7th International Scientific Conference
"Business and Management 2012"
May 10-11, 2012, Vilnius, LITHUANIA

ISSN 2029-4441 print / ISSN 2029-929X online
ISBN 978-609-457-116-9 CD
doi:10.3846/bm.2012.023
http://www.bm.vgtu.lt

MARKETING AS CORE INSTRUMENT TO IMPLEMENT SUSTAINABILITY STRATEGY FOR A BUSINESS WORLD. THE CASE OF FAST MOVING CONSUMER GOODS

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Abstract. This paper analyses sustainability through the context of business. There are many different approaches to marketing and sustainability correlation; in this paper some different aproaches are presented. Nowadays rising the question how to be sustainable and still profitable the paper explains suggesting making marketing mix strategy more sustainable. The aim of this paper to find the optimal distribution of marketing investment (committed to sustainability) among the marketing mix elements, through the example of fast moving consumer goods (FMCG), with the aim to implement the concept of sustainability in a company, invoking the idea of rational allocation of resources and mathematical method of investment portfolio.

Keywords: corporate sustainability, FMCG, marketing mix, stochastic optimization.

Jel classification: G11, M31

1. Introduction

As a result of nowadays global problem- sustainability, there has been an immense pressure on business, as well as consumers, to be conscious and responsible in their lifestyle.

Sustainability can be one as core value of the company. A growing number of companies are looking to recognize the role of sustainability as an integral component of their business strategy (Jones et al. 2008). And according to Peter White (2009) the first what should be done: the key is to build sustainability into the business, rather than present it as an additional activity. Building on Drucker's concepts, Varadarajan (1992) was among the first marketing scholars to argue that sustainable business policies and practices were likely to increase in importance to the survival, growth and profitability of the business.

Despite the fact that sustainability is a continuesly dispute issue, there is growing interest in the relationships between marketing and sustainability. Charter *et al.* (2002) pointed out the importance of growing interest in "sustainable marketing" which has been defined by him as "creating, producing and delivering sustainable solutions with higher net sustainable value whilst continuously satisfying customers and other stakeholders".

The paper discusses marketing and sustainability as interrelated factors; bringing forward the attitude that marketing could play one of the main roles implementing sustainability into the business world, taking into account that there is a demand of optimal distribution of marketing investment, the mathematical method of investment portfolio, based on Markowitz Random Field is used.

The structure of this paper is following: the next chapter presents the concept of sustainability penetrating through the context of business environment till the corporate sustainability. The third chapter answers the relevant question- can sustainability go along with marketing? After getting the answer the next chapter presents the case of fast moving consumer goods by choosing the marketing strategy.The fifth chapter analyses the attitude how to make marketing strategy more sustainable. The sixth chapter presents the theoretical approach to marketing means portfolio and the last chapter describes the application of marketing means portfolio for the case of fast moving consumer goods invoking the idea of adequate investment portfolio and from the sets of possibilities find the best one which meets the needs and expectations.

2. Sustainability through the context of business

Sustainability, according the Merriam-Webster dictionary (Conner 2010) defined as a: of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged (sustainable techniques, sustainable agriculture) b: of or relating to a lifestyle involving the use of sustainable methods (sustainable society). Since 1987 when the United Nations World Commission on Economic Development (also known as the Brundtland Commission) issued their report titled Our Common Future, the definition of sustainability as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” became most citated and like pivot on which many more definitions and conceptions of sustainability are created. This paper will analize a small, but valid part of sustainability- corporate sustainability. On purpose to understand the sustainability in the context of business world it is necessary to go “step by step” reaching the corporate sustainability through the context of business. Galbreath (2009) quet specifically describes the business sustainability: sustainability is a business approach that seeks to create long-term value for stakeholders by embracing opportunities and managing risks associated with economic, environmental and social developments. At this point we should stop and emphasize two trends of importance for business sustainability.

The first one is stakeholder. Cambridge dictionaries online explain the term stakeholder as- it is a person such as an employee, customer or citizen who is involved with an organization, society, etc. and therefore has responsibilities towards it and an interest in its success. Sodhi (2011) comprehensively defines the interrelation of business sustainability and stakeholders saying that sustainability in the private sector is increasingly understood as the creation of not just financial and economic value but also long-term environmental and social value for a wide range of stakeholders – including shareholders, employees, customers, suppliers, communities, and public-sector partners – with particular consideration for the needs of future generations. Herewith Dyllick and Hockerts (2002) see business sustainability through the context of stakeholders as: is meeting the needs of a firm’s direct and indirect stakeholders… without compromising its ability to meet the needs of future stakeholders as well.

The second trend of importance should be seen the so called Triple Bottom Line (TBL). Already in 1998 John Elkington named the sustainability’s approach into business world as an attractive method for business to view its responsibilities through the Triple Bottom Line, a perspective based on three important dimensions: environmental quality, social equity, and economic prosperity.

Sustainability describes how an organization integrates social, environmental, and economic activities in the pursuit of outcomes other than profit (Amaral and La Rovere 2003; Cowell et al. 1999). These three dimensions can be viewed and concretized as follows: the environmental dimension focuses on firm activities that do not erode natural resources through corporate environmental management (Bansal 2005; Hart 1995). The social dimension encourages firms to consider their impact on society and addresses issues akin to community relations, education support, and charitable contributions (Elkington 1998; Wood 1991). The economic dimension centers on the value creation and enhanced financial performance of a firm’s activities (Bansal 2005). Sensitivity to the social, ethical and environmental context in which a firm operates is simply good business and certainly a prerequisite for long-term legitimacy and survival. Firms must integrate these issues into their broader strategic thinking by adopting a ‘triple bottom line’ approach, rather than purely focusing on growth in market share, sales and profitability (Charter *et al.* 2002), changing the classic methodology and perspectives when companies have focused on the economic dimension and employed resources to maximize the company’s profit (Friedman 1970; Gauthier 2005; Walker 2002).

The second chapter of this paper ends with brief definition of sustainable enterprise expressed by The Center for Sustainable Enterprise (2010) “a way of doing business that creates profit while avoiding harm to people and the planet” and rising many following questions: Is it possible to be sustainable and still profitable? How heavy the investment should be? Orsato (2006) emphasizes that progressive firms have made considerable investments in increasingly ambitious sustainability initiatives while trying to identify initiatives that generate both public benefits and corporate profits. Still the open question is: Who is responsible for investments which would bring a company to the way of sustainability (or support) sustainability? May be all these investments for sustainability should be seen as general marketing investments?

3. Marketing and sustainability

Relationship between marketing and sustainability is treated miscellaneously. This chapter will start revealing several approaches of marketing and sustainability correlation. In many ways marketing is often seen as the antithesis of the concept of sustainability (Jones *et al.* 2008). So *the first* approach is - marketing and sustainability are incompatible. It is a common assumption that marketing and sustainability are set for a head on collision because marketing is about selling more while sustainability is about consuming less (Chartered Institute of Marketing 2007). *Second one* that marketing and sustainability can go along and support each other along the way to common goal-better world. Peter Drucker may have been the first to place sustainability within the domain of marketing. Though Ethical Corporation (2003) challenges and says that marketing and sustainability might seem to be as different as "chalk and cheese", Jones *et al.* (2008) in their paper acknowledge the growing evidence that the two concepts have something to offer each other.

This paper supports the second approach and the following discussion brings more clearity. Marketing is one of core instruments in a corporation bringing the face of corporate or its brand to society. Marketing's responsibility for a firm's social impact can be found across a range of market activities such as product safety and product recalls, advertising that leads to health issues (e.g., obesity and smoking), and targeting vulnerable market segments (Smith 2009). Sodhi (2011) emphasizes that the discipline of marketing assumes its importance from establishing an interface with the consumer and the society at large.

Telling more advocacy words to second approach, the predication of Kuosmanen et al. (2009) should be citated that sustainability is nowadays generally accepted as one of the key success factors in the long term business strategy of the firm. Menon and Menon (1997) position by suggesting that businesses can reduce environmental problems "by finding new ways to produce, package, and deliver goods and services to consumers and disposing or recycling the wastes created in the production or consumption of these goods or services." Connelly et al. (2011) underline the biggest importance for marketing scholars that, sustainability is now viewed as an effective way for the firm to differentiate its offerings and to achieve a position of competitive advantage (Menon and Menon 1997; Porter and Van der Linde 1995). What is essential is to have sustainability owned by the business units, not by a corporate group, and to integrate it into the daily rhythm of the business (White 2009). As Jones et al. (2008) emphasize that; sustainable marketing is the next natural step forwards, with an emphasis on progress towards greater sustainability.

In fact, the conclusion should be made that the marketing as a business unit is well positioned, influential enough to carry the responsibility on the implementing and supporting sustainability in a corpore's daily activities.

4. Marketing strategy for fast moving consumer goods implementing sustainability

In this paper the case of fast moving consumer goods marketing strategy will be analyzed, as support to our attitude P. Jones *et al.* (2008) is citating "… it is easier to encourage sustainable buying behaviour in fast moving consumer goods, such as food, where regular shopping allows habits to be formed and maintained rather than it is for the occasional purchase of large items like a fridge, a motor car or a house." According to Galbreath (2009) the fast moving consumer goods (FMCG) industry includes food and non-food everyday consumer products. They are usually purchased as an outcome of small-scale consumer decision so they are heavily supported (advertising, promotion) by the manufacturers. Typical purchasing of these goods occurs at grocery stores, supermarkets, hypermarkets etc. Every one of us uses fast moving consumer products every day.

The product's way to the endusers starts already in a mind of marketer. Fuller et al. (1999) see that marketing can have the greatest impact in the design and life-cycle management phases of the product. Polonsky et al. (1998) clearly indentified the process stages before palcing any new product onto consumer shelves, these stages are: 1.) Opportunity- Identification; 2.) Design; 3.) Testing; 4.) Introduction; and 5.) Life-cycle management. Jones et al. (2008) agreed that there are major challenges here in that such an approach may need to span the entire product life cycle and to involve a comprehensive reassessment of product design and development, of pricing policies, of distribution and marketing communications and of product and packaging disposal.

Marketing strategy is not homogeneous; it is a combination of variety marketing strategic means. Each corporate choose its own marketing strategy. Kotler (2008) described the way marketing strategy should be implemented in a company. First the company's marketing strategy outlines which customers the company will serve and how it will create value for these customers. Next, the marketer constructs a marketing program that will actually deliver the intended value to target customers. The marketing program builds customer relationships by transforming the marketing strategy into action. It consists of the firm's marketing mix, the set of marketing tools the firm uses to implement its marketing strategy.

The last step in creating a sequential marketing strategy is selection of functional strategies of separate elements of marketing mix. It should be concluded that marketing mix- only one, but very important, of means for marketing strategy to prepare. Marketing mix elements are controllable variables; they vary and are supplemented during assessing environmental changes and the combination of variables in an optimal way. Rutkauskas et al. (2007) emphasize the importance of marketing mix strategy "whatever the strategies of the business development and this development resultant marketing strategies would be selected, complex means of operational pricing (marketing mix) is still one of the most important instrument, with which is possible, on the one part to influence changes of strategy, and on the other part estimate the costs of those measures to implement."

Talking about sustainability the importance of social and environmental impacts on the marketing strategy, as well as on marketing mix elements, should be seen. "This is a complex task which involves research throughout the supply chain and one which will take marketers outside their traditional frame of reference. On the one hand, such calls may be interpreted as encouraging marketing departments and marketers to lead the way, or at least to play an important role in the development of more sustainable products and services and in making the traditional "marketing mix" more sustainable." (Jones et al. 2008, Charter et al. 2002)

To conclude this chapter with optimistic note, we would like to citate Galbreath's (2009) point of view "it is easy to see how a combination of material changes, different production techniques and multiple-use product designs may change consumer purchases, sending our society into a savvy, new world." And add Jones et al. (2008) observations that an increasing number of companies publicly claim to be committed to an all embracing definition of sustainable development of a marketing mix of sustainable goods and services.

The conclusion should be made that fast moving consumer goods are very welcome to invoke marketing mix strategy engraining sustainability to the business world, strating from products, services, company, and each person which is included or closely linked to business. This attitude will be presented in the next chapter.

5. Making marketing mix more sustainable

Marketing mix - this is all actions taken by the company, to affect the demand for their product. All these actions can be divided into four groups, which in English mean „four P„: product, price, place, promotion (Kotler 2001). The first four „P"combination proposed E. Jerome McCarthy, in the book „Basic Marketing: A Managerial approach"in 1971 (Zineldin *et al.* 2007). It should be recognized that the origins of the marketing mix concept or approach was developed by Niel Borden at the Harvard Business School in the 1960s to describe the important ingredients or elements that should be considered in formulating a marketing program. These ingredients or elements were the following (Borden 1964, Zineldin *et al.* 2007): product planning, pricing, branding, channels of distribution/place, personal selling, promotions, advertising, packaging, display, servicing, physical handling, and fact finding and analysis. Over time Borden's elements of marketing mix have unfortunately been simplified under the four headings or categories (4Ps) and known and called as Kotlerism. A success will come to that organization which best determines the perceptions, needs, and wants of target markets and satisfies them through the design, communication, pricing and delivery of appropriate and competitively viable offerings. (Kotler *et al.* 1996) In this definition of customer orientation, Judd (2002) recognize the elements as the design, communication, pricing, and delivery of the organization's offering, as elements of the traditional "marketing mix." But many authors and marketers criticize the traditional marketing mix pointing out the need to update and expand the traditional marketing mix. Gronroos (1994), for example, argues that the four Ps model is obsolete. Marketing reduces the main determinants of customer loyalty to the familiar Four Ps: Product, Place, Promotion and Price. These are all critical factors, but marketing orthodoxy is myopic, for reasons that are often lodged right in the structure and culture of corporations. The result is that a fifth P is typically left out of the reckoning: People (McEven 2001). Lately marketers are proposing incresingly the traditional marketing mix 4-P's expan with the fifth P-and the element "people" has to be included. Judd (1987) explains that incorporating employees into an organization's marketing mix, as the people-power element, was originally proposed and modeled for manufacturing firms engaged in business-to-business marketing in a field sales setting and late Judd (2002) emphasize the significance of people-power precisely "Obviously, the people in an organization are part of, or are responsible for, everything that is visible to those outside the organization. Some employees are on the front line creating the service, selling the product or promoting the offering; others are behind the scene working to create value for customers. Porter's (1985) model of the value chain depicts nine activities of a firm which together create value for customers. In this content, all employees of a firm are responsible for creating value whether they are engaged in primary or support activities." Knilans (2009) defines the 5th element- people agreeing that "People" refers to more than just the marketing and sales teams and continues seeing it as “a group, which includes all stakeholders who can offer input that may influence decision-making in the marketphice. Among those are IT and administrative staff, personnel from public relations and other creative services agencies, vendors and suppliers and strategic aliiame partners. Last but not least, don’t rule outadding customers to the people group. Their input could be substantial in assessing marketing mix effectiveness.”

Talking about the way to make marketing mix strategy more sustainable, one significant fact should be mentioned again – it is necessary to evaluate the environmental and social impacts on all the elements of marketing mix. Charter et al. (2003) explains it as “a need to consider the environmental and social impacts of products and services from ‘cradle to grave’ – from procurement of materials, manu- facturing, to distribution, consumption and disposal (or reverse engineering) – both from an environmental and social point of view. It also means that all the aspects of the marketing mix need to be considered, although the emphasis across the mix will change dependent on the company, its product or service portfolio, its markets and its particular circumstances.” Some people within an organization are involved with the creation or implementation of the marketing mix; that is, involved with designing, producing, pricing, financing, distributing, installing or servicing the product (Judd 2002). Going concrete to elements of sustainable marketing mix, Charter et al. (2002) decribe the principles of all 5 marketing mix elements:

Product. Products and services offered will need to be modified and adapted to changing customer attitudes and tougher legislation. In some cases firms may need to work with various stakeholders to bring about changes in the overall consumption system, not simply change corporate activity. Packaging has been on the front line in ‘marketing and environment’debates. Key packaging issues vary between product types but seven general demands can be stated: product protection, cost efficiency, product quality, tamper evident, information, shelf appeal, environmental safety.

Price. Price is a key element of the sustainable marketing equation. Traditionally economic theory has dictated that many environmental and social costs are treated as ‘externalities’ and not included within existing market structures. This means that external costs, such as those linked to pollution, are not reflected in the prices of the products that we buy, or the cost accounting of the companies that produce them. This situation is gradually changing. Many of these ‘external’ costs are now having a price attached to them by legislation and stakeholder pressure. Pricing decisions have the capability of helping direct the flow of consumption into socially and environmentally useful areas. The real challenge is translating environmental improvement into value for the consumer, or at least into a value proposition that they are willing to pay for.

Place. The physical distribution, wholesaling and retailing of products and services has both direct and indirect environmental impacts. Place not only involves where consumers purchase goods, but also includes the movement of goods within the firm.

Promotion. The company should develop an integrated communications approach that includes ‘company-specific’ and ‘product specific’ aspects of environmental and CSR matters. The strategies and claims made by the firm must be based on sound research and information. Information must be communicated consistently to customers and other stakeholders, and companies should be wary of any claims or com- munication that could be viewed as hype.

People. An integral part of business sustainability is to remember that ‘people are the business’ and they have to implement change. Any organisation that embarks on the process of making itself more sustainable is likely to face a difficult and turbulent time. It will mean that projects will need to be looked at in different ways, and inter-disciplinary skills will be needed. Implementation of strategies and policies will be more likely to succeed if employees are involved in decision-making, and are given a sense of ‘strategy ownership’.

To the chapter 5 a neat conclution will be made: the approach to extended marketing mix strategy – 5P, for fast moving consumer goods, later in this paper will be used.

6. Theoretical approach to marketing means portfolio

Portfolio is defined as a kit of certain assets, liabilities or other items, made up for a particular aim to reach (Rutkauskas *et al.* 2007). There can be found a lot of expressions in literature where “portfolio” is connective word, for example: a type of briefcase; portfolio (government), the post and responsibilities of a head of a government department; career portfolio, an organized presentation of an individual’s education, work samples, and skills; artist’s portfolio, a sample of an artist’s work or a case used to display artwork, photographs etc.; electronic portfolio, a collection of electronic documents; patent portfolio, a collection of patents owned by a single entity; product portfolio (business administration), separation of products by their market share and profits or growth rates portfolio, projects portfolio in project portfolio management; the portfolio of projects in an organization; Atari portfolio, a palmtop computer; Portfolio.com, a business magazine; minister without portfolio (Rutkauskas *et.al* 2011).

According to the theory, the father of which was Harry Markowitz (his paper "Portfolio Selection," was published in 1952 by the Journal of Finance) it's possible to construct an "efficient frontier" of optimal portfolios offering the maximum possible expected return for a given level of risk. He first used the terms in his works: an expected profitability of the portfolio, portfolio risk, portfolio diversification and the efficient portfolio (Zilinskij 2009, Markowitz 1952, 1959).

According to Markowitz portfolio theory, investor, making a decision in choosing the portfolio, seeks to maximize the expected portfolio return and minimize the risk (Ramanauskas 2007). Blau *et al.* (2010) describes the situation in less theoretical way: while the perfect investment would have the attributes of high growth with little or no risk, the reality, of course, is quite different. Not surprisingly, significant time is spent developing methods or strategies that come close to that "perfect investment." None is as popular or compelling as Modern Portfolio Theory (MPT). Investing is a tradeoff between risk and expected return. In general, assets with higher expected returns are riskier. For a given amount of risk, MPT describes how to select a portfolio with the highest possible expected return. MPT is therefore a form of diversification. As Blau e .al. (2010) explains the MPT, the theory quantifies the benefits of diversification—not having all of your investment eggs in one basket. Under certain assumptions and for specific quantitative definitions of risk and return, MPT explains how to find the best possible diversification strategy (Rutkauskas *et.al* 2011).

Therefore in literature continuously proceed the discussions – could Modern Portfolio Theory (MPT) be analysed to marketing (Cardozo *et al.* 1985) and especially for risk impact assessment. In next chapter we will analyse the marketing portfolio (Ryals *et al.* 2007) where marketing segments are initiated as marketing assets and which will be approached as direct appliance of MPT. Rutkauskas (2001, 2006, 2007) based on the theory of Markowitz (1952) and his research findings explains the usage of the modern portfolio ideology, approving that it is possible to do the researches of average and standars deflection (risk) of marketing outlay marginal efficiency and using the adequate portfolio of marketing outlay marginal efficiency for stochastic nature, a set of possibilities are investigated, as also the risk and the reliability of each possibility.

Function of fundamental modern (Markowitz) portfolio and its further amplifications (Fabozzi, Markowitz 2002; Reilly, Brown 2003) is an intention to commensurate investment profitability and risk objectively and to give an opportunity to select a portfolio taking into consideration investor's indifference curve. Efficiency line of portfolio values is fundamental mean of such choice and optimization (Sharpe 1964). Rutkauskas (2000) asserts that effective line refects only the return (profitability)-risk combinations, where profitability to a certain level of risk is the higherst, without evaluating the aimed profitability's reliability and using the methodology the two-dimensional evaluation is transffered to a three-dimentional, adding the additional security measure reliability and designing an effective surface. Efficient surface, which is formed as an intersection of survival functions of portfolio possibilities values and isoguaranties, not only contributes for such a commensuration, but also becomes a set of constraints searching for the possibility of the highest profitability for an investor. After the effective zone of portfolio has got, the question rises-how from the sets of possibilities find the best one that justifies expectations? Here it is possible to analyse the selection of utility possibilities measured in three parameters: profitability, reliability of profitability and risk with the help of three-dimensional utility function (Rutkauskas et al. 2011). Before we'll illustrate how the utility function could be used for solution to select, first the mathematical expression of it will be presented:

$$U = \frac{pxg}{r}, \qquad (1)$$

where:

U – is the utility level of possibility,
p – denotes profitability,
r – the risk,
g – the guarantee

Such specification of utility function and decision making procedure is analytically meaningful, because it allows solving a complex stochastic programming task with the help of imitative technologies and graphical decision-making methods (Rutkauskas *et.al* 2011).

Generalizing this chapter and before moving to the application of method which is based on modern portfolio theory, but takes into account three variables-risk, return and reliability, some words should be added. In this paper we assert that the method of investment portfolio optimization can be applied to solve the problem of optimal distribution of marketing budget. Solving the problem of the stochastic optimization of the marketing mix resources, all possible portfolio structures will be analyzed.

7. The application of marketing means portfolio for the case of fast moving consumer goods

Treating marketing campaigns as investments with expectations for generating positive returns makes it possible to manage the entire marketing budget as an investment portfolio (Lenskold 2003). Tingiris (2003) explain it as "anytime I spend a single dollar on marketing, I'm making an investment, and I want a return. However, like investing in stocks, with each marketing investment there's a level of risk. To manage risks, we try to balance my marketing mix like an investment portfolio." Rutkauskas (2006) see the task of investment distribution among the marketing mix's elements as complex stochastic programming problem. Because (Rutkauskas *et al.* 2007b) between the efficiency possibilities of the individual marketing mix elements there are complex correlative relationships, determinating the total portfolio return possibilities and risk. Solving the optimization task, marketing mix elements are examined as transformers of today's costs to the future benefit's possibilities spectrum, so they are treated as random processes and values (Rutkauskas *et al.* 2007). This task to solve was used simulation technologies, susceptible to obtain the graphic images of the researched processes. Simulation techniques give similar results as the analytical mathematical models (Rutkauskas 2006).

If a company is formed and keeps the database of the necessary data, using statistical and mathematical methods it is possible to obtain reliable elements of the portfolio. However, the results are statistically significant; the database should cover quite a long period of time and must be collected detailed data. When the data of past situations is not enough, frequently is the second method used - the expert analysis. It should be noted that even with the real data is not always appropriate to rely on them alone, because these figures reflect the past, and the market is constantly changing, evolving, so the past does not always reflect the situation in the future. In this context, it should be noted that the model adapted in this paper may be useful not only as a selection tool for the structure of the portfolio, but also as a learning tool for experts. Accumulated experience may be the source of unique skills, the formation of insights, may develop a unique insight into competitive advantage. The choice-expert analysis was made because of lack of limited available data. Marketing is one of the major company's competing means, that's why the details of marketing activities, costs, and the results are not usually declared public.

Moving to the practical expression, one more factor should be noted. All investment evaluation techniques are trying to compare the future expected returns from current expenditures where the decisions differ. One of the most common used techniques is the return on investment (ROI) formular, which is used by practices and marketers of the fast moving consumer goods already not the first year. Lenskold (2003) expressed basic return on investment approach to marketing return on investment "marketing ROI offers the most comprehensive and practical approach to using marketing return on investment (ROI) techniques and tools to optimize the profit potential through more effective strategic planning."

Table 1. The averages of stochastic values and the values of standard deviation (made by the author, based on expert opinion)

		ROI	
		Average value	Standard deviation
P_1	Product	1.35	0.35
P_2	Price	1.43	0.38
P_3	Promotion	1.83	0.48
P_4	Place	1.12	0.39
P_5	People	1.60	0.44

The following table (Table 1) summarizes the estimates of 5 marketing experts (based on practice, historical data and the technic of return on investment calculations) of the marginal cost-effectiveness of each marketing mix element separate, which is defined as stochastic value.

The case, which will be analyzed, consists of five main marketing means - the 5P's. Having each of five means distribution of the possibilities effectiveness we have variables W1, W2, W3, W4 and W5. Variables W1, W2, W3, and W4 show us the cost distributions of the traditional marketing mix elements of product, price, place, promotion, and people. Having the distribution of the efficiency probabilities of the each element and using the possibilities of imitational modelling, 23.751 possiblities' structures of available marginal recourses distribution were generated. The relative structures of the portfolio have been concluded consistently changing the weights of possible elements in 2 percent step:

Table 2. The sum of the analized marketing mix structures (made by author)

W1	W2	W3	W4	W5
0.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.02	0.98
0.00	0.00	0.02	0.02	0.96
	<...>			
0.96	0.02	0.02	0.00	0.00
0.98	0.02	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00

During the imitational modeling, using the above tendered assumptions, the dispersion, the average of the return and the meanings of indexes of percentile and quartiles (divided into 100 of parts) of various portfolio structures are rated.

Doing the analysis of the structures of marketing mix elements costs, there was calculated the total value of portfolio return, expressed through the return on investment of marketing mix elements, and the risk, expressed through the dispersion index (standard deviation is the square root of the dispersion). From these values it is formed a set of marketing mix structures. The most important information for the investor is concentrated in the critical set limits of analysed portfolio, in particular – in the effective line. Effective line reflects only these return-risk combinations (Fig.1), where profitability to a certain level of risk is highest. The full spectrum of the portfolio opportunities reflects the distribution of random value possibilities.

In the Figures 2 and 3, quartiles of the distribution of return opportunities are considered: Figure 2 shows quartiles of the return opportunities of the marketing mix structures, and in Figure 3 - effective quartiles lines.

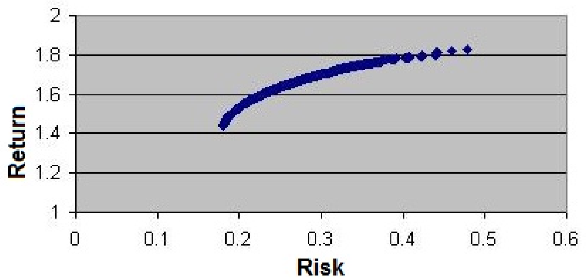

Fig.1. Effective line of a set of marketing mix structures (made by author)

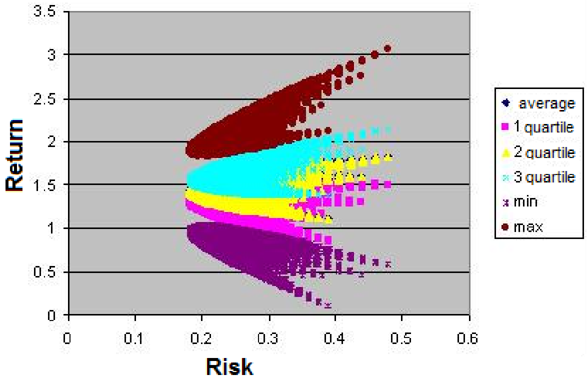

Fig.2. The marketing mix structuries' quartiles to "risk-profit" set - the effective zone (made by author)

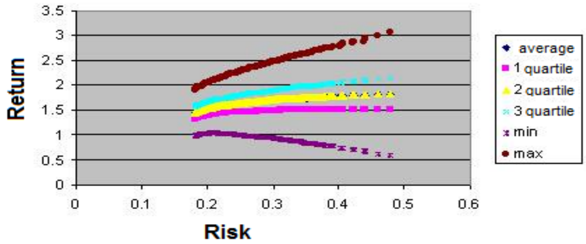

Fig.3. The marketing mix structuries' quartiles effective lines (made by author)

In the Figures above the distribution of the return probability has been divided into five parts, said quartiles, but this distribution can be divided into galore pats or quartiles. When the distribution is divided into a large number of quartiles, showing in the graphics the effective lines of these quartiles, the effective surface is obtained, where effective line of each level quartile reflects certain reliability. Using the methodology the image is transferred to a three-dimensional space. An additional security measure is brought, and we get an image of the effective zone of the portfolio (Fig. 4).

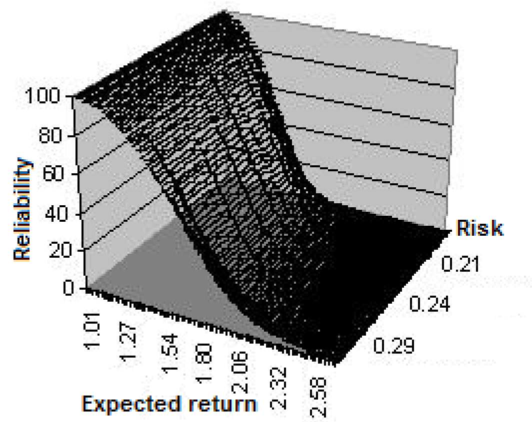

Fig.4. The effective surface – the spatial view of marketing mix different structures (portfolios) marginal profitableness possibilities (made by author)

Thus, using an imitational modelling possibility and evaluating presumptive effect to marginal costs of marketing mix elements, considering the covariation of elements, a set of optimal portfolio structures is obtained, which is reflected as an image of effective zone. Using a particular investor utility function, (Fig. 5) from the given efficient portfolios set is choosen the optimal portfolio.

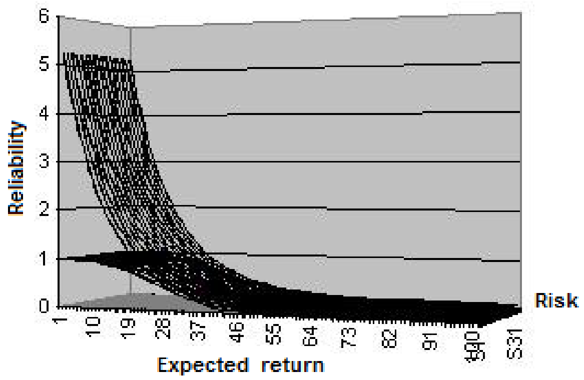

Fig.5. A view of the Set of Posibilities and Utility Function in Three-dimentional Space

The optimal portfolio is choosen bei finding the tangent point of effective zone and the utility function (Fig. 6). In this figure the section and touch-point of these two surfaces by specific risk are shown. The solution - selected optimal portfolio - is characterized by three measures: expected return, risk and reliability.

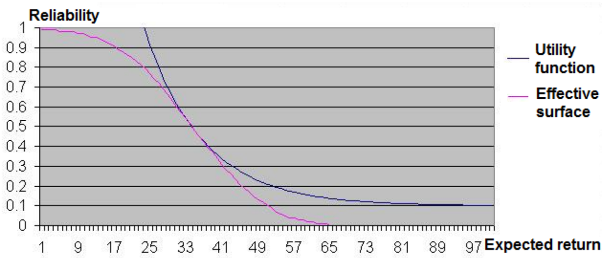

Fig.6. The section and touch-point of the surfaces of effective zone and utility function (made by author)

Concrete results (portfolio) is generating a particular distribution structure of marginal cost, showing how the marginal cost should be allocated to specific marketing mix elements - product, price, place, promotion and people- in order to distribute rational the marketing investment of the company. By the value of risk 0.213, the optimal solution is following: P1 0.24; P2 0.16; P3 0.32; P4 0.04; P5 0.24.

8. Conclusions

Approaching sustainability through the context of business two factors are playing huge role: stakeholders and keeping the balance in the Triple Bottom Line. Ignoring their existence and influence both on business and single company is not allowed.

Despite the miscellaneous approach to sustainability and marketing, the fact should be accepted that marketing is weighty enough to take the role of sustainability's installer in the company.

The main points presented in this paper suggest that the 4P's marketing mix framework is not acceptable for a nowadays business and in oder to create a successful marketing finance strategy for a fast moving consumer goods, the extended marketing mix 5P's should be used, adding one more element- People.

The analytical system of return on investment calculations helps us to make sence in complex and seemingly disordered marketing investment templates and let us quickier make valid conclusions about the future marketing commitments.

The results reported here, showed that the mathematical method of investment portfolio optimization could be applied to solve the problem of the optimal distribution of marketing investment among the marketing mix elements, when fast moving consumer goods are using the marketing mix strategy. In this work, the idea of adequate investment portfolio is applied directly to the optimization of the marketing mix structure. The imitational technologies give possibilities to solve difficult stochastic programming tasks.

The last but not the least conclution should be made that adaptation and systematic use of the model may enable the company to develop unique insights and not only get the decisions making advantage, increase the company's competitiveness, but become as means to tame and integrate the sustainability to the business world.

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