

Patterns for Personal Business Model Canvas Applications – BE(A)ST, an Approach for Aware Career Development

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Abstract: The model in which after formal education a person obtains a stable occupation has been replaced by the career model of building many, often different individual development paths throughout the course of one's life. It poses a huge challenge for higher education institutions. Universities must move from the current mode of 'mass production' of students to the approach that treats students individually according to their interests, values, passion and character traits. Furthermore, universities should focus not only on developing hard skills, but also universal competences that can positively affect their ability to adapt to the changing demands of the labour market. The education process usually involves many stakeholders: students themselves, academics, career office staff, parents, employers, or friends. Each of these groups has different levels of understanding of what a career is, what career planning is about, and what professional success means. Ideally, the university provides support for the personalization of educational pathways and career planning at various points of contact - classes, career offices, career related events. Students should also be motivated to actively develop their career identity and its connection to what makes them tick. Universities should offer career planning tools for various stakeholder groups tailored to their needs. Our approach called BE Aware Student (BE(A)ST) is a comprehensive framework that enables universities to prepare students to be more agile in educational track individualization and increase students' adaptability in the process of conscious career development. The key technique adopted for the BEAST approach is the Personal Business Model Canvas (PBMC). This paper presents the patterns of PBMC applications in the form of possible scenarios that may be used by students, educational staff members, and career office workers. Students can use the PBMC for educational track individualization and early career planning. Educational Staff Members can use the technique to present the market potential of the subject they teach and to prepare a reference model for possible job positions related to the subject matter of the classes. Career office workers may use PBMC for counselling students and collecting information on occupation requirements from employers.

Keywords: Personal Business Model Canvas, BEAST Approach, Agile Career Design and Development, Career Awareness, Individualization of educational path

1. Introduction

The set of competencies sought in the labour market today is shaped by many factors, including characteristics of new generations, requirements regarding career development and learning, ongoing digital transformation of organizations, and globalization. The labour market has become extremely volatile. According to forecasts, by 2025 about 85 million jobs will be automated (World Economic Forum, 2020), mostly in the case of performing repetitive manual activities. The reduction in employment, however, takes place not only in the area of physical labour, but also with regard to routine, white-collar jobs such as banking and clerical work. The same report also predicts the creation of 97 million new jobs in the same period, implying that more jobs will be created than eliminated. According to the Deloitte analysis (2021), the key drivers of the current job market are the democratization of technology and new opportunities for employees to use it, the data-driven culture of companies that influences decision-making processes, as well as the dynamic development of artificial intelligence algorithms and tools. PwC's research with over 2,000 participants from nine major industries and 26 countries has shown that it is still a problem to fill the gap in the labour market, i.e., finding the right talent for specific occupations. However, a bigger challenge than the ever-changing technology is a human factor (Geissbauer et al., 2016): In the IT sector, one of the most profitable in the EU economy, there is an estimated shortage of more than 0.5 million workers (Sedlar et al., 2018). The labour market is also significantly affected by demographic changes and globalization. Telecommuting has become one of the standard possible choices for young people, and the full-time model of employment has been replaced by part-time, temporary, and on-call employment models (Kergroach, 2017). All of these factors contribute to the wide variety of skills required and the need to adapt quickly to volatile conditions.

These insights have led us to the idea of a comprehensive approach to career development, named BE Aware Student (BE(A)ST), that universities can adopt and that universities can implement. The BE(A)ST approach is

being developed by the authors of this paper in cooperation with scientists from partner universities in the framework of three projects. BEAST, DYLMIC, and OMNI-BEAST¹. The projects are being implemented by the University of Information Technology and Management in Rzeszów, Alma Mater Studiorum - Università Di Bologna, Instituto Politécnico De Portalegre and Université de Nice – Sophia Antipolis. The outcomes of BEAST family projects include process, driving stakeholders' activities, and the toolbox. The tool that we consider the most important in [this] career iterative development is Personal Business Model Canvas (PBMC) (Clark et al., 2012). This paper describes possible applications of this tool in the form of templates that can be used for career development activities carried out by students and supported by university staff members, academic teachers and Career Offices workers. The templates show how to use PBMC in different contexts, depending on the role of the stakeholder. However, in every case, the main aim of the application is to empower students' choices for their own aware and agile career development.

2. BE(A)ST Methodology as a Multi-sided Approach to Career Design and Development

Properly managed career development is a huge challenge not only for students but also for academic teachers and career offices staff. This has motivated us to start the development of the BEAST approach. Its main objective is to provide all stakeholders involved in the process of shaping the professional identity with a framework and set of tools that can be used to design educational and career paths with a focus on professional and personal fulfilment. The BEAST approach is a multisided, original methodology that integrates the following currently available frameworks:

- *Business Model Generation & Business Model You*. In the BEAST approach we have included a Personal Business Model Canvas (Clark et al., 2012) (inspired by a Business Model Canvas (Osterwalder, Pigneur, 2010) that promotes a “prototype, test, and revise” approach to career development. As will be shown in the paper, PBMC may be used by all stakeholders according to application patterns depending on the context and their specific needs.
- *Designing Your Life*. In the BEAST approach, personal resources of students are the most important drivers for defining professional identity in terms of values, interests, and passion. The application of the *Designing Your Life* framework and tools (Burnett, Evans, 2016) allows young people to self-reflect and find the connection between personal resources and possible career paths. Such a connection may result in the selection that will provides students with personal and professional fulfilment.
- *Design Thinking*. As career development is nowadays considered as a “wicked problem”, i.e., one that cannot be solved using standard problem-solving techniques, integrating Design Thinking framework into the processes of the BE(A)ST approach usage enables individuals to be fully assisted when building the careers they desire and designing their professional way forward (Jakiela, Świętoniowska, Wójcik, 2021). With Design Thinking the career development process may be carried out in a flexible and nonlinear, iterative fashion.

The main assumption we take as our point of departure is that every job position in an organization has as its foundation the need for a human resource. When doing the job, this human being creates value for the business' customers. An employee working in a specific occupation can be considered as a human resource that has her own personal business model. In our BE(A)ST approach, the key technique supporting the “prototype-test-revise” approach to agile career development is the Personal Business Model Canvas. We adopted this particular tool due to its high level of flexibility, which has given us many options for different applications. PBMC is a one-page professional development tool, the structure and content for which is presented in Figure 1.

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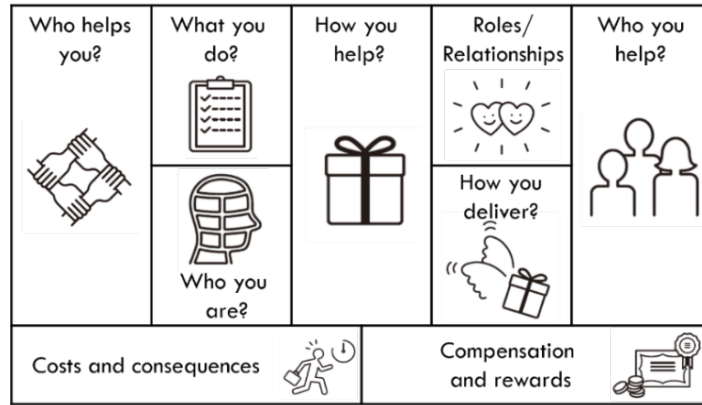


Figure 1: Personal Business Model Canvas

Detailed descriptions of all PBMC segments can be found in the book *Business Model You: A One-Page Method for Reinventing Your Career* (Clark et al., 2012). This paper discusses only patterns of applications for Personal Business Model Canvas. However, it is worth remembering that the BEAST toolbox includes more than 20 techniques that can be used by all stakeholders in the development of the student's career and the individualization of educational pathways (Vignoli et al., 2022).

As the BE(A)ST is a multifaceted approach to career development, it includes templates for possible applications of various tools that can support activities carried out by different stakeholders at the universities involved in career development processes: students, university teachers, and career offices workers.

3. Personal Business Model Canvas Application Patterns for Students

The main aim of students' development is to make them more self-reflective seekers of career opportunities who can plan and re-plan their learning path as well as adapt to a volatile labour market. All the templates for students have been designed for this purpose.

3.1 Scenario #1 Better planning of one's educational track at the university

Aim of the scenario: Selecting the most valuable elements – from the perspective of professional identity – of the educational offer: the major and/or subjects of greatest importance for the future occupation.

Application: The application of the scenario requires an analysis of the Occupation Canvas(es) related to the student's professional identity. A detailed description of all elements in the canvas will provide a view on the typical activities that a given position entails. The student may use the university's Catalog of Career Canvases related to job positions, important from the perspective of graduates' profiles for key majors. In an alternative approach, the student can prototype a PBMC for a chosen occupation, taking into account the results of the conducted analysis of the labour market requirements (job offers, articles, labour market reports, interviews with people employed in the position, etc.). Students should be provided with a course guide that describes the aims as well as learning outcomes of the subjects/courses on offer. Students who have selected their study program and career canvas for particular job position, can then identify the subjects of greatest importance for their future job position and professional development, namely, those that best align with the learning outcomes achieved with the job requirements described in the PBMC.

Key elements of the PBMC to analyse: What you do, How you help, How you deliver, Roles/Responsibilities.

Results: The student develops a *Plan for his/her educational path at the university* including the elements of the university's educational offer as well as additional opportunities in the field of informal education.

3.2 Scenario #2 Identification of personal resources and finding the best fit between them and market requirements

Aim of the scenario: Planning the personal resources development: to identify the student's current needs in terms of development of skills, knowledge, and interests with respect to the desired occupation.

Application: The scenario application requires an analysis of the PBMC describing the student's personal business model as well as the PBMC developed for the job position that is related to the student's professional identity. A comparison between the PBMC for a specific job position and the student's own personal business model (especially the WHO You Are part) will allow the student to assess if she/he is well prepared for the specific market requirements related to the occupation she/he is interested in, as well as identify skills and knowledge areas that he/she should develop (gaps to be reduced). She/he can then create an AS-IS version of the PBMC and then develop SHOULD-BE variants depicting the desired development plan. Then she/he can list the gaps referring to skills and knowledge that should be developed. With regards to this list, the student should analyse the additional educational offerings of the university that can support his/her knowledge and skills improvement outside the classroom (such as additional trainings organized at the university, scientific circles, student organizations, conferences etc.). Student may also consider a variety of other learning situations that are not related to "formal learning" at the university, but aimed to develop the skills or build the relationships (networks) in a professional environment – self-development activities. These can include searching for additional on-line courses, webinars, podcasts, books, events. As a result of the application the student should select the most valuable ones from the perspective of Professional Identity in the area of informal educational support.

Key elements of the PBMC to analyse: Who You Are.

Results: The student prepares a *Development Plan* including elements of the university's additional educational offerings as well as new opportunities in the field of informal education. The valuable outcome of preparing *the Development Plan* is the student's self-reflection to determine whether he/she is well-prepared to meet the specific market requirements of the selected occupations.

3.3 Scenario #3 Better understanding of the future job environment

Aim of the scenario: Understanding the ecosystem of favourite occupations.

Application: The application of this scenario requires an analysis of the PBMC that yields a description of how the specific occupation is related to the student's professional identity. The occupation canvas analysis can help the student to understand the ecosystem of a specific job position. With a PBMC for a specific occupation, the student can investigate the kinds of activities she/he would be doing and the characteristics of the specific business model environment: the partners the student will cooperate with, the roles she/he will play in carrying out his professional activities. She/he can determine if the work environment will offer her/him certain expected opportunities e.g., to work with a variety of people, in national or international teams. Self-reflection on the activities the student likes as well as his/her strengths and weaknesses and comparing them with the characteristics of the job position described in the occupation canvas will allow the student to answer the question whether this is a job that may bring him/her fulfilment and satisfaction in the future – not to mention whether s/he can meet occupation requirements. However, learning about the environment related to the selected profession can also take place during the process of preparing the PBMC of the dream job by the student himself. The canvazing process will require the student to analyse the labour market requirements described in job offers posted by employers, branch reports, feedback from the professionals working on this particular position, etc.

Key elements of the PBMC to analyse: Who you help, Who helps you, How you help, Roles/Relationships, How you deliver.

Results: Better understanding of the ecosystem of a specific job position; insight into whether the job position selected is a job that the student can find fulfilling in the future and whether he or she will be able to meet the occupation requirements.

4. Personal Business Model Canvas Application Patterns for Educational Staff Members

Educational staff members at the universities can and should play a much more important role in the process of developing students than they are playing now. It entails not only shaping students' hard skills connected with their major, but also helping them develop their professional identity and integrating it with their interests and passion. One very important aspect is also how well the competences that are being developed during classes match with real market requirements. Therefore, there is a need for university teachers to undergo a transformation from passive knowledge providers to active mentors and coaches. Recommended scenarios are presented below.

4.1 Scenario #1. Finding the best fit between content of the classes and real market requirements.

Aim of the scenario: Defining learning outcomes highly correlated with graduate profile job market requirements.

Application: In the first step, the teacher should analyse the connections between the subject under consideration and possible occupations related with the graduate profile of the students' major. Each identified occupation will have specific job market requirements concerning skills, knowledge areas and universal competences. Based on information collected, occupations requirements may be mapped with PBMC. The mapping may start with naming *Key Activities* (What you do) associated with the specific occupation and then key *Personal Resources* (Who you are) required for these activities to be carried out in the most effective manner. Other important segments are *Roles/Relationships* and *How you deliver*, which can provide additional information on competences and possible interaction patterns as well as tools needed for getting the jobs done on the specific occupation in the company ecosystem. An analysis of *Customer segments* (Whom you help) will give teachers a better understanding of value provided by future employee and help to start thinking in terms of professional *value proposition* that could be developed during specific classes. The content of *Who helps you* segment is a source of valuable hints as to who usually supports the employees' activities in the areas that are beyond the core of the occupation's key resources or may support resources development. The mapping process should be done for all occupations related to the specific major's graduate profile. The resulting *Occupation Canvases* will serve as a reference model for setting the class's scope and careful planning its content. Such a holistic approach will enable teachers to focus on the topics that are most important from the perspective of current and future labour market requirements.

Key elements of the PBMC to analyse: What you do, Who you are, Roles/Relationships, How you deliver, Whom you help, Who helps you

Results: Class's content with learning outcomes adjusted to job market requirements.

4.2 Scenario #2. Better understanding of students needs related to personal resources connected to subject under consideration.

Aim of the scenario: Provide teachers with the opportunity to dynamically adjust the class's content to specific group/individual needs

Application: Occupation canvases developed for possible future job positions can be presented to students at first meetings (lecture, labs, project); this will give students the vision of the class's content and help them to understand its importance with regard to real market requirements and their professional identities. This approach is the source of several benefits for students and teachers. With the reference model describing personal resources in terms of skills and knowledge needed for occupation, students can inform their teachers vis-à-vis gaps they currently have. Any given subject usually has the content structure fixed before classes start. However, balancing the effort students put into different activities may be accomplished dynamically during the classes based on students' feedback. It is possible to dynamically personalize the scope of the topics, the number of assignments and their difficulty level according to the group's (or even individuals') specific needs connected with their professional identities. This will also improve the quality of the mentoring/coaching process conducting by teacher. Every group of students – or even individual students – will be treated according to their specific educational needs and will thus benefit from the classes as much as possible with regard to personal resources developed.

Key elements of the PBMC to present/analyse: What you do, Who you are, Roles/Relationships, How you deliver, Whom you help, Who helps you

Results: Class's content closely related to labour market requirements and adjusted to specific group/individual needs.

4.3 Scenario #3. Support to reduce routine teaching behaviors

Aim of the scenario: Determine the importance or priority of topics presented during classes and use this information for setting the class's scope and teachers' self-reflection and self-development

Application: It is quite common for university teachers to be biased with regard to subjects they are responsible for. They are often eager to incorporate content related to their existing knowledge into their lesson plans. This is understandable, but should not negatively impact the content being taught to students. This scenario represents a tool that may help reduce routine teaching behaviours. During the process of preparing/analysing occupation canvases, teachers have the opportunity to get a holistic view on personal resources that students should develop to be competitive on the job market. Deep understanding of what really matters with regard to required competencies may be very helpful when preparing the scope of classes and their content. When setting the scope, the most important characteristic of the topics taken into consideration is the topic's priority. Planning process driving by occupation canvases may simplify the process of selecting the most important content for the fixed timeframe set for the subject. After careful analysis of the occupation canvases it is easier to decide which topics fall into the following categories: must-be-learned, should-be-learned, could-be-learned, or will-not-be-learned – during specific classes. It also helps to reduce routine teaching, because the content adjustment is not based on the subjective view of the teacher and her attachment to her own expertise; the main lens is rather the importance of competencies students should develop well with regard to occupations related real market requirements. This pattern application and implementation are also very demanding, because teachers have to develop themselves constantly to keep up with job market trends. However, being up-to-date with regard to personal resources will determine the extent of their bargaining power on the educational market. Such occupation canvases for developing the teacher's awareness of her own personal resources (as well as ones she should still develop) can thus also be considered professional development tools.

Key elements of the PBMC to present/analyse: What you do, Who you are, Roles/Relationships, How you deliver, Whom you help, Who helps you

Results: Better understanding of course topics' relevance to the job market; insight into possible self-development points for teachers

5. Personal Business Model Canvas Application Patterns for Career Offices Workers

Employees of Career Offices and vocational consultants are professionally trained to provide counselling services to students in the area of career development. The BEAST approach offers them a framework for supporting students in developing relevant competencies in order to meet the requirements of the labour market and identifying career directions that match their professional identity.

5.1 Scenario #1 Cooperation with entrepreneurs in preparation of internship/employment offers

Aim of the scenario: Preparing a precise offer of internships and placements. Employers looking for students for internships and, in the long run, for employment, struggle with the problem of defining the precise characteristics of the future employee. The recruitment and selection process is very time-consuming and expensive, yet it does not guarantee the selection of the right person. When formulating advertisements, employers often use standard phrases that are not consistent with the real needs. This situation causes frustration for both employers, who often believe that the trainee did not meet expectations, and the employees of Career Offices, who are seen as ineffective brokers.

Application: Career Office staff conducts workshops for employers that last several hours and are designed to familiarize managers and recruiters with the PBMC tool for selected jobs. The workshop includes exercises to test the understanding of the various elements of the PBMC. Understanding the BMC and PBMC techniques and their application in job/position descriptions will help link key activities performed in companies to the skills/knowledge requirements of employees in specific knowledge areas. A validated Career Catalogue is presented to demonstrate the expected quality. In the next step, the representatives of the company create a canvas for the internship and apprenticeship, which they then discussed, correcting any potential errors. These one-page canvases are then described in detail by a member of the Careers Office staff so that they can be compared with the students' PBMC. Direct contact between Career Office employees and companies will also allow the Career Offices to fulfil another basic responsibility of monitoring the local labour market.

Key elements of the PBMC to analyse: What you do – core activities, Who you are and what you have – resources, How you help – value proposition

Results: A catalogue of PBMCs of sought-after professionals prepared by companies, used by Career Offices to find the most suitable future employees among students.

5.2 Scenario #2 Identify student training needs

Aim of the scenario: Develop attractive training in universal skills for students using Career Office services.

Application: The scope of responsibilities of Career Offices has evolved over time from providing students and graduates with information about the labour market and publishing job and internship offers to diagnosing how students' interests match with career opportunities. As part of this scenario, the Career Office staff prepare training materials in the form of attractive e-learning courses/videos presenting the PBMC technique. These materials are made available to students prior to individual sessions with a Career Office staff member. Students prepare a draft version of the PBMC. During the meeting, the Career Office staff member discusses the preliminary version of the PBMC and the results from the completed questionnaires (standard Career Office tools). It is the student's responsibility to revise the PBMC after the session and submit it to the Career Office. This will create a PBMC database of students from different majors and specialties. On this basis, Career Office staff define the weaknesses of students' universal competencies needed in the labour market (based on workshops with employers and PBMCs prepared for selected positions) and prepare a training offer in consultation with professionals (both from the university and external companies).

Key elements of the PBMC to analyse: How you interact – customer relations, How you interact – customer relations

Results: A list of new universal competency trainings entering the Career Office offerings along with a potential list of participants.

5.3 Scenario #3 Selecting the right student for the position offered

Aim of the scenario: Comparison of students' PBMC with job postings stored in the form of PBMCs

Application: Career Offices should target offers to the right students, however, profiling often proves ineffective or is simply unsuccessful. It is done on the basis of standardized questionnaires and assumptions about students in a particular field of study, and as a result, some offers do not reach the right students. Such an approach eliminates the individual and subjective treatment of persons seeking internships, and thus results in a moderately positive perception of Career Offices. The Career Services employee uses the database of students' PBMCs and the complemented and developed Catalogue of Career Canvases to select potential candidates for a job position. In the case of a small number of offers and student profiles in the form of PBMC, the selection can be done semi-automatically. Bigger institutions, however, should invest in software dedicated to performing this selection stage automatically. Once the cohort of suitable candidates has been selected, the Career Office employee contacts them and supports them individually in the process of soliciting the employment.

Key elements of the PBMC to analyse: What you do, Who you are and what you have – resources

Results: A table containing the job offer number with the names of eligible students assigned to it. This table should be kept up-to-date and contain only active offers and active students.

6. Conclusions

This paper discusses innovative scenarios of PBMC applications in the context of different roles in the process of personalizing students' educational path and career development, already at the stage of higher education. Skilful use of PBMC can support the activities of not only students, but also teaching staff and career office workers. The use of patterns or templates in the didactic process allows for a better correlation between students' skills developed during classes and the current requirements of the labour market. As a result, students are better prepared for professional work in positions related to the chosen field of study. PBMC also supports the transformation of teaching staff from passive knowledge providers to mentors and coaches who are the source of professional hints and questions stimulating students' self-reflection. Teachers can also use PBMC for continuous professional development towards delivering classes that increase students' employability and professional identity awareness. This can significantly reduce routine teaching practices. Moreover, students who use PBMC for iterative personal business model prototyping can better understand the areas they should take into account in the educational process and properly balance the focus and effort. PBMC used according to the prototype-test-revise method supports agile career development and fast adaptation to changing occupation environments. The BEAST approach is still under development, and the PBMC technique is thus continuously being tested during workshops with students organized in the form of summer schools. Workshops

for teachers are in the pipeline, the main goal of which will be to discuss possible testing strategies for the application patterns intended for teaching staff.

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