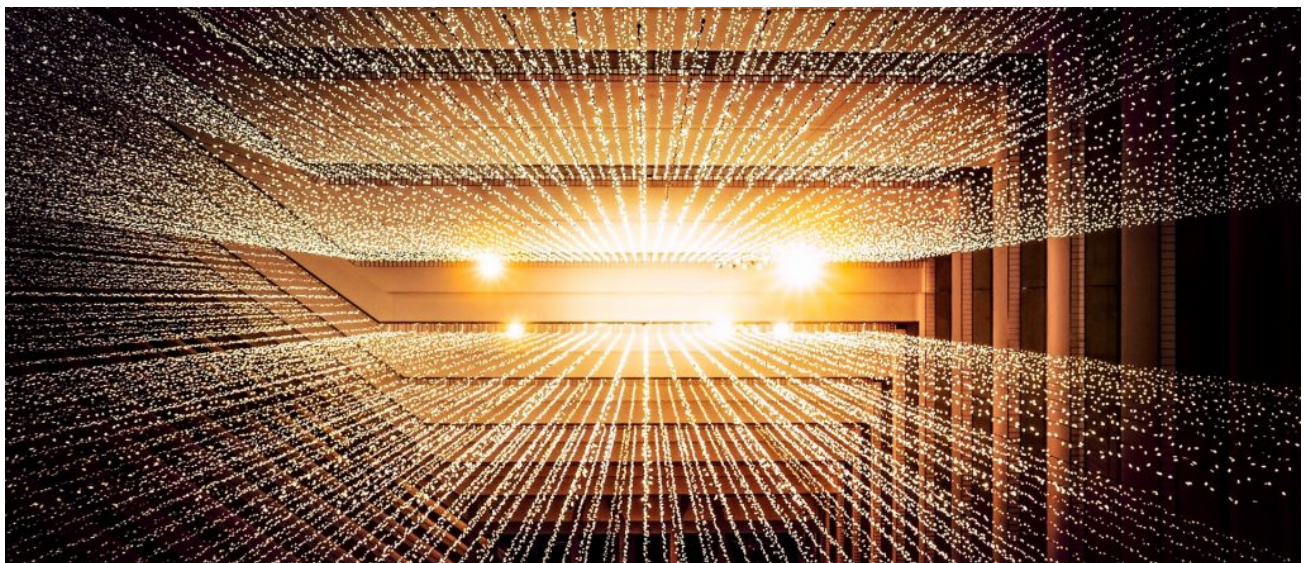# Handbook for the university course on
*Explorative Business Process Management**

Thomas Grisold[1], Steven Gross[2], Katharina Stelzl[3,] Jan vom Brocke[1], Jan Mendling[2], Maximilian Röglinger[3]

1 University of Liechtenstein, Liechtenstein

2 Vienna University of Economics and Business, Austria

3 University of Bayreuth, Germany

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CONTENT

Executive Summary of the Curriculum

This handbook proposes a curriculum to teach Explorative Business Process Management (explorative BPM) to university students. It is based on the *Five Diamond Method*, which is a method to connect business process management with approaches from innovation management. Thereby, the curriculum addresses aspects related to organizational strategy, business model innovation, digital technologies and business process design.

The proposed curriculum is designed as a 4 ECTS seminar. It covers a total number of 8 lectures, and can be used for Bachelor's and Master's courses.

It is based on the following key ideas:

- Every unit consists of two parts: the "lecture" part (theory) and the "hands-on" part (practice)
- The module is divided into four major blocks: (1) foundations, (2) business, (3) technology and (4) integration
- In the practice part, students work in groups and apply the theoretical concepts in practical terms
- Each group is provided with one case organization and, over the course of the lecture, this case is approached from different (theoretical) point of views (see group work)

Figure 1 offers a brief overview of the course.
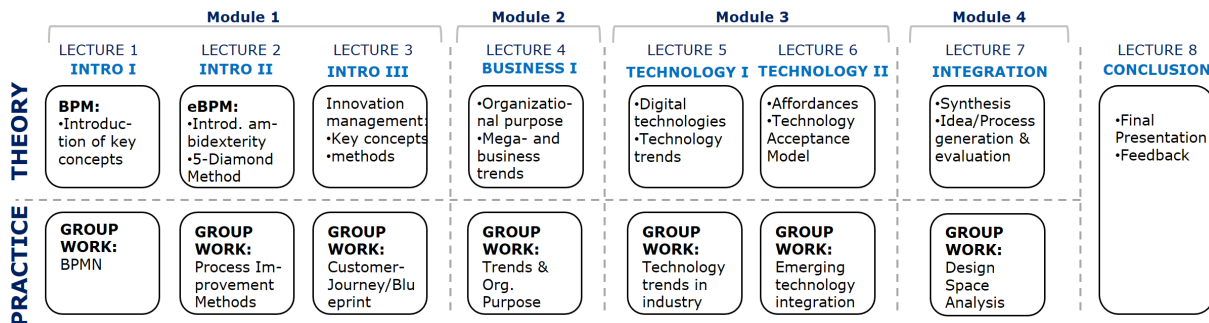
Fig. 1: The module contains seven lecture units which are subdivided into four thematic blocks. Each lecture unit has a theory part and a corresponding practice part.

Figure 1 depicts the four core modules.

- Module 1 provides a basic introduction to BPM and explorative BPM. It consists of three lectures which provide the underlying foundations of BPM (lecture 1), ambidextrous BPM and corresponding methods (lecture 2), and innovation management (lecture 3).
- Modules 2, 3 and 4 address the key elements of the Five Diamond Method (see a more detailed description below).
- Module 2 (lecture 4) focuses on the purpose and business diamond.
- Module 3 (lecture 5 and 6) comprises key concepts of (digital) technologies.

- Module 4 (lecture 7) translated ideas gained in in the previous modules into concrete business process designs.

We have evaluated the curriculum at three European universities (University of Liechtenstein, Vienna University of Economics and Business, University of Bayreuth) with a total number of 200 students.

In the following, we will provide an in-depth review of the curriculum.

The Five Diamond Method

The underlying foundation of the course is the Five-Diamond method (see Figure 2). It structures explorative BPM into four interrelated elements, namely purpose, business, technology, and integration. The diamond shape reflects stages of divergent and convergent thinking. We have developed the Five Diamond Method to integrate business process management and innovation management. We have evaluated the method in several empirical studies, both with university students and executives.

Each element focuses on one important aspect of explorative BPM.

In the purpose diamond, the strategy and context of the organization are defined, as well as the scope and vision of the organization and the actual application of the method itself.

In the business diamond, mega trends and industry trends are first explored in the divergent thinking phase. The most relevant trends are selected in the convergent thinking phase. The aim is to select trends with an adequate contextual and strategic fit, taking into consideration the results of the purpose diamond. Similarly, the technology diamond explores trends with respect to emergent technologies. They are selected with regards to the organization's context and strategy.

The integration diamond aims to synthesize the previously gained results. First, process ideas are divergently generated before being evaluated and selected in the convergent thinking phase.

Fig. 2: Overview of the Five-Diamond method, which is the foundation for the lecture and the group work
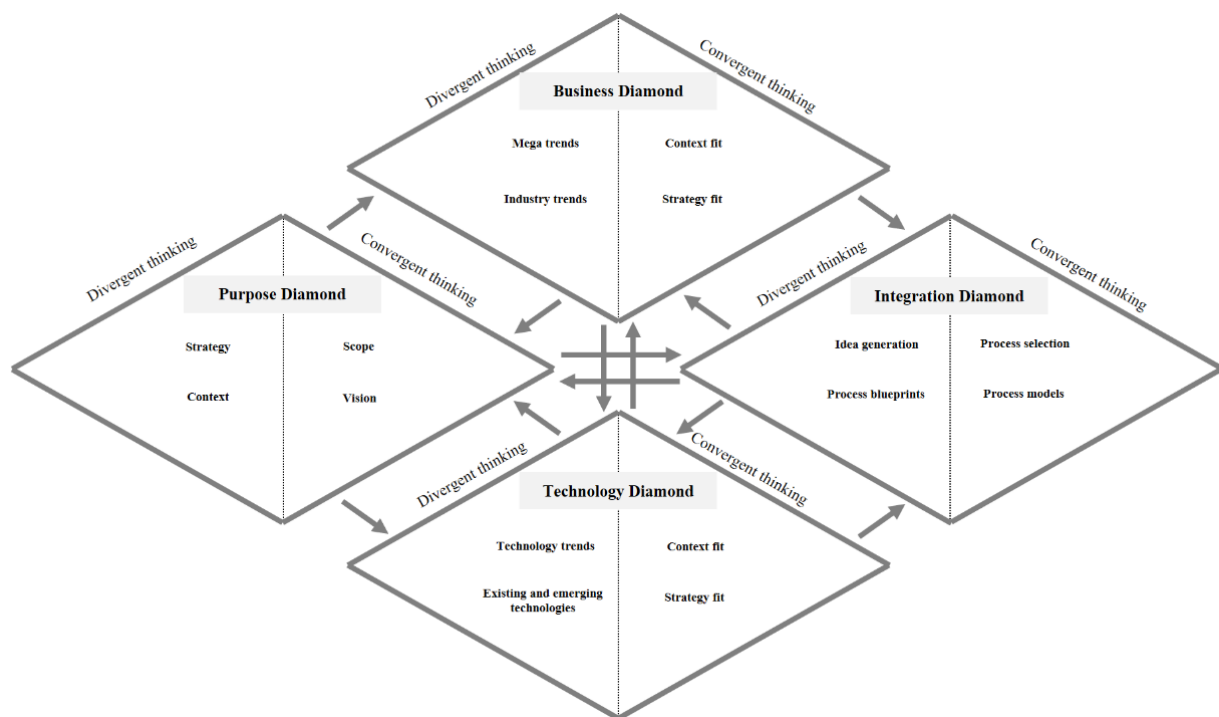
Additional information about the Five Diamond Method can be found here: https://www.bptrends.com/class-notes-teaching-the-five-diamond-method-for-explorative-bpm/

The Curriculum: Structure and Content

This curriculum addresses key elements of explorative BPM across several lectures. For each lecture, we have developed slides, which are freely available here: www.explorative-bpm.com.

Key principle: Balancing theory and practice

Key to this curriculum is that theoretical knowledge will be complemented with practical hands-on exercises. All slides are provided online and the relevant literature is provided at the end of this document.

The practice parts are organized as group works. In the group works, students apply the Five Diamond method independently. Our experience shows that the ideal group size is 3-5 students. All groups are assigned a case organization. Ideally, every case organization is well-known in the geographical area where the curriculum is taught. It is important that students can easily obtain information about the respective organization. Since a central idea of explorative BPM is to identify a new value proposition, students will not get a specific process to focus on, but they will investigate potential new value propositions themselves and decide to either reengineer an existing process or to create a completely new process capturing a new value proposition. Either way, the new or reengineered process should align with the strategy, context, and vision of the case organization.

The formation of the groups as well as the assignment of the case organizations occur in lecture 3, such that students can apply the Five Diamond method along the modules 2-4. We recommend to split the outcome of the group work into two aspects; (1) a final presentation, and (2) a final report where the feedback from the final presentation is considered.

In the following, we will outline the contents of each block of the module. For each lecture and the respective content, we will briefly describe (1) how/why it is relevant for explorative BPM and (2) concrete concepts and ideas to be taught.

The relevant literature for each module is provided in the appendix.

Module 1: Introduction to the basics of (explorative) BPM and Innovation Management

The general idea behind the first module is threefold. First, students should be made familiar with the general idea behind business process management (BPM). Second, they should be able to understand the significance of the idea behind explorative BPM. These ideas will be covered in the first two lectures. Lastly, students should receive foundational knowledge about key concepts of Innovation Management, which is the focus of lecture 3.

LECTURE 1: Introduction to BPM

This first lecture presents and reviews the basic assumption of BPM. In doing so, it will define and describe BPM and discuss its underlying assumptions.

In the theory part, core themes to be covered are:

- BPM as a management discipline
- The concept a business process
- The lifecycle of business processes
- The six core elements of business process management

In the practice part, students should get familiar with the basics of process modeling using the modeling notation BPMN.

Please note that this lecture can be skipped if students already have background knowledge about BPM.

LECTURE 2: Introduction to ambidextrous BPM

In the second introductory lecture on BPM, students will be introduced to the idea behind explorative BPM. A key message is that explorative BPM poses challenges on many levels, notably on the process and management level.

The lecture delineates explorative BPM from related ideas; it will first discuss process innovation, improvement, and re-design. Additionally, it will introduce the concept of organizational ambidexterity as it is important to understand what explorative BPM is. Methods play a central part of this lecture and exemplary methods for exploitative BPM are being introduced. Finally, it will introduce explorative BPM and present the Five Diamond Method which serves as the scaffold for explorative BPM. This framework has four main perspectives

(business, technology, and the integration) that will be presented in detail in lecture 4 to 7. Lastly, we introduce the use of divergent and convergent thinking in context of the application of the theoretical content and provide details on the purpose and business diamond of the Five Diamond Method (see Lecture 2).

In the theory part, core topics to be covered are:

- The difference of process improvement and process innovation
- Organizational ambidexterity
- The Process Design Matrix
- Methods for process improvement and innovation
  o Redesign heuristics
  o Product-based design
- Explorative BPM (definition and dimensions)
- Divergent and convergent thinking
- Five Diamond Model

In the practice part, groups will review and apply BPI methods. This will help them to understand the potentials as well as the limitations of established approaches to improve BPM methods.

Please note that this lecture can be skipped if students already have background knowledge about BPM.

LECTURE 3: Introduction to Innovation

Lecture 3 will give an overview of innovation management research, which informs explorative BPM. Thus, it will introduce different types of innovation, the innovation process itself, and different innovation factors.

In the theory part, core topics to be covered are:

- Innovation (Attributes of innovation, Types of innovation, innovation process)
- Innovation management
- Innovation methods and creativity techniques (Design Thinking, Open Innovation, Lead User Method, Brainstorming, Lean Startup)
- Innovation strategies (market-pull vs. technology-push)
- Innovation factors (innovation climate, innovation skills, innovation barriers, and facilitators)

In the practice part, groups will engage with creativity techniques. Key to this part is to apply different creativity techniques to address a business problem from a value-driven perspective.

Module 2: The business side of explorative BPM

LECTURE 4: Introduction to Business

This lecture conveys the most important aspects of the purpose and the business side of explorative BPM. Therefore, the theoretical part of the lecture will cover these two topics.

Firstly, the focus is on vision and strategic concepts for an organization as a basis for understanding the relevance of explorative BPM. Additionally, different classifications of an organizational context are presented to structure the field of action.

Secondly, megatrends and industry trends are examined more closely as knowing about trends is especially important, since innovation in one domain is often tied to trends and innovations in other fields.

In the theory part, core topics to be covered are:

- Vision, strategy, and context of an organization
- Mega- and industry trends
- Application of the purpose and business diamond

In the practice part, students will form groups. They will get assigned a case organization and make themselves familiar with this organization. Afterwards groups will apply the purpose and business diamond. Thus, they will specify the vision, strategy, context, and scope of applying the Five-Diamond-Method for the case at hand. Additionally, they will search for and identify trends that are relevant for the case they are working on. Guiding questions are, e.g. "What are emerging/popular industry trends?", "Which trends are especially important and what fits into the business vision?", "How can trends be related to the case at hand?"

Module 3: The technology side of explorative BPM

LECTURE 5: Digitalization

This lecture introduces the technology side of the Triple-Diamond Model. Thereby, it discusses digitalization as a global trend that affects businesses on various levels. There is an in-depth discussion of the implications of digitalization.

Digitalization is also approached from a theoretical perspective. Digital technologies have distinct attributes that set them apart from other technologies; these ontological features are important to understand in order to realize the potential of digital technologies in terms of innovation.

In the theory part, core topics to be covered are:

- Digitalization as a mega trend
- Digitalization as disruptor of the business landscape
- Affordances and requirements of digitalization
- Digital ontologies

In the practice part, groups will search for and identify digitalization trends that are relevant for the case they are working on. Guiding questions are, e.g. "What are technologies that are important in a specific industry?"

LECTURE 6: Introduction to digital Technologies

In the second part of this module, we will relate digital technologies to organizational practice. We will take a closer look on how digital technologies can amplify, constraint or even afford new business processes. In doing so, we will discuss the connection between tasks and

technologies and we will examine how we can assess the fit between those two. Furthermore, we will introduce the concept of "affordances". In light of the unique ontologies of digital technologies that were covered in lecture 5, we will explore how companies can identify new opportunities for actions and practices.

In the theory part, core topics to be covered are:

- Task technology fit
- Affordances and archetypes of digital technologies
- New work practices in the digitalization era

In the practice part, groups will discuss how they can reinforce emerging technologies into their business processes. The focus here, however, is less on the integration of new technologies into existing work processes but rather on the question of how new processes can be designed.

Module 4: Integration of Business and Technology in the light of explorative BPM

LECTURE 7: Integration

In lecture seven, we set out to generate and assess new solutions. The lecture covers two topics.

On the one hand, it will review the contents covered so far and encourage the synthesis of the two blocks, that is, technology and business.

On the other hand, since explorative BPM is related to the development of new business processes or business models, their realization may yield opportunities but also risks. Thus, it is important to approach possible solutions from different perspectives to determine the likelihood of success or failure. The main artifact covered is the Business Process Design Space (Gross et al. 2021)[1], which supports a structured procedure for the creation of process redesign alternatives.

In the theory part, core topics to be covered are:

- Idea creation (through the Business Process Design Space (Gross et al. 2021))
- Idea evaluation

In the practice part, groups will identify and generate new process ideas for their respective case with the aim to select one of these processes for the final presentation (lecture 8).

LECTURE 8: Presentation

In the final lecture, the groups are presenting their results. They describe the situation faced with their case organizations, the actions taken (by applying the Five Diamond method), results achieved (the new or reengineered business process and the new value proposition), and lessons learned. In the 'actions taken' part, students should focus on the divergent and convergent thinking phases of the purpose, business, technology, and integration part of the Five Diamond

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[1] Gross, S., Stelzl, K., Grisold, T., Mendling, J., Röglinger, M., and vom Brocke, J. 2021. "The Business Process Design Space for Exploring Process Redesign Alternatives," Business Process Management Journal (in press:in press). The article can be downloaded here:
https://www.researchgate.net/publication/345718601_The_Business_Process_Design_Space_for_Exploring_Process_Redesign_Alternatives

Method. The students will then receive feedback from the classroom (other students) as well as the lecturer regarding their proposed explorative business process. Evaluation criteria for the group work is the level of innovativeness (is it new, original, and useful in the area of application?), feasibility (can it be operationalized now or in the next 2-3 years?), compliance (does it comply with rules and regulations?), and the new value proposition (is the process offering a new value proposition for its customers?). The feedback gathered in the classroom can then be used to rework the idea and to submit the final report, which covers the same material as the presentation. We suggest to grant at least 10 days from the final presentation to the submission of the final report, such that students can adapt their content adequately.

Teaching the Curriculum Virtually

In response to the Covid-19 crisis, we addressed the question of how we can teach the explorative BPM curriculum virtually.* *

In the following, we propose how to empower digital skills, reduce "Zoom fatigue" as a new kind of information overload, as well as stress resulting from increasingly blurred boundaries between private and professional (including school/university) life. In particular, we focused on the question of how we can maintain the highly interactive character of the curriculum within virtual teaching environments.

Amongst others, we interviewed lecturers from other universities, conducted hybrid workshops and seminars, tried different setups of break-out sessions, and looked into tools that allow for more natural, i.e. proximity-based, interaction between meeting participants than commonly used WCS. Many ideas informed the concept of the Virtual ERCIS BPM Winter School, which took place from 22/02/21-26/02/21. As such, the BPM Winter School included a quiz, a game for getting to know each other, a virtual company visit, a virtual party, an online panel, interactive elements during the lectures, and a lounge space that participants could visit during e.g. lunchtime or coffee breaks to chat with their peers.

Based on our learnings, we developed the following guidelines that shall help to create and reinforce social interaction and informal exchange in virtual environments.

Recommendations and guidelines

Before the lecture:

- **Verify functionality of microphone and camera**: Even though most lecturers will have a lot of experience giving online classes by now, a quick check is recommended to avoid problems during the class.
- **Open the class room 10 minutes before the actual lecture starts**: In a physical setting, not all class participants would arrive at exactly the same time. Especially the time before a lecture starts is a good one to catch up with peers or the lecturer. In a virtual setting, participants do not have a "place" to meet. Give them an opportunity to chat with peers and or with you by opening the meeting room a few minutes before the lecture.
- **Establish and communicate a meeting etiquette**: Course participants should mute themselves when not speaking and be encouraged to switch on their camera during the session (if conformable with the applicable data privacy regulation). Turned on cameras help the lecturer to get some feedback from the audience and also increase the level of concentration and engagement on part of the participants
- **Create a "place"**: Virtual meetings generally provide less opportunities to express oneself and to create an atmosphere. However, meeting solutions provide features, e.g. virtual backgrounds, that can help recreate some physicality and shared context. Think about which mood you would like to create during your class, which impression you would like to give, or which picture would fit the topic of your teaching unit and customise your background

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* For more information about this part of the project, please refer to Dr. Janine Hacker: janine.hacker@uni.li

accordingly. Also encourage meeting participants to use a virtual background, e.g. showing their city or favourite holiday spot. As such, different backgrounds can also work as an icebreaker at the beginning of a meeting and create a more personal atmosphere.

During the lecture:

- **Try to reduce front-of-class teaching to a minimum and have your participants interact**: Even more so than during physical lectures, students' minds easily wander off during virtual meetings that require listening rather than active participation. Think about how you can keep the front-of-class teaching part low and instead, create opportunities for your participants to interact. Break-out rooms are a good means to facilitate group work. To indeed foster interaction, break-out rooms should not include more than five participants. Ask the students (or randomly assign a student) who will moderate the room and summarise the outcome of their work. Check on your meeting participants as they are in the room.
- **Use external tools to diversify your lecture**: Using external tools to get feedback, do a quick test, or facilitate collaboration are a great way to enhance lectures and give students a break from the virtual classroom. The following list of tools can help as a starting point:
  - Get feedback: Zoom poll
  - Do a quiz: Mentimeter, AhaSlides
  - Enable brainstorming and collaboration: Miro, MURAL, Google docs
- **Invite external speakers**: The fact that location does not matter in the virtual world creates opportunities to diversity the speakers involved in your lecture. Since there is no need to travel, virtual guest lectures are easier to organise and align with a guest lecturer's schedule. Think about which people with in-depth expertise and / or practical insights in a certain area of your course might like to drop by for a short or full virtual guest lecture.
- **Get out of the virtual classroom**: Company visits are often perceived as a highlight of a course. Get in touch with companies that you would like to visit and check if they offer virtual company tours. This can possibly be arranged with case organizations.

After the lecture:

- **Get feedback from course participants**: Ask your course participants what they learned during the lecture, and what they liked or disliked about the lecture, either directly or by using one of the tools for polling. Asking students to write (brief) diary entries to reflect on the lecture is an option to obtain more detailed feedback.
- **Have a coffee in your virtual cafeteria**: Proximity-based meeting solutions, such as wonder.me and gather.town, enable participants to gather around e.g. a table and only interact with the people close to them. Invite your course participants over to your virtual cafeteria to have a quick informal chat with you or their peers.

Appendix: Reading material for each lecture

Lecture 1

[Books]

- Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. A. (2013). *Fundamentals of business process management* (Vol. 1, p. 2). Heidelberg: Springer.
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Lecture 3

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Lecture 5

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