A concept of strategy development for a food company in a polycyclic environment (Food company strategy)

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Abstract

This research seeks to develop a concept of forming a set of strategies (a multi-component strategy) optimally adapting a food company to the current and potential variability of a complex polycyclic environment. The concept is based, firstly, on the provided definition of a company strategy as a long-term interactive and pre-emptive reaction to the environmental influences and, secondly, on the theory of overall polycyclic dynamics of the environment. Being of interest to management scholars and practitioners, the formulated concept is a theoretical basis for further development of efficient contemporary strategic tools (models, methods) and format of strategic management at food companies.

Introduction

Intense demographic, scientific, technical, and economic development of modern civilization and its environmental consequences - a dramatic drop in the volume and quality of natural resources - have resulted in a significant increase in the frequency and complexity of somewhat chaotic changes in food production and consumption. By the second half of the 20th century, wide application of genetic engineering technologies, innovative methods of molecular chemistry and physics, as well as nanotechnologies and other advances of fundamental sciences in the food industry resulted in the formation of the complex process of consumer behavior at the food market due to the multitude of available choices, in particular, organic, functional synthetic, genetically modified, dietary, and various complex recipe foods and beverages. Moreover, in the current situation of global contamination and depletion of the natural resource base under the combined effects of the cyclical laws of economic and non-economic development, we can expect major changes related to the probable occurrence of a cluster of interrelated global crises. This cluster would particularly affect the food industry because of the features of its resource base and potential major shifts in consumer behavior.

Thus, the dynamic and uncertain polycyclic environment and expected potential of its future changes explain the need for a food company in the complex and efficient adaptation to these changes.

The instrument of such adaptation is a strategy developed as a long–term optimal reaction to the current and projected environmental variability. Therefore, the overall issue of a food company's strategy development and implementation is vital. This research covers only the aspect regarding the construction of a theoretical framework for developing an optimal set of strategies for a food company under polycyclic environmental conditions.

The goal of this paper is to develop a concept of forming a set of strategies (a multi-component strategy) that optimally adapts a food company to the current and potential variability of the uncertain, turbulent, and complex polycyclic environment. The objectives are to: 1) analyze the essence and structure of the polycyclic environment of a food company formalizing macro influences and patterns of consumer behavior 2) enhance the definition of a company strategy to form a theoretical basis for the proposed concept development 3) formulate the stages of the proposed concept.

Materials and Methods

The methodological framework of this research consists of the following:
1. Analyze and formalize polycyclic company environment: identify cyclic and noncyclic macro patterns in the environmental influences; identify contemporary patterns in food consumer behavior by conducting relevant surveys.
2. Analyze existing definitions of strategy and

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enhance its notion.

3. Provide the stages description for the proposed concept of developing the optimal set of strategies.

4. Report results and provide suggestions as to further concept application.

A combination of the supply-demand analysis within the classical economic theory and the motivational analysis is primarily applied in the development of the proposed concept. The system analysis is used in formulation of the "strategy" notion and stages of the proposed concept. Synthesis, formalization, idealization, and graphical methods are applied in environmental dynamics analysis. Specific patterns of consumer behavior at the food market are identified by inductive generalization of both results of in-depth interviews with food consumers of varying profiles, direct observations, and textual analysis.

Literature Review

One of the initial assumptions of this research is to consider the total environmental variability a set of nested, correlated, and independent economic and non-economic cycles, as well as non-cyclical trends according to the concept proposed by Yakovets (2009). This underlying concept of the total polycyclic dynamics of the company environment provides an integrated view, and an ability to formalize and predict the multitude of environmental influences to enable company strategy development. The Yakovets theory extends beyond the idea of Forrester (1971), Berry (1991), and Schumpeter (1934) on the nested nature of interrelated economic cycles of different lengths (the economic polycyclic theory) by identifying interdependent economic, ecological, demographic, scientific and technical, social and political cycles of different lengths in the structure of the overall dynamics of the environment. These polycyclic theorists mentioned above incorporated the wide range of individual economic and non-economic cyclic theories, such as those of Kitchin (1923), Juglar (1862), Marx (1983), Tchijevsky (1924), Kuznets (1971), Kondratieff (1984), Frank (1981), Snooks (1996), Nefedov (2002) and Braudel (1992), Menshikov (1989), Toffler (1980), Spengler (1991), Toynbee (1947), Milankovitch (1941), etc.

For simplicity and clarity of this consideration, this article will use a graphical representation of a fragment of environmental polycyclic dynamics since 1780 integrating only the main cyclic theories mentioned above (Figure 1). Crossing a certain threshold back in the 1780's, global population growth stimulated the "public intellect" (namely, accumulated body of
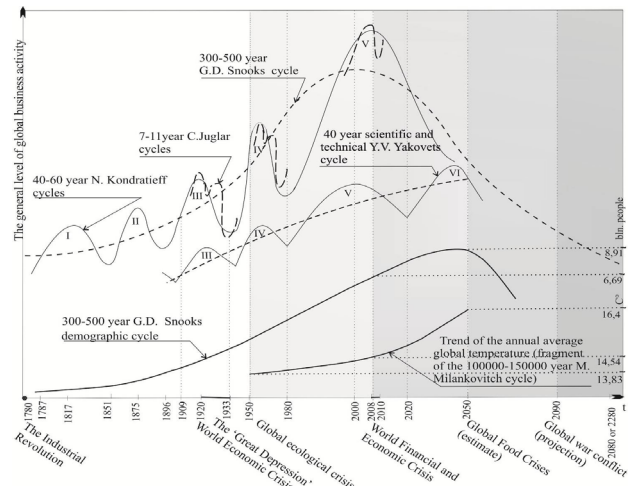

Figure 1. A fragment of polycyclic dynamics of the food company environment

knowledge and overall human intellectual abilities) to achieve a critical value that triggered acceleration of science and technology progress as one of the major factors of long-term world economic growth and, consequently, an enhancement in living standards. The latter further promoted the population growth, followed by the "public intellect" development, scientific and technological advancements, and a shift of world production levels and living standards.

From the polycyclic Yakovets theory point of view, taking into account individual cyclic concepts listed above, it is possible to describe the cumulative impact of economic factors by the 3 types of nested economic cycles of varying lengths from 1780 through 2080 (or 2280), Figure 1. The 300–500 year Snooks superlong wave (Snooks, 1996) that originated during the Industrial Revolution in the second half of the 18th century is constituted by the 40–60 year Kondratieff cycles (Kondratiev, 1984), which, in turn, consist of the medium-term 7–11 year Juglar cycles (Juglar, 1862). Such an economic polycyclic wave is also under the effect of non-economic environmental factors in the forms of demographic, scientific, technological, climate, energy, cultural, social, political and other cycles as well as various polynomial trends of the volume of natural resources, biodiversity, pollution, and so forth.

As a result of the simultaneous consideration of the cyclical and non-cyclical, economic and non-economic components (patterns) of the general environmental dynamics, it's possible to presume that the phenomenon of the World Financial and Economic Crisis of the 2008-2010 is the beginning of the long-term recession in the world economic system. That is, the World Financial and Economic Crisis of 2008–2010 or the last Juglar recession coincided with and was amplified by both the

Kondratieff long-term recession of 2008–2040 and the Snooks super long recession of 2000–2080 (or 2280), Figure 1. Moreover, it is plausible that these simultaneous future long-term economic recessions will be intensified not only by their interaction but also under the mutual influence of coinciding global long-term ecological (pollution and depletion of natural resources since 1950s) and demographic (growing world overpopulation since 1950s) crises, as well as projected scientific and technical, social and political, and world food crises. As a result, emergence of a cluster of the global crises can be projected by 2050 (Carpenter *et al*., 2005), Figure 1. If such scenario is to take place, there is a current need in an efficient strategy as an adaptation tool to the projected environmental changes, particularly, for food companies.

The concept of forming the optimal set of strategies for a food company developed in this research is based on the suggested notion of strategy as a long-term reaction to the present and potential environmental variability. Prior to introducing this notion, we will review the main existing definitions of this term.

The evolution of the notion "strategy" began around the year 300 BC in the ancient Greece, when the strategy, being a military term, had the meaning of "activity of generals" or "generalship". In the theory and practice of management, the concept "strategy" did not exist until the second half of the twentieth century due to the relative stability of the business environment. However, in the 1950s, due to the increase of mobility and uncertainty of the external environment, the need for companies to respond flexibly to these changes emerged to insure their efficient functioning (Dmitrienko, 2002). Strategy became a tool to provide this reaction. At that time strategy was seen as an action undertaken by a party in response to the real or projected actions of competitors (Steiner, 1979). This interpretation had been completely transferred to the management theory from military science for the first time in American literature. Thereafter, interpretation of the notion broadened and starting from 1960s and '70s to date there is no longer a consensus in the definition of strategy, although achieving the competitive advantage has remained its key and unchanged element.

Just to provide a brief review of the main contemporary definitions of strategy, we can mention the following:
1. A combination of means, by which the organization is close to achieving its long-term goals (Hussey, 1999).

2. A set of actions and approaches to achieve the specified performance indicators (Thompson, 1995).
3. A means to set goals for corporate, business, and functional levels (Ansoff, 1965; Steiner, 1979).
4. Determination of the main long-term goals and objectives of a company and the development of the course of actions and resource allocation necessary to achieve these goals (Chandler, 1962).
5. Consistent, coherent, and integrated structure of management decisions (Mintzberg, 1987).
6. A plan: the means of obtaining the desired result, or the transition from the current to desired state (Mintzberg, 1994).
7. A model: the pattern of action for a specified period of time.
8. A position, reflecting the decision to offer specific products or services at certain markets (Mintzberg, 1994).
9. A perspective: the purpose, direction, and vision of the desired state (Mintzberg, 1994).
10. A maneuver: the purposeful action based on secrecy and deception that is undertaken to achieve the competitive advantage (Mintzberg, 1994).

Because the aforementioned existing interpretations do not include the required adaptive element of strategy under the conditions of today's dynamic environment, these definitions cannot form the basis for the concept of the optimal strategy development proposed in this research. Thus, there is a need to enhance the notion of "strategy".

Results

Defining company strategy
Because a company can be seen as an aggregate of individuals, its goals and, consequently, strategies (seen as goals of lower levels) can be seen as generalized goals of senior managers realized through the company. This indicates the similarity in an individual and a company regarding the nature and formation of goals and strategies. Therefore, we will initially consider the nature and process of forming personal goals and strategies. Afterwards we will adapt and transfer the obtained findings to the company process of goals and strategies formation.

The cumulative impact of the external and internal environment of an individual is a two-level structure, where the impact of economic, demographic, scientific, technical, and other factors of the contextual environment along with social factors of the microenvironment as well as marketing, personal and psychological factors are on the base level. These influences form motives and capabilities
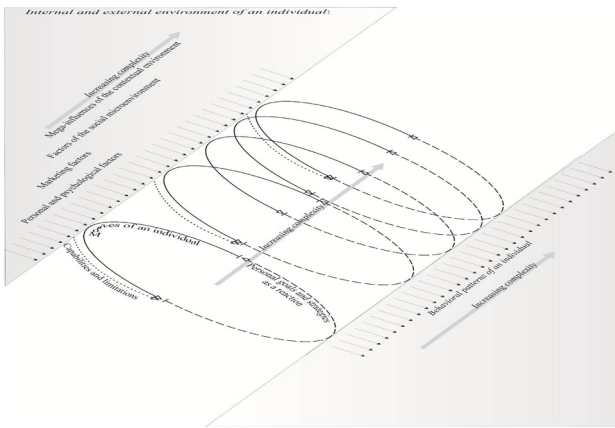
Figure 2. Forming personal goals and strategies in the
moving cycle of mutual influences

(or limitations) of an individual on the second level
that directly govern one's behavior (Figure 2). The
system of motives is a derivative of the joint effects
of the internal factors - needs and external factors –
incentives. External incentives specify, sophisticate,
and enhance existing or create new needs of an
individual. These needs at a certain level of detail
and intensity become motives. For example, the
physiological need for food in general under certain
marketing stimuli turns into the pursuit for a specific
category and brand of a food product, such as
McDonald's cheeseburger. An opportunity provided
to an employee by the company management to
receive a monetary award and the internal needs of
the employee to purchase certain products form a
motive for professional activity. Such influence as
the financial and economic crisis and the need for
personal security form the motive to compensate
for the adverse effects of the instability that this
crisis presents. According to the major theories of
motivation (Ilyin, 2000), the system of motives of
an individual is a driving force in the formation of
personal goals and strategies, which are directed to
satisfy these motives. This allows for definition of
individual goals and strategies as a reaction to the
current or anticipated cumulative influence of the
significant environment of an individual, that is, to
motives and capabilities (or limitations).

Figure 2 shows the moving cycle of mutual
influences of motives on one hand and personal goals
and strategies on the other. The latter are formed
taking into account factors of personal capabilities and
limitations. As the external and internal environment
of an individual is getting more and more complex,
motivation and consequently, personal goals and
strategies follow the same tendency. The set of
strategies and goals of an individual can be specified to
the level of behavioral patterns, which can be viewed
as repetitive sequences of actions that also get more

complex with time due to the increasing variability
and uncertainty of the individual environment.

Considering an enterprise as an aggregate of
individuals, we can similarly define its strategy as a
long-term interactive and pre-emptive reaction to the
variability of the environment. That is, an instrument
of optimal adaptation to the current and potential
long-term environmental influences, the criterion of
which is maximization of the long-term competitive
advantage of the company under given environmental
conditions.

The interactive reaction (as a constituent of a
strategy) is formed by a company to the current long-
term influences of the environmental factors. In its
turn, the pre-emptive reaction (as the other constituent
of a strategy) is formed as a current response to the
future environmental influences, which can either
be projected with a certain degree of probability
according to existing tendencies or be a result of the
current modeling impact applied by the company
itself to modify the existing environmental trends.
In the first case, the pre-emptive reaction is just an
adaptation to the natural and often inevitable course
of future events, such as the world economic and
financial crisis on the macro level. In the second case,
the pre-emptive reaction is an active modification of
the current environmental situation in order to cause
some desired future influence of the environment
(for example, from the consumer side). In this case,
a current company's reaction to a certain projected
environmental influence also forms it.

How has "beer drinking" become a social
tradition? Why is it still the main communication
attribute in many youth groups at a party or a picnic?
Back in 1999-2002 the leading US producer of beer,
Anheuser-Busch (Budweiser brand), adjusted the
image of its beer to match the image of trendy youth
in the context of globally developing pop-culture at
the time. It can be illustrated by the formerly popular
Budweiser "WASSUP" advertising (Budweiser
advertising 2013). The company's strategy was
formed as an active (modifying) pre-emptive
reaction, which was to position "beer drinking" as
a social tradition for the population in general and,
specifically, for the trendy youth. This reaction
was formed to the projected future environmental
influence from the consumer side "status consumption
of beer" that would never emerge if not for such
reaction realization. This status consumption included
associating beer drinking with achieving a social
status, enjoyable communication with friends, desire
for freedom and liberation, rather than traditional
consumption for nutrition purposes.

Still this strategy did not help to avoid the global

drop of beer sales and the product's loss of popularity by 2010 when pop-culture was replaced by the new healthy lifestyle traditions and sports popularity. Accounting for these trends, back in 1997 the Red Bull GmbH company introduced the first energy drink (Red Bull) adjusting the image of its' product to match the image of people with the active life-style following the general social trend of sports and night life popularity among youth. This strategy in the past was an active (modifying) pre-emptive reaction to and the cause of the current consumer influence: "associating energy drink consumption with high athletic performance and active youth socialization".

In both cases discussed above, the future desired environmental influence was caused by the preceding company modifying (active) pre-emptive reaction to it and would be unlikely or impossible in the absence of this reaction.

Theoretical results: the concept description

A necessary precondition (first stage) for forming a company strategy as an interactive and pre-emptive reaction to the changing environment is the formalization of the variety of environmental influences. Of the total influence of the constantly changing company environment, along with the random chaotic changes, it is possible to identify deterministic components, which are patterns within influences of all basic factors, namely, the consumer, macro-environment, suppliers, competitors, and internal environment. In this case, pattern is a recurring regularity in the influences of a certain factor, such as long-term cyclical fluctuations in the financial and economic system of a country, or certain rhythms in a company operation, and so forth. Despite the nature of patterns being vague or hidden, they have a significant impact on the performance and competitiveness of a company providing an opportunity to formalize the multiplicity of the environmental influences in order to form an efficient strategic reaction to the overall variability of the environment.

Therefore, there is a need for prior identification of the main patterns in the environmental influences that would be a basis for the subsequent development of the optimal strategic set by matching the identified patterns (types of environmental influences) and strategic options. As stated above, in this research, the pattern recognition in the structure of the total environmental variability is carried out in the context of the polycyclic concept regarding the dynamics of the environment Figure 1). Identified cyclic and noncyclic macro patterns predetermine patterns in consumer behavior in the markets of various products. In turn, these behavioral patterns and their
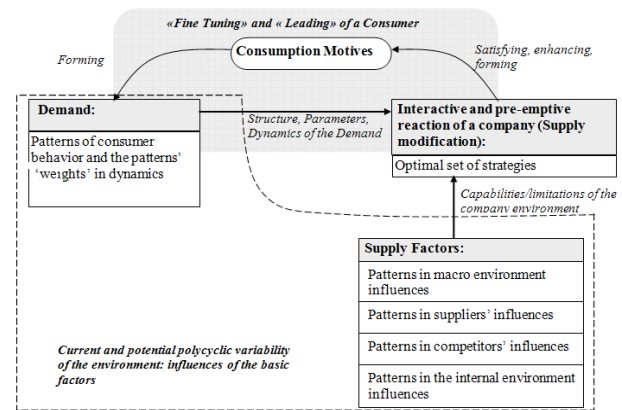

Figure 3. Developing a set of strategies that optimally adapts a food company to the polycyclic variability of the environment

shares' ("weights") dynamics in the overall random process of consumer behavior form the structure and dynamics of the demand, which is influence of the consumer, the latter being the key factor in company strategy development, Figure 3.

One example of a pattern that exists today in most Western societies is the following:

$$y_{1\_1980\text{-}2013} = \Omega \, [\text{Leisure time food "overconsumption"}]$$

beyond biological necessity as a result of emotional or thoughtless eating; emergence of diseases associated with malnutrition, such as obesity, diabetes, atherosclerosis, hypertension, strokes, and heart attacks; subsequent use of various diet plans or continued "overconsumption"].

The symbol Ω used above indicates that the process in the brackets [] is repeated multiple times during the given time period t=1980-2013.

The consumer influence is prioritized in the totality of environmental influences, since correspondence can be established between each pattern of consumer behavior and a set of optimal strategies that maximize the competitive advantage of a company under the given environmental conditions. Thus, the concept of developing the optimal set of strategies or a multicomponent strategy for a company also includes the original "fine tuning" to the current and future projected patterns of consumer behavior and the subsequent "leading" of the consumer considering the limitations of the internal and external polycyclic environment of the company.

The nature of the "fine tuning", as shown in Figure 3, is in developing a set of company strategies, which, under the environmental limitations (opportunities), best satisfy and enhance those motives of food consumption that form patterns of consumer behavior with high growth potential. The magnitude of this potential is significantly influenced by the phases of the environment macro-cycles described above.

Below is the list of contemporary food consumption motives present in Western societies from 1980 through 2013 deduced from Abraham Maslow's pyramid (Maslow, 1970):

$m_{1\_(1980–2013)}$. Ensuring a stable nutrition system: regular purchases of the biologically required food set;

$m_{2\_(1980–2013)}$. Saving resources, such as personal funds, time, and effort, used in the process of buying, cooking, and eating;

$m_{3\_(1980–2013)}$. Obtaining the desired taste and visual sensations as well as emotional comfort (pleasures from consumption);

$m_{4\_(1980–2013)}$. Maintaining health and attractiveness of the body: consuming safe and nutritious foods;

$m_{5\_(1980–2013)}$. The desire for investigation and knowledge of product innovations (curiosity, pursuit of novelty in taste);

$m_{6\_(1980–2013)}$. Joining a target social group and establishing interpersonal relations through food consumption; and

$m_{7\_(1980–2013)}$. Self-positioning in society or forming the image through "status" consumption of prestigious food brands.

The simultaneous consideration of the main behavioral patterns over time allows for strategies' "fine tuning" to the most "preferable" patterns of consumer behavior in each time period by comparing these patterns' "weights" and development trends based on the identified macro-environment cycles (Figure 1). In this case, the most exact match can be achieved between the demand (current and future) formed by these behavioral patterns, and the supply, defined by company strategies. That is, "fine tuning" suggests that the motives of food consumption must simultaneously manage the consumer behavior and the company's strategy development in a way that both are directed to most fully satisfy these motives.

For example, the highest "weights" or presence in total consumer behavior at the food market in the contemporary developing world have the following two so-called "restrained" patterns:

$y_{2\_1980\text{-}2013}$ = ⟳ [Time-consuming extensive search for the least expensive alternatives of food staples ("basic foods") with a long shelf life and relatively low nutritional value (e.g., canned goods, potatoes, onions, cereals, sugar, flour, etc), infrequent purchases of such foods in large volumes and creating home supplies, long-term consumption of the foods often beyond their expiration date, and acceptance of some product degradation in a constant attempt to reduce the cost of nutrition.]

$y_{3\_1980\text{-}2013}$ = ⟳ [Active frequent search and purchase of complementary foods with a short shelf life in the middle price segment (fruit, berries, vegetables, dairy products, bakery and confectionery products, etc.) that are discounted because of either degraded condition (compromised quality) or approaching expiration date; direct consumption of these products or application of home preservation methods such as canning in order to stock up "for winter".]

The main reason why these "restrained" consumption patterns are among the main ones, for example, in Ukraine today is the high budget limitations of the majority of the population, 37.7% of whom live below the poverty line (Official site of the Ukrainian State Statistics Committee 2013). In the case of the projected cluster of global crises, which are anticipated to emerge in 2050, in particular, the long-term financial and economic crisis and the food crisis at the global and national scale, these patterns will become predominant in consumer behavior.

The considered patterns y1 and y2 are formed by and aim to satisfy the motives listed below:

$m_{1\_(1980–2013)}$. Ensuring a stable nutrition system: regular purchases of the biologically required food set;

$m_{2\_(1980–2013)}$. Saving resources, such as personal funds, time, and effort, used in the process of buying, cooking, and eating.

Therefore, the optimal strategy matching these patterns (y1 and y2) or best satisfying the motives (m1 and m2) is the "strategy of providing price incentives for borderline consumption by creating the supply of the compromised quality products in the low and middle price segments."

"Leading" the food products consumer is a modification of his or her behavior in a way that new behavior patterns are formed through either developing new consumption motives or affecting already existing patterns of behavior directly. This behavior modification is carried out by applying company strategies, which include not only the adaptive, but also the modifying (active) component described above, that results in the desired change in the consumer influence (demand transformation) providing for an increase in the company's competitive advantage and performance.

An example of the consumer "leading" from the beginning of this century (end of the expansion phase of the long-term global economic growth, Figure 1) is a strategy of the major Western manufacturers of beer and energy drinks that included "product image adjustment to match the potential buyers' personal image" implying developing such an image for a product that its acquisition will contribute to a customer's personal image. This strategy contributed

to the creation of a new motive m6 $_{(1980–2013)}$ "Joining a target social group and establishing interpersonal relations through food consumption". The latter (motive m6) formed the following behavioral pattern:

$y_{4\_1980\text{-}2013}$ = 🔵 [Consumption of "trendy" foods and beverages to enter the target social group and maintain one's image in it]. Some of these pattern's realizations were provided above and included regular beer or energy drinks consumption during socialization with friends or colleagues, etc.

Today this "social" pattern has a high enough prevalence and positive dynamics, the corresponding optimal strategy being "matching the product image with the potential buyers' personal image". One of the successful implementations of this strategy mentioned above was the Anheuser-Busch Companies' advertising campaign for Budweiser beer during 1999-2002, in particular, the 'Whassup?' TV ad, which established a new social beer drinking tradition for the pop culture youth worldwide by positioning this product as a required attribute or symbol for the free, relaxed, and modern life style.

Matches of consumer behavioral patterns and company strategies obtained at both stages of the concept described above should be adjusted depending on the cyclical and polynomial patterns in influences of the other basic environmental factors such as the "supplier", "competitor", "macro environment", and the "internal environment", which determine capabilities and limitations for the selected optimal strategies' implementation. The main capabilities (limitations) of the environment can be divided into administrative (licenses, patents, taxes, etc.) and resources, which are determined by the structure and dynamics of the key resources' supply. That is, influences of the basic factors "supplier", "competitor", "macro environment", and the "internal environment" are non-price factors of the product supply affecting the price, availability, and efficient use of resources (or company total costs) limiting company opportunities as to meeting or modifying the demand.

Therefore, the optimal set of strategies or a multi-component strategy of a company can be defined, on one hand, as an interactive and pre-emptive reaction to the aggregate influence of the environment and, on the other, as modifications of the quantitative and qualitative parameters (e.g. price, quality, nomenclature, etc.) of the company supply curve under the influence of the demand and non-price factors of supply formed by the basic factors (Figure 3).

Below we will describe three conducted surveys that allowed for identification of patterns of food consumer behavior in Ukraine (some were mentioned above) and of linkages between these patterns and the motives forming them.

Empirical results: Identifying patterns of consumer behavior at the food market in Ukraine

Survey 1: "Restrained" consumption patterns

Method

About a year ago, the NGO "Fund for Social and Economic Development of Sevastopol" organized a food assistance program for the retired population, including veterans of World War II, of the city of Sevastopol, Ukraine. Aside from direct food donations or so-called "food packets" distribution, 1,000 retirees between the ages of 60 and 90 were granted special "plastic food cards" – these cards are similar to the "link" cards available for food assistance in the U.S. Each card allows the holder to purchase food at 16 different locations (grocery stores and supermarkets) in the city and is topped up every month by $62 USD, which is about a half of an average monthly retirement pay. Because the NGO is privately funded, the arrangement with the grocery stores and supermarkets that are contracted to accept the food cards requires them to report information regarding the items purchased by the card holder.

The fund's management decided to organize a holiday meeting of retirees and war veterans to be held on the Victory Day, May 9, 2012, (67 years after WWII) and recruited students from the Sevastopol National Technical University and an Affiliate of the Moscow State University to help set-up the event and analyze the results of the food assistance program.

The student group performed the following:
1. Created an electronic database where, for each of the 1,000 food cards, the list of food categories purchased were indicated. Every category had matching parameters, including brands, average product price, average quantity bought at one purchase, and frequency of buying, total quantity purchased, and the location of the purchase.
2. Conducted individual interviews with 200 randomly selected food card recipients after the event asking the following questions:
a. Describe your typical diet before and after using the food plastic card. What has changed?
b. How do you assess your general satisfaction with nutrition on the scale from 0 (absolutely not satisfied) to 10 (totally satisfied). How can it be improved?
c. Describe the "ideal food package" you would accept as a donation.
d. What is your attitude to consuming products with

an approaching expiration date or in less than perfect condition?

e. Do you follow any nutrition-associated traditions to cut food consumption costs?

Results

Finally, the author of this research combined the database information and the interview results inferring two adjacent patterns, characteristic of 97% of the sample:

$y_{2\_1991-2013} =$ 🔵 [Time-consuming extensive search for the least expensive alternatives of food staples ("basic foods") with a long shelf life and relatively low nutritional value (ex. canned goods, potatoes, onions, cereals, sugar, flour, etc); infrequent purchases of such foods in large volumes and creating home supplies; long-term consumption of the foods often beyond their expiration date and acceptance of some product degradation in a constant attempt to reduce the cost of nutrition].

$y_{3\_1991-2013} =$ 🔵 [Active frequent search and purchase of complementary foods with a short shelf life in the middle price segment (fruit, berries, vegetables, dairy products, bakery and confectionery products, etc.) that are discounted because of either degraded condition (compromised quality) or approaching expiration date; direct consumption of these products or application of home preservation methods such as canning in order to stock up "for winter"]. These behavioral regularities emerged at the intersection of the joint influence of the motives ($m_{1\_(1991-2013)}$ (ensuring a stable nutrition system: regular purchases of the biologically required food set) and $m_{2\_(1991-2013)}$ (saving personal funds on nutrition) and consumption opportunities equal to the first level of food discrimination $p1\_(1991-2013)$ (limited economic availability of foods in amounts required for adequate nutrition).

Both motivations and possibilities have formed mostly due to the high budget constraints of this particular social group. According to the official data of the State Statistics Committee of Ukraine, the current national average for retirement pay is 1,039.6 hrivna per month (an equivalent of about $130 USD). Consequently, similar behavior patterns at the food market are intrinsic not only to the majority of the retirees, who comprise 30% of the population, but also to a much larger population group of 37.7% of total population living below the poverty line. Thus, the "restrained" consumption patterns are still significant enough in Ukraine despite mild national economic growth. These "restrained" consumption

patterns are likely to emerge and spread in the developed countries as well, gradually replacing the "overconsumption" pattern , if the scenario of the long-term economic recession by 2050 described above takes place.

Survey 2 – "Organic" and "Healthy" Consumption Patterns

Method

Like most Ukrainian cities, Sevastopol is divided into the predominate apartment complexes and private home subdivisions sometimes neighboring at both sides of one road (Figure 4). Consumer behavior at the food market differs greatly between residents of a 12-story apartment building and a private house with a small plot of land replete with a fruit and vegetable garden, along with various livestock: chickens, rabbits, cattle, goats, etc.
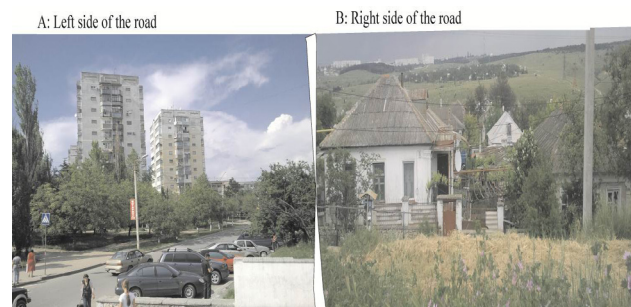

Figure 4. Views of the left and right sides of one road in Sevastopol, Ukraine

In this survey, from a group of 50 management students of the Sevastopol National Technical University, each was assigned to interview two middle-class families of their friends or relatives: the first one living in a private home subdivision and the second one – in an apartment complex. The purpose of this survey was to identify patterns in consumer behavior concerning healthy and organic eating and its current prevalence among the middle class. The following questions were asked:

a. Define organic vs. "health" foods and your attitude to both categories.

b. Describe your typical diet and share of health (including organic) foods in it.

c. What is your understanding of healthy nutrition? On the scale from 0 (absolutely unhealthy) to 10 (absolutely healthy) how healthy is your nutrition?

d. Describe your ideal diet.

e. Where, how frequently, how much, what categories of health/organic food products do you normally buy?

f. What food–related patterns do you usually follow and why?

Results

The following patterns were revealed:

$y_{5\_2000-2013}$ = 🔄 [Careful "home" pre-purchase planning of food shopping, usually in the form of creating a "shopping list"; price and nutritional assessment of foods at regular places of purchase (grocery stores and supermarkets) comparing various brands by the label and advertising information; making mostly logical decisions based of the principles of "healthy" but rarely organic nutrition within the family budget allowing for an insignificant portion of impulse emotion-based buying of "comfort" foods].

$y_{6\_2000-2013}$ = 🔄 [Buying primarily organic or near-organic "health" products from regular or specialized shopping locations, private individual farms or homes without any consideration of the price and location factors; preparation of healthy meals at home from primarily natural organic or near-organic products].

$y_{7\_1991-2013}$ = 🔄 [Mostly self-sufficient organic farming at a private house with a plot of land focusing on maintaining cows, goats, rabbits or chickens along with growing enough crops (fruits and vegetables) to feed the family; spending much effort and time on nutrition organization: home cooking of simple (unsophisticated) healthy meals and seasonal canning to stock up "for winter"; infrequent buying of a few basic food categories, like sugar, flour, vegetable oil, etc., at regular buying locations].

The survey has shown that the current prevalence of these patterns is as high as 5% of the sample for and, while it is as high as 40% for. These patterns emerged under the effect of the motivations $m_{2\_(1980-2013)}$ (saving resources, such as personal funds or time and effort) and $m_{4\_(1980-2013)}$ (maintaining health and attractiveness of the body) along with the consumption opportunities equal to the second and third levels of food discrimination $p_{2\_(1980-2013)}$ (limited economic and / or physical availability of high quality and safe products in the situation of the general abundance of foods) and $p_{3\_(1980-2013)}$ (limited availability of reliable and complete information about foods and shaping individual food preferences in the situation of the general abundance of varying quality foods).

Survey 3 "Indifferent" consumption patterns

Method

As U.S. and national fast food products grew in popularity over the last decade in Ukraine, a number of newly opened restaurants - McDonalds, Potato House, Celentano Pizza, and others – have been hiring most exclusively college students in need of a part-time job. Three of them, working as waitresses for the restaurants mentioned above in Sevastopol, were recruited in exchange for class credit to identify the customers who return on the regular basis. After a month of observations, each student asked ten such clients to fill in a questionnaire, which was designed to elicit the rationale for those individuals to regularly return to those restaurants.

The following questions were included:
a. Describe your typical daily nutrition process: diet, timing, and eating locations
b. What is the proportion of your consumption of convenience/fast foods vs. healthy home-cooked-from-scratch meals in your daily food intake and why?
c. On the scale from 0 (absolutely not important) to 10 (most important) indicate importance of such characteristics as 'nutrition', 'taste of food', 'food quality', 'food variety', 'health', 'sports', 'body fitness', 'caloric intake', 'pleasure', 'time', 'money', 'career/studies', 'judgment of others'.

Results

Based on the answers to these question and the direct observations of the subjects at the restaurants, the following adjacent patterns were derived:

$y_{8\_2000-20113}$ = 🔄 [Giving low priority to nutrition being constantly busy with various activities, such as careers, studies, and sports; habitual convenient and quick dining out at nearby fast food restaurants or cafeterias for the main part of daily nutrition with minimal consideration of food nutrition characteristics, variety, caloric intake, price, and taste; focusing on other than food issues - working on a project using a laptop/papers or conducting business negotiations on the phone or in-person - during the consumption].

$y_{9\_2000-2013}$ = 🔄 [Buying snacks and convenience foods "on the go" at the closest location in a daily rush; quick simplistic microwaving or direct consumption of these products in the mornings and evenings with little concern about nutrient-rich ingredients and awareness of calories; making occasional purchases of "health" products that are ready-to-eat fruit and vegetable products to compensate for an unhealthy diet; regular home-cooking-from-scratch limited to holidays and special occasions despite lower costs and higher quality of such meals].

Concomitant empirical findings

While conducting the surveys described above, several patterns were identified but were out of the scope. Although, they are characteristic of Ukrainian consumer behavior at the food market and, thus,

mentioned below:

$y_{10\_1991-2013} =$ [Status consumption of prestigious or exclusive foods and beverages (wines, cognacs, red and black caviar, various delicacies, etc.) at social events in order to achieve goals not related to nutrition: demonstration of success, imitation of an "icon"/authority, meeting high expectations, establishing social affiliation, achieving professional goals, etc.]

$y_{11\_2000-2013} =$ [Long-term intense frugality regarding nutrition choices during regular shopping and meal planning; short-term episodic consumption of gourmet prestigious highly priced foods and beverages during holidays and vacations along with "overconsumption" of foods from the normal diet].

$y_{4\_2000-2011} =$ [Consuming "trendy" foods and beverages in public (beer, energy drinks, supplements, and so forth) in order to gain acceptance into a social group, such as a youth group, sports team, professional association, and to form an individual image in it].

$y_{1\_2000-2011} =$ [Leisure time food "overconsumption" beyond biological necessity as a result of emotional or thoughtless eating; emergence of diseases associated with malnutrition, such as obesity, diabetes, atherosclerosis, hypertension, strokes, and heart attacks; subsequent use of various diet plans or continued "overconsumption"].

Conclusions

The increasing magnitude of the environmental changes requires significant complex adaptation of food companies, the instrument of such adaptation being a strategy viewed as a long-term interactive and pre-emptive reaction to the variability of the environment. The latter, in this research, is presumed to be polycyclic in nature in order to have the ability to formalize the multitude of various environmental influences at the first stage of developing the concept of forming a multi-component strategy optimally adapting a company to the current and potential polycyclic variability of the environment. Consumer influences being the primary factor of a company's strategic choice, each of the behavioral patterns identified at this stage can be uniquely associated with a set of optimal company strategies accounting for the limitations of their implementation in a given business setting. Three surveys were conducted to outline the main food consumption patterns specific for Ukraine, their origin and prevalence in overall consumer behavior. The subsequent stages of "fine tuning" and customer "leading" of a customer in the structure of the suggested concept match behavioral patterns of the consumer and company strategies, on one hand, through the existing consumer motives and, on the other, by following laws of the classical economic theory such as interaction of the supply, demand, and equilibrium point, as well as interaction of the supply and its non-price factors. The concept formulated in this research is a theoretical basis for the further development of specific strategic tools including models and methods for forming optimal multi-component strategy (strategic set). These tools can be applied to establish the efficient format of strategic management for a food company, format meaning the system organization of the process of company strategy development and implementation in the modern world.

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