PLoS One*, Vol. 6, No. 2, p. e16782.
- Wadin, J. & Ahlgren, K. (2019), Business Models for Sustainability—Change in Dynamic Environments, *Journal of Business Models*, Vol. 7, No. 1, pp. 13-38.
- Weick, K. E., Sutcliffe, K. M. & Obstfeld, D. (2005), Organizing and the process of sensemaking, *Organization Science*, Vol. 16, No. 4, pp. 409-421.
- Weiner, M. (1959), "An introduction to war games", RAND Corporation, available at: <http://www.rand.org/pubs/papers/P1773/> (accessed 05 November 2019)
- Wirtz, B. & Daiser, P. (2018), Business model innovation processes: A systematic literature review, *Journal of Business Models*, Vol. 6, No. 1, pp. 40-58.
- Wouters, P., Van Nimwegen, C., Van Oostendorp, H. & Van Der Spek, E. D. (2013), A meta-analysis of the cognitive and motivational effects of serious games, *Journal of Educational Psychology*, Vol. 105, No. 2, pp. 249-265.

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Booster Cards: A Practical Tool for Unlocking Business Model Innovation

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Abstract

Business model innovation is an interesting yet challenging teaching area. Both teachers and students encounter barriers, such as dominant logic and a limited level of capabilities. In this paper, we present an analogy-based approach to enhance the teaching process and elevate student motivation using business model stimulus cards.

Keywords: Business models, business model innovation, teaching

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Introduction

Many different fields of teaching and researching business models (BMs) and BM innovation (BMI) exist. The diversity of the research fields raises questions on how to teach BMI to students and enable them to unlock the complexity of applying BMI. Massa and Tucci (2013) suggested splitting the notion of BMI into two categories: BM design and BM reconfiguration. The first is related to inventing new businesses and BMs, whereas the latter concerns restructuring and generating new ideas within existing BMs. The notion of BMI (both designing and configuration) is a challenging and complicated art (Teece, 2007). Although research within this area has been quite heterogeneous, Wirtz and Daiser (2018) derived a generic seven-step BMI process in their systematic review, namely analysis, ideation, feasibility, prototyping, decision-making, implementation, and sustainability. This paper will contribute by identifying a way to enable BMI in teaching, especially in the earlier stages of BMI, such as ideation.

When addressing the issue of teaching BMI, one needs to understand some of the inherent barriers in addressing innovation. The typical barriers that teachers face are related to the dominant logic and level of capabilities of their students. The dominant logic comprises how the firm creates and captures value, which can be difficult to assess due to prejudice and other subjective matters (Bettis and Prahalad, 1995; Chesbrough, 2003). The level of capabilities in this sense refers to the restrained repertoire of a person's ability to see new ideas (Pisano, 2006). These issues are, in our experience, common when students try to develop new BM ideas in a BMI process. Often, the restraints are less challenging when addressing new business designs but become more complex and challenging when doing BM reconfiguration (Teece, 2007; Massa and Tucci, 2013; Lüttgens and Diener, 2016).

Thus, teachers often must overcome these barriers of underlying assumptions in the dominant logic and restrained capabilities. If not appropriately addressed, the result will be a limitation of the potential variety of inputs to the BMI process (Rumble and Minto, 2017), as students will often replicate and conform to the known norms (e.g. de Jong and van Dijk, 2015), arguably compromising the idea of teaching innovation in the first place. Nonetheless, there are several techniques to

overcome these barriers, enabling the teacher and class to stimulate novel and creative ideas through BMI.

In the literature, there have been various suggestions on how to improve the ability to innovate BMs. One of the topics concerns the idea of using experiments to generate different solutions (Ahokangas and Myllykoski, 2014) and ultimately identify the optimal solution (Chesbrough, 2010). However, this quickly turns into a 'catch-22' paradox¹ because the experiment designs are often restricted by the dominant logic present in the individuals and by their (limited) capabilities. This is why we have invented a set of booster cards to help students create experiments and develop better and more original BM designs and BM reconfigurations. In line with the work by Smith (1998) on creative triggers, we intended the booster cards to act as a stimulus to amplify the idea generation process. Smith (1998) distinguished between the following three types of stimuli:

- Concrete stimuli (Higgings, 1994): Use physical items or pictures in idea generation sessions.
- Related stimuli (VanGundy, 1988): Provide stimuli that are connected to the problem-solving task.
- Remote stimuli (Rickards, 1974): Provide stimuli that are unrelated to the problem-solving task.

The booster cards essentially combine all three types but are mainly based on related and remote stimuli. We do this by only providing topic-specific stimuli (hence, the BM configuration typology), while simultaneously forcing the students to assess and reflect upon the individual and sometimes unrelated BM configurations. The latter refers to BM configurations that immediately appear illogical or distant to the case at hand. In other words: the booster cards will constitute 'provocations' to enable the students to think 'outside of the box'.

Converting BM typologies into playing cards is not a new invention (e.g. the BMI Lab at St. Gallen University developed BMI Pattern Cards; see Gassmann *et al.*, 2013, 2014). However, we did not find these cards comprehensive to our satisfaction in terms of typology and categorisation. A decision was made to develop a

¹ A catch-22 is a paradoxical situation from which an individual cannot escape because of contradictory rules (e.g. a bank will never issue someone a loan if they need the money).

deck of playing cards designed according to an already-defined BMI framework: the 5V framework by Taran *et al.* (2016). This will be elaborated on in greater detail later in the article.

The booster cards are built on the principle of creating analogical reasoning. Analogical reasoning is understood as applying insight from one setting to another, which is a method found to be useful for creating novel BM ideas (Gavetti and Rivkin, 2005; Martins *et al.*, 2015; Rumble and Minto, 2017).

A known example of applying analogies is Nespresso. Traditional coffee machine manufacturers focus on selling machines with high margins, which is essentially the core of their BM. In contrast, Nespresso coffee machines are sold with a low margin, but the company compensates by earning high margins on the coffee pods. At the core of the BM, Nespresso is creating a lock-in effect towards the consumer, as the machines only can be used with Nespresso pods. Nespresso developed and succeeded with this BMI by adopting elements (or analogies) from the razor-and-blade model known from Gillette (Matzler *et al.*, 2013), and many have since tried to copy them in the industry.

The story of Nespresso shows the strength of using analogies by removing the constraints of dominant

logic (coffee machines are the core) within the same industry or sets of assumptions. Furthermore, a set of different BM patterns or recipes (Baden-Fuller and Morgan, 2010; Osterwalder and Pigneur, 2010; Taran *et al.*, 2016) can help overcome the limited capabilities of students, for example (Rumble and Minto, 2017).

The booster cards help break the barriers of dominant logic and the limited capabilities by enabling students to experiment with various ideas through different analogies of the cards. These analogies support students to overcome their dominant logic from a given context and further provide a range of diverse alternatives, reducing the barrier of limited capabilities.

The cards are based on 71 different BM configurations identified in the work by Taran *et al.* (2016). Each card in the deck represents a specific configuration and contains a short description of the configuration and real-life example to strengthen the analogy further. The description might give room to gain context-free ideas, but if the students are having issues with generating ideas or understanding the concept, the real-life examples often spur them in the right direction. An example can be found in Figure 1, where the configuration 'Free for advertising' provides both a short explanatory text of the general concept and empirical references (in this case of Facebook and Google).



Figure 1: Examples of booster cards.

Thus far, the cards have been tested in different contexts ranging from more than 125 business administration students at the bachelor's level in a workshop-teaching format to more than 30 international business master's students in a traditional classroom setting for three years. The cards have also been tested with professionals and business developers. Through various trials, the booster cards have proven to act well as a facilitator of discussing different business opportunities and future scenarios by providing new ideas on how to design or reconfigure BMs. We will elaborate on these outcomes later in the paper.

Approach

Initial understanding and requirements

The booster cards can be implemented in various settings, such as a workshop with practitioners and lectures with students. The latter will be exemplified in the paper. It is essential to add that the cards function primarily as a facilitator or add-on to use in the teaching context. The participants will need a basic understanding of BMs, and it is also preferable to have experience in working with a BM framework, such as Osterwalder and Pigneur's (2010) BM canvas (BMC). The notion of a framework (e.g. BMC) helps to illustrate how the cards affect a given BM, which is an essential element in BM reconfiguration. However, as mentioned earlier, this paper will focus on the earlier stages of BMI.

Following the original work of Taran *et al.* (2016), the 71 cards are divided into five different categories. These five categories address key areas found throughout both empirical and theoretical BM research in the following ways:

- Value proposition (VP): What is the company offering (pink cards)?
- Value segment (VS): To whom is the company offering it (green cards)?
- Value capture (VC): How much and in what way does the company generate revenue (brown cards)?
- Value network (VN): With whom does the company collaborate to develop, distribute, and/or sell the offering (blue cards)?
- Value configuration (VCo): How does the company develop and distribute this offering cost-effectively (yellow cards)?

The number of configurations (i.e. cards) is not evenly distributed across the above-mentioned categories. As such, there are 23 VP, 8 VS, 14 VC, 10 VN, and 16 VCo cards.

The Taran *et al.* (2016) framework was chosen because it offers an increased number of categories and configurations compared to other frameworks. Previous to this study, the only academic work on BMI cards was found in Gassmann *et al.* (2013). In comparison, the Taran *et al.* (2016) framework 1) employs five categories instead of four (resulting in a clear separation between the BM elements of customers and distribution), 2) entails the most exhausting list of configurations (71 compared to the original 55), and 3) offers the most recent review. We have also found other BMI cards, all of which comprise 50 to 68 cards (e.g. boardofinnovation.com, businessmakeover.eu, and methodkit.com). Nevertheless, none of these are scientifically derived but rather are based on practical work, experience, and consultancy tasks. In short, the 71 configurations offered by Taran *et al.* (2016) comprise the most extensive, scientifically developed, and updated list we were able to find. For further information about the configurations, we refer to Taran *et al.* (2016).

In the teaching setting, the initial approach would include one or several lectures introducing BMs in general and potentially the BMC. Using the terminology of the BMC helps to frame the experiments that the booster cards facilitate. Figure 2 exemplifies how the configuration of 'leasing' not only affects its main category (VC) but also how designing or reconfiguring a BM to the leasing configuration would affect other parts of the BM. The effects are not explained in the cards, as they are different from case to case; hence, the participants will need to reflect upon these in each situation.

Having established the basic knowledge regarding BMs, it becomes essential to frame the notion of BMI and how experimenting with the cards is meant to improve the students' ideas. In entrepreneurial courses, the cards are more relevant in the lines of BM ideation, where they can be explored as inspiration to generate novel BM design ideas for new business opportunities, problems, or projects. In settings where students work with real-life cases (e.g. established companies with existing BMs), the cards provide new

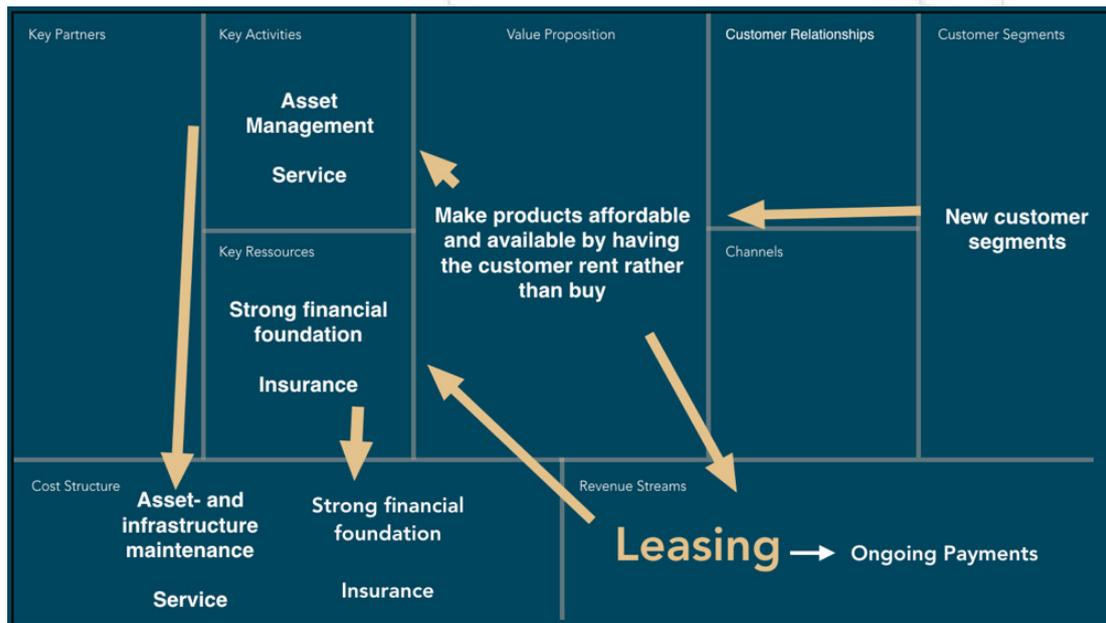


Figure 2: Configuration of leasing.

inspiration to stimulate BM reconfiguration. In both instances, the cards enhance the experimentation with ideas that might not have been produced without this stimulation, thereby overcoming the cognition biases of the dominant logic and limited competences of the students.

Following Byrge and Hansen (2014), we found that the approach of first working individually, then in pairs, and lastly all together in the group (presented in Steps 5-9) will enhance the ideation process by bringing more knowledge into play. If time is short, Steps 3 and 6 could be skipped.

Using a real-life case

The approach described above has also been tested several times with real-life cases where a business representative (e.g. owner, manager, or an employee) presents their company in front of the class, potentially stating an innovation dilemma. As stated in the introduction, the company is often restrained by the dominant logic or/and capabilities; hence, they are prepared to seek inspiration from other sources, such as students. To ensure the students are not predominantly influenced by the logic and constraints of the company representatives, the use of analogies through the booster cards aids the students to have an open mind and generate novel ideas continuously.

In this setting, it is essential to have the students map the company's current BM using the BMC (or other BM frameworks) as an initial phase before the steps mentioned above; otherwise, the students will have a hard time understanding the underlying basis of the company case. The students can also use the booster cards to identify the current patterns or configurations of the company to understand and interpret the current setting.² Subsequently, the students are asked to either generate new ideas or innovate in the current setting. The process could evolve around various objectives, such as targeting specific customer problems, innovation issues, or technological challenges, or it could merely be an open task.

As stated earlier, the students often rely heavily on the logic or context presented by the company if the process is not facilitated. If a real-life case gives away too much information about the vision for the future, the students end up developing ideas that are not new to the company or novel or interesting in any way. We experienced this when a company accidentally told the students that their next market would be wholesalers. Afterwards, around 80% of all the ideas developed by the students addressed wholesalers as the 'new

² Interpreting is also an often-found phase in analogy models (e.g. see Rumble and Minto, 2017, for more details).

Manual for using the Booster Cards	
Steps /Duration	Action
1 15 min	Form groups consisting of approximate 4 students. Aim: Form dynamic working groups
2 10-15 min	The students are then asked to browse through all 71 configurations cards to get a brief understanding. Set aside 10 min for browsing and a few minutes for questions that need to be discussed in the plenum. Aim: Basic introduction and understanding to the configurations
3 Depends	This step is optional. The teacher or students could here identify areas, where they want to focus and hence select the group of cards associated to this focus. For example, if the students want to work primarily with the revenue streams or value capture, the students can choose to primarily use the brown (value capture) cards. Aim: Narrow the idea generation process.
4 5 min	Each group member hereafter draws five booster cards from the deck to start the ideation process. Aim: Stimulate/provoke through random and unrelated inputs
5 15 min	Individually, the students should now try to generate BM ideas based on the cards he/she has for 10-15 minutes, without talking to each other. Aim: Idea generation, problem solving, prototyping
6 30 min	In pairs of two, the students should now exchange their ideas to be co-developed even further (5 minutes per participant for all ideas). This round continues until all possible pairs in a group have been created and co-developed together Aim: Stimulate/provoke through random and unrelated inputs
7 10-15 min	Each student should individually assess which idea is the best, based on an assessment criteria made by the teacher. It could be the most novel idea, the most viable etc. (1-2 minutes). Aim: Idea assessment
8 25 min	The students will individually prepare a short presentation of their best ideas (one to three) either as a short narrative or using the BMC as a storyboard going through each building block one by one. Aim: Idea refinement and communication
9 25-30 min	Each student presents to the rest of the group. A short amount of time (approx. 5-10 minutes) should be devoted for feedback and discussion of each idea. Aim: Idea communication, idea refinement, and prototyping
10 15 min	Each group should determine which one or two ideas they think are the best, based on the criteria previously presented. Aim: Idea assessment and selection
11 15-20 min	Give each group 15-20 minutes to discuss the idea even further and prepare a group presentation of the configuration(s) they have recognised as the best. Aim: Idea refinement and communication
12 Depends	Each group performs a 5-minute presentation of their configuration in front of either an opponent group, company representatives or the whole class. Set aside 5-10 minutes for feedback on the idea from either the opponent group or plenum. Aim: Idea pitching and -refinement
13 Depends	As a final step, have a discussion in plenum about the learnings and what further steps to consider when going from BM ideas to BM implementation. Aim: Frame the key learnings

Table 1: Booster cards manual

innovative strategy' for the company. The example shows how quickly students absorb dominant logic and experience difficulties, diverting from it.

From our experience, fostering novel ideas and new insight occurs more frequently when the cards are incorporated as a medium in the ideation process right after the mapping of the existing BM. The booster cards provoke new thought patterns and thereby amplify the pool of ideas the students are creating. The analogies and stimulation through the cards help the students develop relevant ideas that are directly transferable from the cards. Other times, the students have 'wild' ideas that are not related to the cards, but the line of thought was initiated using the cards. Although these initial 'wild' ideas are unrealistic, we have seen many

examples where they eventually spur new ideas that are viable.

An example of the above was observed during a real-life case workshop where the company in question had too-high costs. From the card representing the configuration 'external sales force', one group had the idea of only having salespeople from low-income countries. This idea was pretty 'wild' and unrealistic, but together with the booster card representing the configuration 'target the poor', they started wondering why the company did not address low-income countries. As the company made modular products, the relatively high production cost could be lowered by the economy of scale, making the market of developing countries attractive as a new source of income. In essence, the

original idea would have little chance of success, but the evolution or development from the initial 'crazy' idea proved to be an important novel idea that the company wanted to investigate further and eventually implement as part of their future strategy.

In all the workshops and lectures that we have facilitated in this manner, the company representative has always left with new inspiration and often reasonably implementable BM ideas and innovation routes.

Key Insight

Through the use of analogies, the booster cards seemingly provide a practical and understandable method of breaking down some of the barriers in the often-impeded BMI process. Repeatedly, students or companies become stuck within their inherent limitations and dominant logic, which rarely spurs original ideas. With a relatively minimal amount of preliminary knowledge, students, companies, entrepreneurs, and business developers can gain new inspiration on how to either design or reconfigure BMs.

Furthermore, the booster card analogies and their configurations are built on both generic text explanations and case examples, which often makes the process very intuitive for students at all levels. The cards provide a hands-on and tangible approach rather than the more 'fluffy' theoretical approaches. The use of the booster cards is especially relevant in courses that undertake a practical approach to understand, innovate, and test BMs. Moreover, the booster cards and pertaining processes have continuously led to new innovative ideas and inspiration on how to innovate BMs, which was the overall ambition of introducing the booster cards.

Reflecting on the learning outcomes of using the booster cards, we have likewise seen positive results. We have not performed statistical experiments but have some experience that shows how students adopt and apply the analogical use of the booster cards after a workshop or lecture. Through written exam essays on the topic of BMI, we have found that students apply the knowledge from the booster cards and analogical learning to explain different BM concepts and existing BMs of case companies. Consequently, this shows that students gain a deeper understanding of the topic and learning objectives of the course. Additionally,

students that are using the booster cards often manage to develop a greater variety of BM ideas. While not statistically proven, the development of more BM ideas was agreed upon by both the internal lecturers and external examiners of the assignments. The same type of evidence can be found in the vast number of oral exams we have done over the years. Students who have been introduced to the booster cards (and actively used these in their project work, written assignments, etc.) demonstrate better insight into the subject and can have more complex discussions during the exam compared to students without this knowledge. Moreover, the workshops have successfully generated novel, inspiring, and applicable new BM ideas; hence, the case companies, without request, have all expressed their interest in participating again.

Discussion and Conclusion

The idea of using inspiration from generic BMs is not new in a BM setting. The booster cards are similar to gaining inspiration from BM patterns (Osterwalder and Pigneur, 2010; Gassmann *et al.*, 2014), analogies (Rumble and Minto, 2017), analogical reasoning and conceptual combinations (Martins *et al.*, 2015), BM recipes (Baden-Fuller and Morgan, 2010; Sabatier *et al.*, 2010), and so on. Nonetheless, the booster cards offer the students a more hands-on experience, which often supports the experimentation or ideation phase of BMI, compared to directing them to a book or webpage. The analogies of the cards help to break down the main barriers to BMI, that is, the dominant logic around how firms create and capture value (Bettis and Prahalad, 1995; Chesbrough, 2003) and the missing ability to generate new ideas (Pisano, 2006).

The fact that the booster cards are not a standalone solution might potentially also constitute their main limitation. Students need a certain understanding of the BM concept, and it is also preferable to have experience in working with a BM framework to use the cards most efficiently. However, if this basic knowledge is achieved, the booster cards are reasonably intuitive. Furthermore, an advanced class could also address related matters, such as the effect a new configuration might have on the supply chain, management accounting, performance measurement, and other topics on how to operationalise the suggested changes to

a specific BM. However, due to limitations of the short paper format, these are not addressed here.

Another limitation worth mentioning is the time factor. In general, we recommend at minimum a three-hour workshop for using the booster cards, including a short introduction to BM configurations, the booster cards, and then the hands-on approach. Dedicating enough time is vital for the students to understand the booster cards and reflect upon their ideas and designs. If rushed, the result will typically be half-finished unoriginal ideas, which they will be more reluctant to present. Ultimately, this will naturally negatively affect the learning output.

The most impressive part of using the booster cards as an analogy stimulus is the variety of BM ideas generated by the students. Even when applying the same business case in different workshops with diverse students, we have observed radically diverse BM ideas each time. In addition, the students appear to enjoy 'playing' with the booster cards even after the workshop session is over. For the students, it is not only a fun exercise, but they also gain more comprehensive knowledge and competencies in understanding and working with BMs. Ultimately, these skills will help the students fulfil learning objectives related to an innovation course. Hence, the adoption of the booster cards enables the students to not only reach the learning objectives of the course but also build valuable BMI skills for future employment.

References

- Ahokangas, P. & Myllykoski, J. (2014), The practice of creating and transforming a business model, *Journal of Business Models*, Vol. 2, No. 1, pp. 6-18.
- Baden-Fuller, C. and Morgan, M.S. (2010), Business models as models, *Long Range Planning*, Vol. 43, No. 2, pp. 156-171.
- Bettis, R. A., & Prahalad, C. K. (1995), The dominant logic: Retrospective and extension. *Strategic management journal*, Vol. 16, No. 1, pp. 5-14.
- Byrge, C., & Hansen, S. (2014), *Enhancing creativity for individuals, groups and organizations: Creativity as the Unlimited Application of Knowledge*. Frydenlund, Frederiksberg.
- Chesbrough, H. (2003), *Open Innovation: The new Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston, MA.
- Chesbrough, H. (2010), Business model innovation: opportunities and barriers. *Long range planning*, Vol. 43, No. 2-3, pp. 354-363.
- De Jong, M., & van Dijk, M. (2015), Disrupting beliefs: A new approach to business-model innovation, *McKinsey Quarterly*, Vol. 3, pp. 66-75.
- Gassmann, O., Frankenberger, K., & Csik, M. (2013), "The St. Gallen business model navigator", working paper, Institute of Technology Management, University of St. Gallen, St. Gallen.
- Gassmann, O., Frankenberger, K., & Csik, M. (2014), *The business model navigator: 55 models that will revolutionise your business*, Pearson, UK.
- Gavetti, G., & Rivkin, J. W. (2005), How strategists really think, *Harvard Business Review*, Vol. 83, No. 4, pp. 54-63.
- Higgings, J. M. (1994), *101 Creative problem-solving techniques*, New Management Publishing Company, Winter Park, FL.
- Lüttgens, D., & Diener, K. (2016), Business model patterns used as a tool for creating (new) innovative business models, *Journal of Business Models*, Vol. 4, No. 3, pp. 19-36.
- Martins, L. L., Rindova, V. O., and Greenbaum, B. E. (2015), Unlocking the hidden value of concepts: A cognitive approach to business model innovation, *Strategic Entrepreneurship Journal*, Vol. 9, pp. 99-117.
- Massa, L., & Tucci, C. L. (2013), Business model innovation, in Dodgson, M., Gann, D. M. & Nelson, P. (Eds.), *The Oxford handbook of innovation management*, Oxford University Press, Oxford, UK, pp. 420-441.
- Matzler, K., Bailom, F., von den Eichen, S. F., & Kohler, T. (2013), Business model innovation: coffee triumphs for Nespresso, *Journal of Business Strategy*, Vol. 34, No. 2, pp. 30-37.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons, Hoboken, New Jersey.

- Pisano, G. (2006), Profiting from Innovation and the intellectual property revolution, *Research policy*, Vol. 35, pp. 1122-1130.
- Rickards, T. (1974), *Problem-solving through creative analysis*, Gower Press, Essex, UK.
- Rumble, R., & Minto, N. A. (2017), How to use analogies for creative business modelling, *Journal of Business Strategy*, Vol. 38, No. 2, pp. 76-82.
- Sabatier, V., Mangemtin, V. & Rousselle, T. (2010), From recipe to dinner: business model portfolios in the European biopharmaceutical industry, *Long Range Planning*, Vol. 43, No. 2, pp. 431-447.
- Smith, G.F. (1998), Idea-generation techniques: A formulary of active ingredients, *Journal of Creative Behavior*, Vol. 32, pp. 107-133.
- Taran, Y., Nielsen, C., Montemari, M., Thomsen, P., & Paolone, F. (2016), Business model configurations: a five-V framework to map out potential innovation routes, *European Journal of Innovation Management*, Vol. 19, No. 4, pp. 492-527.
- Teece, D. J. (2007), Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance, *Strategic management journal*, Vol. 28, No. 13, pp. 1319-1350.
- VanGundy, A. B. (1988), *Techniques of structured problem solving*, Quorum Books, New York.
- Wirtz, B.W. & P. Daiser (2018), Business Model Innovation Processes: A Systematic Literature Review, *Journal of Business Models*, Vol. 6, No. 1, 40-58.

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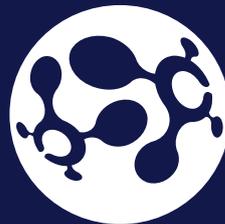
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