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APPLICATION OF GAME-THEORETIC APPROACH TO DECISION MAKING UNDER RISK

Like any human activity, entrepreneurship, necessarily holds in it a game element that is initially caused by biological and subsequently fixed by human's social nature. Moreover, in entrepreneurship and its motivation there is an inherent connection between rational and irrational, as any game, it usually includes two types of indefiniteness: chance and choice. Choice in this case is seen as rational, and chance as irrational. In game theory it is determined that a player behaves rationally when they aim at getting bigger numerical value.

Term "value" in game theory corresponds to assumption of any kind that a player seeks to win. Therefore, an entrepreneur is a typical player, because their desire to maximize profits and the most self-improvement is a specific form of player's realization of desire to increase gain of any kind. Thus, scoring is one of the most powerful motivators of entrepreneurship. Desire to win and values of any kind are main characteristics of player's rationality and entrepreneur-player's in particular.

To make decisions in conditions of indefiniteness, when the probabilities of possible variants of the situation are unknown, special mathematical methods are developed, which are discussed in game theory. Game theory is one of the most young of mathematical disciplines. Its origin dates back to 1944, when J. Neumann and Morgenstern's monograph "Theory of games and economic behavior" was published. Later game theory has become an independent mathematical discipline that has practical use.

Game theory provides an entrepreneur or a manager with a mathematical apparatus for the choice of strategy in conflict situations, which allows better understanding of competitive environment and to minimize risks. In addition, analysis of risk situation by using techniques of game theory motivates an entrepreneur (manager) to consider all possible alternatives of their actions and partners and competitors' strategy as well.

In recent years, game theory is wildly used in Economics, especially in the industrial organizations. When economic theory and decision-making theory as its component isn't unable to give recommendations to enterprise behavior under conditions of unindefinitness and risk through forecasting situation, aid of game theory with its specific prognostic tools shows up.

Risk is a characterological trait, a pole around which any game revolves, and game-entrepreneurship in particular. Outside risk, thus, no games, no business. So, in their general features and characteristics concept of "game" and "entrepreneurship" coincide.

The most absolute is the fact that entrepreneurship, which is a dialectical unity of the rational and the irrational, comprehensive, holistic can be adequately described with the help of theories symbiosis: economic theory, philosophy and game theory.

In the economy, sometimes you have to face a situation where if there are many participants effectiveness of one of them depends on what decisions other participants make. All situations where effectiveness of one of the participants depends on actions of others, can be divided into two types: participants' interests coincide, and they can agree on joint actions; participants' interests do not match.

A situation of this type is called conflict, because they are generated by a variety of partners' interests and a desire of each of them to make the best decisions that will implement a goal, while everyone has to consider not only their goals but also goals of the partner, and to take into account unknown decisions that these partners may make.

Essence of conflict situation is that improvement of some indicators that characterize final result, is only possible at the expense of worsening of rival's indicators. The basis for analysis of conflict situations is widely-spread games − chess, checkers, card games. Since, natural terminology of game theory: conflicting parties are conventionally called players and result of conflict − gain.

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