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Abstract – We propose that the quantum strategy can be considered as a most effective winning virtuous organizational strategy, allowing the board of directors to build a prosperous organization with the optimal business model in the economies of the scale and scopes at the time of the great opportunities and unexpected challenges by the globalization. We provide a concise definition on the quantum strategy: The organizational strategy, which can be derived with the use of the quantum strategy search algorithm by the interlocking interconnecting directors in the board of directors in the modern organization at the time of the global integration. We demonstrate that the quantum strategy search algorithm applies the quantum logic (the probabilistic logic) on the top of the inductive, deductive and abductive logics (the value based logics), aiming to create the most effective optimal winning virtuous organizational strategy by the interlocking interconnecting directors in the board of directors in the modern organization in the information century. We highlight the main existing differences between the multivector strategy (the multiple different strategies implementation at the selected time period) and the quantum strategy (the most effective optimal winning virtuous organizational strategy implementation at the selected time period), considering the real-life case study on the strategy formulation and execution by the interlocking interconnecting directors in the board of directors in the Apple Inc. We express a research opinion that the quantum strategy can be clearly defined/distinguished in line with the generally accepted scientific definitions/meanings/principles in the quantum mechanics science. We think that the prosperous organizations will create and implement the quantum strategies to increase their valuations and outperform the competitors in the economies of the scales and scopes at the time of globalization.

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Keywords multivector strategy, quantum strategy, winning virtuous strategy, strategy creation and implementation, strategy selection logics, strategy decision making, strategy optimization problem, most effective strategy search, quantum/inductive/deductive/abductive logics, board of directors composition, board of directors chairman, interlocking directors networks, boards of directors seats accumulation number, centrality, Freeman degree, Betweenness, information flows measurements, destructive coordination, information absorption, theory of firm, microeconomics, Schrodinger wave function, quantum mechanics, econophysics, Apple Inc.
Introduction


Indeed, the quantum strategy theory as a research subject of considerable scientific interest attracts an increasing research attention by the academicians and practitioners in the business administration science and in the microeconomics science around the World in Ledenyov D O, Ledenyov V O (2015n). Thus, let us explain that the quantum strategy represents an organizational strategy, which can be derived with the use of the quantum strategy search algorithm by the interlocking interconnecting directors in the board of directors in the modern organization at the time of the global integration. The quantum strategy search algorithm
applies the quantum logic (the probabilistic logic) on the top of the inductive, deductive and abductive logics (the value based logics), aiming to create the most effective optimal winning virtuous organizational strategy by the interlocking interconnecting directors in the board of directors in the modern organization in an information century in Ledenyov D O, Ledenyov V O (2015n).

In this research article, we would like to be focused on the theory of the quantum strategy creation and execution in Ledenyov D O, Ledenyov V O (2015n) by the interlocking interconnecting directors in the boards of directors in the modern organizations in the modern economies of the scales and scopes in the time of constant introduction of the market-creating innovations, sustaining innovations and efficiency innovations on a global scale in Christensen, Raynor, McDonald (December 2015), Christensen, Denning (December 2015), Rodin (2015), Dobbs, Woetzel, Flanders (2015), Barber (2015), considering the Apple Inc real life business case study as an example. A real-life business case study represents one of possible research approaches to understand an essence of the quantum strategy theory in the business administration science / the microeconomics science. Heracleous (2013) conducted an interesting research on the quantum strategy at Apple Inc, in which it was suggested that the Apple Inc has already created and executed its quantum strategy. In this connection, we would like to highlight the main existing differences between the multivector strategy (the multiple different strategies implementation at the selected time period) and the true quantum strategy (the most effective optimal winning virtuous organizational strategy implementation at the selected time period), considering the highlighted real-life business case study on the strategy formulation and execution by the interlocking interconnecting directors in the board of directors in the Apple Inc in Heracleous (2013).

It makes sense to say that, presently, the leading scientists from a number of well established/funded research institutions/universities make everything possible to find an answer on the challenging question: How can the interlocking interconnecting directors create and implement the quantum strategy, which is considered as a most effective winning virtuous organizational strategy, allowing the board of directors to build a prosperous organization with the optimal business model in the economies of the scale and scopes at the time of the great opportunities and unexpected challenges by the globalization? There is no simple answer on this particular question. We hope that our research will greatly improve the quantum strategy theory, which was proposed for the first time in Ledenyov D O, Ledenyov V O (2015n), and move the frontiers of the business administration science / the microeconomics science forward. Therefore, completing a short insightful introduction, let us begin a more detailed insightful
discussion on the comparative analysis of the multivector strategy vs. the quantum strategy by Apple Inc, presenting our original research thoughts on the subject of scientific interest in this research article.

**Multivector strategy vs quantum strategy by Apple Inc**

The board of directors in the Apple Inc could be mathematically represented as a two dimensions matrix in Ledenyov D O, Ledenyov V O (2015b, n):

\[
\text{Board of Directors} = \begin{bmatrix}
d_{1,1} & d_{1,2} & d_{1,j} \\
d_{2,1} & d_{2,2} & d_{2,j} \\
d_{i,1} & d_{i,2} & d_{i,j}
\end{bmatrix},
\]

where \(d_{ij}\) is the position of a director’s seat in the matrix.

The change of the composition of the board of directors in the Apple Inc over the time could be mathematically described as an integer in Santella, Drago, Polo (November 11 2007), Ledenyov D O, Ledenyov V O (2015b, n):

\[
\text{board}_{i,j} = \text{board}_{i,j-1} + \int_{t}^{t+1} (en-ex)dt,
\]

where

\[
en(t) = \frac{d}{dt} en \cdot t = en,
\]

\[
ex(t) = \frac{d}{dt} ex \cdot t = ex,
\]

\(en(t)\) is the number of directors entrants at time \(t\),

\(ex(t)\) is the number of directors exits at time \(t\),

\(\text{board}_{i,j}\) is the board of directors size at time \(t\),

\(c\) is the company,

\(i\) is the director.

Let us begin our detailed insightful discussion and conduct a comparative analysis on the multivector strategy vs. the quantum strategy by Apple Inc, using the recently published research article in Heracleous (2013) and the knowledge base in Ledenyov D O, Ledenyov V O (2015b, n). We would like to provide the below citations and to consider the research ideas on the quantum strategy, focusing on the following research topics in Heracleous (2013) and discussing them in details:
1. the research statements on the electron in the quantum mechanics / the quantum physics; and

2. the research statements on the quantum strategy in the business administration science / the microeconomics science.

3. the concluding scientific remarks on the subject of interest.

Heracleous (2013) writes: “Conversely, conventional wisdom holds that a company competing on innovation, outstanding design, or service excellence will not be able to reach intense levels of efficiency, since these capabilities are costly to develop and maintain. Apple, however, has achieved both — what might be seen as the holy grail of strategy — and it is worth asking how. The answer can help us gain insight into the trickiest of strategies to execute, and one that most companies do not even try to achieve. This strategy, if successfully executed, represents a shift of the iso-value curve to the right in any industry it is employed in, not just movement along the curve where most competitors are positioned. I call this Quantum Strategy, after the idea that at the quantum level of reality, the same electron can be at two places at the same time, and two different electrons can occupy the very same physical space. Both seem to be logical and natural impossibilities, but nevertheless do occur. An understanding of Quantum Strategy offers important lessons for executives. In particular, we can understand the principles are involved in breaking the trade-offs that are conventionally assumed to constrain strategic choices and to lock firms in single generic strategies.”

As we can see, Heracleous (2013) made the following two meaningless mistaken statements, related to the quantum physics science:

1. “the same electron can be at two places at the same time, and

2. two different electrons can occupy the very same physical space.”

observation stage, the transition stage and the final observation stage in the quantum mechanics science / the quantum physics science, hence:

1. In the transition stage, the single electron can be in a superposition state, in which the single electron cannot be characterized by the certain physical parameters in the time – space domain. However, the electron can be accurately characterized by the momentum, spin and other parameters in the final measurement state only;

2. In the final observation stage, the two different electrons can occupy the very same physical space, if they have the different spins only.

Speaking about the strategies by Apple Inc in Heracleous (2013), it is difficult to understand: How can the innovation strategy by Apple Inc and the efficiency strategy by Apple Inc in the strategies superposition state in Heracleous (2013) relate to the superposition state by the single electron in the quantum mechanics/the quantum physics in Blokhintsev (2004)? We can hypothetically suppose that the innovation strategy and the degradation strategy can exist in the strategies superposition state in the quantum econophysics science. Also, we can hypothetically suppose that the efficient strategy and the inefficient strategy can exist in the strategies superposition state in the quantum econophysics science. However, it makes no sense to state that the two absolutely unrelated strategies (the innovation strategy by Apple Inc and the efficiency strategy by Apple Inc) in Heracleous (2013) can create a superposition state in the quantum econophysics science.

Heracleous (2013) states: “Apple has achieved its outstanding performance through effectively implementing an unconventional strategy: differentiation through innovation (along various dimensions that include serial, strategic and incremental innovation) with simultaneous intense levels of efficiency, leading to the lowest costs in its peer group. Conventional wisdom holds that such strategies would be impossible to achieve in a long-term, sustainable timeframe, because they entail mutually contradictory investments and organizational processes. … Apple has accomplished the Quantum Strategy within the same organizational setup, skillfully integrating elements of strategy that most other companies would consider distinct; and achieved long term competitive success in the process. … Quantum strategy has enabled Apple to achieve super-normal profits in hyper-competitive industries with thin margins.”

In our opinion, the fact that the Apples Inc successfully created and executed the differentiation through innovation strategy on one side, and the cost leadership strategy / the efficiency strategy on other side at the same time in Heracleous (2013) does not mean the Apples Inc successfully created and executed the quantum strategy. The conclusion on the quantum
strategy by Apples Inc in Heracleous (2013), which is derived, going from the comparative analogy between:

1. the fact on the successful creation and execution of both the differentiation through innovation strategy and the cost leadership strategy / the efficiency strategy by Apple Inc at the same time; and

2. the fact on that the two different electrons can occupy the very same physical space at the same time;

is dubious and mistaken from the scientific point of view, because the above mentioned comparison is made between:

1. the two unrelated different business strategies on one side; and

2. the two similar quantum objects with distinctive parameters (the two electrons with the different spins) on other side.

In other words, the following scientific question may arise: What are the main criteria for the quantum strategy definition/characterization in the econophysics science in Heracleous (2013)? As we explained early: “In the final observation stage, the two different electrons can occupy the very same physical space, if they have the different spins only.”

Heracleous (2013) expresses the following research opinion: “Porter’s classic strategies have shaped strategic thinking for decades, and Porter’s ideas have consistently been recognized as among the most influential in business. Most companies have employed the differentiation, cost leadership or niche strategies as a first approximation to their strategic thinking. The belief has been, as Porter had argued, that it is impossible to achieve the sustained, true combination of cost leadership and differentiation because of the inherent conflict that occur if a firm tried to do so. At the time Porter developed and popularized these ideas (later 1970s/early 1980s), this proposition was both reasonable and valid. Since then, however, things have changed. … Apple is a master of Quantum Strategy, which is both unconventional as well as extremely difficult to implement. The company has accomplished serial innovation and outstanding design in terms of its offerings and its business model as well as simultaneous cost leadership, having become more efficient than the traditional cost leader, Dell.”

Analyzing the above research outcomes in Heracleous (2013), we think that the Porter’s research ideas in Porter (1980, 1998; 1985), Miller, Friesen (1986a, b), Miller (1988) mostly relate to the case of the small and medium size firms (the startups) with the limited available resources. The creation and implementation of the multivector strategy (the multiple strategies) by the startups at the same time cannot be achieved successfully in view of the existing obvious limitations as far as the financial/human/technological resources is concerned. In the case of
Apple Inc, we have a different story, because the Apple Inc is one of the biggest multinational corporations with the approximate firm’s market valuation of US$700bn as of December, 2014 in Ive, Foulkes (March 6, 2015).

Therefore, thinking about the expressed misleading research opinion on the Apple Inc in Heracleous (2013), we would like to say that the modern firm such as Apple Inc can efficiently create and implement the multivector strategy (the multiple corporate strategies) at the same time, including:

1. the R&D strategy;
2. the manufacturing strategy;
3. the efficiency/cost leadership strategy;
4. the logistics strategy;
5. the sales strategy;
6. the marketing strategy;
7. the financial strategy;
8. the public relationships strategy.

An important fact is that the formulation and implementation of the winning virtuous R&D strategy would lead to the superior product/service design by the modern firm, which could create a huge competitive advantage for the particular firm in relation to other firms in the corresponding goods/services market at the time of globalization. The existing differences in the R&D strategies between the competing firms define the winners and the losers in most of the cases. Here, let us explain that the implementations of all the strategies, including the R&D strategy, the manufacturing strategy, the logistics strategy, the sales strategy, the marketing strategy, the financial strategy and the public relationships strategy are normally well optimized among all other key competitors so that the mentioned strategies implementation efficiency levels among all the competing firms in the corresponding markets are pretty much similar.

In other words, the interlinking interlocking directors in the board of directors in the prosperous organizations such as the Apple Inc create and implement the unique R&D strategies, which result in the design of the new products/services/ecosystems for the potential customers in the corresponding markets. Let us note that the Apple’s winning virtuous R&D strategy has been successfully created and implemented together with the manufacturing strategy, logistics strategy, sales strategy, marketing strategy, financial strategy, public relationships strategy, etc at the same time. We have to emphasis that the other less successful competing firms have been unable to create and implement their winning virtuous R&D
strategies, however they had all the necessary capabilities to realize/implement all other strategies at the same time quite efficiently.

Let us sum up all the research statements by saying that the unique winning virtuous R&D strategy creation and implementation by the Apple Inc is a key differentiating factor, which allows the modern firm like the Apple Inc to win the competition with other firms at the selected industries at the same time.

The creation and implementation of the multiple strategies by the modern firm at the same time period can be regarded as a certain type of the multivector strategy creation and execution, but not the quantum strategy creation and execution. The modern firm wins a fierce competition with other competing firms due to its unique winning virtuous R&D strategy creation and implementation mainly, assuming that the other competing firms can efficiently implement the multiple business strategies in the selected time frame.

Let us compare the authors’ research statements in this article with the research findings in Heracleous (2013):

1. We propose that the unique winning virtuous R&D strategy (the differentiation through innovation strategy) by Apples Inc, comparing to other R&D strategies by the competing companies, mainly creates the Apples Inc competitive advantage in the digital creative economies of the scales and scopes at the selected time periods.

2. From other side, Heracleous (2013) thinks that the successful creation and execution of both the R&D strategy (the differentiation through innovation strategy) and the cost leadership strategy / the efficiency strategy within the firm such as Apple Inc results in the Apples Inc competitive advantage appearance. Heracleous (2013) misses the fact that it is necessary to compare the R&D strategies between the various corporations, because, in most cases, the corporations can create and implement all the business strategies quite efficiently.

Once again, we must understand the following fact that the successful R&D strategy creation and implementation is able to result in the competitive advantage origination mostly, because all the modern global corporations in the high tech industries are very efficient in the implementation of their business strategies (see the above list of strategies). Let us support our research statements by the citation on the unique winning virtuous R&D strategy by Apple Inc in Ive, Foulkes (March 6, 2015): “[Apple’s] Hardware and software seem designed together in such a way that one cannot quite tell where the machine ends and the operating system begins. As a commercial strategy [the R&D strategy] it is undeniable brilliant, quickly enveloping users in a world they do not want to leave. But it is the clairvoyant ingenuity of it all that makes me marvel.”
Making the innovative research on the multivector strategy vs. the quantum strategy at Apple Inc, we would like to provide a research comment that it is necessary to remember that the scientific term “quantum” in the quantum mechanics science / the quantum physics science has both its clear scientific definition and its certain scientific meaning; hence, we think that it would be beneficial for Heracleous (2013) to clearly understand the scientific terminology in the quantum mechanics science / the quantum physics science, avoiding the use of the word: “quantum” in the inappropriate cases in the published research article in Heracleous (2013).

the case of the creation and implementation of the multivector strategy by the Apple Inc at the selected time period. The multivector strategy is well studied in the frames of the fundamental strategy theory in the business administration science / the microeconomics science.

Quantum strategy creation and implementation by Apple Inc

The quantum strategy as a new research topic in the business administration science / the microeconomics science has been introduced for the first time in Ledenyov D O, Ledenyov V O (2015n).


Speaking about the quantum mechanics / the quantum physics in Ledenyov D O, Ledenyov V O (2015n), it is necessary to explain a few interesting scientific facts that the Copenhagen interpretation of the quantum mechanics science considers a quantum phenomenon as a process, which takes place from the initial condition through the transitory state to the final condition. The evolving understanding of the quantum mechanics led to the new theoretical discoveries, particularly, to the introduction of the Schrödinger wave function, which can accurately probabilistically characterize the quantum system, using the probability distributions in Schrödinger (1926). One of the interesting facts is that the probabilities distribution depends

Khanna, Montgomery, Porter, Rivkin, Rukstad, Wells, Yoffie (2005), Porter, Kramer (2006),
Sadler (2003), Roney (2004), Ireland, Hoskisson, Hitt (2006), Besanko, Shanley, Dranove
both to get an increased business valuation (a return premium) and to make a positive social
impact in the local community and society in the frames of the socially responsible investment
(SRI) process that integrates social, environmental, and ethical considerations into the
investment decision making in the real sector of economy in Waddock, Graves, (1994), Arora,
McWilliams, Siegel, Wright (2006), Scholtens (2006), Cespa, Cestone (2007), Cumming,
Renneboog, Horst, Zhang (2008), Arjalies (2010), Crifo, Mottis (2010), Morrell, Clark (2010),

Let us take a minute and refresh the scientific meanings of the inductive, deductive,
abductive logics in Wikipedia (2015) and the newly introduced quantum logic (the probability
logic) in Ledenyov D O, Ledenyov V O (2015n):

1. Inductive logic – the logic of what is operative — reasons from the specific to the
general. Induction allows inferring a entails b from multiple instantiations of a and b at the same
time.

2. Deductive logic – the logic of what must be — reasons from the general to the
specific. Deduction allows deriving b as a consequence of a. In other words, deduction is the
process of deriving the consequences of what is assumed.

3. Abductive logic – the logic of what could possibly be true – reasons through
successive approximation. Abduction allows inferring a as an explanation of b, because of this,
abduction allows the precondition a to be inferred from the consequence b.

4. Quantum logic (Probability logic) – the logic of what may occur – reasons
through computing of events probabilities distributions. Quantum logic allows a and b to be
realized, depending on a and b events probabilities distributions equal to square of
Schrödinger’s wave function.

We would like to illustrate the distinctions between the quantum logic (the probability
logic) and the inductive, deductive and abductive logics (the value based logic, the binary logic),
making a citation with the detailed explanation in Ledenyov D O, Ledenyov V O (2015n):
1. “We can illustrate the probability logic, by using the quantum mechanics and by saying that the probability that the Schrödinger cat may be alive or dead (the two possible choices) in the superposition state in the observable closed box is 50% until the moment of the measurement in Schrödinger (1935). In other words, the interlocking interconnecting director in the board of directors in the organization must consider the probabilities distribution of the various events, related to the particular business matter / situation, before the moment of the creation of the quantum business strategy.

2. We can describe the value based logic by referring to the inductive, deductive and abductive logics and by showing that it operates with / converges to the values: Yes and/or No, hence it has some similarity with the binary logic: 1 and/or 0. It means that, the interlocking interconnecting director in the board of directors in the organization must inductively / deductively / abductively come to the conclusion: Yes and/or No, related to the particular business matter / situation, before the moment of the creation of the usual business strategy.”

Going from the suggested scientific ideas framework, we can also demonstrate an essence of the quantum logic (the probability logic), using a practical example of the quantum random number generator on the magnetic flux qubits chipset in Ledenyov V O, Ledenyov O P, Ledenyov D O (2002) in analogy with the the Schrödinger wave function / Schrödinger cat representation in Schrödinger (1935). For example, the special entanglement of the qubits, with the probability of 50% that any particular qubit exists in a superposition state of being 0 and being 1, can be achieved in the quantum random number generator on the magnetic flux qubits chipset in Ledenyov V O, Ledenyov O P, Ledenyov D O (2002).

In the business administration science / the microeconomics science, we would like to make a few empirical research comments, explaining that the practical creation and implementation of the Quantum Strategy Creation Algorithm can be realized by the interlocking interconnecting directors in the board of directors in the modern organization at the time of the global integration/disintegration in agreement with the use of the following greatly simplified strategic actions scheme in Ledenyov D O, Ledenyov V O (2015n):

1. the interlocking interconnecting director absorbs the information of interest on the particular business events/processes/ecosystems,

2. the interlocking interconnecting director applies the creative imperative integrative intelligent conceptual co-lateral adaptive logarithmic thinking process to analyze the particular business events/processes/ecosystems,

3. the interlocking interconnecting director uses the inductive, deductive and abductive logics (the value based logic, the binary logic) to come to a certain logical conclusion
on the desirable corporate strategy of the choice during the strategic choice structuring process in Ledenyov D O, Ledenyov V O (2015b),

4. the interlocking interconnecting director applies the quantum logic (the probability logic) to evaluate the corporate strategy of the choice, with the ultimate purpose to create the quantum strategy or to disregard the corporate strategy of the choice during the strategic choice structuring process, and then

5. the interlocking interconnecting directors in the board of directors implement the quantum strategy in the digital creative economies of the scales and scopes at the selected time period.

Going from the true meaning of the quantum strategy in Ledenyov D O, Ledenyov V O (2015n), we can assume that the Apple Inc had been able to create and implement its quantum strategy, primarily based on the quantum leap in the innovative design and advanced technology applications, to outperform the competitors in the global markets of the wireless computing devices, the laptop computers, the electronic timepieces and the operating systems at the certain time periods, however we propose to clearly distinguish the multivector strategy by Apply Inc (the mistakenly treated/labeled as the quantum strategy in Heracleous (2013)) from the true quantum strategy by Apply Inc in Ledenyov D O, Ledenyov V O (2015n).

Looking forward, in our opinion, the main question to understand is: Will the interlinking interlocking directors in the board of directors in the Apple Inc be able to sustain a fierce competition from the competitors and continue to maintain its competitive advantage in the time of globalization?

Answering the challenging question, we think that the interlinking interlocking directors in the board of directors in the Apple Inc must continue to create and implement its constantly updated/improved quantum strategy, aiming to design the new wireless computing devices, laptop computers, electronic timepieces, operating systems and having an ultimate goal to satisfy the customers’ experiences and to increase the Apple Inc market valuation on its way to the prosperity in the digital creative economies of the scales and scopes in the selected time period.

Finalizing all our research statements, let us say that the authors’ general strategic vision is that the interlinking interlocking directors in the boards of directors in the complex organizations will greatly benefit by creating and by implementing the quantum strategies, pursuing the ultimate goal to build the prosperous organizations in the digital creative economies of the scales and scopes at the time of the disruptive changes and opportunities by the globalization.
Conclusion

In an information century, the leading scientifically/technologically advanced states create the quantum devices/technologies development roadmaps, trying to predict/outline/evaluate the future progress in the quantum devices/technologies in the economies of the scales and scopes for the years to come. The progress in the quantum devices/technologies development depends on the state of matters in the natural sciences (the physics, chemistry, mathematics sciences) as well as the hi-tech industries (the electronics, computer, materials processing industries) in the economies of the scales and scopes presently. The examples of the quantum devices/technologies in the natural sciences/the hi-tech industries are the designs of the thermonuclear and nuclear reactors, the high power gas lasers, the low power semiconductor heterostructures lasers, the quantum random number generators on the magnetic flux qubits chipsets, the quantum random number generators on the laser noise, the superconducting quantum interference devices, the photonic processors, the quantum processors, the single electron transistors, the semiconductor heterostructures transistors, the quantum cryptography optical devices/networks, etc in Ledenyov D O, Ledenyov V O (2015a).

In an age of the quantum disruption, the most progressive scientifically/technologically advanced states continue to invest heavily in the innovative research programs on the quantum technologies/principles application in the social sciences with the aim to improve/optimize the existing scientific theories / the management practices in the economics/finance/business administration/state governance. The examples of the quantum principles application in the social sciences are the creations of the quantum macroeconomics theory, the quantum microeconomics theory, the quantum theory of firm, the foreign currencies exchange indices quantum forecast theories with the use of the wave function, the quantum money, the quantum strategies, etc in Ledenyov D O, Ledenyov V O (2015h, i, j, k, l m, n).

In this connection, the innovative research on the application of the scientific principles in the quantum mechanics science / the quantum econophysics science with the purpose to understand and to accurately characterize the business strategies by the interlocking interconnecting directors in the board of directors in the modern firms looks very attractive from the scientific point of view in Ledenyov D O, Ledenyov V O (2015b, n).

In this research article, we proposed that the quantum strategy can be considered as a most effective winning virtuous organizational strategy, allowing the board of directors to build a prosperous organization with the optimal business model in the economies of the scale and scopes at the time of the great opportunities and unexpected challenges by the globalization.
We provided a concise definition on the quantum strategy: The organizational strategy, which can be derived with the use of the quantum strategy search algorithm by the interlocking interconnecting directors in the board of directors in the modern organization at the time of the increasing global integration.

We demonstrated that the quantum strategy search algorithm applies the quantum logic (the probabilistic logic) on the top of the inductive, deductive and abductive logics (the value based logics), aiming to create the most effective optimal winning virtuous organizational strategy by the interlocking interconnecting directors in the board of directors in the modern organization in the information century. We compared the quantum strategy search algorithm with the modern strategy search algorithm, showing the characteristic distinctions in the used logics.

We highlighted the main existing differences between the multivector strategy (the multiple different strategies implementation at the selected time period) and the quantum strategy (the most effective optimal winning virtuous organizational strategy implementation at the selected time period), considering the real-life case study on the strategy formulation and execution by the interlocking interconnecting directors in the board of directors in the Apple Inc.

We expressed a research opinion that the quantum strategy in the business administration science / the microeconomics science can be clearly defined / distinguished in line with the generally accepted scientific definitions / meanings / principles in the quantum mechanics science.

We think that the interlinking interlocking directors in the boards of directors in the prosperous organizations will continue to create and implement the quantum strategies to increase the firms’ market valuations and outperform the competitors in the digital creative economies of the scales and scopes at the time of globalization.

Going from our present research stand point, we believe that the better understanding on the quantum mechanics / quantum physics / quantum chemistry by the scientists will continue to progress rapidly, creating a necessary knowledge base for the groundbreaking inventions towards the new quantum device technologies in the natural sciences as well as the new quantum theories / the quantum methods / the quantum principles in the social sciences.

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institutions and universities, hence we sincerely acknowledge an enormous interest to our innovative research on the quantum strategy from the side of the Michael Porter’s Strategy Institute at Harvard University in Cambridge in the USA.

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