

From Technical Product Training to Sustainable Education for Students – A Strategic Alliance Approach to Applied MOOCs

Janina Nakladal¹, Jerome Geyer-Klingenberg¹, Matthias Stierle², Martin Matzner²

¹ Celonis SE, Theresienstrasse 6, 80333 Munich, Germany

² Chair of Digital Industrial Service Systems, Friedrich-Alexander-University
Erlangen-Nuremberg, Germany

{j.nakladal, j.geyerklingsberg}@celonis.com
{matthias.stierle, martin.matzner}@fau.de

Abstract. Evolving technologies require continuous skill adaption in the industry, often resulting in a gap between the practical demand and academic curricula. Educating the next generation and attracting attention towards the respective organization are common goals for both parties. They enable a strategic alliance-oriented approach to applied teaching of new technologies aligned with theoretical contexts. MOOCs as open e-learning format benefit from a joint imparting by corporate and academic partners. This paper presents an exemplary structural framework for applied MOOCs, incorporating the objective to ensure a broad and sustainable adaption of innovative technologies among students and an inspirational learning experience. Simultaneously, possible conflicts of interest are tackled and discussed. These insights are equally valuable for representatives from Higher Education institutions and companies.

Keywords: Strategic Alliance, Technical Training, E-Learning, MOOC.

1 Bridging the Gap between Academic Education and Industry Demand for Technology-related Skill-Sets

In today's era of digitalization and innovation, technology evolves faster and provides uncountable opportunities for new business models, products and services. Sources for innovation are not longer limited to research labs and development teams, but can be established wherever people are creative, open-minded and skilled. In addition, online learning empowers adaptive learners to upskill with ubiquitous offerings [1,5]. Technological and digital innovation can be key success factors for any business. But to ensure fast growth and long-term success, a trained workforce is required [1,7].

Ensuring the provision of technical and analytical capabilities within the academic path of students would be ideal but is often impossible in a short-term perspective. Changing curricula on a global level is effortful due to scarce resources, educational policies and differences in teaching approaches and knowledge levels. This leads to a gap between the academic skill sets that students gain in Higher Education (HE)

institutions and the practical demand of a fast-changing business world. It results in a non-optimal allocation of human resources and costly training on-the-job [1,4,7].

Corporate players are tackling this gap by entering and supporting the education market. Additional qualification measures are offered to prepare students and professionals for future tasks and provide them with recent knowledge in technology and business. These training opportunities seem to be a cost-effective and fast approach for up- and re-skilling – but mostly from the business perspective, facing the need for certain abilities related to immediate tasks [5,6]. Students without an instant necessity to apply these skills are lacking motivation and relevance. This is especially valid for competencies related to software and business tools.

Business software often comes with the advantage of easy training possibilities offline and online. It stands to reason to also make those technical trainings, used for corporate workforce development, available to upskill students. But without any relevance or opportunity to use it, students will rather not retain to the training or become excited about the technology. Therefore, these functional skills must be incorporated in HE curricula and be related to other subjects to provide students with a broad overview of values and coherencies they need to understand to become a professional in a certain field [1,7]. This is enabled by Strategic Alliances consisting of companies and HE institutions. This paper examines an alliance-oriented approach to enhance a new analytics technology used in business with academic relevance for a broad and sustainable adaption among students and an inspirational learning experience.

2 The Strategic Alliance Approach

Bridging the gap between academic curricula and practical skill-demand requires to involve both parties and their characteristics [1]. To ensure a fruitful collaboration, objectives need to be communicated, discussed and aligned.

Exemplary business objectives. Educating the future workforce is strongly related to an attractive employer branding, a fast-signaling approach for recruiting of skilled talent and a cost-effective onboarding process [5,6]. Moreover, innovative companies strive to be a technology leader and create a category to generate demand for the product. And lastly, academic exchange is supposed to lead to product development and usage of the latest research methods and knowledge.

Exemplary academic objectives. HE institutions have a certain aspiration to provide students with business-relevant education. Although designed for enabling breakthrough research and academic careers, more institutions offer also an applied approach to subjects to attract students and meet industry demand. Being a strong incubator for inspiration and exploration, they want to be the perfect starting point for career development. In addition, understanding the needs of markets supports the funding of research projects and attracts attention to the academic institution [1].

Hence, both parties do have a commonality in the empowerment of students to become future thought leaders and valuable employees. Moreover, using the collaboration as a marketing tool for global outreach and creation of credibility, attention and demand is a shared interest as well [5]. Having set compromising goals, the Strategic Alliance can combine various content aspects, innovative technologies and diverse didactic methods to enhance the learning experience [1]. One format to ensure such value realization are MOOCs (massive open online courses).

3 The Concept of Applied MOOCs

MOOCs are technology-based learning formats aiming at large-scale participation and open online access, while offering high-quality education and certification. MOOCs have seen some adoption for corporate workforce training and young professionals are using them for life-long learning [2,3,5]. Therefore, they are an appropriate format to combine pre-available technical product training and academic content. Hands-on usage of specific business tools shall enhance the learning experience, create new formats for content delivery and foster the adoption of complex topics. This may ensure an improved retention rate and satisfaction with the MOOC.

The overall objectives for an applied MOOC can be related to those possibilities: (i) Embed theory through hands-on application, (ii) teach new, relevant skills with software and business tools, and (iii) provide an exciting story connected to academic and industry context for better retention and learning success.

These objectives may be achieved through various engaging formats: Teacher-centered teaching, additional reading material, video training for software-tools or technology features, self-paced exercises to be solved within a tool or application of a technology, applied challenge or case study combining theoretical knowledge and hands-on skills, collaborative tasks or peer-reviewed homework, usage of other new technology-based formats like Augmented Reality, Serious Games or Social Networks.

4 Exemplary Structural Framework for an Applied MOOC

The Strategic Alliance consists of a young software company [8] and a young university chair [9] in the fast-growing and innovative domain of data-driven process analytics. The designed MOOC with an applied focus shall empower a future workforce in this area of business analytics and provides relevant and applied academic education. The following structural framework is meant to be a proposal illustrating the joint approach. It is not limited to the specific topic of process analytics but can be used similarly for any other technical product training. Therefore, the technology specific terms are substituted by placeholders to demonstrate the generalizability.

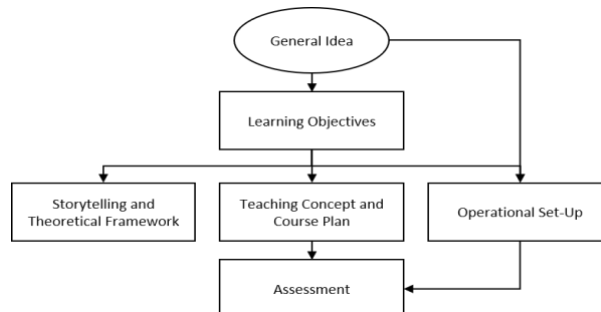


Fig. 1. Structural Framework for an Applied MOOC

General Idea and Learning Objectives. As a first step, a general common idea is verbalized to define learning objectives incorporating the academic and practical demands. Possible formulations are:

- The focus is to teach how to apply [technology, tool, product, topic] in practice and how to generate business value with [technology, tool, product, topic]
- The course complements existing (online) courses, that focus on [topic] theory, and links academia and industry-related topics

The participant...

1. understands the importance of [topic] in a digitalized world,
2. knows how companies are using [technology, tool, product, topic],
3. comprehends the theoretical foundations, prerequisites and challenges for [topic],
4. can apply [[technology, tool, product] to generate valuable business insights,
5. has an idea of future trends in [topic].

The generic learning objectives can be extended with any topic-specific objective. The applied learning approach should manage expectations in advance and attract the desired target audience. Defining the target audience is a helpful step to create an appealing story and the level of difficulty for exercises. MOOCs on well-known platforms can be accessed by learners from various backgrounds. Thus, the actual users can only be targeted by a clearly communicating the course's idea and objectives.

Operational set-up. In terms of MOOC provision, the chosen e-learning platform will default a certain set of possible content formats and means for user engagement, tasks and exams. Besides, instructors need to be found. Teaching on applied topics may require insights from both industry and academia capable of conveying the relevance and the desired skills in an appropriate way.

Teaching concept and course plan. Based on objectives and operational set-up, a detailed teaching concept and course plan can be defined. For this exemplary case, students will both be listening to theory lessons and working on hands-on assignments with a software for data analysis. The first chapters start with several keynotes and a theoretical introduction. Industry representatives provide practical insights, aligned

with academics from the relative research field, to demonstrate the broad relevance of the topic. In the following chapters, a common structure applies: Theoretical input is delivered by academic teachers and additional reading material. Those sessions are followed by video training for the analytics software, based on the technical product training from the software provider. Participants then apply the presented content in short quizzes and exercises, as well as a case study covering a sample company. During the exercises, participants work with the software tool on a demo data set. Besides the quizzes, participants also prepare a findings' report, which is peer-reviewed by other participants. The exemplary MOOC finishes with future related content on trends and possible research fields. Ultimately, the keynote speakers will frame the whole concept with an outlook for their respective role.

Comprising, the proposed teaching concept for an applied MOOC strives to be clearly structured to easily grasp the approach and prevent participants from being overwhelmed by combined concepts.

Storytelling and theoretical framework. Applied MOOCs will often address various groups and knowledge levels. To ensure retention, valuable learning experiences for every participant and content-based certification, the respective courses can have a specific focus on storytelling and a clear theoretical framework being delivered. The framework should incorporate both academic and business content. Besides that, the MOOC can have an exciting story to follow which highlights the relevance for research but also career development. If possible, the story should be based on characters, the target group can relate to, and start with a problem statement and end with a solution that is to be found through the application of the technology or tool.

Assessment. The applied MOOC aspires to provide participants with a certificate valuable for both Academia and industry. Hence, all assessments need to be designed to measure the learning objectives and evaluate the academic and hands-on performance in the tool. Assessments should be focused on skills and the theoretical framework.

In summary, this structural framework for an applied MOOC integrates objectives and content from both parties of the Strategic Alliance. It is focused on demonstrating relevance to the target group and enhancing the learning experience by combining technical product training with academic context for a sustainable learning experience.

5 Discussion

Collaborative partnerships between industry and academia to bridge the gap in education are expected to have certain advantages, realized through specifically designed conceptual frameworks. Using technology, tools or innovative products in a self-learning environment is engaging, equips participants with new skills, strengthens transfer thinking and attracts new learners. It connects minds and markets and ensures a relevant and exciting education leading to fast career development. Relying on

academic frameworks ensures credibility and grounded skill-placement detached from classical feature training. For both parties, a Strategic Alliance increases attention, creates demand and helps developing a certain image [1].

However, the described advantages can only be realized if conflicts of interest due to different approaches to concepts and people are avoided. While the academic party aims to attract students to university enrolment and research careers, the corporate party pursues to acquire skilled talents. Hence, the general objectives, marketing messages and instruments for retention and conversion of participants differ and can even be opposed to each other [5]. Additional conflicts affect one party at a time. Using corporate technology and innovative tools challenges universities to acquire proficiencies. With a growing number of new tools on the market, academic parties need to develop the capability to analyze trends and offerings and make decisions focused on the most valuable resources for their staff and students. Incorporating technology in a MOOC also requires support resources provided by both parties. Dysfunctional tools might lead to learners' dissatisfaction and surrender. On the contrary, the industry party often supplies their business software and training for free on open platforms without participant restrictions. There is a risk of cannibalization of training services, devaluing training as a paid service [5].

These conflicts of interest and obstacles must be considered, communicated and monitored. If they are managed in a value-oriented way, both Strategic Alliance partners can meet their objectives by focusing on the common goal: providing high-quality education, easily accessible for learners, and empowering a future workforce with relevant skills. This approach ensures sustainable growth for innovative, technology-based ventures, create new research categories and deliver sustainable education based on an ecosystem, integrating all stakeholders in a knowledge economy.

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