

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

1. *Khymenko, O.* On innovation activities development. *Economics&Education / O. Khymenko // Intern. Sci. J. / ISMA University.* — Vol. 4, Iss. 2. — P. 19–29.

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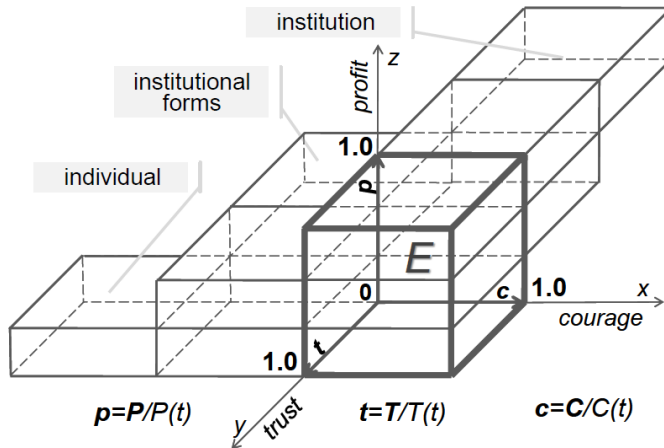
## THE MODEL OF FIRM’S ACTIVITY IN “SPACE OF ACTION”

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-



Modeling of the activity of the firm E in an imaginary “space of action” (“courage”, “trust”, and “profit”) at a certain moment [1, p. 24]

sibility to the moral boundaries of its conduct with different —  $B2B$ ,  $B2C$ ,  $B2G$  — customer categories); for the “profit” direction — as economic (from the volumes: available resources and assets with which to start (develop) activities; profits received; taxes paid; funds paid for personal and social programs to hidden income and unpaid taxes).

The proposed theoretical model shows why two or more firms that are competitors in the “profit” direction of business can simultaneously be partners in the “trust” or “courage” directions, and provides an opportunity to describe and compare the behavior of all economic agents in all four sectors of the economy for all institutional forms, including consumer behavior.

### Reference

1. *Khymenko, O.* On innovation activities development. *Economics&Education* / O. Khymenko // *Intern. Sci. J. / ISMA Univ.* — Vol. 4, Iss. 2. — P. 19–29.

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## FIRMS INTERACTION MODELING IN “SPACE OF ACTION”

In an imaginary “space of action” we model the process of creating and launching innovative products with new consumer characteristics. To do this, we will select four firms  $E_1$ ,  $E_2$ ,  $E_3$ ,  $E_4$ , which will play such roles during the observation period:  $E_1$  — “creator”,  $E_2$  — “customer”,  $E_3$  — “consumer”,  $E_4$  — “agent”, and suppose that at least six of these agreements will operate between them:  $E_2/E_4$  — on study of “consumers” interest in a range of new features that can be further provided with innovation products;  $E_2/E_1$  — on production of innovation products with additional features;  $E_3/E_3$  — on regarding the expert evaluation of new consumer features of innovation products;  $E_1/E_4$  — on information support and technology transfer services;  $E_1/E_3$  — on testing innovation products with additional features;  $E_4/E_3$  — on participation in surveys on new features of innovation products or new products ap-