

ARTICLES

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THE CONCEPT PRE-INCUBATION IN THEORY AND PRACTICE

Abstract

The concept of business pre-incubation is described in a residual way in the literature. The few articles defining what business pre-incubation is describe it as a service that enables an entrepreneur to test his or her business idea in real market conditions. The aim of this article will be to try to define and structure the concept of pre-incubation by pointing out its basic features, as well as to identify good practices for corporations that would decide to create a corporate incubator along the lines of the one described below. The objectives of the article will be achieved through an analysis of a pre-incubation project carried out at the end of 2021 and the beginning of 2022. The analysis will be carried out from the point of view of its participant, and through information from the organisers of this project in order to maintain a multi-faceted and broad view of the problematic of the concept of pre-incubation. By analysing existing definitions, listing the basic characteristics of pre-incubation and placing them in a real-life example, the conceptual and theoretical gap that exists in the science of about innovation, and the practical features of such a model of cooperation from the point of view of enterprises will be indicated.

Keywords: Pre-incubation; Innovation; Innovation Management; Innovation Processes; Startups; Entrepreneurship

JEL Codes: M13, O31

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1. Conceptual structuring and definition of pre-incubation

In order to get a closer and deeper insight into how pre-incubation is perceived so far, it is necessary to delve into the proposed definitions. According to one of them, pre-incubation is "a proactive activity to check whether innovative ideas have business potential." (Mwandosya, Apiola, & Lahde, 2016) The concept of a pre-incubation recipient does not appear in the above definition. Key in this definition is the indication of the processivity to which the idea is subjected. It is checked for business potential. The activities that are undertaken for the said checking are not outlined. A characteristic feature of this definition is its broad outlining of the subject, and the object of pre-incubation. The only restrictive criterion is that the pre-incubated idea must have an innovative feature. Two conclusions can be drawn from the above, namely that an already existing product or service cannot be pre-incubated. The business solution must be at the concept stage, and it must be innovative, i.e. propose a new, previously unknown solution (Mwandosya, Apiola, & Lahde, 2016).

Researchers associated with the Technical University of Valencia, and the university's StartUPV incubator, point out that pre-incubation, as a business development tool, is primarily dedicated to students, and that the main area of activity within the pre-incubation stage concerns the search for business opportunities, the refinement of technology, and the development of a business model (Griol Barres, Márquez Gómez, Giménez Carbó, & Gómez Martín, 2022). Here, in turn, the main audience is shown as a student who has an idea that needs to be adjusted to a level where this idea will solve a specific problem and consequently meet consumer demands. Furthermore, the role of pre-incubation at this stage is to simultaneously develop a business plan through which the idea will develop a profitable business model.

Putting these two definitions together, it is important to note how broadly defined the recipient of pre-incubation is. What they have in common is that it is usually a young entrepreneur (both in terms of age and in terms of running their own business) and that pre-incubation is subject to an idea being developed and tested in relatively safe conditions. This testing can take place within professional business incubators, inside specially dedicated teams within companies, as well as within student incubators set up at universities. It is, however, impossible to pre-incubate an entire functioning enterprise, as the purpose of pre-incubation in a broader context is to create a product or service, as well as the processivity going on around it. A developed enterprise has all these characteristics so it is impossible to preincubate such entities. One can therefore conclude that in the preincubation process it is not the experience of the entrepreneur or the team that is important, but the idea around which the process environment is built.

The pre-incubation and creation of the business model itself takes place in multiple stages. Several sub-stages of business idea creation have been

listed in the literature. These sub-stages will later be placed in the context of the eponymous corporate-student incubator.

The various stages of creating a business model are (Yoganandan & Vignesh, 2017):

- information gathering,
- analysis of the business environment,
- analysis of the practicality of implementation,
- creation of a multi-pronged business strategy,
- preparation of a pre-incubation report,
- evaluation and control of activities.

The above stages help to outline the basics of pre-incubation. None of these stages would be possible without having a business idea. Pre-incubation starts with having an idea, as it is the business idea that is the subject of pre-incubation, not the entrepreneur or any other entity. The second cut-off point is the end of pre-incubation. This can be considered as the creation of the first business model for the idea. This idea does not have to be profitable; it can be subject to numerous modifications in relation to the current market situation. This stage is already carried out as part of the incubation process. The literature indicates that the recipient of incubation, i.e. the next process after pre-incubation, is already the entrepreneur (Rudawska, 2020), who must have his or her own business, as it is the main object of incubation next to the support in creating an innovative product or service (Przybył & Grudzień, 2011).

2. Definition of pre-incubation versus student pre-incubation programme

In view of the above considerations, the proposed definition of pre-incubation is as follows: pre-incubation is the process during which a business model for an innovative solution to a market-embedded problem is developed around an idea for an innovative solution to a market-embedded problem, under controlled conditions. Two aspects are key in the proposed definition: the controlled conditions and the market-embedded problem. The entrepreneur aspect is deliberately omitted, as an idea is pre-incubated regardless of the specific characteristics of the entrepreneur. An idea tested inside a large-scale corporation can be pre-incubated as well as a student idea. Restricting the definition with the notion of entrepreneur would considerably narrow the concept of pre-incubation itself. More important than who is the recipient of pre-incubation is what competences of the originator will be strengthened through the pre-incubation process (Rudawska, 2020).

Another point is the controlled environment. Using the definition quoted earlier, there is no company at the pre-incubation stage, so strategy development and early testing must take place in as safe an environment

as possible. Purpose-built business incubators or academic incubators, on the one hand, and corporate incubators for enterprise innovation, on the other, can serve as safe environments. Equally important is the market-embedded problem. By this term is meant the solution to a problem, the solution of which will bring the greatest added value to the customer. This value brought to the customer will then be a source of growth for the future enterprise (Ries, 2017). A definition outlined in this way, together with the indicated characteristics, should be put into a concrete practical example.

For the purposes of this article, this example will be the pre-incubation programme (<https://csv-student.pl/program-preinkubacji>), co-organised by the Foundation for Shared Value Creation by Students, and the Polish white goods manufacturer. The idea of the programme was based on the cooperation between corporate managers and students on real business problems faced by the company. According to one of the programme's organisers, Marcin Bielicki, PhD it was primarily intended to create a space for learning project activities, rather than for learning how to find and diagnose problems. In addition, the programme was intended to "respond to business challenges aimed at solving a real, existing problem in the market." (<https://odpowiedzialnybiznes.pl/aktualności/grupa-amica-stawia-na-preinkubacje/>). Organisationally, the programme was based on a stage-gate innovation model and the methodology of the individual teams was to use Design Thinking tools. The people taking part in the programme were divided according to their personality predispositions examined beforehand using a specialised tool under the guidance of experts. The teams thus selected designed and tested their solutions, in collaboration with the managers assigned to each problem and team. The projects were evaluated after a certain period of time within the individual gates and some of them were rejected. The entire programme was quoted from the participant's point of view. At this stage, it is important to note how this project fits into the definition proposed earlier. The first aspect will be to look at the lack of inclusion of the word entrepreneur in the previously proposed definition and how the activities in the pre-incubator relate to this theory. According to the Polish Entrepreneurs' Act (The Entrepreneurs' Act of March 6 2018) an entrepreneur can be defined as a person who "is a natural person, a legal person or an organisational unit that is not a legal person, to which a separate act grants legal capacity, performing business activity." Also key to the full picture is the concept of economic activity. According to the aforementioned Act, it is "an organised profit-making activity, performed on its own behalf and in a continuous manner". Continuity of activity is of particular importance here. Pre-incubation as a process is not a continuous activity, its limit is the creation of a viable business model for the proposed idea. In addition, during the pre-incubation process, the idea may undergo dynamic changes, so its earning potential is severely limited.

The aim of pre-incubation is to develop a model as well as entrepreneurial attitudes (Bielicki & Weinert, 2021).

In this spirit, the eponymous pre-incubation programme was carried out, which, in terms of entrepreneurship, provided a source of knowledge for both the participants (who were students) and the senior managers. The cooperation, and the project activities, did not create a new entrepreneur, but provided a basis for further learning and development of entrepreneurship. The learning aspect was particularly emphasised with respect to the students. In addition to practical involvement in project activities, a series of training courses was conducted in parallel, whose topics included introducing participants to the Design Thinking methodology (<https://press.amica.pl/releases/726025/preinkubacja-studencka-w-grupie-amica-na-polmetku>). Given the above, pre-incubation only indirectly focuses on the creation of entrepreneurs, and focuses more on the creation of attitudes and personal know-how, and in parallel the business development of the pre-incubated idea.

The idea of solving a market-embedded problem is another point within the definition. The issue of the idea is central to the concept of pre-incubation, as it is the idea that is the object of pre-incubation, while the subsequent stages of business development focus on the development of the product or service, and the business itself. The viability of the idea itself, and the exploration of the preferences of potential consumers, is the subject of the first three activities mentioned above, i.e. gathering information, analysing the economic environment, and analysing the practicality of implementation. Each of these tasks is aimed at refining the idea itself

as much as possible, as further activities in the pre-incubation process depend on the quality and precision of the idea. In the programme mentioned earlier, the ideas were identified by the company itself, so the participants acted on real problems. The identification of problems depended in this particular case from the analysis of trends, and the company's analysis of its competitors' activities. This is a natural direction, as innovation itself, according to the literature, must include the element of "novelty", i.e. the absence of previous similar solutions, as well as the ability to implement the innovation into market conditions, i.e. practical implementation into everyday business life (Grandstand & Holgersson, 2020).

The last part of the definition is the controlled conditions under which pre-incubation is carried out. This is an essential element, as the pre-incubated idea is not a finished product and all processes and necessary know-how are only just being developed. Controlled conditions are understood in a broad sense, as they can be both professional technology incubators, but also incubators established inside mature companies that test internal innovations created for the corporation. This is not a closed catalogue of institutions that provide controlled conditions for development, however, due to the specificity of the case described, these three types of institutions

will be developed. Technology incubators, and technology parks of all kinds, are an important point of business creation, because in addition to the development of the innovative idea itself, they support the creation of new forms of scientific cooperation between business and universities, contribute significantly to the development of various forms of industry, thereby supporting the development of regions, and raise the level of corporate culture (Hunjet, Ivetić, & Kozina, 2018). The programme described here is representative of a corporate incubator, however, enriched with elements derived from the philosophy of 'open innovation', which involves companies opening up to the outsourcing of innovation processes and extensive cooperation (Chesbrough, 2003). In the described case, the controlled conditions served as the operating within the space created by the company and the organisers. All ideas were tested and fine-tuned with the help of the management in order to eliminate costs for both the company and the participants as much as possible while maintaining the professional nature of the event. This also confirms that the incubator does not have to be a separate professional institution in every case, but that places operating in a similar way can also be set up after the space inside the company has been set aside after separation of the space within the enterprise.

In addition to the definitional aspects, it is important to note how the programme described fits into these six stages of pre-incubation. For the purposes of the programme and due to its specificity, some of the stages were reduced or modified and some were given more emphasis. This does not change the fact that participants went through each stage learning from it.

The first stage mentioned is information gathering. It is understood in two ways, i.e., information includes both information concerning the market, competition, know-how or requirements of potential clients, as well as information not directly related to the subject of pre-incubation. It can include, among other things, information on how to run the business, which necessary formalities to complete, how to negotiate contracts concluded with the company, etc. Information presented in this way fits in with information in this way fits in with the indirect aim of pre-incubation, which is to develop entrepreneurial attitudes, thereby simultaneously developing the idea and its creator. Participants in the pre-incubation programme collected information according to a given scheme. They received information about the market and the problem from the managers who looked after the project, as well as from their own research into the environment. Soft information, i.e. any knowledge about operating methodologies, was provided by the Foundation, whose experts provided training on operating methodologies, as well as personal creativity development, product approach development or training on problem solving and logical thinking. This phase was conducted

practically throughout the programme, and by the length of the programme was one of the most comprehensive one.

The next stage is the analysis of the economic environment. This concept refers to a direct analysis of the economic environment in which the business, based on the pre-incubated idea. This mainly concerns issues of potential competition, potential suppliers of the necessary materials, information on who is the right and who is a side target group. There can be many channels for gathering this information including the internet, the professional press, colleagues and associates, and networking. One source of information can also be pre-incubation for the originator. It is this way that was adapted by the described programme. Managers provided their teams with a baseline of the economic environment before the teams started the actual work, but any specific issues were sought out by the teams. The model used here is modified from the regular information search, as basic information about the market and the problem was presented to the participants at the very beginning of the struggle, no preliminary research was required from them, so the procedure was relatively simplified compared to standard incubator activities.

The third stage is practicality of implementation, i.e. assessing whether the idea is suitable for practical application in business life. This analysis can have many dimensions, e.g. it can concern the drawing up of preliminary versions of a cost analysis for the launch of the product/service, so production costs, marketing costs or team maintenance costs. If it is a more complex product/service, it may concern the technical possibilities offered by potential suppliers and whether it is possible to create this product fully on one's own. This issue in the pre-incubation programme was reduced to the creation of initial cost estimates, as projects in which the company would be interested would be developed through the creation of appropriate cost estimates and creating the right business models for the solution.

This fact connects to the next three points, which together will constitute the business model and its control of the idea refined in the earlier steps. The first step is the design of the business strategy. This moment, and the strategy and model that is created, is a crucial step for the emerging company. According to researchers, having a business model is an attribute of a genuine company (Massa, Tucci, & Afuah, 2016), which, apart from the product, has an idea for its development, sales or marketing. The choice of a company's business model and the development of its strategy should be as precise as possible, as having and managing multiple business models at once can lead to the models undermining each other at the expense of the product (Porter, 1996). This step was the first of six that was almost completely ignored in the development of projects in the pre-incubation programme. The main idea of the programme was to test potential solutions under controlled conditions and the development of its participants,

and the creation of appropriate models and strategies would be addressed by the company.

The same was true for point five, the creation of the report. The summary contains the individual steps that the initiator needs to take in order to market the idea in accordance with the previously developed strategy. This point is a bridge between design and testing and the actual implementation. Successful implementation depends on three main factors: a strategic approach to innovation within the company, the business environment in which the innovation will develop and the characteristics of the innovation itself (Johnson, 2001). These features are listed in no particular order, as even the best environmental conditions for innovation development can be undermined by insufficient or no innovation policy in the company. As in the previous point, this point too was not particularly emphasised as far as the pre-incubation programme was concerned. Due to its R&D nature, implementation details were not a target activity envisaged in the programme.

The last feature cited is the evaluation and control of activities. This point is essential, in the creation of innovations of any kind, as the dynamics of any innovation require continuous evaluation of the actions already taken and ongoing modification of the strategy adopted. The technology industry in particular is characterised by high volatility and changes in innovative solutions. Data shows that large companies can change their innovation strategies even at monthly intervals (Yoganandan & Vignesh, 2017). This stage was used differently in the pre-incubation project than described. The checks on the progression that the actors made in their projects focused on the information and initial solutions that the teams proposed, not on the progress of the market implementation of the solutions.

3. Final conclusions

Summarising the previous considerations, the specificity of pre-incubation can be understood in a broad way. This is conducive to the modification of processes depending on the demand that the pre-incubation recipient makes. Depending on who this recipient is, pre-incubation can be carried out in different ways. Other needs are those of a student, whose main objective, apart from developing an idea, is to learn the basic market know-how of the business, and others are those of a large corporation, for which the most important thing is to test the market for the profitability of the innovation and the return that the investment can bring. It is also possible to combine the individual features and create syncretic solutions tailored in detail to the needs of the company. A representative of tailored pre-incubation is the cited pre-incubation programme, which brings together the business world and the academic world through a third sector organisation. In addition to the flexibility of matching, pre-incubation is characterised by a group of constant

features. The first feature is the development of the idea, which is the main feature of any pre-incubation programme, since, regardless of who carries out the pre-incubation and who is the recipient, the main objective of pre-incubation will be to develop the idea at the seed stage of investment. Another of the main features is that the whole process is carried out under controlled conditions. The idea that is the main object of pre-incubation is not the actual company, and all the measures taken are aimed at creating the entire institutional background, headed by a business strategy and a business model.

The aim of the article was to attempt to define and structure the concept of pre-incubation. The objective was achieved through the analysis and synthesis of existing definitions. The main outline of the definition involved expanding the model provided by G. Yoganandan and T. Vignesh through the enrichment of practical analysis for each of the previously proposed points. This analysis was based on the pre-incubation program, by incorporating its individual stages into the already highlighted points. Additionally, the model incorporated elements of definitions proposed by other authors. Limitations in the article creation primarily pertained to the lack of a larger number of definitions in the global literature. Therefore, the article represents an attempt to extract common characteristics from available definitions and synthesize them into a single definition.

Table 1. The provided definition, after being divided into individual stages, is presented as follows:

Stages	Groups of interest	Barriers	Best practices
Information gathering	Originators;	Time; Money; People;	Diversification of sources of information;
Analysis of the business environment	Originators; Pre-incubator; Incubator; Customers	Competition; Macroeconomic environment	SWOT Analysis; Trends Analysis; Using broad number of data
Analysis of the practicality of implementation	Originators; Pre-incubator; Incubator; Customers; Capital Providers	Technology; Suppliers of materials	Testing the product on a target customer
Creation of a multi-pronged business strategy	Originators; Pre-incubator; Incubator; Customers; Suppliers; Capital Providers	Lack of business model for a new product; uncertainty	Recognising the strengths of the product and showing what problems it can solve
Preparation of a pre-incubation report	Originators; Pre-incubator; Incubator; Customers	-	Precise describing successes to date
Evaluation and control of activities	Originators; Pre-incubator; Incubator; Customers; Suppliers; Capital Providers	Lack of data; Subjectivity of indicators; Difficulties with risk assesment	Creating clear evaluation criteria; putting emphasis on finances and customer experience

Source: *own development*

Outlined in this way, pre-incubation offers the possibility of creating a similar programme in enterprises. Good practice to set up such a programme relates primarily to establishing close contacts with local universities or with organisations that deal with innovation or cooperation with students. Another of the phases of starting cooperation concerns the ongoing identification of problems that are possible solvable through the use of pre-incubation and, in a later phase, the production and testing of the finished product within the organisation. Some of the identified problems can be delegated in parallel to the students collaborating with the company as part of the pre-incubation programme. A collaborative model designed in this way broadens the optics to new, out-of-the-box solutions that can be proposed by the students. This opens up a number of opportunities for the enterprise, as in addition to the innovation process, the enterprise simultaneously trains the students and gives them an insight into

its organisational culture thus increasing the chances of attracting young talent and further development.

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