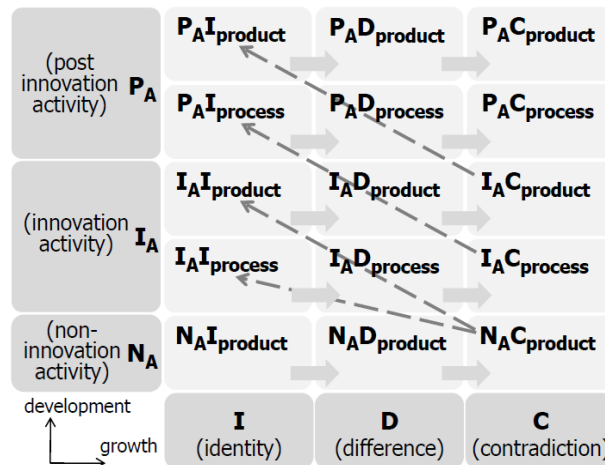


THE MATRIX OF «DEVELOPMENT / GROWTH» OF THE FIRM IN THE MARKET ECONOMY

The innovation activity and its development for any firm begin when the authorized person to develop and adopt the relevant management decision, and subsequently implement this decision for a certain period within legal capacity. The firm that executes this decision becomes innovation-active. The object of activity of the innovation-active firm is transformed from the “product life cycle” to the “innovation life cycle”. The subject of activity of the innovation-active firm besides the product may be technologies, objects of intellectual property rights, business processes, etc., that are the property of the firm, and management decisions on which should be made in relation of their perspective on the market. Some business processes can create complementary couples with subject of activity, providing a reproduction of the necessary stage of the “innovation life cycle”, therefore, operationally related to it and preceding it in time. The progress of development and adoption of decision-making on innovation activity (both those that have been successful and those that did not result in as intended), as well as the innovations that occurred during the observation period, constitute the firm’s “success story” — the result of its innovation development.

In order to visualize the progress in time and space of development processes, we propose the Matrix of “development / growth” of the firm in the market economy, which (see Figure) is based: on three stages of “growth” of the firm — “identity → difference → contradictions” — horizontal, and three levels of the firm’s “development” as a stage of activity — “non-innovation activity → innovation activity → post innovation activity” — vertical.



The Matrix of “development / growth” of the firm in the market economy [1, p. 22]

At the $N_A I_{product}$ stage, the firm is in the “profit zone”; at the $N_A D_{product}$ stage — it loses some of its profits, for example due to competitors’ actions or inefficiency of the production process; at the $N_A C_{product}$ stage — is at high risk and may leave the “profit zone”. The solution to the “contradiction” at the $N_A C_{product}$ stage is to discontinue or further develop the firm as a transition to another level of development up to pursuing innovation activity, which may

cause the firm to return to the “profit zone” and find itself in a new “identity”, but at another stage of its development for the product ($I_A I_{product}$) and for the process ($I_A I_{process}$) as a complementary couple, the appearance of which has been outlined above. Further, the process of growth as a successive movement of the firm in the time within the stages of “identity → difference → contradiction” for the product and for the process to the stages of “contradiction” is repeated. The firm can operate several products and processes at the same time, thus simultaneously being at different stages of growth and levels of development. Today, it is not yet known how to resolve “contradictions” at the $I_A I_{product}$, $I_A I_{process}$ stages, as they should arise in the firm’s innovation activity, and what will be the name of the “post innovation activity”.

The Matrix of “development / growth” of the firm in the market economy can be used for organizing, planning and governing the development of innovation activities at the microeconomic level.

Reference

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THE MODEL OF FIRM’S ACTIVITY IN “SPACE OF ACTION”

In the imaginary three-dimensional “space of action” along the axes of the Cartesian coordinate system, we set aside the key attributes and motivating factors that should be given to or guide the firm’s managers in making management decisions about the current activities of the firm. As the factors (features) for innovation activities, we choose: “courage”, “trust”, and “profit”, with the axes of abscissa, ordinate, and applicate, respectively.

We choose the key notions of institutional economy — “individual”, “institutional forms”, “institution” — the three components of the formation of the firm, depict them as parallelepipeds with the aspect ratio: “individual” — 3:1:1/3, “institutional forms” — 2:2:1/3, “institution” is 1:3:1/3 and we will lay them on top of each other so that they have one common “rib” along the axis of the applicate.

We draw on the axes the abscissa, the ordinate and the applicate the unit vectors \mathbf{c} , \mathbf{t} , \mathbf{p} as the result of the division of a vector describing the relevant factors (features) from the above, by the scalar of this vector at a particular point in time t : “courage” — $\mathbf{c} = \mathbf{C}/C(t)$, “trust” — $\mathbf{t} = \mathbf{T}/T(t)$, “profit” — $\mathbf{p} = \mathbf{P}/P(t)$. Under such conditions, any firm E in an imaginary “space of action” at a certain moment t_i will look like a cube formed by three parallelepipeds with the aspect ratio of 1:1:1/3, with an edge length equal to one, and is described by three parameters $E(C(t_i), T(t_i), P(t_i))$ (see Figure).

This approach to modeling the firm’s activity in a market economy allows us, firstly, to examine the behavior of both the innovation-active firm and firm’s managers in at least three aspects regarding “courage” when making management decisions; the degree of “trust” in existing institutions and other economic agents; the amount of “profit” as a probable consequence of the management decisions implementation; secondly, to describe the permissible limitations for doing business that can be defined: for the “courage” direction — as physical (the boundaries of the firm, market, geographical borders of the region, country, the continent up to the Earth limits, the latter, for example, in the case of space tourism as a commercial service); for the “trust” direction — as mental (from restrictions or permissions managed by the firm, the level of necessary legal support of the current activity; corporate social respon-