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Milivoje Radenković
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Address
Belgrade, Jove Ilića 154
Tel./fax. 381 11 3950 868
E-mail: manage@fon.rs
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CONTENTS

Diversity of Specific Quantitative, Statistical and Social Methods, Techniques and Management Models in Management Sistem

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Gheorghe Savoiu[1], Ondrej Jaško[2], Mladen Čudanov[2]
[1]Faculty of Economic Science, University of Pitesti
[2]Faculty of Organizational Sciences, University of Belgrade

The application of specific methods of various backgrounds in management increases over time. If we sustain system approach to management we can observe it as a system that brings together elements having a planning, informational, decisional, organizational, as well as a motivational character. The increasingly complex subsystem of management methods and techniques is a methodological-experimental subsystem made up of methods, techniques, procedures and instruments characterized by rationality, complexity and formalization, which conduce to an ascending dynamics of the organization's managers' professionalization. As this article will illustrate, specific management methods are so diverse that achieving needed proficiency can result in overspecialization of experts and create obstacles in integrating several different methods. So we can conclude that further advances in this field need to be supported by theoretical frameworks developed by experts in different fields of science that support specific managerial methods.

1. Introduction

The specific management methods, although believed to have an applicability below the level of the entire managerial process – which is, indeed, much more restricted, i.e. for a limited number of functions or stages – gather the broadest range of manners of approaching matters, as well as principles, techniques, procedures of analyzing the phenomena and the internal processes of the organization, and displaying its results, as a consequence of the joint action of various disciplines, which generates a multiple structure of distinct characteristic classes. In further text, several proposed categories of methods and techniques will be presented, and methods within those categories will be promptly described. The idea is not so much to provide unified list of potential specific methods in management, but to emphasize vast differences in background disciplines.

2. Specific methods for improvingpersonnel's creativity

A. The methods of stimulating the personnel's creativity within the organization, as a result of an interweaving with the psycho-sociological disciplines, as well as those of communication and public relations, combine some simple, yet efficient techniques in many concrete situations, which call for creativity; their relevance here is that of establishing new relations between people, things and ideas [1], and also creating new connections:

a1. the technique of forcing thinking, or Alex Osborn's checklist consists in reviewing all the aspects of a problem or issue, on the basis of a list, the aims of which are primarily to facilitate transforming the problem through operations used in a different manner, or bearing a different sense, such as similarity, modification, augmentation, diminution, replacement, rearrangement, reversing, combination and dissociation; furthermore, it can generate different perspectives on the respective problem;

a2. the technique of the list of attributes or of the qualitative list consists in drawing a list of attributes or qualities that an object or a problem has, then trying to change or modify each attribute or group of attributes in a number of modalities as large as possible (it is the modern variant of Alex Osborn's list, developed by Robert Platt Crawford).

a3. the technique of the case studs represents the simplest, yet most efficient variant of making the participants directly confront a real-life, genuine situation, taken as a typical example, representative of a whole set of challenging, problem-posing situations and events;

a4. the technique of the question "why?", and the technique of repeatable questions represent another two very techniques of creativity stimulation, consisting in developing a subject by means of questions; the former, which is quite old and comes from Asia, helps to solve the problem that eluded the manager's attention, in a first stage, as the latter is a bit more nuanced, and the questions are asked to emphasize a certain direction, be it causal, relational, successive, oscillating, etc.;

a5. the technique of the cause and effect diagram, similar to the fishbone-maps technique, which gives the possibility of evincing the sources of a problem, issue,

event or result, being used as a group technique, as a creative process of generating, organizing and attentively analysing the causal mechanism of an effect, both major (i.e. the main causes), and minor (i.e. the secondary causes);

a6. the technique of solving the problems in a process-related manner, using seven steps structures the reaction to a certain problem in several steps, which cover the function of managerial decision-making, in four major steps, i.e. planning the decision (in keeping with the following steps: step I – identifying the problem and the necessary changes, as well as minutely describing the problem, step II – describing the processes and relationships through drawing a map, setting the performance standards, step III – making a diagram that includes the causes and effects of the problem, or a "tree of the problem", and step IV – conceiving a detailed action plan starting from the solutions found), implementing the decision (exclusively through step V, i.e. communication of the plan to the parties involved, and to the parties interested, as well as application of the steps planned, and monitorizing that application), evaluation of the impact of the decision made (which only consists of step VI, i.e. review and evaluation of implementation and of the changes produced through comparing them to the performance standards), and the final step, i.e. improvement, or adjustment of the effects of a future decision (made up of a single step, step VII, i.e. reflection on the basis of the new information, evaluation of the entire process, and improvement of it, where a similar future situation needs better results).

a7. the technique of free association is based on the flow of the conscious ideas that can be inferred, and along the network of associations of a linear type (in accordance with the principle the each idea that emerges through association starts from the previous idea), and also of a radial type (each new idea has its origin in the central idea, not in the previous one – hence the name of this technique, star bursting or "stellar explosion").

a8. the technique of the metaphor, or the technique of lateral thinking, consists in representing the problem in a non-conventional manner, which resignifies it in order to change the participants' mood, their rhythm of work, in order to stimulate creativity through novelty and the sheer challenge of the task, to underline the practical side of the process, as the technique generates strong artistic and jocular / play-related implications, and assuming a written form (story, essay, etc), graphical (diagrams, collage, etc.), spatial or three-dimensional (sculptures, model constructions, etc.), sonorous (tunes, songs, etc.), kinetic (drama, mimicry, etc.).

a9. brainstorming [2] is a two-step technique, the former step pursuing the generation of ideas and their expression as freely as possible, without any judgment/evaluation being done, and the latter seeks to create a free, associative atmosphere, that of a creative group, through assessing the quality of the ideas after all the ideas have been expressed. Brainstorming starts by postponing the evaluation of an idea in favour of generating a new one, in a stimulated group, and thus creates a genuine explosion of ideas, as each member of the group is inspired by his/her predecessors' ideas (in circa 30-45 minutes, in a group of 5-6 people, an average of 100-150 ideas can be generated). The technique is also called the technique of unchaining ideas, and has generated three specific tackling ways: the progressive-linear one, the catalytic, prevalently analogic, or innovative one, and the mixed way. The essence of brainstorming lies in separating and specifying / lending precision to the psychological operations present in the act of creation, so as to maximized the efficiency of each of those, gradually turning the organization into a milieu/ environment favourable to idea-production and contagion through chain-association (by means of creative groups).

a10. the Frisco technique is a "staged" variant of brainstorming that is characterized by the fact that the participants plays roles imposed upon them (managerial roles in essence), which cover a certain dimension of the managerial personality, from a multiplied perspective, offering new solutions for the complex and difficult problems of the organization, by using simple and efficient ways. The Frisco technique can be partially identified with another variant, namely the technique of the thinking hats [3] belonging to Edward de Bono, which is centred on the hypothesis that if you play the part of a good/efficient thinker, or that of a good manager, you will actually become one. Acting is based on different parts, in keeping with the colour of the hat chosen, and so the technique of the thinking hats becomes one belonging to the interactive type, derived from brainstorming, yet retaining the elements characterizing it as a technique of stimulation of the participants' creativity;

A11.brainwriting is different from brainstorming through the mandatory written form of the generation and capturing of the ideas, thus desinhibiting the fear of ridicule, the dominating tendencies of certain people, the potential conflicting situations, etc.

a12. the technique of the nominal group takes over, in order to annul the effect of antagonistic arguments, the best of both brainstorming and brainwriting, but in addition presupposes using a group made up of people

who do not know one another, and who were brought together in order to solve a certain problem;

a13. the technique of the Philips 66 reunion represents a temporally condensed variant of brainstorming, in which the object of consultation is not merely individuals, but teams made up of (usually 6) individuals; the duration of the talks is very short, as a consequence of allotting at most one minute per participant in order to express their opinions);

a14. the technique of the panel reunion is a participative management technique, the grounding of which remains the permanent dialogue, having the character of a debate between two groups of people who met to make certain decisions concerning the range of problems specific to the organization. The frequent case when the panel reunion is applied is reflected by the activity of the boards of administration in their relations with the shareholders' general assembly;

a15. William Gordon's technique [4] is also a group technique, where it is only the leader of the group who knows the problem to be solved, while the topic is chosen in conformity with the problem, without however revealing its precise nature. The central axis of this technique is the leader of the group, who guides and directs/orientates the talks, over a duration a bit longer than that of regular brainstorming; he/she will try to alter its often superficial solutions, through skilful and expert / experience-trained substituting the problem-ridden relations in the organization for the ideas expressed by the participants with respect to the subject-matter being debated. The problem itself is disclosed at the end of the discussion, and disseminated / made public. Very much as Osborn's brainstorming is recommended when there are several ideas, so Gordon's technique is recommended for selecting one single idea, or in identifying an entirely new solution;

a16. synectics, a technique developed by the same William Gordon, also called the method of the analogies, brings together completely different elements to formulate ideas and hypotheses, through the reasoning of analogy (its name comes from Greek synectikos, which can be translated as "bringing together various/ different elements", which in fact suggests the very fundamental principle of the method, namely the association of apparently unrelated ideas). The method (or the technique) described stimulates the developing of novel, unexampled, original ideas, starting from a human's ability to establish connections between apparently irrelevant elements. The stages of synectics are: the building of the synectic group, the presentation of the problem, the setting of the synectic itinerary/course, the elaboration of the model / pattern according to which the problem will be solved, and, eventually, experimenting and applying the model. An interesting conclusion of the method, whose implications concern both management, and the assessment of emotional intelligence, underlines the fact that, in creative processes, the emotional element counts more than the intellectual element, the irrational prevailing over the rational.

Apart from the facts synthetically mentioned, there exist many other techniques specific to management, which fall, be it in a relative way, within the broad category of the methods of identification and stimulation of the staff's creativity; such techniques refer to the dynamics of the groups, and evince the special part held by groups in leading the organization, as well as in the process of multiplying ideas, which occurs in the participative management of the organizations, and no less in the management achieved through communication, when it comes to using the tests meant for the recruitment and selection of the creative employees, and the sociogram (i.e. the scheme of the aptitudes necessary to fill in a position), etc.

3. Specific statistical methods connected to efficiency

B. The specific statistical methods of managerial analysis starting from the criteria of efficiency are the result of integrating careful statistics and economics with ecological analysis within the contemporary methodical arsenal of the organization manager, and they include:

b1. the method of energy analysis, which is based on the method of the energy balance, focuses on assessing the potential of energy conservation, establishing an optimal level of that potential, and consequently on setting up an optimal managerial decision regarding the conservation of energy by having recourse to coherent measures.

Cassette no 1.

The general equation of a quantitative energy balance is a reflection of the content of the first principle of thermodynamics, which is expressed in a nutshell by the following formulation: "the sum of all the quantities of energy entering (SWI) the contour of the flow of executing the product or of the firm's activity (defining energies of every form, expressed in the equivalent of only one form of energy) is equal to the sum of all the amounts of energy coming out (SWE) of the same contour: S WI = S WE . As part of the energy that comes in (SWI) two major components are defined, namely the energy effectively entered into the contour from the outside, and the thermal energy generated from the inside through exothermal chemical reactions (when such energies occur effective-

ly); likewise, within the energy gone out (SWE) two other significative components are defined, through the effectively used energy, and the energy lost from the contour. The energy used or valued in a useful / efficient manner within the contour of the flow of executing the product is, in its turn, divided in two components, in keeping with the main technological flow, directly generating the product of the firm, and other processes or secondary flows of the firm. Thence several conceptualizations appear [5], useful for making the energy analysis, defined as energy efficiency rate:
1. the global efficiency rate = the efficiently used energy / the energy coming from the outside, and generated within the contour,
2. the internal global efficiency rate = the efficiently used energy in the main technological flow / the energy coming from the outside, and generated within the contour,
3. the economic efficiency rate = the efficiently used energy / the energy entering the contour from the outside,
4. the internal economic efficiency rate = the energy efficiently used in the main technological flow / the energy entering the contour from the outside.
The specific consumption (cX) of energy W for executing a unit of product "x", realized in the total quantity Q, is a final indicator significative for the energy balance, defined by the relation: c x = SW / Q x .

b2. the method if exergetic analysis appeared with a view to improving the method of the energy balances, as a means of investigation and calculation having energy and ecological implications. The notions of exergy, or usable energy, and anergy, or energy of a null capacity of transformation, were introduced by Zoran Rant[6], in the years 1953, and respectively 1963. In a succinct detailed presentation, the mechanical energy and the electric energy contain only exergy, the energy of the ambiant environment – only anergy, while thermal energy contains both exergy and anergy. Exergy evinces the quality of energy, a type of energy being all the more valuable as it contains more exergy. Anergy underlines, in the current stage of scientific knowledge, the lack of the capacity of transforming a certain kind of energy. In general, all the natural processes are irreversible, as they conduce to a qualitative degradation of energy through transforming exergy into anergy. The energa balance becomes, in keeping with the exergy analysis, a balance between exergy and anergy, through applying the second principle of thermodynamics, which defines the behaviour of both exergy and anergy during the reversible or irreversible processes, as follows:

Axiom I - In the irreversible processes, exergy turns into anergy.

Axiom II - In the reversible processes, exergy remains constant.

Axiom III – It is impossible for anergy to turn into exergy.

The general equation of a exergy balance validates both the principle of the conservation of energy, and the quantitative energy balance (or energy balance proper), and the principle of the degradation of energy during the irre¬versible transformations, and is virtually identical to the equation of the energy balance, except fort he fact that each component of energy is in turn divided, within the exergy balance, into exergy (E) and anergy (A), so that:

$W = E + A$, and $S W = S (E + A)$

Thus appear the exergy deficits (DE), and the anergy surpluses (DA) at the exit from the contour of the flow of execution of the product, or of the firm's activity, the former indicating the size of the transformation's irreversibility, and being equal to the latter within the contour (DE) = (DA). The ration between the exergy deficit upon going out of the contour, in proportion to the same on entering (DE), and the exergy deficit generated within the contour (DEg) defines the degree of irreversibility of the energy transformation (DE /DEg). The exergy deficit (DE) can be reduced through managerial decisions aiming at thermodynamic improvements of the contour, the rational direction of the energy flows, augmenting the efficiency of the energy transformation rates, and through turning to account the secondary energy resources.

b3. the analysis of the restrictions and of the synchronous production, initiated by Goldratt Eliyahu, develops a set of programmes that organize and structure the activities within the economic processes, in the natural hypothesis of the limitation of the resources, tools and materials, machinery and equipment, personnel, and of any other restrictions which can affect the possibility for an organization to realize a certain production programme, thus laying the foundation of a new specific management method, briefly designated by the name of the method of the restriction analysis. One can easily see that nearly all organizations are faced with the phenomenon of the sense of haste/urgency in realizing the production at the end of the time period allowed by the contract (called by Goldratt Eliyahu "a hockey-stick", from the graphic aspect of the evolution of the production towards the final part of the period). The cause of the cyclic occurrence of this problem[7], lies in the fact that two different sets of indicators are involved: the initial indicators of norm-regulation of the energy consumptions, (manual) work / labour and materials (of efficiency of the cost accounting, local indicators, which lead to minimizing the number of technological interventions through large lots of work pieces, and also to diminishing deviations from the consump-

tion norms), and final indicators, which refer to the financial performance (theoretically, monetary units/delivered product, but practically in the shape of the net profit, the amortization of investment, and of the flow of cash per product). Thus appears the need for realizing other indicators having an operational character, another set of indicators, which could offer a direction of action: the equivalent value of the sold product, the stocks and the operational costs. The added and realized value is concisely defined as the equivalent value of the sold products, the stocks represent the money that the organization has invested in the products which it/they want(s) to sell, and the operational costs – the money that the organization pays for transforming the stocks into a turnover. The organization's objective becomes treating all three indicators simultaneously and continuously, and this leads to achieving the end of obtaining the money for which provision was made in the order or the contract proper, i.e. it is expressed through increasing the added and realized value, at the same time as the stocks and the operational costs are reduced. Another problem faced by the organization is generated by the deficient capacities, the exceeding capacities, and the resources having capacity restrictions. The notion of deficit capacity is identified, or the appearance of a bottleneck as being the resource with capacity smaller than the demand placed on it, and the notion of excess capacity, or the appearance of a wide spot, as being the resource the capacity of which is bigger than the demand placed on it. The conclusions of the analysis are remarkably useful: one hour saved in a tight spot / bottleneck virtually means an extra hour for the entire production system, while an hour saved at a wide spot is but an illusion, which only adds another hour to the idle/inactivity time. Thus, the analysis reveals resources with a restriction of capacity, or resources whose utilization is near to capacity, and so they can become bottlenecks/tight spots if they are not carefully programmed. The time of a complete cycle of executing a product is made up of a number of specific categories, or types of time: the adjustment time, a time that a team spend waiting for a resource to be scheduled or accessed, the access, or resource processing time, the queuing time, while the team waits their turn to come to access the resource, while the latter is busy with another team, the waiting time, when the team waits for another team (the subcontracted phase in the product's technological flow) in order to co-generate a certain stage of the project, and the inactivity time, as the difference of the duration of the activity cycle and the sum of the four previous times. In analysing restrictions the following notions are also used: drum, buffer, and rope. If the production system contains a tight spot, this is the best checking point, and it will be called a drum, because it sets the rhythm in which the rest of the system (or those parts that it influences) works (or "beats"). Putting and maintaining, before the tight spot, a buffer appears as an immediate necessity, in order to permanently ensure something to work on, as the production of this tight spot determines the firm's turnover. Likewise, within the flow, communication will be made upstream, in order to prevent a large stock forming, which would immobilize the firm's money. Communication, called, in a graphical manner, a rope, can be formal, in the form of a programme, or informal, coming as free talks.

b4. the method of the entropic analysis follows the signification of the second principle of thermodynamics, often even called the law of entropy; according to this signification, phenomena in nature are irreversible, their sense comes back from the state of order to that of disorder, from the state of imbalance to the state of balance / equilibrium. The acceptations of entropy are variegated, from thermodynamic entropy to statistical entropy, from informational entropy to social entropy. Entropy has facilitated the understanding of the processes having to do with energy, of the losses accompanying any energy transformation, seeking to increase efficiency of turning to account the energy available. The entropic analysis extends the contour of the productive technological flow, also involving the environment, or nature, in a polluting, negative and non-regenerative sense; the product and the packaging become, after use, factors of increasing the outer disorder. The process of product execution is defined as entropic, or resource-consuming, thus maximizing disorder in the ambient milieu. However, the support of information, or negentropy, appears as being a practical solution by means of extending, through knowledge, the traditional resources available, or via substituting them for new resources.

b5. value analysis [8] or value engineering constitutes one of the most interesting specific management techniques, which ensures the necessary balance between the use values projected, and the costs due/appropriate to their execution; they are defined through expressly analysing the product, the function of the product and its use value. Value analysis is a systemic and creative method of analysis and research-planning that, through the functional approach, sees to it that the functions of the product under study are conceived and realized at minimal costs, in conditions of quality that should satisfy the users' necessities in keeping with social-economic demands. The range of the problems related to dimensioning the functions, from both the technical and the economic standpoint, is determinant in value analysis. The correct evaluation of the level to

which a function is realized, by means of the characteristic measuring units, is called the technical dimensioning of the product function. The economic dimensioning of the functions presupposes the analysis of the product submitted to value analysis, from the producer's point of view, determining the means or resources consumed for the realization of the product, as well as its cost. In applying value analysis, the following steps are taken in economic practice: the stage of the preparatory measurements, the analysis of the social need, the analysis and evaluation of the existing situation, the conception or re-conception of the product, approval of the optimal solution, the execution, and the checking of the application. Value analysis represents a method having a very special character of generalization. The method of value analysis, or value engineering, can be applied to any product, organization, and even managerial system, going beyond its boundaries, and proving apt to successfully being tailored for the whole social and political system. Value analysis or value engineering imposes a new type of approach in organization management, responding to the components of the system through the intermediary of their functionality, and ignoring managerial procedures, and even the existing organizational structures, built exclusively on productive-constructive bases, which can lead to obtaining spectacular results, to improving the performances of the system, and increasing its economic potential. This brief historical sketch of value analysis emphasizes perhaps one of the most promising specific management methods, in the perspective of an expected resource crisis.

Cassette no. 2

- During World War Two, the crisis of such strategic materials as nickel, chromium, wolfram/tungsten and platinum determined the allied governments to prioritize their allotment to the armament industries. Diminution of resources generated an increase in the insurance of supply of substitute materials. In order for the product to work properly in the conditions when substitute materials were used, all of them had to be re-designed.[9] The theory of value analysis, succinctly described by L.D. Miles, presupposed defining the notion of product value starting from the difference of content which that notion involved, for the buyer, and for the producer. For a buyer, the value of a product signified the maximal amount of monetary units that he/she was willing to pay in exchange for the defining attributes of the product, in accordance with the quality characteristics, the conjuncture of the relationship demand-supply, and the prices of the products that concurred them in point of usefulness, or of the similar products offered by the other firms present on the market. Virtually opposed to the value-for-the-buyer, the value-for-the-producer, or the cost value, was defined as the minimal amount of costs by which the respective product can be manufactured. The two notions can merge into only one simple notion, that of value, which additionally implies the conclusion that the value of the product can be augmented either through diminishing the value-for-the-producer, or the cost value, or through increasing the value-for-the-buyer, or multiplied through both variants, cumulated in point of effects. This is, succinctly and in rather general terms, the concept of "value" elaborated at the General Electric Company, which also achieved, over a very short interval, important annual savings. This procedure of analysis of the firm General Electric was taken over by the Ford corporation, after 1958, and then by the companies coordinated by the Department of the USA Air Force, and, subsequently, by an increasing number of American companies, and, beginning with the year 1960, by some European firms. Nearly a decade after the emergence of the method, new extended solutions appeared at General Electric. To begin with, the typology of values was diversified, so the theory acknowledged the existence of four categories of values, namely: use value, estimation value, cost value, and exchange value. The first two categories synthesize the minimal costs necessary in order to configure the defining functional and psycho-sensorial attributes or characteristics of the product. In estimating quality by means of value, the product is redefined as the ensemble of utilities, and of relationships with its users. The other values, bringing together the production costs, or those recognized through exchange, are evaluations realized not in proportion to the material costs, but rather in proportion to the satisfaction the buyer gets after using the product. A first significant result of the method was that many manufacturers were tempted to use substitute materials. L.D. Miles set up a team made up of specialists coming from various compartments involved in designing a product, with a view to methodically and systematically analyzing the value of the designed and manufactured product. In the sixth decade of the last century, H. Erlicher, who had, in the meantime, become the Secretary of the Armed Forces, used his position to extend the method of value analysis. Yet, the method was simultaneously utilized by the USA Navy Office, who initiated a target-programme aimed at reducing the costs of the ships and adjoining equipment, as early as the design phase, which yielded excellent results in the years 1955 and 1956. The year 1956 was in fact the year when value analysis, now alternatively defined as value engineering in the activity of design, substantially developed thanks to the US Secretary of Defence, Robert McNamara. Using value analysis led to eliminating many unjustified costs, in direct proportion to the use value of the product; in only five years, the amount saved rose to something like over $14 million..

Value analysis is also defined through a number of fundamental principles:

I the principle of functional analysis, in keeping with which the functional characteristics are much more important than the structural ones,

II the principle of the double dimensioning of the functions, namely their technical dimension expressed through specific technical measuring units, and the economic dimension expressed through costs,

III the principle of the maximization of the ratio between the use value and cost (increasing the product's competitiveness through maximizing the use value in parallel to minimizing the costs),

IV the principle of the final hierarchization of the product's functions, starting from the simple relation of ordering S* = S S / P, where S* represents the average rank of importance, of the individual level of importance S allotted through order numbers, resulting from the number of analysis matrixes of the P type (assigning the level of importance is called up in proportion to the number of functions that define the product) [10]

V the principle of the systemic approach to use value, as the newly created products, on the whole, respond to certain individual/social needs, but not at any rate their subsets or components parts.

Value analysis is a type of organized analysis aiming at identifying the useless costs in the products having more than one component elements, utilizing functional analysis to define the problem, and group creativity to solve it.

Among the specific techniques and instruments that are incorporated in value analysis, one can distinguish the techniques of functional analysis, of analysis of the product structure, the use of the contact schemes and the determination of the conception function of the new product, the cost analyses (calculating costs through analogic, parametric or analytical methods, using matrices of the functions-costs type, and the cost histograms), methods for identifying the appropriate solutions to meet the consumer's needs and requirements, such as the techniques of creativeness stimulation, of functional arborescent analysis, and the computer-assisted devices (CAD), the technique of evaluation of the design solutions for the new products (the functional block diagram, or BDF, the table of functional analysis, or TAF, calculation of the conception efficiency rate, reliability, globally assessed through AMDEC (Analysis of Modes of Failure, Effects and their Criticalness). By detailing the inventory of the various techniques of functional analysis, one can find that each of them is more or less adapted to the specificity of the product or the type of analysis (the technique of the interactors, the functional tree, the F.A.S.T. diagram, the S.A.D.T. or G.R.A.F.C.E.T. techniques). Concluding, the method of value analysis has become, at present, more than an inevitable reality in the management of prevalently productive organizations, over a comparatively short period (only half of a century) after its spectacular appearance, looming as the main argument of a managerial type in the context of the drastic limitation of resources.

4. Specific statistical methods connected to previsioning

Revisions represent an interesting sociological answer, but mainly a mathematical and statistical one, given to management in order to help it design and plan decision-making and organizational alternatives more easily, either as individual techniques, or as ensembles of techniques that are rather various, yet homogeneous through the object predicted:

c1. the Delphi technique provides contiguity in solving a problem, by the agency of addressing questionnaires, or even rounds of questionnaires, to people who are at a considerable distance from one another (as a rule, experts in the domain under investigation, and, more rarely, a number of people who are directly interested); the aim of this technique is also to extract an organization's problems, and in order to make sure the initiative or the move will work, it is imperative to clearly establish the domain and the precise delimitation of the problem, the judicious choice of the participants, the processing, the synthesis, the interpretation and the presentation of the answers with a lot of competency, as well as allowing the participants sufficient time to answer;

c2. the set of the technological previsioning techniques comprises various techniques, from the technique of the scenarios, the pattern technique, the morphological technique, the technique of the matrix of discoveries, possessing a higher degree of use in the organization's managerial practice, to the technique of technological prevision through analogy, the technique of the precursory events, the technique of international comparation, and even the technique of opinion polls / canvassing, whose utilization is relatively lower in point of frequency. The technique of the scenarios defines a procedure that points out the critical moments where the manager is required to intervene for the activity of the organization to continue, through decision-making, opting for one of the possible variants in a certain domain. The technique describes a sequential, yet logical, event, and has the capacity of emphasising critical moments. The option allows continuing the action along one direction or the other, and generates another logical succession of sequences, as the iterations lead towards different critical areas, imposing another option through decision-making, etc. The technique diversifies in keeping with the elements characteristic of the scenarios, through the theory of the strategic games,

through simulation, mathematical models, dynamic programming, etc. The pattern technique, utilized in prevision-making in the technical and technological field, first puts forward the objective, and then effects the previsional study in order to discover the factors that facilitate attaining the time targets, or make it more difficult; it is apparently similar to the management method based on objectives, applied in the particular case when the objectives cannot be rigorously quantified, so the moment of attaining partial goals cannot be accurately predicted, and consequently the stages of performing the programme have a broader tolerance margin. [11]

The morphological technique of prediction decomposes the whole into its structural parts, and distinctly realizes the independent quality projection for the component parts, starting from the progress of technique and technologies. The technique of the matrix of discoveries makes predictions through combining only two factors (either both technical or technological, or one technical or technological and the other economic);

c3. the set of the techniques of trend estimation combines the statistic techniques of adjustment and extrapolation of the chronological series of data;

c4. the set of the techniques of stochastic and econometric modelling puts into effect variegated statistical and mathematical techniques, starting, in principal, from the technique of self-regressive modelling and the technique of econometric modelling.

5. Specific nžmanagerials models of organizational generalization

D. The typical methods of the managerial activity are the methods of maximal organizational generalization, and they include:

d1. the meeting, or reunion (both names, although different, designating the same institutionalized form of dialogue, taking place in keeping with pre-established rules, where, through the confrontation of the participants' opinions, regulations and rules are set/established, and decisions are made; simultaneously, it also becomes the solution that usually serves the communication problems);

d2. the delegation (a decision that transfers tasks to the collaborators, especially in the periods of managerial over-occupation, and develops a favourable climate for amplification of the subordinates' initiative);

d3. the control panel is a useful technique, notably in top organization management, interested in possessing synthetically, simple and prompt situations concerning the general state, as well as the organization's time and space performance.

6. Various specific methods of management

E. The specific methods of management (e.g. weather disasters management)

The weather disaster management involves many disciplines and institutions and focus on the main activities that take place, some on a regular basis as part of the weather forecast service, and some triggered by extreme events. These activities are: 1) weather and hydrological forecast; 2) assessment of weather disaster risk for specific zones and warning; 3) evacuation and other measures taken to diminish damage; 4) further intervention and rescue missions, help in case of weather disaster; 5) steps to restore normality and resume economic activities; 6) complex evaluation of the situation and implementation of plans that will adapt communities for future possible severe weather disaster [12-13]. Disaster Management includes the main weather management issues of weather disasters: monitoring environmental changes, observations and data collection, diagnosis, modelling forecasting of meteorological and hydrological hazards produced by extreme weather and climate change, advances in radar, satellite and hydrological modelling methods for flash flood forecasting and droughts, remote sensing and geophysical surveying, quantifying fluxes of water among hydrologic reservoirs, and understanding the causes of global water and energy cycle variability, prediction and simulation of hazardous weather using mesoscale and microscale, numerical models and assimilation systems, urban planning or urban disaster management, natural catastrophe risk modelling (recent development in loss modelling technology and application to insurance, risk managers and local governments). Natural catastrophe risk can represent overall social and economic impacts of natural hazard on humans and the built environment. Such impacts include, among others, loss of life, injury, damage and loss to properties, business interruption and loss of profit. This integration of natural phenomena and their consequences is mathematically specified as exposure:

Risk = Hazard x Vulnerability x Value.

Evaluating the social and economic impacts of natural catastrophes involves a number of different disciplines ranging from earth and weather sciences, to management, economics, mathematics, statistics, physics, engi-

neering, demography, etc. Natural catastrophe risk models may also be used by local government for risk mitigation, post-disaster reaction, recovery planning and public awareness programs relating to: computer modelling of natural risks, natural catastrophe risk modelling methodologies, the use of GIS in natural catastrophe risk modelling, uncertainty and sensitivity of computer risk models, availability, reliability and quality of data used in natural catastrophe risk models, regional vs. local risk models, modelling the social and humanitarian impacts of natural disasters, natural catastrophe risk modelling of urban areas and its application to urban planning, post-disaster planning and risk mitigation, building and social vulnerability of developing countries to natural disasters, practical applications of natural catastrophe risk models in the business environment, etc.

7. Conclusion

As management theory advances in development of wide spectrum of specific multidisciplinary methods and techniques it is becoming more and more necessary to combine the techniques into new methods, and even methods into new leadership and management systems, with a view to attaining an increased efficaciousness of management. We propose further study aimed at aggregation of methods. Aggregation of techniques in practice, while the methods and the techniques are increasingly utilized in ever more diverse combinations by the managers, can result from disadvantages of individual application of any method or technique, further the capacity of homogeneous ensembles of techniques grouped into methods of satisfying multifunctional managerial needs, in constant striving toward improvement. But as this article has illustrated, specific management methods are so diverse that achieving needed proficiency can result in overspecialization of experts and create obstacles in integrating several different methods. So we can conclude that further advances in this field need to be supported by theoretical frameworks developed by experts in different fields of science that support specific managerial methods.

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Operational Risk Management in Financial Services and the nev Basel Accord

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Vesna Bogojević Arsić
Fakultet organizacionih nauka, Jove Ilića 154, Beograd, bogojevic@fon.bg.ac.yu

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Today's turbulent financial markets, growing regulatory environments, and increasingly complex financial systems have led risk managers to realize the importance of measuring and managing Operational Risk. According to the Basel Committee on Banking Supervision, Operational Risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, and systems or from external events. Infrastructure failures (e.g., information technology, terrorist attacks), fraud (e.g., rogue trading), legal and regulatory risks (e.g., fines), have become the motivators behind the move to proactively manage Operational Risk in large Financial Services Institutions. In this paper we provide an up to date critical review of the most fundamental issues on Operational Risk Management, e.g., methodology, data collection, analytics, implementation, based on practical experience.

1. Introduction

Of all the different types of risk that can affect institutions, operational risk can be among the most devastating and the most difficult to anticipate. Management of operating risks is a key component of our financial and risk management discipline that drives net income results, capital management and customer satisfaction. Rigorously controlled and well-managed risk, frees up resources and capital for revenue generating opportunities.

Although credit and market risk are now well understood and are therefore more likely merely to wound, operational risk remains an enigma for risk managers. It is the relative lack of understanding of it that is threatening. Unlike market and credit risk, which tend to be isolated in specific areas of our business, operational risks are inherent in all business processes. It is a broader concept than “operations” or back office risk.

Along with established capital charges for market and credit risk, Basel proposes an explicit capital charge to guard the banks against operational risks. Since January 2005, the new capital requirements require financial services institutions to implement robust systems for the collection and tracking of data. As a result of that, the biggest financial institutions have started devoting significant resources to identify, measure, analyze, report and mitigate this potentially catastrophic risk class. They aim to implement a framework that meets all the compliance requirements with the New Capital Accord (Bank for International Settlements, BIS II) regulations: data collection, data tracking and a robust internal risk-control system.

Since operational risk became the focus of intense interest among industry participants, regulators and other observers, there is a great opportunity for operations research specialists, risk managers and management scientists to apply quantitative and qualitative techniques in this field. There is no doubt that the management of operational risk has taken on increased importance in financial services institutions in recent years and banks are becoming increasingly sophisticated in determining how it a can be accomplished. It is a new, exciting area of risk management in the banking sector.

2. Operational risk definition and categorization

In general, operational risk contains the losses that follow from acts undertaken (or neglected) in carrying out business activities. Therefore, when a transaction is priced solely in terms of market and credit risks, an important risk, which can have devastating financial consequences, is missing from the product pricing.

After a number of years of intensive debate on what constitutes an operational risk, according to the Basel’s current definition for purposes of quantification and capital allocation, operational risk can be defined as a risk of direct or indirect loss resulting from inadequate or failed internal processes, people, and systems or from external events 2, pp. 144.

Strategic and reputational risks are not included in this definition. The four operational risk categories are further clarified as follows:

- People,
- Process,
- Systems and,
- External.

People as a risk category are losses associated with intentional violation of internal policies by current or past employees. In some specific cases, the risk extends to people who are being considered for employment.

Process risk can be explained as losses that have been incurred due to a deficiency in an existing procedure, or the absence of a procedure. Losses in this category can result from human error or failure to follow an existing procedure. Process-related losses are unintentional.

Systems risk category consists of losses that are caused by breakdowns in existing systems or technology. Losses in this category are unintentional. If intentional technology-related losses occur, they should be placed in either the people or external category.

Finally, external risk category could be defined as losses occurring as a result of natural or man-made forces, or the direct result of a third party's action.

The definition focuses on the causes of operational risk and is open to endless discussion about the detailed definition of each loss category.

There are three common categorization methods: event, cause and effect. There is a live debate in the operational risk managers and insurance community regarding the pros and cons of each method. Tables 1 and table 2 demonstrate the classification proposed by Basel.

Table 1: Basel Business Line Classification

INVESTMENT BANKING	Corporate Finance
	Trading and Sales
BANKIING	Retail banking
	Commercial banking
	Payment and Settlement
	Agency Services and Custody)
OTHERS	Asset Management
	Retail Brokerage

Table 2: Basel Loss Event Type Classification

Event-Type Category (Level 1)	**Subcategories (Level 2)**
1. Internal Fraud	Unauthorized Activity Theft and Fraud
2. External Fraud	Theft and Fraud Systems and Fraud
3. Employment Practices&Workplace Safety	Employee Relations Safe Environment Diversity&Discrimination
4. Clients, Products&Business Practices	Suitability, Disclosure&Fiduciary Improper Business or Market Practices Product Flaws Selection, Sponsorhip&Exposure Advisory Activity
5. Damage to Physical Assets	Disasters and other events
6. Business Disruption and System Failure	Systems
7. Execution, Delivery&Process Management	Transaction Capture, Execution&Maintenance Monitoring and Reporting Customer Intake and Documentation Customer/Client Accounting Management Trade Counterparties Vendors&Supplies

3. Basel treatment of operational risk

Capital Adequacy Framework 2 identified operational risk as a key area of regulatory consideration. The New Capital Accord identifies three methods for calculating operational risk capital charge, with increasingly sophistication and advanced qualitative criteria:

(1) Basic Indicator Approach (BIA),
(2) Standardized Approach (STA) and,
(3) Advanced Measurement Approach (AMA).

According to basic indicator approach, the capital charge should be derived as a fixed multiple (alpha) of some aggregate activity measure such as gross income that has to be positive (in either case, should be excluded from numerator and denominator) 2, pp. 144. The charge may be expressed as follows 2, pp. 144:

$$K_{BIA} = (GI_{1,..n}) \quad n \qquad (1),$$

Where K_{BIA} is the capital charge under the Basic Indicator Approach; GI is annual gross income, where positive, over the previous three years; N is a number of the previous three years for which gross income is positive and; is 15%, which is set by the Committee, relating the industry wide level of required capital to the industry wide level of the indicator.

On the other hand, standardized approach suggests that different business lines are assigned individual gross activity measures and the regulators determine the appropriate fixed multiple (beta) to calculate the regulatory capital requirement. The business lines are defined in detail in table 3.

The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the business lines in each year. The total capital charge may be expressed as:

$$K_{TSA} = \{\Sigma_{vear\ 1\text{-}3} \max \Sigma(GI_{1\text{-}8} \times \beta_{1\text{-}8}), 0\} / 3 \qquad (2),$$

Where K_{TSA} the capital charge under the Standardized Approach; $GI_{1\text{-}8}$ is a annual gross income in a given year; as defined in the Basic Indicator Approach, for each of the eight business lines and; $ß_{1\text{-}8}$ is a fixed percentage, set by the Committee, relating the level of required capital to the level of the gross income for each of the eight business lines. The values of the betas for the corporate finance ($ß_1$) trading and sales ($ß_2$) and payment and settlement ($ß_5$) are 18%; for the commercial banking ($ß_4$) and agency services ($ß_6$) are 15% and; for the retail banking ($ß_3$), asset management ($ß_7$) and retail brokerage ($ß_8$) are 12%.

Table 3: Mapping of Business Lines

Level 1	Level 2	Activity Groups
Corporate Finance	Corporate Finance Municipal/Government Finance Merchant Banking Advisory Services	Mergers and acquisitions, underwriting, privatizations, securitization, research, debt (government, high yield), equity, syndications, IPO, secondary private placements
Trading & Sales	Sales Market Making Proprietary Positions Treasury	Fixed income, equity, foreign exchanges, commodities, credit, funding, own position securities, lending and repos, brokerage, debt, prime brokerage
Retail banking	Retail Banking	Retail lending and deposits, banking services, trust and estates
	Private Banking	Private lending and deposits, banking services, trust and investment advice
	Card Services	Merchant/commercial/corporate cards, private labels and retail
Commercial Banking	Commercial Banking	Project finance, real estate, export finance, trade finance, factoring, leasing, lending, guarantees, bills of exchange
Payment and Settlement*	External Clients	Payments and collections, funds transfer, clearing and settlement

Level 1	Level 2	Activity Groups
Agency Services	Custody	Escrow, depository receipts, securities lending (customers) corporate actions
	Corporate Agency	Issuer and paying agents
	Corporate Trust	
Asset Management	Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open, private equity
	Non-Discretionary Fund Management	Pooled, segregated, retail, institutional, closed, open
Retail Brokerage	Retail Brokerage	Execution and full service

Source: BCBS, "International Convergned of Capital Measurement", Annex 8, pp. 302
** Payment and settlement losses related to a bank's own activities would be incorporated in the loss experience of the affected business line.*

According to advanced measurement approach, there is a range of internal approaches currently under development, which may be broadly categorized as:

- Internal Measurement Approach (IMA),
- Loss Distribution Approach (LDA) and,
- Scorecard Approaches.

When applying internal measurement approach, the business lines are overlaid with a series of operational risk types. For each business line/risk type combination, regulators define an exposure indicator (EI). Banks then use internal data to define the probability of a loss event (PE) per unit of the exposure indicator, and the expected loss given such an event (LGE). Expected losses (EL) by business line and risk type are the product of these three components. Regulators supply a fixed multiplier (gamma) to translate these expected losses into a capital charge, i.e., Value-at-Risk (VaR) figure for unexpected losses.

Loss distribution approach involves estimating two distributions based on internal loss data. One distribution is the loss associated with a single event and the other is the frequency of loss events over a given (usually one year) time horizon.

Scorecard approaches are using forward-looking risk indicators and built them into "scorecards", to measure relative levels of risk. In order to qualify for the advanced measurement approach, the approach must have a sound quantitative basis.

It is clear that basic and standardized approaches are not scientific ones. Allocating capital based on simple aggregate activity measures, fails to distinguish between well-run and poorly-run units. However, these approaches are not out of line with the practice in many internal efforts to allocate economic, as opposed to regulatory capital. The internal measurement approach framework is similar to the one followed for market risk. However, without data to calibrate such a framework objectively, it will have the appearance of scientific sophistication with little of the reality.

The Basel Accord states that as banks move along the continuum, they will reap the reward of a lower capital charge. Further, the Accord also mandates that failure to comply will be addressed by a variety of supervisory actions including increased oversight, senior management changes, and the requirement of additional capital.

The Accord emphasizes the importance of data collection and stipulates that banks must have data collection processes in place long before the January 2005 deadline, when the new capital requirements became mandatory. It also mandates that banks must be able to prove that these systems are robust and auditable. After the January 2005, the majority of the institutions have not had sufficient internal data to support loss distribution approach.

The intention of the Basel Committee was to keep the aggregate capital requirement roughly constant for most banks under the new Accord. On the other hand a desirable secondary goal was the creation of internal incentives for improved operational risk management as well as the reliable basis creation for the trend analysis.

4. The operational risk framework

The large financial services institutions are in the process of building a framework that provides an enterprise-wide view of losses and allows them to proactively manage operational risk, no matter if the risks lie in operational processes, resources, systems or external

events. This framework should meet the compliance requirements with the BIS II Regulations, in terms of data collection, data tracking and a robust internal risk-control system.

It should deal with operational risk measurement and management issues, such as: developing efficient management and organizational frameworks, economic capital allocation, advanced operational value-at-risk (operational VaR) measurement techniques, internal loss database design and implementation, data collection and reporting, definition and categorization issues, risk indicators analysis, and the integration of operational risk measurement with control self-assessment scores and insurance.

The basic components of the operational risk framework are:

(1) Risk identification&assessment,
(2) Risk quantification & measurement,
(3) Risk analysis, monitor & reporting,
(4) Risk capital allocation and,
(5) Risk management & mitigation.

Risk identification & assessment is usually done through a Risk and Control Self-Assessment (RCSA) program. Managers of line of business identify key processes, risks and controls in those processes, gaps and action plans to close gaps. They could also assess the impact and likelihood of risk, in a qualitative manner.

A quantitative framework that follows the advanced measurement approach is suggested, so operational risk can be measured accurately. Typically, exposure indicators, e.g., gross income, past losses and Key Risk Drivers/Indicators (KRDs/KRIs) constitute the internal database. Availability and integrity of internal data as well as relevance and scalability of external data are important issues. Risk profiles, provided by RCSAs, have fundamental information as well.

Risk analysis contributes to the integration of risk and business performance, making risks transparent and identifying gaps. Risk monitoring of operational risks, key risk drivers/indicators and action plans, should reflect changes in the enterprise and raise awareness. Risk management performance, which links the risk to value creation, becomes important. Consolidated reporting across the enterprise, should be appropriate for various levels of management, including the Board of Directors.

Operational Capital at Risk (CaR) (both regulatory and economic capital) is calculated for every line of business, to protect for unexpected losses at a certain time horizon and percentile, e.g., 1 year – 99.9% operational VaR.

Risk management & mitigation consists of sophisticated alternative risk financing and transfer arrangements (through insurance programs), as well as updated business continuity plans. Ongoing communication making risks transparent, training and sharing of best practices becomes vital.

5. The information support for operational risk management

The data needed for operational risk management is insufficient and inconsistent. Definitions of what constitutes an operational loss differ from institution to institution and even across departments. Even the range of items to be considered under the operational loss heading is a subject to dispute. In addition to that, even with agreement on the relevant risk categories, there remains room for dispute on how to calibrate exposure drivers for each area. On a "purely scientific" basis, the problem is great in the current environment.

Sources of data can be: internal operational loss data and exposures, collected from and within the institution; educational opinions (e.g. management scenarios or self-assessments); key risk drivers/indicators for each risk type in order to signal problem in the earliest stages so that preventive action can be undertaken and; other institutions' operational loss data (i.e. external data can be used as a proxy for the institution that is being analyzed).

Integration of data (objective and subjective) provides details of events and risk indicators for model calibration, a predictive look at new initiatives, and a retrospective picture of the historical patterns of risk in the business processes.

5.1. The internal operational risk database

The development of a model for measuring operational risk begins by building an internal database. Events therein should carry their losses or potential losses, the business activity giving the losses, and other risk indicators. The creation and management of the database is important to understand the business environment. The aiming target should be a comprehensive database that provides reliable information on significant losses, e.g., losses above a certain threshold. Major financial institutions have started putting in place a process for ongoing tracking and monitoring of operational risk losses, to facilitate the effective measurement and management of operational risk.

Data should be reviewed for accuracy and completeness thoroughly, i.e., being of high-quality. The database should include only those losses that have impacted the institution and not losses that have been realized by individuals or shareholders, since this information cannot reliably be used for modeling purposes.

There are several technical issues that managers face when it comes down to designing an internal operational risk database. The first issue refers to kind of data to be collected and the reason for the data collection, regarding losses, exposures, key risk drivers/indicators, and management control information. The second issue refers to the definition of the optimal database structure. Third issue is the treatment of so-called "near misses" data, i.e. the mistakes that almost cost the bank but which are sorted out just in time. There are many other technical issues, regarding: losses and key risk drivers/indicators data module design and implementation, database features and specifications, security and user authorization issues, hardware and software requirements, integration with the bank's internal systems, e.g. accounting system, etc.

The "granularity" of loss and risk data records by the different line of business is another important issue. If banks record their internal losses in very general categories, and do not associate losses with enough contextual information, it may be impossible later to drill down into the data looking for finer gradations of risk or it may be very hard to reclassify the database according to an agreed industry or regulatory standard.

Operational risk teams should identify the sources of data and how to obtain it, ensuring it is all captured and reported to a central database. "Open issues" type of events should not be included in the database but should be made available upon request.

However, a certain number of practitioners argue that the main barriers to data collection are not technical and methodological, but rather the economic and cultural ones. For example, some managers worry that admitting to mistakes and quantifying total losses will weaken their position. Also, to the collection of key risk indicators, the bank would need to be convinced that there would be considerable benefits. The decision about whether to gather data comes down to a cost/benefit analysis, just like any other decision.

5.2. External data provision and operational risk management

Operational risk data is unique in the financial world because operational risk events often occur in private, out of the public eye. Unlike market and credit risk observations, operational risk observations are not summarized on a Reuters or Bloomberg screen.

Internal operational loss data is the most relevant information for measuring operational risk, but it is generally insufficient for purposes of modeling operational risk. More specifically, in order to measure operational VaR one must be able to accurately measure the probability of rare loss events taking place. Rare events, by definition, occur infrequently, so it is unlikely that a single institution will have experienced a sufficiently large number of these events to develop a useful data pool. Therefore, based on internal data alone, an institution could find it extremely difficult to estimate the shape of the tail of its loss severity distributions. To address this dilemma, the institution has two options: it can estimate the shape of the tail using "expert" opinion and scenario analysis (people usually question and dispute those scenarios), or it can use external data.

Banks cannot develop their operational risk strategy in isolation. Once a bank has begun to gather a rich set of data on internal losses and key risk indicators, it may decide that it needs to compare this information to the pattern of losses incurred by other banks. The use of external loss data can also strengthen and extend the knowledge that has been gleaned from internal data gathering. With more public understanding of the magnitude and frequency of operational risk events, stakeholders will become less sensitive to these events and not use operational risk losses as a proxy for bad management. In addition, by sharing data, the possibility of creating efficient operational risk financing and transfer markets, increases dramatically.

However, there are consistency and technical issues related to the use of external data, which makes the whole problem more challenging. Mainly reliability issues of data drawn from so many different institutions of varying sizes with different control structures, different cultures and different countries. This information is also subject to numerous truncations and data capture biases. A number of problems have not been resolved yet (for example, scalling problem, aggregation problems with the internal data, consistency problem in categorization of event types between different institutions etc.).

In last few years there are initiatives and efforts to industry-wide database creation, as well as effort in sharing data promotion, which could be beneficial for institutions and which could help them to model operational losses and find risk-transfer solutions.

6. Operational risk Quantification and capotal allocation

According to Basel a capital charge for operational risk should cover unexpected losses, so the provisions should cover expected losses 2. The measurement of operational risks along the different line of business enables the allocation of risk capital to be determined from historical loss information and/or scenario analysis. The Accord highlights risky business activities, and help management monitor and manage the risk. An operational risk system could take a tool-kit approach, permitting users to select various combinations of quantification approaches 4, depending on their preferences. In future we could expect the more use of curve fitting using maximum likelihood estimators to various types of distributions, Monte Carlo simulations, modeling the benefits of insurance, and methods to consider both internal and external data for calibration.

The financial services institutions could do this by assuming families of distributions, based on descriptive statistics and empirical evidence on observations of public and non-public loss events. Families of distributions often suggested: frequency distribution (the chance that a loss event will occur, such as: Poisson, binomial and, negative binomial distribution) and severity distribution (the size of the loss, such as lognormal, Weibull, Frechet, Gumbel, Pareto, beta, gamma, mixture, etc.). Institutions, then, need to estimate the parameters from the available sets of data. The next step consists of determining whether fitted distributions are representative or not. The parameters might be selected on the basis of opinion, or by visually inspection, or by applying "goodness of fit" tests to the existing data (e.g. Chi-square, Kolmogorov-Smirnov and weighted Kolmogorov-Smirnov tests). However, "goodness of fit" tests make sense when a moderate amount of data is available. Therefore, the "best fits" derived from very limited sample sets may not necessarily reflect that would be expected from the complete distribution (were it available) 3.

Once the distributions have been established, an operational Capital-at-Risk (CaR) model can be applied, and CaR results obtained. The key to stable and robust CaR numbers is to find distributions that best fit the data. For example, using multiple distributions to estimate the distribution of the underlying data means that the CaR results will be more robust, as long as the basis for selecting the curves can be justified. There are several problems to overcome: sample size (usually limited data sets), "fat tails" (a relatively high proportion of "unusual" or "catastrophic" events), data-capture biases, scale, mixing internal and external data for calibration, truncation, fitting data to the most appropriate frequency and severity distributions, inflation, factoring in insurance, VaR, etc.

The relative scarcity of operational risk data means that the risk managers often have to adjust either the data that is available, or the models that they use. There is a series of techniques that can be applied to limited data sets, or that estimate/extrapolate data using limited data samples. For example "resampling with replacement" ("bootstrapping") allows analysts to create multiple distributions for analysis, all of which are based on empirical data – thus eliminating the need to "assume" any distribution 1.

It is critical that attention be paid to how well the distributions employed by the analyst fit the empirical operational risk data. To combat fitting problems, the severity distribution can be broken up and different distributions can be fitted to different portions of the curve. For example, the risk manager might use an empirical distribution for the bulk, lognormal for the middle, and generalized Pareto for the tail.

Currently, most operational risk groups have adopted an actuarial based approach, using either real loss data (when available) or scenario analysis. The approach is theoretically valid, for the purposes of quantification of operational risk. The model, e.g., a compound Poisson, derives frequency and severity distributions which drive the cumulative loss distribution (losses due to different risk types) for each line of business (for example, a compound Poisson process with lognormal severity intensity, is commonly used). Monte-Carlo simulation calculates the expected losses and the operational VaR percentiles. A typical time horizon is one year. The better the data, the more reliable the resulting VaR figures are.

In addition to the actuarial approach for risk quantification, operational risk specialists experiment with Bayesian modeling, extreme value theory and causal modeling 5. Extreme value theory (EVT) provides a useful framework for the application of parametric smoothing methods to fit the tail of loss distribution beyond a certain level. The extreme value theory helps the risk manager to estimate the shape of the distribution deep into the tail, where relatively little data are available. Correlations are usually assumed to be perfect across line of business and zero among the risk types per line of business. However, this is a stylized assumption. Copulas is a tool for combining correlated risks, which is getting popularity 3. It can be used in conjunction with Monte Carlo simulations to aggregate

correlated losses. Finally, possible correlations between operation risks and market and credit risk should be investigated as well.

7. Conclusions

Deregulation and globalization of financial services institutions, together with the growing sophistication of financial technology, are making the activities of banks (and thus their risk profiles) more diverse and complex. Developing banking practices at internationally active banks suggest that risks other than credit and market risk can be substantial.

Although the operational risk management is still immature, there is a growing industry. The Risk Management Group of Basel and other regulatory bodies have been stressing the importance of operational risk in the last few years.

By creating operational risk awareness, financial services institutions can enhance their ability to achieve their objectives and improve their processes, technology and business practices. Sustainable best practices would lead to reduced losses, higher profitability, improved customer and employee satisfaction. Finally, financial services institutions serious and careful operational risk consideration, can lead to relief of capital charges and reduced corporate insurance premiums.

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Metadata and Website Design for Statistical Data Dissemination

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Miroslav Hudec, Pavol Büchler
INFOSTAT, Institute of Informatics and Statistics, Bratislava, Slovakia

Dissemination of statistical data targeting to web-based audience is one of inevitable requirements for statistical organisations. This poses a significant challenge to the statistical organisation to provide the suitable web page format, accuracy, timeliness, and reliability of data and especially metadata. Descriptive metadata are strongly content oriented and their aim is to ensure a correct interpretation of presented data on the website and to avoid the misuse. Metadata assisting the search and navigation give general view of the statistical website and help users to understand the general website structure. The form of metadata and data presentation facilitates legibility and apprehensibility of the disseminated data meaning. The aim of this paper is to present experience in the design of websites for statistical purposes with emphasis on metadata, data and the appropriate form of data dissemination related to territorial units.
These important factors for website design are analysed, and discussed on examples of following websites: MO[/MIS (Urban and Municipal Statistical Project and Information System of the Slovak Republic), Urban Audit for selected Slovak towns and Censuses (Population and housing censuses in Slovakia). Each of these projects has its own requirements, goals and user groups as well as common features which are highlighted. The common features of these websites are researched to obtain as unified presentation of information and navigation structure as possible. The purposes and goals of each website are preserved in unchanged form.

1. Introduktion

Data dissemination is broad area of research and application. Dissemination of statistical data targeting web-based audience is one of essential task of statistical organisations. The statistical websites should present vast variety of collected and analyzed data. New developing tools and new knowledge about dissemination offers new possibilities for statistical organisations to create more sophisticated websites with large data sets. This poses a significant challenge to statistical organisations to provide suitable format to the users and also ensure accuracy, timeliness, and reliability of data and especially metadata.

As the way in which websites are designed can either improve or impede users to look up for information on Internet, great attention has to be paid to the website design to facilitate the access to data. A website with an easy to use and comprehensible navigation is required. This paper points out metadata on the one hand in relation with giving context and increasing meaning of presented data and on the other hand in relation with navigation and search on statistical websites. The purpose of tables and graphs is to show important information effectively. This paper briefly discusses the appropriate design of websites as well as design of tables and graphs to support better legibility of information presented on these websites.

The websites have to satisfy the requirements of users and to attract them to repeatedly visit websites and to apply the content of the website for their needs. The purpose of websites analysed in this paper is to enhance knowledge of home and foreign general and professional public about some statistical information concerning the Slovak Republic.

The theoretical aspects and practical solutions of statistical websites are discussed in this paper. First, common aspects for the website design are mentioned and then these aspects and experiences with the web design are discussed on examples of the MOŠ/MIS (Urban and Municipal Statistical Project and Information System of the Slovak Republic), Urban Audit and Population and Housing Censuses in Slovakia (Censuses) websites. Each of these projects has its own requirements, goals and user groups as well as common design elements which are highlighted.

2. Metadata

Data are raw representation of facts; the metadata are necessary to supply the context for the data to be usable. IAIDQ‘s definition of data is as follows: Data: (1) Symbols, numbers, or other representation of facts; (2) the raw material from which information is produced when it is put in a context that gives it meaning [13]. Information is data in context. IAIDQ’s definition of information: Information: (1) Data in context, i.e., the meaning given to data or the interpretation of data based on its context; (2) the finished product as a result of processing, presentation and interpretation of data [13]. Thereby, information is data

plus description given by metadata. They enable better understanding meaning of data (in statistics data are mostly figures). Metadata describe who, when, how, where, in which unit… collected data and these metadata are very useful for end users. According to these definitions the following equation is correct: Information = Data + Metadata.

Data are raw facts. Information takes into account the context of data. Without any context the figure is just a number, and a number by itself has no meaning associated with it. If there is an error in the data value the error can be found and corrected only by means of an adequate context. The essence of metadata is reducing or eliminating the communication barrier between the human and the presentation unit (in this web pages case), so that the data obtained from web pages are in general clear and can facilitate actions based on these data.

The metadata quality is more important than the data quality. It is absolutely necessary that the description of the data is up-to-date, accurate, accessible, complete, and consistent. Shortly, the metadata have to be of such high quality and so appropriately presented that users can rely on them. If any metadata component does not meet user's quality expectations, then the user will deem the metadata and data to be unusable. If an error occurs in data, it can be relatively easily found with the help of reliable metadata and corrected as long as the error in data is not essential.

Metadata mentioned above are descriptive metadata and they are strongly content oriented. Their aim is to ensure a correct interpretation of presented data on the website and to avoid misuse. Metadata assisting search and navigation give general view of the statistical website and help users to understand the general website structure. Metadata for searching and navigation are also interconnected with descriptive metadata to enable navigation across three-dimensions in this case: indicator, territorial unit and period. Such navigation helps users to obtain adequate data more efficiently. The good navigation structure can attract occasional users or users with limited statistical knowledge to use the websites and allow professional users to save labour and time.

3. Website design

Besides the sufficient amount of the relevant metadata and data, the form of metadata and especially data presentation is very important too. The intent is to point out the most important data. The user's preattentive process is an extremely fast process. If the designer wants a particular set of objects to be seen as belonging together, then he/she should design them differently from the surrounding information. This visual information is moved into the user's short-term-memory. In this context the most important fact concerning the short-term-memory is that readers of graphs or tables can only hold a few chunks of information at any time. It means that in tables and graphs the relevant legend information should be kept as close as possible to the data and to have adequate supporting–information. Only well designed tables and graphs are usually stored in the user's long-term-memory. Some tables and graphs from the websites analysed in this paper are shown in this chapter. It is more useful if data are in several smaller tables than in big one. When such separation is not possible, is better to put data into logical parts in the same table to point out differences and common chunks of data. "The numbers have an important story to tell and it is up to us to help them tell it."[2].

In this case study three above mentioned websites are considered. At the beginning of deeper analyses goals and purposes of each website are mentioned. The environment for data is the same for all websites. Data are situated in a cube of three dimensions (axes): territorial units, indicators and periods. These dimensions are basis for navigation on web sites to retrieve an appropriate data. Common design elements are highlighted bellow.

Statistics about users' behaviour shows that: 34% of users selects the search engine, 23% chooses the menu list (the toolbar, tree structure), 10% goes to or looks at key figures and 4% goes to or looks at marketing part of the page (relevant statistical publications for example) and none looks at the institution or of project logo. In above mentioned survey on Statistics Denmark websites log files and Eye tracking method were used. Eye tracking method uses special designed cameras to catch movement of user eyes during browsing web pages. Log files were analysed to trace how users attain statistical web pages. This data mining shows that users attain a web page by different ways. Users mostly come "out of the blue". The second way is searching by the search engine, then follow direct links and links from other statistical pages. This survey also has shown that Google is the most important searching engine. All of examined parts except the marketing one can be find on MO[/MIS webpage shown in Figure 1. Detailed description of this web page is in the next section.

3.1 MOŠ/MIS

The purpose of this presentation is to enhance awareness of home and foreign community about basic indicators concerning all Slovak municipalities and whole territorial structure of the Slovak Republic. The goals are following: to simplify the access to basic data concerning municipalities, to enable the presentation of whole structure of monitored indicators for all periods of their monitoring and to make available the contact for ordering further data. This website presents data only for the last year approved by the Statistical Office.

The website fully meets the World Wide Web Consortium (W3C) standards (HTML 4.01 Transitional and CSS) and the regulation of the Ministry of Finances of the Slovak Republic Nr. MF/013261/2008-132 on the way of design of information systems and websites for public administration (national regulation).

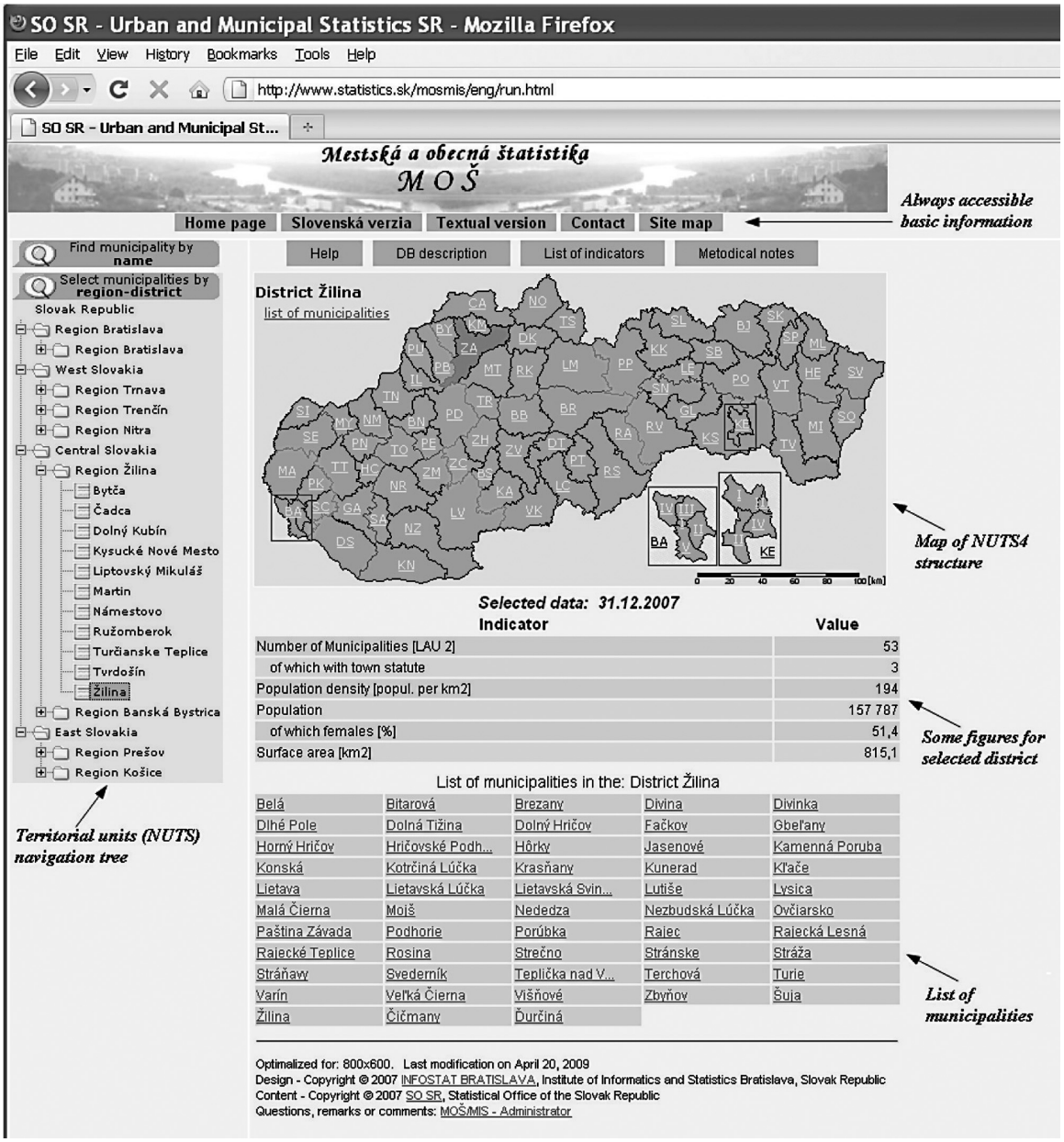


Figure 1: *Key figures and navigation to municipalities – MOŠ/MIS*

The navigation tree of territorial units is in fact metadata describing the whole territorial structure of country and assisting in navigation. The territorial units navigation tree has been done according to the Nomenclature des Unités Territoriales Statistiques (NUTS) structure. The map presents the navigation through the fourth NUTS level. Six key figures (data) and list of municipalities are presented for the selected district.

There are three ways for reaching municipalities. First two ways are done by metadata. The first one is fast selecting the district (NUTS 4) by the aid of the map shown in Figure 1 and choosing the particular municipality from the list of municipalities belonging to the selected district. The second method consists in navigation across the hierarchical tree from NUTS 1 to NUTS 4 shown on the left side in Figure 1 and 2. These two navigation methods enable to preview the municipality position in the map and get some statistical key figures for the selected district, region, group of regions and country. Finally, the user can attain the requested municipality directly through the search engine. In a final step indicators for selected municipality divided into domains are presented in Figure 2.

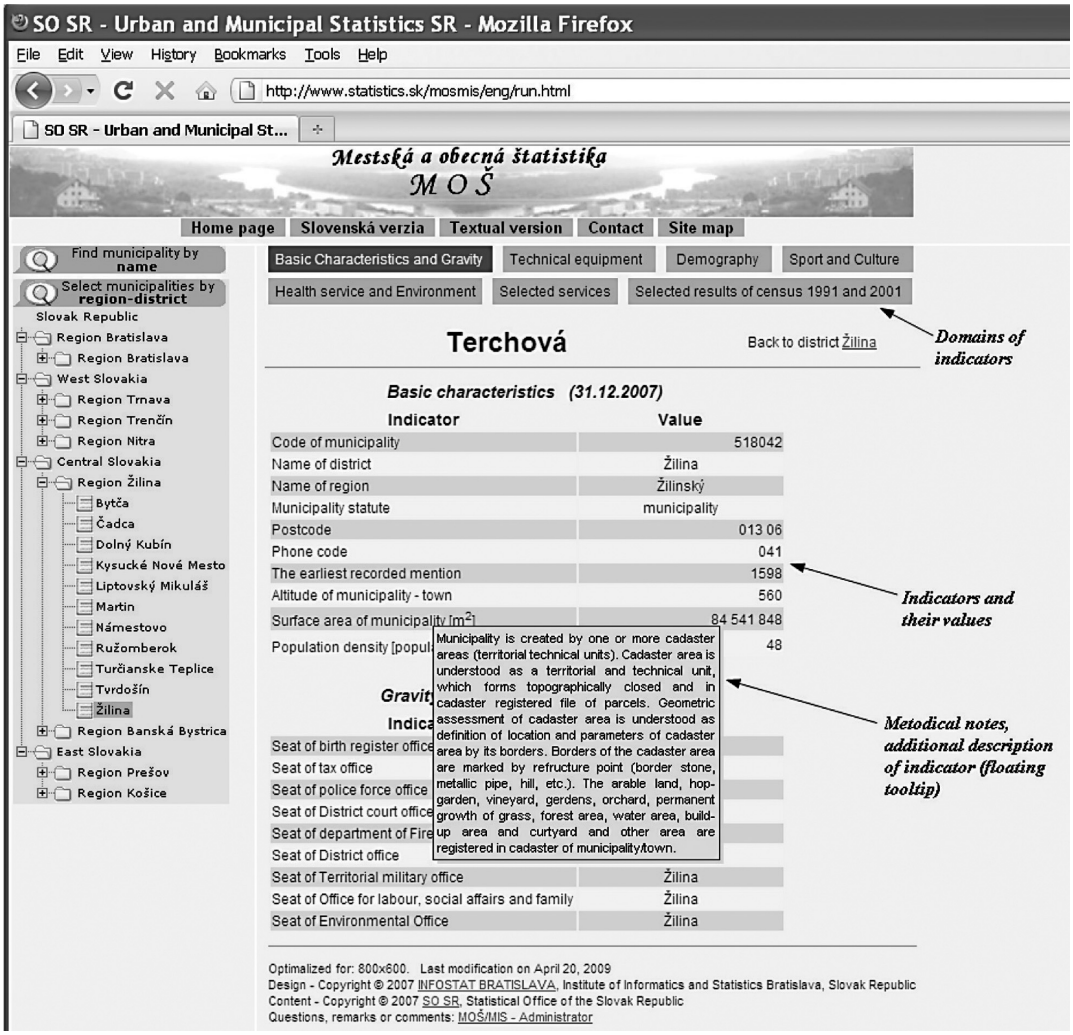


Figure 2: *Selected domain of indicators and municipality – MOŠ/MIS*

Figure 2 contains also metadata but the main stress in on data. Two tables in the middle of page contain rows and fill colours are used here for better information legibility. This is an example of how fill colours in alternating rows can be used to aid scanning across rows and point out that the importance is on the row not on the single value. Properly designed fill colours are for scanning across rows less distracting to the eye than grids. If user wants to know more about an indicator, the tooltip with full methodical notes concerning an indicator appear by pointing on an indicator or on his value.

In the MOŠ/MIS website the descriptive metadata are used as a navigation tool too. Users can very easy obtain indicators from all domains by one click. The user also can very easy obtain the desired district, region and group of region for the analysed municipality. It is very useful that user can by one click on the tree of territorial units

obtain a totally different district with its municipalities. The territorial unit tree always shows user's position in the whole NUTS structure of the Slovak Republic.

3.2 Urban Audit

The purpose of the Urban Audit Website is to present all indicators concerning eight selected towns and their subcities in the Slovak Republic in years 2001 and 2004. The website was realised in frame of the European Urban Audit project. All indicators are same for both years which allow compact presentation of surveys.

The eight selected towns are shown in tree on left side of screen in Figure 3. All indicators for selected towns (C - city), one level above or districts (L – large) and parts of town (S – sub-city) are presented. The navigation structure is the same as on the MO[/MIS website but only for selected districts, cities and sub-cities participated in this European project. The user can obtain data for all supported territories by its selection from the tree. Here are significantly more indicators (338) in comparison with the MOŠ/MIS, where are presented 140 indicators. Indicators are divided into domains and sub-domains, which are accessible via the drop-down menu. After clicking on a subdomain, user can see all indicators and their values. The table is of the same type as in Figure 2 but with a larger number of rows and also fill colours are here used for better legibility. In this website fill colours in alternating rows are more accentuated than the previous one because there are significantly more rows in each table.

The UrbanAudit website is similar to the MO[/MIS website and also meets the W3C standards and the mentioned national regulation. When users become familiar with one of these websites they will be able to use easily the other one.

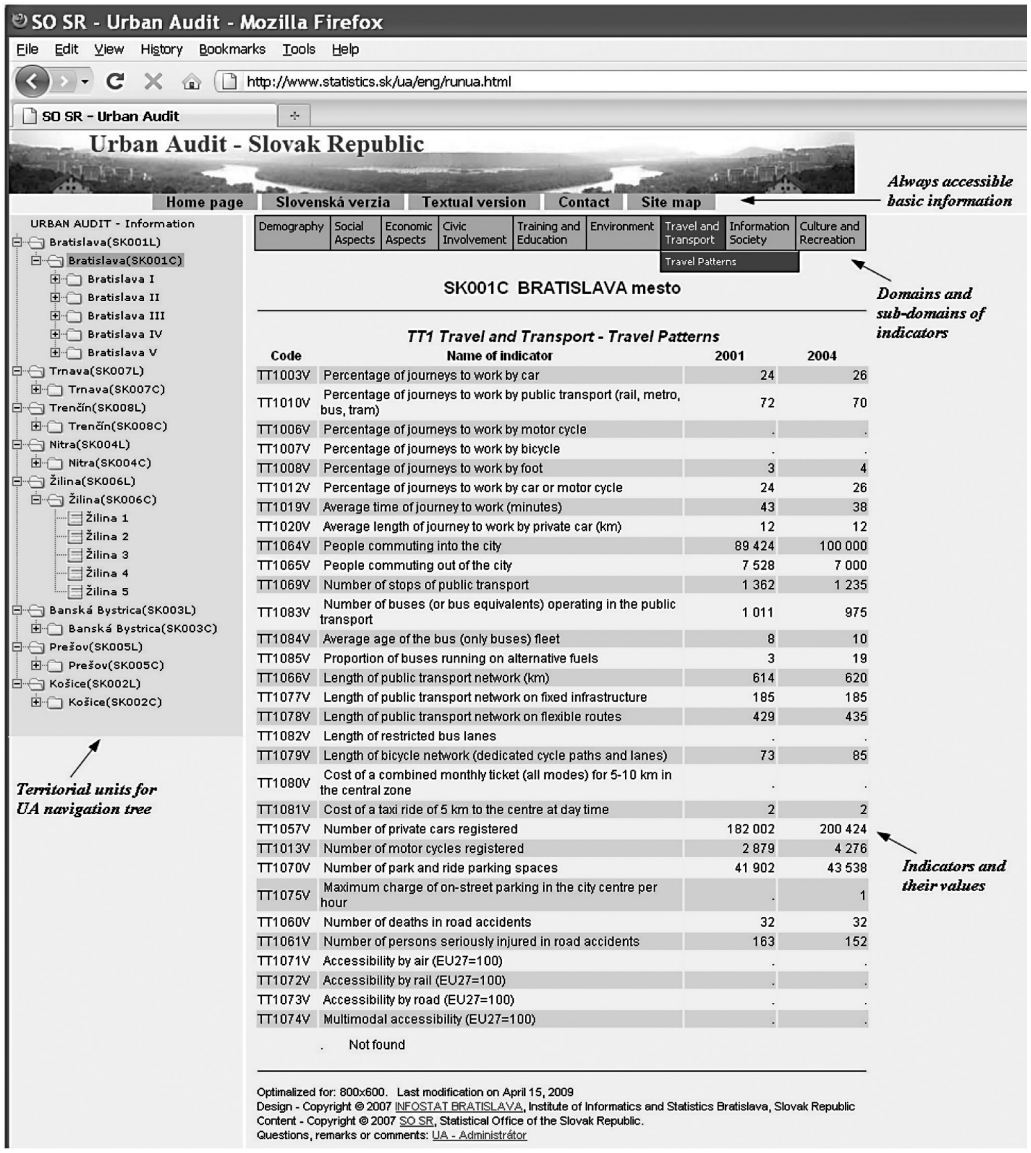


Figure 3: *Selected sub-domain of indicators for selected city – Urban Audit*

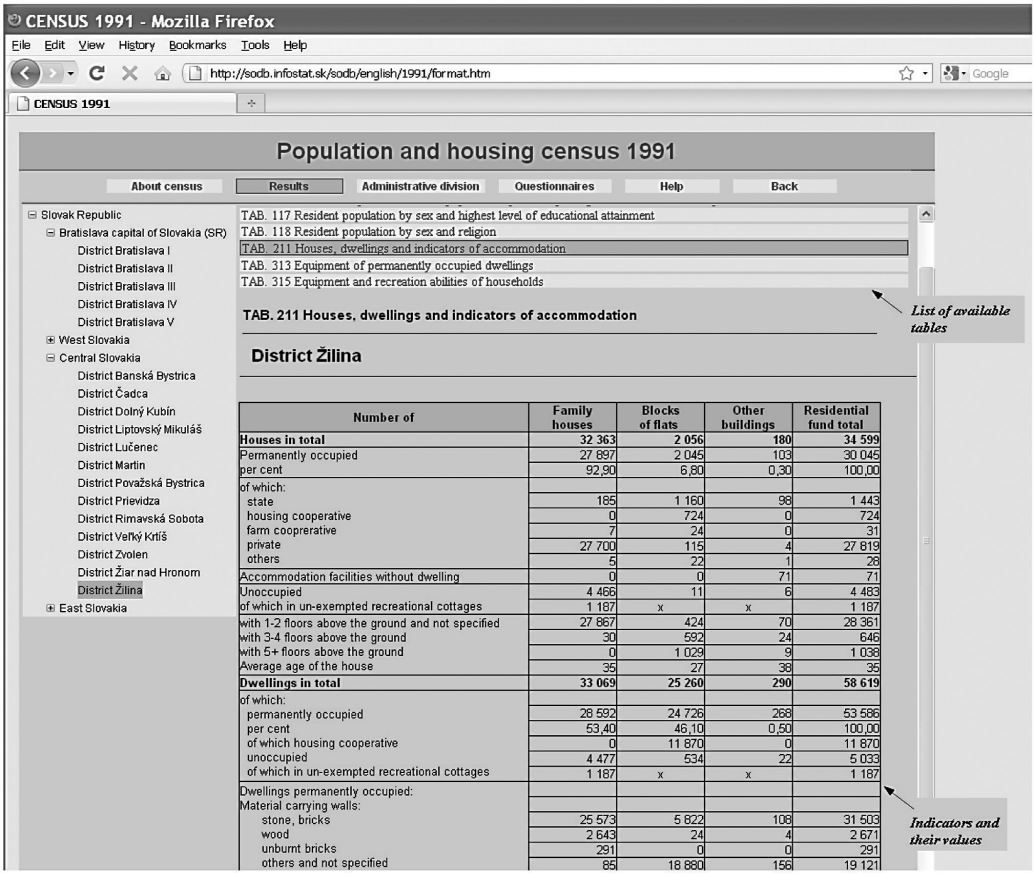
3.3. Censuses

The purpose of this project is to enhance the knowledge of domestic and foreign general audience and professionals about population and housing censuses realised in the area of Slovakia during almost one century. The population and housing censuses, give a complex picture of demography and social and economic characteristics of a country. The census data are very specific and it is impossible to replace them by data from other types of surveys.

The objectives of this project partially differ from the objectives of other two projects mentioned above. This presentation offers detailed results and other related basic information concerning population and housing censuses realised in Slovakia in years 1921, 1930, 1950, 1961, 1970, 1980, 1991 and 2001. The user obtains the results in one place, in the unified form and in various representation modes like tables, diagrams, maps and their combinations. Detailed results of each census are in separated web pages because territorial unit structure was changed in the time between every two censuses and the structure of indicators was designed for each census according to actual requirements. This presentation also provides the possibility to compare common selected indicators in their historical context. The design allows an easy and trouble-free future expansion of this website. More about this project is in [4].

The data from the last three censuses (1980, 1991 and 2001) were computer processed already in the census time. The creation of the three - dimensional data structure (time, territory and indicator), the conversion to the unified data format and the storage of data into the common database were accomplished in first project realisation steps. In the case of older censuses (1921-1971) the selected paper documents were used as data sources. They were digitised and transformed into HTML format.

The territorial navigation for the three latest censuses is realised via the hierarchical tree of territorial units actual for each census. Figure 4 depicts the hierarchical navigation tree of territories, list of available tables and the selected table for the 1991 census. Territorial unit navigation tree is the administration division of the Slovak Republic effective during the 1991Census. The difference to the MO[/MIS website is in the territorial unit navigation tree as the administration division of the Slovak Republic changed between years 1991 and 2001. The focus in this table is on individual values in cells, so the grids are used. This table is bidirectionally structured with two sets of subdivisions of categories.



Number of	Family houses	Blocks of flats	Other buildings	Residential fund total
Houses in total	**32 363**	**2 056**	**180**	**34 599**
Permanently occupied	27 897	2 045	103	30 045
per cent	92,90	6,80	0,30	100,00
of which:				
state	185	1 160	98	1 443
housing cooperative	0	724	0	724
farm coopreative	7	24	0	31
private	27 700	115	4	27 819
others	5	22	1	28
Accommodation facilities without dwelling	0	0	71	71
Unoccupied	4 466	11	6	4 483
of which in un-exempted recreational cottages	1 187	x	x	1 187
with 1-2 floors above the ground and not specified	27 867	424	70	28 361
with 3-4 floors above the ground	30	592	24	646
with 5+ floors above the ground	0	1 029	9	1 038
Average age of the house	35	27	38	35
Dwellings in total	**33 069**	**25 260**	**290**	**58 619**
of which:				
permanently occupied	28 592	24 726	268	53 586
per cent	53,40	46,10	0,50	100,00
of which housing cooperative	0	11 870	0	11 870
unoccupied	4 477	534	22	5 033
of which in un-exempted recreational cottages	1 187	x	x	1 187
Dwellings permanently occupied:				
Material carrying walls:				
stone, bricks	25 573	5 822	108	31 503
wood	2 643	24	4	2 671
unburnt bricks	291	0	0	291
others and not specified	85	18 880	156	19 121

Figure 4: *The territory navigation tree, list of tables and the selected table of results – 1991 census*

This table presents quantitative values in intersection of one regular and one hierarchical subdivision of categories and shows their relation to both subdivisions of categories. When tables are long or total values are more important than the detailed ones, total values are placed at the top of a table so the user can read total values without moving the vertical bar on the screen.

Besides the data from individual censuses, the presentation offers time series of selected indicators in numerical and diagram form. Some series start as early as in 1848. An example of time series is shown the Figure 5 depicting the population development in years 1848 - 2001 in the area of Slovakia.

The population is presented in the bar graph. Grid lines are used to make easier to perceive differences in the lengths of bars. The Y-axis starts at zero value, what means that bar length expresses nominal values.

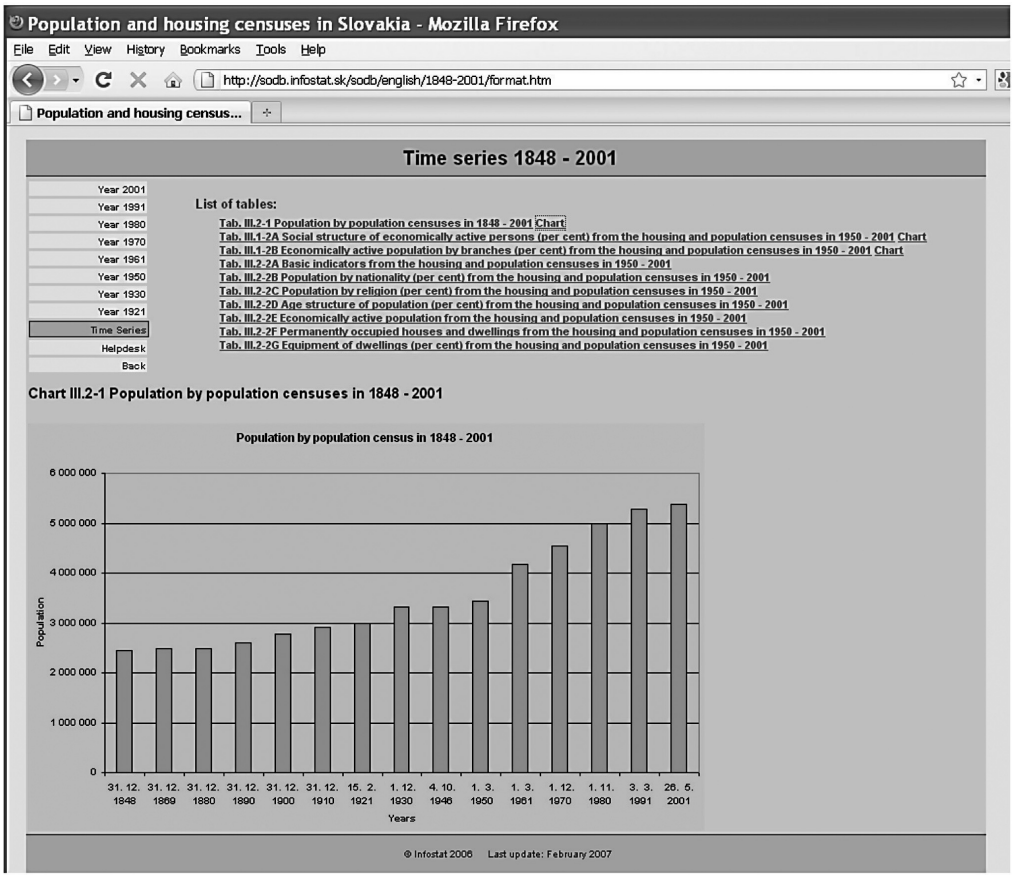


Figure 5: *Population development in years 1848 – 2001*

4. Conclusion

The MO[/MIS and the Urban Audit websites were already finished and only maintenance of web pages is assumed. Both websites are placed on the website of the Statistical Office of the Slovak Republic. The MO[/MIS website is one of the most visited websites on the Statistical Office web, what proves that the MO[/MIS website is a useful source of the statistical information concerning territorial units of the Slovak Republic. As for the Censuses website, its first version is finished and placed on the INFOSTAT website. In response to the requests, changes in the Censuses website could be realised. For example the enlargement of the amount of presented data can be done by expanding the territorial units to the municipality level, adding detailed bibliographical part for individual censuses, expanding the length and number of time series, transforming static presentation system from older censuses (censuses till 1970) into dynamic form, adding the search engine working across the website, retrieving and presenting data from censuses older than 1921 census. The presentation should also fully meet the W3C standards and the above mentioned national regulation.

These three projects have specific and common points. The common points are analysed to obtain as unified presentation form and navigation as possible. The common points are analysed with regards to fuse descrip-

tive metadata with metadata for search and navigation into appropriate website design. These websites are running at different web servers (Apache and MS IIS), web pages (jsp, aspx and html) and database management systems (Oracle, SQL Server). The particular solution depends on the hardware and software infrastructure of the respective web server manager - the Statistical Office of the Slovak Republic or INFOSTAT, where the websites are operated. For end users it is not important because the layout and navigation system of these websites is as unified as possible and the purpose and goals of the each project remain in unchanged form.

Projects mentioned above result in better information of home and foreign community. Relevant websites enable easier accessing the vide variety of statistic indicators describing different territorial levels and time periods. The MO[/MIS presents on his website only current data and information. The Urban Audit website presents data for both surveys. The Censuses website presents data and information from almost one century period starting with the 1921 and ending with the 2001 census.

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Advantages and Ddisadvantages of Project Financing

UDC: 005.8

Slađana Benković[1], Miloš Milosavljević[1]
[1]Fakultet of Organizational Sciences, Belgrade

The initial decisions on the project involves many issues of great importance. The decision complexity derived from the fact that compound and financially demanding projects are acceptable only if expected social and economic benefits are more influential then costs associated with the project operationalization. According to the previous, project financing comes up as a potentially useful method that governments use for development promoting of the most important resources, or better still, for establishing new independent facilities at the places of major importance. This paper presents advantages and disadvantages of project financing, as one of the financing models, as well as circumstances in which it can be meaningful for investors. The paper particularly points out the fact that project financing is a kind of financing model that strives to satisfy all contract parts, taking into account their mutual interests and a return on joint investments as well.

1. Introduction

Project financing is a financing model which is becoming increasingly important and attractive, due to the scope and the complexity of the projects that can be funded in this way. It is a very useful and attractive technique used in a large number of industries worldwide. Project financing is a model long implemented in the developed countries and is used to maximize the results within the financial means available. In the developing countries, this method of financing infrastructure facilities is by all means present in a broadest sense, however, it is expected to yet gain popularity and importance, since, as a rule, the developing countries do not command enough financial resources to start large-scope projects, nor to complete them in a proper way.

Project financing is defined as financing a certain project, most often an infrastructure or a financial one, where the lenders rely on cash flow and project returns as monetary sources to pay the invested funds back. Basically, this means that the investor has an insight into the monetary flows, and that the profit earned is the only way to pay the debts off, i.e., that the "project assets are to ensure the financing of the project itself [4]", therefore it is the only gurantee that the project will be completed.

The driving force of the project financing include its sponsors and investors. The project sponsor is the party "behind the project" and serves as its motive power, most frequently the Government of a country, an autonomous entity of an industry sector, or a consortium, a future buyer of the project products or services. The project financiers/promoters are mainly financial institutions, such as: international organizations for development financing, banks, investment trusts, equipment manufacturers, construction companies, future buyers, etc. [1] A project may have one or more sponsors who promote the project idea and motivate all the participants in its execution.

The governments of the countries worldwide hailed the appropriation of funds of individual investors in the fields of infrastructure and services in a broad range of industrial activities, among them power supply, transport, irrigation and soil improvement, telecommunications, petroleum and gas, mineral resources exploitation, schools and hospitals. Such a manner of funding means improvement of a large number of public works and services without which the quality of operations and work would be hard to achieve.

The start up of investment cycles in Serbia was additionaly imposed by the analysis of various models of financing of such projects, so the market is being introduced to the advantages and disadvantages these different methods of financing bring. By the adoption of the Mortgage Act that introduces the notion of the mortgage securing the facility under construction and the new method of receivables classification on the basis of the monetary flow projections (in the past period, such claims were only possible on the basis of the historic financial indicators) provided by the National Benk of Serbia, a legal basis is formed for implementing such a model of financing. Hence project financing earns a special importance as an infrastructure and capital-intensive projects financing, since in this form it means an improvement in the methodology of project evaluating and financing.

2. Project Financing

The project financing is a form of contracting that means firm contractual relations between/among the participants, and, as such, can be applied only in the

projects that are capable of supporting such a form of firm contract and sustain it on an acceptable cost level. Basically, the project financing requires the presence of a real "joint interest" among the parties included in the project execution. Only when each of the parties is really interested in a successful operalization of the project financing will all the participants do their best to ensure that the project is actually completed. Simultaneously, project financing requires that the financial engineers should design such a financial framework that would contribute to forming of a set of contracts, which will in turn provide benefits from the contracts to all the parties concerned.

The selection of the project financing model prior to the corporate direct finansing includes the selection of such an organization form that differs from a traditional company in two basic aspects: [3]

1. The project has a limited life cycle, the same as the legal entity that owns it, therefore the identity of the entity is defined by the project. In case of the traditional company, the identity of the organizational unit is not time-limited.
2. The project unit distributes the cash flow directly from the project to the creditors and to the capital investors on the project. The traditional companies can hold the resulting free cash flow of profitable projects and reinvest it into other projects, according to the company management preferences. The project financing has an opposite approach, therefore the free cash flos goes to the capital investors. As a result, it is they who make the decision on a further investment of free assets.

The initial and the main characteristic of the the project financing model is the establishment of an entirely new company that is also called the special Purpose Vehicle – Single Purpose Vehicle (SPV), Special Purpose Company (SPC), Special Purpose Entity (SPE) – Single Purpose Entity or Single Purpose Company (SPC) and is a legally independent company whose purpose of establishment is project financing. This entity (most commonly, the incorporated limited liability company, or limited partnership) is set up for the purpose of accomplishing narrow, specific, temporary goals. The primary goal is the isolation from financial risks and bankruptcy, although one of the goals can often be the deduction of tax base and risk. The project organization is financed by the post-entry funds/property, because of the posibility of disposal on the basis of the standard ownership rights.

Such companies are most commonly established for the purpose of executing a concrete project. Here, a number of companies join to build a facility, a part of infrastructure, or to develop a technical innovation. In case of large projects, the investors insist on forming such a company, where the credis risk is limited to special projects. In this sense, there is no threat from other risks from the business activities that the investor (most often a bank) may not be able to get an insight in. The project organization is owned by one or a number of subjects, whereas in certain cases the law provides that the ownership share be percentual, but is not owned by the subject in whose name it is established, that is, is not owned by the sponsor.

3. Direct and project financing relationship

Project financing is most frequently compared to direct (corporate) financing, provided by way of a credit. Here the choice of financing modalities is defined by the characteristics of the project under way, the cost of capital, and the risk that the project itself is exposed to. Therefore, it is important to know that, even if the project financing is possible, it does not mean that the project should be realised in that particulat way. The advantages and disadvantages of such financing modalities have to be carefully analysed, in order that the decision be made as to which of the above mentioned two modalities will bring more benefits to the project stakeholders, and to the company itself, too. [3]

Criterion	Direct financing	Project financing
Free cash flow	➢ Managers have large powers in deciding on free cash flow allocation between dividends and reinvestment, ➢ Cash flow is complex, hence it is allocated according to the company policy.	➢ Managers' freedom of choice is limited, ➢ As per contract, the free cash flow has to be distributed to investors.

Criterion	Direct financing	Project financing
Overhead charges	➢ Investors are exposed to overhead charges of free cash flow, ➢ Granting the management freedom of choice, some specific projects are more difficult to operationalize, ➢ Overhead charges are higher in comparison to project financing.	➢ Overhead charges of free cash flow are reduced, ➢ The freedom of choice enjoyed by the management may be related to the project performance, ➢ Close supervision from the part of investor is easier, ➢ Overhead charges are lower in comparison to internal financing.
Contents of loan contract	➢ Creditors take into consideration the entire sponsors' property when evaluating their credit worthiness, ➢ Most often, the debt itself is not insured (especially in cases the borrower is a large company).	➢ Creditors take into consideration the concrete property or part of property when estimating the capacity for servicing borrowed funds, ➢ Debts are most often insured, ➢ Debt contracts are concluded in accordance with the characteristics of the project.
Indebtedness capacity	➢ Debt financing uses part of the sponsors' indebtedness capacity.	➢ Credit support from additional sources, such as that on the basis of acconts receivable from the project product buyers may be used to support the project loan, ➢ The sponsors' indebtedness capacity may successfully be enlarged.
Bankruptcy	➢ The danger of expensive and long-term loans is possible to avoid , ➢ Creditors enjoy benefits from the entire sponsors' ownership portfolio, ➢ Financial difficulties in one key business line may draw the cash from "successful" projects.	➢ Lower costs of financial problems solving, ➢ The project may be isolated from potential bancruptcy, ➢ The creditors' chances of reclaiming the principal are by far more limited, i.e., the debt cannot be repaid out of the returns earned from other unrelated projects..
Organization	➢ Large-scale works are usually organized in a corporate form, ➢ The cash flow generated on the basis of employing different parts of property and the project are consolidated.	➢ The project is usually organized in the form of partnership or a limited debt exposed company, which most often contribures to a more efficient use of tax reliefs in relation to property, ➢ Property related to the project and the cash flow are separated from the sponsors' other activities.
Monitoring and control	➢ Control is primarilly related to management, ➢ Board of directors monitors the corporate performance important for shareholders, ➢ Investors are granted a limited right to monitor business activities.	➢ There is managemant, however, it is under control in comparison to classic organizations, ➢ Clear separation of property from cash flow provides a higher level of responsibility towards the employed assets of the investors, ➢ The conditions stipulated in the contract define the relationship between the capital and the debt, they simultaneously contain the conditions and provisions to aid their control and monitoring.
Risk allocation	➢ Creditors are entitled to damages from the project sponsor, ➢ Different types of risk are present, depending on the portfolio contents, ➢ Some types of risk may be transferred to other players by insurance purchase, or by a higher level of engagement in the risk precaution activities etc.	➢ Creditors' right to damages is limited, in some cases their rights towards project sponsors do not exist, ➢ Financial exposure of creditors is project defined, although additional credit support may partially mitigate this type of risk, ➢ Conditions stipulated in the contract distribute the risk according to each individual project, ➢ Project risks are allocated to those that can deal with them in the best possible way.
Financial flexibility	➢ Financing is relatively easy to contract, ➢ Internally generated financial funds may be used to fund other projects, in accordance with the conditions in the capital market.	➢ Higher transaction and contracting costs, ➢ Financial agreements are precisely structured, and their life cycle is long, ➢ Internally generated cash flow can be saved and used for the purposes of the new projects of capital owners

4. Advantages of project financing of the project

The financial evaluation of infrastructure and capital-intensive projects is complex. The implementation of project financing means the use of a specific technique of risk and uncertainty, which is what makes the design of the Monetary flow report extremely complex. Project financing is an applicable financing model even in the low credit worth countries, in case the project earns enough hard-currency income to regularly service the liabilities to creditors and in case there are a legal and other guarantees that thus earned income will be used to service the debts incurred in project financing. The aim of project financing is not to conceal the debt from the creditors, credit rating estimating agencies or shareholders, but to share the project risk.

In addition to reducing the project and the financial risks, there are still a number of other important advantages of project financing, among which are [2]:

- the sponsor has the opportunity to obtain the required capital to complete the project which he himself cannot ensure;
- it is easier for the project to get the guarantees the sponsor would otherwise have difficulties in obtaining;
- in case of the creditor's low credit worthiness, and the project is good, chances are better that financial funds and more favourable conditions for the project are obtained;
- the financial load per investor related to the debt servicing is considerably smaller;
- the project can comply with certain investment regulations that the sponsor himself would find hard to satisfy;
- it is easier for the sponsor to avoid certain problems (e.g., blame in case of failure, etc.);
- the costs per investor are considerably lower, etc.

An extremely important characteristic of project financing is the firm belief that the investment funds will be earned back, with a due return on investment. This usually stems from the guarantees, both direct and indirect, issued by a third party, most commonly the state itself. The need for these projects to be insured comes from the fact that they are capital-intensive, i.e., that they most often require that a high amount of borrowed funds be invested. In such a case all the above mentionad sources of funds are possible, however, each brings its own costs and risks.

Companies make use of project investment when investing into large projects, where they most commonly use the so-called structural financing. The structural financing is one that allows the investors to track the monetary flows due to having formed a project organization, as a unit responsible for the achievement of the defined financial goals. Project financing is a special focus of interest of both the manufacturing companies, and those in the field of power processing and transport. The resons are normally their limited capital sources, but also [2]:

- avoiding the burdening of their balance sheets;
- avoiding to disclose the debt so that it does not affect the share price, i.e., avoiding financial reaction;
- avoiding the fall in the sponsor's credit worthiness due to the concrete debt;
- limiting direct responsibility in the risk laden stages of the project execution and putting into effect.

As far as the project investors are concerned, it is important to point out that there is an increasing interest in joint ventures worldwide. The factors influencing entering the project execution with partners are numerous, the most common being the following:

- the project is beyond the financial or management capacities of only one company;
- the financing risk is lower for each of the participants in the execution of the project;
- it is financially more justifiable to enter the joint venture with another company;
- one or a number of partners enjoy tax relief.

Project financing should be applied each time it is possible to reduce the post-tax capital costs, and each time the sponsor's credit is unacceptable, and therefore does not ensure the funds required for the project financing with acceptable funds. The advantages of such a project financing are reflected in: [3]

- achieving economic rent;
- achieving economy of scope;
- risk distribution;
- increase in debt capacity;
- reduced overall assets costs;
- arbitrary placement of free cash flow;
- reducing the cost of solving the financial deviations from what was planned and agreed upon;
- reducing regulatory costs.

a) Achieving economic rent

One special advantage of the project financing is reflected in applying this financing model in natural resources exploiting, especially in the period when these resources are possible to store, or are obtained at relatively low cost. The administrative sector which controls the disposal of the natural resources stocks, can contract a long-term sale, whose project financing it

supports, since that earns an over-than-average return rate on invested funds. The economists define this portion of overall revenue that is higher than expected as *economic rent*. The project sponsors have before them a choice to cash the economic rent by entering long-term sales contracts, where these contracts can be used as collaterals for credits necessary to finance the development of raw material basis. Project financing also has the advantage of allowing the sponsors the disposal of a generated cash flow necessary for project debts servicing, while earning the investors the return on the capital invested.

b) Achieving economy of scope

Project financing is especially applicable in cases of two or more manufacturers joining forces to build a new plant in the presence of the economy of scope in production. Concretely, two aluminium producers may decide to build a plant to process aluminium near the site where both partners have large bauxite basins at disposal. A similar example would be one of companies situated in a highly industrialized area, where they can agree on cooperation in terms of forming a joint venture. Thus they can rationalize in purchasing the energy necessary for heating and joint sales of the electric power to the local power plant.

c) Risk distribution

A joint venture contributes and allows the sponsors to share the project risk. If the cost of capital is high as related to the capitalization the sponsor realizes, the decision on project financing by own funds can seriously imperil the sponsor's future. Similarly, the project may be too large for the host country, in financial terms, to justify financing from the country's own sources. Consequently, in order to reduce the sponsor's exposure to risk, the sponsor or the host country for the project may search for one or a number of partners to form a joint venture.

d) Increase in debt capacity

The project financing of a company allows it for the project sponsor to finance the project through the credit sources of financing. The funds for the project are raised on the basis of the contracted liability, when: 1) the buyers close a long-term contract to buy a product/service and 2) when the contract provisions are set in such a way as to allow for the free cash flow for the project, providing for the debt to be fully serviced under reasonably acceptable conditions. In case any unforeseen costs arise, and the cash flow is not high enough to service them, additional credit support agreements are closed, or often a foundation is established to support the project financing. It should be pointed out that the company established for the purpose of project financing is often in a position to be financed at a fairly higher level of indebtedness compared to the funds invested than it would be normal in the sponsor capitalization. The indebtedness level compared to the funds invested the project realizes depends on the collateral level, that is, the risk the credit worthiness participants are exposed to, the project type or the profitability.

e) Reduced overall assets costs

Whenever the project financing contributes to solving overheads problems important in solving a concrete problem, the project will be in a position to raise funds at a cost lower than that gained by the sponsors. The project organization can obtain a higher level of indebtedness in comparison to the funds invested than the sponsors would be able to realize and maintain themselves, as the future project capital costs will benefit from trading debts at lower costs, in exchange for equity capital.

f) Placement of free cash flow

The project unit's life cycle is limited, therefore its "dividend policy" is defined by contract at the moment any external capital financing is negotiated. The cash flow that is not required to cover operational costs, is used for debt servicing, or for capital improvements approved of by the investors. Hence the approach where the investors, rather than professional managers, make decisions as to how the free cash flow will be reinvested. In this sense, the advantage of the project financing is in that it eliminates the will and the wishes of the Board of directors and grants more freedom to the investors to decide upon the manner of distribution of the cash flow obtained. Simultaneously with the reduction of the risk that the free cash flow can be retained and reinvested without the consent of the capital investors of the project, the equity capital costs of the project are reduced.

It should be mentioned that in such circumstances the sponsor is not in a hopeless position, since he has the option to negotiate with the investors about new projects he considers profitable, and that would be of interest for the investors themselves. In case the investors agree to allow the funds to be used for any additional investment enterprise of the project unit, their dues are stipulated to amount to the compensation they earn, that is, to the dividend.

g) Reducing the costs of resolving financial disorders

The structure of project liabilities is less complex than the structure of the sponsor's overall liabilities. The

capital structure of the project unit normally includes only one debt class, and the number of creditors is rather small. It is a general rule that the time and the cost accompanying the resolving of financial disorders increases with the increase in the number of creditors, as well as with the increase in the debtor's capital structure complexity. This is the consequence of the fact that the traditional organization, over a period of time, has a tendency to accumulate a large number of receivables, including those for the pensions, which can be rather heavy in case of the company insolvency. On the other hand, independent project units with one debt class, especially if the debt is recorded by a smaller number of sophisticated financial institutions, has a tendency to rise out of financial disorders more easily.

In case of the traditional organization, direct debts of the sponsor will be covered by an entire portfolio of the sponsor's property, therefore, if one business line fails, the creditor will nevertheless be paid back, thanks to the project sponsor's other business lines. In case of the project financing of the project, however, the project property will be separated from the sponsor's other property, therefore the access to the property is limited by the level of the reimbursement that the sponsor guarantees to the creditor by a project debt contract. Hence one more advantage that is reflected in the fact that the separation of the project property from the other property owned by the sponsor, isolates the creditor from the risk of the sponsor's sudden bancruptcy.

h) Reducing regulatory costs

Certain types of projects, such as joint investment, include legal and regulatory costs that are more easily handled by experienced sponsors; consequently, they are less expensive. Concretely, chemical and petroleum companies that enter a joint project, may be faced with considerable costs that result from the ignorance of legal and regulatory provisions accompanying the investment. When the projects are run by a team of experts from the field, project financing may lead to the economy of scope, due to the expert control over legal and regulatory costs. The economic sustainability of the project will depend on the further cooperation of a number of external organizations that are not under the direct control of industrial organizations, whereas using the knowledge and experience of the expert team, reputed for having successfully completed similar projects, will reduce operational costs to a considerable extent. More precisely, the project status independence that results from the desire to create a long-term profitable project will reduce the risk for the companies that jointly finance the production.

5. Disadvantages of project financing

Project financing does not result in a less expensive capital under all conditions and in all projects, therefore the costs of contracting are also very important. It is those costs and the negative effects accompanying them that may prevail over all the advantages of the project financing. Therefore, it is important that some of the disadvantages of project financing be also pointed out.

a) Complexity

Project financing is founded upon a set of contracts that require the negotiations with all the participants engaged in the project. The negotiations themselves may be rather complex and hence expensive to conduct. An important feature of negotiations in the analysis of project financing is the time necessary to negotiate, and it is by a rule by far longer than with the traditional direct financing.

b) Indirect credit support

The debt costs in project financing are higher compared to those in direct financing, for all the borrowers, without exemption, which is the result of an indirect credit support. More precisely, the credit support in project financing is carried out through obligations stipulated in the contract, not through direct payments, therefore the lenders of project financing are deeply concerned about having to continually answer the contractual obligations and service debt. Cautious about what might happen in some unexpected conditions, the creditors often require a premium of 50 to 100 percent basis points, depending on the contract between the borrower and the lender.

c) Higher transaction costs

Due to its high complexity, project financing requires higher transaction costs compared to those incurred in direct financing. The higher transaction costs reflect the contracting costs that are part of the project financial structure designing. They result from the analysis and introduction of different taxes characteristic of the project, as well as from numerous legal issues, such as the documentation dealing with the stock issue and a consequent ownership of the project, the documentation related to borrowings, etc.

The end goal of project financing is to raise enough assets necessary for the project to be operationalized and a high enough profit so that the invested funds can be easily paid back. One way of achieving this goal is the insurance provided by a third party, which was discussed above. The projects supported by a third party without that party earning a direct benefit from the project are, however, rare.

6. Conclusion

A well developed and quality infrastructure is a precondition for the development of any country. Project financing may prove to be an attractive financing model in case of large scale projects that can survive as independent economic units, i.e., in case the sponsor companies are sensitive about employing debts in project financing and the risk accompanying the project execution. Project financing appears especially adequate in cases the companies wish to retain operative control over the project, accept complex contracts, firm obligations and a rigid financial audit that normally accompanies project financing as a financing model.

Agreements on project financing include the mutual interests of different parties concerned, therefore, the expected economic returns for each of the participants is proportionate to the risk they take in the project execution process. Project financing has numerous advantages compared to direct financing founded on the corporate basis. Potential benefits are possible to be achieved only after a careful analysis by expert financial engineering. The project organization, its legal framework and its financial plan should reflect the nature of the project, the designated project risk, the profitability, the participants' credit worthiness, tax reliefs, the sponsors' and the state's financial standing, as well as other factors that largely affect the desires of prospective investors and creditors.

Project financing is more efficient in allocating the risk and the revenue in comparison with the diirect corporate financing, therefore the contracts related to project financing are concluded in such a manner as to allocate the project risk and revenue in a most appropriate way, in accordance to the participants in the project execution. It is for this reason that the project financing minimizes the credit impact upon the project sopnsors, hence the contracts that support project loans are drafted so as to minimise direct financial obligations of the project sponsors. The result of the credit support from other participants, project financing allows for a higher level of relations between the debt and the project company capital than the project sponsor could achieve through internal financing. Furthermore, we must also take into consideration the fact that the project leverage is often twice as high compared with corporate balances, conequently leading to a higher financial risk, but to higher returns as well, provided the project is successful.

Project financing is also accompanied by higher transaction costs compared to conventional financing, and these are mostly related to the stipulation of contract obligations. The cost of control is also an important item, hence it is clear that project financing as a model of financing is especially appropriate in case of large projects where it is possible to earn enough returns to cover necessary expences and higher transaction costs. Consequently, project financing is an especially appropriate choice when it comes to financing infrastructure projects both in developed countries and in developing countries, such as Serbia.

Project financing includes a choice of the alternative organizational form which is largely different from the corporate form unlimited in time. As companies most often dispose of a portfolio of assets whose returnss are not perfectly correlated, their managers have a range of choices to choose from when allocating the free cash flow and so they try to sustain their position by new investments into property and into new business. Project financing is related to strictly defined property, hence it may be organized in the form of a company, a partnership or a limited liability company. The life cycle of the project company is limited, since the life cycle of the project itself is limited too. The free cash flow in the project company is primarily distributed towards investors, or creditors, who can then decide whether to refinance further or invest into new projects.

From the aspect of property, project financing can be viewed as form of financial engineering, since every financing is based on the property available, and the financial framework, too, is defined on the basis of the project itself. The role of financial engineering in project financing is especially important when it comes to the analysis of the project risk management, the interest rate, the currency and the credit swapa the project sponsors use to reduce the risk. All the above mentioned tools used in risk management used in combination with securities, such as forward, futures and optional contracts may be crucial in project financing contracting, since the allocation of exposure to risk is of vital importance in the project structuring and financing.

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Process Approach as a Basis for BSC Implementation and Improving of Organizational Performance

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Zoran Radojević[1], Ivan Stefanović[2], Dragana Velimirović[3]
[1]Faculty of Organizational Sciences, University of Belgrade
[2]College of Business Economics and Entrepreneurship, Belgrade
[3] Business Studies College , Čačak

The implementation of process approach as a method of managing organization is sometimes a needed and sometimes a necessary condition for the implementation of BSC which is a complex concept of measurement of organizational performance. The organization's focus on its key processes enables their permanent improvement. This process improvement is in the function of satisfying the requirements and desires of its customers. This paper gives an account on the impact of the process approach on the implementation of the BSC concept. In addition to theoretical presentation, this paper presents a case study of the Toyota company.

Introduction

The traditional organizations, that is, the organizations that operated or are still operating in the conditions of a relatively steady and predictable environment, did not need to monitor the events in the environment on a permanent basis, nor did they need to implement frequent changes in their strategy, processes and structure. Due to such conditions they were able to grow and develop to a great extent, assuming that size is a characteristic that guarantees success in the market.

However, a new business era began, an era in which large companies find it ever more difficult to maintain their competitive position and to defend themselves from smaller, far more flexible organizations which can adapt to the changing requirements of the environment in a relatively short period of time.

1. The process approach implementation

It is obvious that traditional organizations encounter numerous problems stemming from their bulky structure intersected by functional barriers. Modern theory and practice, however, offer solutions to this problem. We are talking about the organizations that are able to minimize these flaws, actually, about the organizations that adjusted their structure and work methodology to the requirements of the modern environment. These organizations are not oriented towards their functions, they are directed exclusively towards their customers, by focusing upon their own processes which in turn create value for them. In order that these organizations be in a position to respond promptly and to adapt to different situations, their structures are characterised by a minimum number of hierarchical levels. These are the organizations that have implemented the process approach into all the aspects of their operations, these are process organizations.

The process organization is one whose entire operation is established in such a way that it can be viewed as a process or part to the process. The process organizations are managed through their basic processes. In other words, the changes in the processes result in changes across the organization. Literature lists these organizations also as "horizontal organizations" or "flat organizations".

The process approach, i.e., the process oriented organization, means that attention is shifted from end output (products and services) to the activity chain that shapes this output. The basic idea is that, since the process (with an active human participation) is responsible for the output creation, the organizational processes should be managed and continually improved [11, pp. 17-18]. The orientation towards processes results in shortening the process total flow time, as well as in an increased flexibility that allows for a prompt response to the variations in market demand [2, p. 115]. On the other hand, the most important characteristic of the process is its easy decomposition (fragmentation), but also an easy way of making it into a momentuous process. Processes are identified by an anatomy approach to organizational systems, starting from the material/ object of work specified for the purposes of an easy identification of the process [10, p. 13]. This facilitates permanent monitoring, analysis and improvement of processes, allowing for the organization to continually increase its own efficiency and effectiveness, and hence its competitiveness in the target markets.

A research conducted in autumn 2005 on the sample of 1267 Slovenian companies of over 50 employees each (small and medium-sized enterprises) has revealed that the process orientation has significant positive effects

on the overall organizational performance. This research verified the following three hypotheses [14, pp. 171-185]:

1. The increase in the process orientation results in the improvement of the organization's financial performances;
2. The increase in the process orientation results in the improvement of non-financial performances, in terms of the increase in the customers', the employees', and the suppliers' satisfaction;
3. The improvement of non-financial performances results in the improvement of the organization's financial performances.

This research supports the already adopted hypothesis that the process oriented organizations generally achieve higher performances compared to the traditionally designed (functional) organizations.

2. The BSC concept and organizational performances measurement

The creation of the BSC (Balanced Scorecard) concept was initiated by the attitude that the existing approaches to organizational performances measurement based primarily on the financial and accounting indicators have long become obsolete [7, p. 143]. The BSC is a system that translates the organization's mission and strategy into measurable goals and indicators in four basic fields: finances, internal processes, customers and learning and growth. Thus the BSC concept, as a measurement method, means the indicators among which there is a balance between the external indicators that refer to shareholders and customers and internal indicators of critical processes, innovations as well as learning and growth; however, simultaneously, the balance between the indicators of the results achieved (lagging indicators) and the indicators of future performances (leading indicators) is also achieved [4, p. 10]. More precisely, the BSC means a balanced system of organizational performances measurement, one that means a balance between the short-term and the long-term goals, between financial and non-financial indicators, between lagging and leading indicators, as well as between internal and external perspectives of organizational performance [7, p. 144].

It should be mentioned that the four above quoted fields in which the organizational performance is measured need not be understood as imperative. They are proposed as most desirable to be measured since they are the basis of development and work of any organization. Of course, an organization may add (or even subtract) certain areas the management finds to be of crucial importance for the organization, i.e., for the achievement of the organizational goals and the operalization of formulated strategies. It is, however, necessary that one should be very cautious in selecting the areas of crucial importance for the organization's work, in which the performances will be monitored. The selection of each area means the identification of a certain number of indicators on the basis of which the organizational performances will be monitored. The larger number of areas to be monitored, the more numerous the indicators. Normally, a larger number of indicators increases a total amount of information to be processed in the formal managerial decision-making mechanism, which may affect its efficiency and eventually cause the "paralysis of the analysis". On the other hand, a small number of key areas or indicators will certainly increase the decision-making efficiency, however, it may hinder the effectiveness of measuring and monitoring of the ovarall organizational performance. Therefore it is the responsibility of every organization management to, aware of both the positive and the negative effects of a small or of a large number of indicators (or areas), determine the areas of crucial importance for the work of the organization they manage, and then define an optimal number of indicators that will allow for a comprehensive insight into the work of the organization.

After the organization has decided upon the areas in which the performance is to be measured (these may be the areas other than the four mentioned), it has to define the key organizational performance indicators (KPI) in them. Then comes the definition of the result planned to achieve in the chosen areas (to be measured via the defined indicators), as well as the method to be used in measuring [13, pp. 197-204].

The BSC (Balanced Scorecard) should be implemented as an adequate system of measuring and improving the overall organizational performance in all organizations, since it is in this way that the organization (with an implemented BSC), on the basis of a set of different indicators referring to finances, customers, internal processes and the organizational learning and growth, could at any moment find out its standing as regards its goals [3, pp. 41-46]. Hence the BSC can be said to represent the essential tool of the strategic management system. It harminizes, supports and provides for the inter-correlation of the key processes of management, guiding them towards the defined strategy. The BSC allows for the strategic goals to be transparent and translated into the goals of each of the organizational segments/processes, and of all the employees. The strategy has to be defined in such a way that each organizational unit, each process owner, and even each employee,

can and must recognize their role in the defined strategic goals and hence set their individual goals and activities to accomplish them [1, pp. 75-78].

3. The process approach impact upon the BSC concept and organizational performance

A successful implementation of the BSC concept as an organizational performance measuring system means that a number od conditions have to be satisfied beforehand. One is the process approach implementation. In other words, it is desirable, if not necessary that the BSC implementation be preceeded by the process approach implementation in the organizational management.

The BSC concept was already said to observe the performance indicators (leading and lagging) in four key areas (there may be more than four), one of which refers to internal processes. If we observe only the internal processes area, we can easily conclude that there is a large number of indicators that can be monitored there. Let us list only some of them [7, pp. 193-194]:

- administrative expenses/total income (%);
- production process period (number);
- timely deliveries (%);
- average leading time (number);
- leading time, product development (number);
- leading time, from order to delivery (number);
- leading time, suppliers (number);
- leading time, manufacturing (number);
- decision making average time (number);
- supplies turnover (number);
- productivity improvement (%);
- IT capacity in the company (number);
- IT capacity/number of employees (number);
- changes in IT supplies (in currency units or %);
- IT costs/administrative expenses (%);
- manufacturing process impact upon environment (number);
- the product use impact upon environment (number);
- costs of wrong decision making/management income (%);
- flawlessly fulfilled contracts (number);
- administrative expenses/number of employed (in currency units), etc.

From the standpoint of the process approach, where all the processes can be classed as eithr basic or subsidiary processes, however, a logical conclusion can be inferred that the performance indicators will not be used in measuring all, but only basic processes, which can further be divided into three basic process groups: inovations, operations (manufacturing process) and post-sales services [5, p.91]. These three groups of processes can be understood as sub-areas of the internal processes area and each can be appointed performance indicators. For example, in the sub-area of operations (manufacturing process) three groups of indicators can be set: process duration indicators, process quality indicators and process costs indicators [7, pp. 175-176].

Indicators are then defined for each of the groups. For the process quality level, for example, indicators can be established to measute the quality level achieved, knowing there are four basic levels of process qualiy definition. These are [6]:

1. Spontaneity level. This is a primitive process level. Its structure any dynamics are insufficiently well planned. On this level the process is usually aproached ad hoc. This level is characterised by:
   - absence of clear procedures and defined execution standards;
   - absence of adequate documentation;
   - unequal knowledge and skills of employees;
   - the process sussess depends exclusively upon the experience of the manager and the process team.
2. Initialization level. This is the level on which initial attempts in a systematic approach to processes occur. Its main features are the mistakes made in the initial attempts to organize and run-in the process. It is characterised by:
   - non-standard approaches in implementation and gradual running-up of the system;
   - documenting certain parts of procedures and data (on this level it is usually said what should be done, not how it should be performed);
   - all processes are structured according to the basic manner of functioning.

3. Formalization level is one on which the overall process becomes completely harmonized. This level is characterised by the presence of precise standards and procedures in the process execution, in the course of which the process loses its adjustment capability, i.e., it becomes rigid. This level is characterized by:
   - standards and procedures institutionalization;
   - presence of accompanying documentation for all major processes;
   - consistent data collection and reporting throughout the organization;
   - a developed process management training system.

4. Optimization level. This is the highest quality level of the process organization. On this level, the process has precise standards, clearly defined procedures in certain parts, and acquires a capacity of adjusting to changing circumstances. This level is characterised by:

– data collection and storage in integrated databases;
– establishment of mechanisms for permanent process improvement;
– continual enhancement of inventiveness in all members of the organization, for the purpose of process development;
– abandoned attitudes on the process success; the stress is on the success of the people and the system.

The analysis of the above classification leads to the conclusion that the last two levels of quality definition of the process are those which the organization of all processes should seek to achieve. To which of the two levels it will be directed in particular will depend on the nature of the process itself. In modern business conditions, the organization of a majority of processes should lead to the optimization level, a consequence of the impact of frequent changes in the environment. There are, however, processes whose nature does not allow them to be executed on a level on which major deviations from the execution method defined by pracise standards and procedures are possible. Such examples may be the processes in chemical and base industries. The hydrochloric acid or pyrolitic oil production processes require a very precise production technology and clearly defined standards of execution. It is for this reason that in the production of these it is necessary that the manufacturing processes should be brought to the formalization level. Changes in this production are possible only on condition a new technology has been adopted, more effective than the present one [12, p. 41].

The implementation of the process approach as a basic strategic management concept, that is, as the basis for the management of the entire organizaton, largely facilitates the introduction of the BSC concept, as well as measuring, or monitoring, various organizational preformance indicators (primarily in the area of internal processes, and then in all the other areas). The logic is the following: since the main purpose of the existence of a market oriented company is to meet the needs and desires of its customers, all its processes should be oriented towards fulfilling this goal. This means that all the processes in the organization are carried out for the purpose of achieving the customers's satisfaction with the products or services of the organization, which will (in case these needs are satisfied successfully) result in improving the organization's financial performance. On the other hand, the efficient execution of all the organizational processes requires appropriately trained executives, ones who will use knowledge and skills to permanently monitor any possible changes in the processes, as well as an adequate remuneration system. Thus all the four areas of organizational operations considered to be crucial in the basic BSC concept are embraced: processes, customers, finances and employee learning. It only remains to identify an optimum number of indicators and the performance monitoring may start. In other words, the process approach implementation into the organization management system allows for a solid basis to be formed for processes monitoring and measuring, which will eventually result into an easier measuring and monitoring of indicators related to customers, finances and employee learning. It will only be necessary that the indicators in these areas be defined and the BSC concept is complete.

5. Case study: process approach implementation in the „Tojota" company

The modern environment is extremely dynamic, hence unpredictable, which requires that all the organizations doing business in the area should achieve a satisfactory level of flexibility. One example is that customers have become considerably choosier. They demand specific products, both in functionality and in design [8]. Such tendencies create a demand for the implementation of flexible production systems, where flexibility is above all mirrored in the production of a large number of small series, with a wide range of products [9].

Such tendencies in the environment development have timely been identified by the management of the Toyota company, the result being that Toyota is today a modern process oriented company, based on flexible production systems. The philosophy that has for years been prevailing in Toyota, and which is customer and employee oriented is called the Toyota production system (TPS). The TPS has three desirable outputs [17]:
– to supply the client with a highest quality vehicle, at a lowest possible price, and in reasonable time;
– to secure the employees' satisfaction at work, safe work place and correct work relations;
– to ensure that the company is flexible enough to respond to the market needs, earn profits through the activities of reducing the costs and secure a long term prosperity.

The basics of the TPS are built on the standardization for the purpose of securing a steady method of work and a consistent quality. The members of Toyota tend to continually improve their standardized processes and procedures in order to ensure the best quality, improve efficiency and eliminate costs. This is known as Kaizen and is implemented in each area of the company's operations.

The basis of the Toyota system is made up of the Toyota production system and the TSM (Toyota Service Marketing). The Toyota production system is the world's most famous modular programme. It tends to [17]:

- reduce redundancies of any kind, such as unnecessary motions, tools, etc;
- achieve a balanced work load in order to avoid peak burdens and idle motion by planning every minute, by a constant visual control and by a strict adherence to the piece-by-piece production;
- control and maintain a balanced time dynamics: standardization of production process and each individual step within this process;
- identify latent problems, find counter-measures and thus prevent their repetition from the start.

The above quoted characteristics of the Toyota production system lead to the practice of a just in time (JIT) delivery of goods (and services) where they are needed and when they are needed.

To make its concern with the customers more complete, Toyota developed the so-called Toyota Service Marketing (TSM) programme that deals with the post-sales activities. The TSM is one of the Toyota's strengths worldwide that guarantees the customers' satisfaction and a high quality of repairs. The challenge today is the TSM implementation throughout the Toyota's repair net and creating a highest quality network operated by the manufacturer.

Concern about the customer makes the basis of the Toyota's TSM programme. The entire philosophy of this post-sales programme can be observed through a presentation on Figure 1. In the centre (area 1) are the so-called Toyota's customer oriented processes. The employees, the objects and all the internal procedures that represent the operations elements (area 2) are focused upon the execution of the core processes. The business management in the post-sales operations sector pays due attention to the aspect of operations management (area 3). The achieved outputs here are measured via respective performance, primarily the profit.

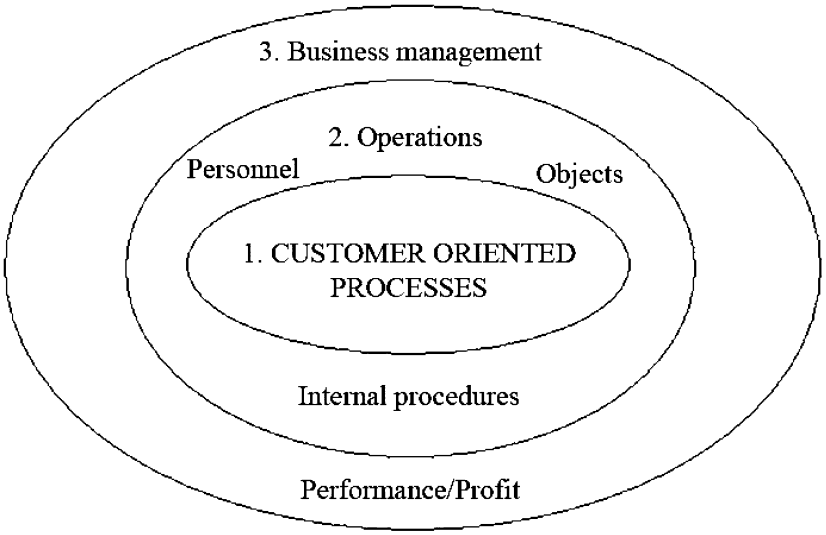

Figure 1. *Customer oriented activity circles*

In the post sales activities, the importance of the "Toyota Customer oriented processes" notion (Figure 1) is seen in the defining of the processes such as: the contact with clients procedure, motor failure repair procedures, claim resolving procedure, administrative work, maintenance and repairs, clients, etc. In the TSM manual each process is presented by a respective flow chart and a textual description of this same process. A description of a documented claim resolving procedure can be presented in the following way [16]:

1. The serviceman should maintain an open line for contacts with the client.
2. The receptionist should answer the call politely, identify the name of the serviceman, introduce himself and ask questions in order to encourage the client to explain what he needs.
3. The receptionist should direct the client to the person in charge of clients' complaints resolving (CRE - Customer Relationship Executive). To find out what the client's problem is, the CRE should listen to the client attentively and make necessary notes.
4. The CRE should search for the solutions to propose to the client.

5. The repair takes place.
6. The CRE in the service makes a questionnaire to check whether the client is satisfied and sends it by post or calls the client on the phone.

There is a documented procedure for every work activity connected to servicing the automobile. Figure 2 presents such a procedure related to making an appointment for a repair. The ultimate goal is to improve the appointment rate.

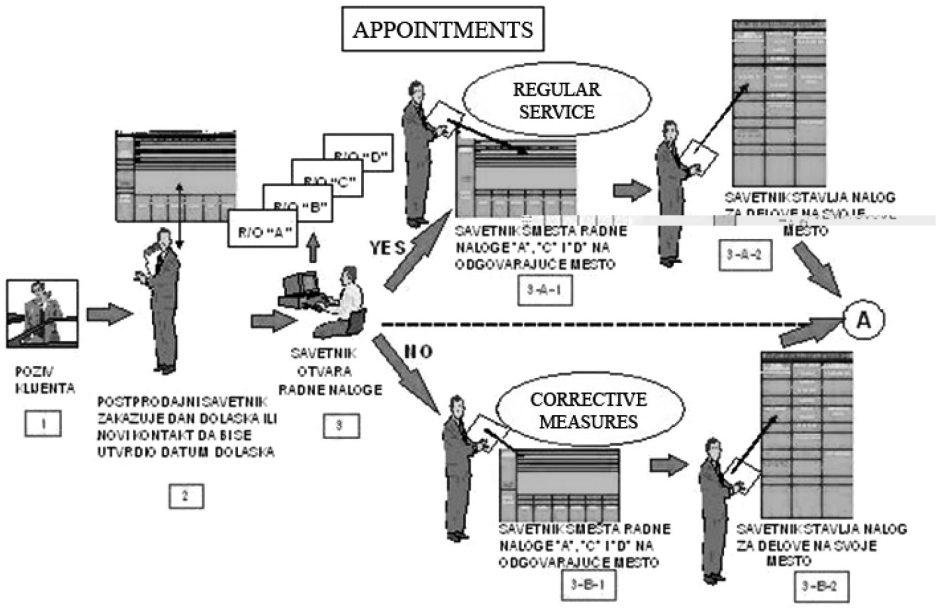

Figure 2. *The repair appointment making procedure*

All the processes in Toyota are, of course, defined in detail, in order that their performance should be monitored more easily. Monitoring is achieved by appropriate measurings. The measurings, however, are not carried out just for the sake of monitoring performance, but rather for the purpose of getting new knowledge of the extent to which the previously set goals are achieved.

To monitor the efficiency of business operations and the extent to which the goals are achieved Toyota uses the key performance indicators (KPI). The implementation of these indicators helps the management guide and improve their business. In the automobile post-sales processes these indicators are classed as: a) the client turnover indicators (number of visits of clients, number of repair orders, serviced cars at the expense of the client, etc.), b) post-sales success indicators and c) financial indicators.

The KPI examples that refer to the post-sales service success indicators are: spare parts sales indicators, client turnover indicators, delivery indicators, the repair specialist capacity indicators, etc. All the above mentioned parts and indicators of the service success indicators are important in monitoring the execution of the set goals, but also for the future planning. The method of monitoring the planned and the realized values of spare parts sales, as one success indicator, are shown in Figure 3.

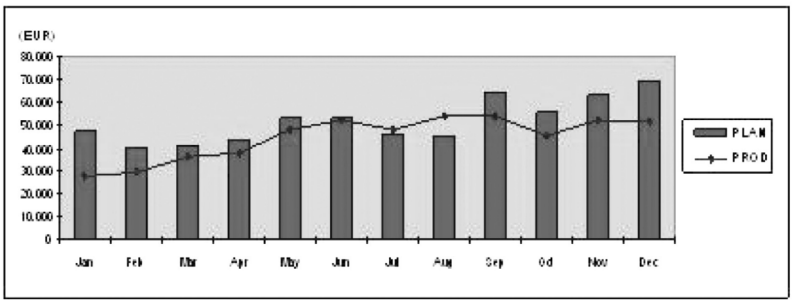

Figure 3. *Chart of spare parts sales results*

This example clearly shows that Toyota pays a lot of attention to its processes, especially to those directly related to customers. It is important to point out that Toyota allocates large funds in the development of its employees. All the activities Toyota undertakes resulted in a continual growth in sales on the global level as well as in the satisfactory levels of financial performance. We can only stress that the earned income of the Toyota company in the last three years records a continual growth (including the year 2008 when the recession was global). The data on the earned income are illustrated in Figure 4 [15].

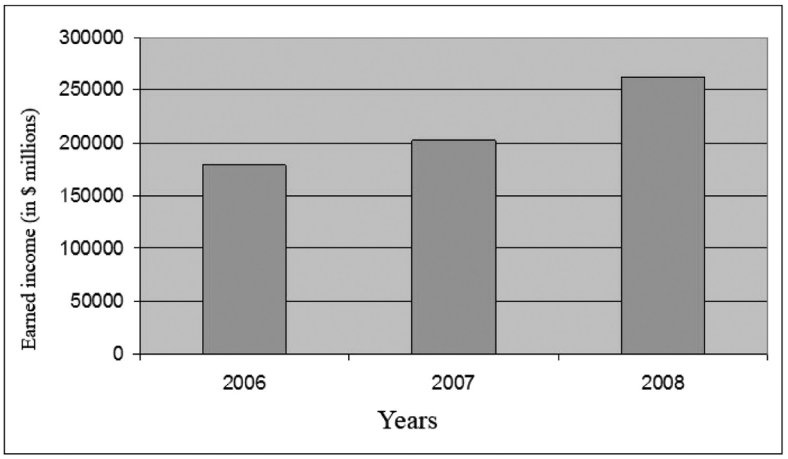

Figure 4. *The Toyota company income in the last three years*

On the basis on the above, we can draw a conclusion that Toyota implements the process approach in organizational management simultaneously, and that this type of management is supported by a developed BSC system used to monitor all the important performance indicators of this large company. Naturally, establishing these and many other management and organizational systems resulted in Toyota becoming a leader on a global automobile market.

Conclusion

The process oriented organizations can manage these processes in an easier way. Naturally, in marketing oriented organizations, where the basic (key) processes are customer oriented, this means that organizations focus upon meeting the needs and desires of their customers. On the other hand, occasional changes in the processes will require that all the employees permanently learn and improve so that they should, using their knowledge and skills, efficiently adapt to the changes within organizational processes. Such a method of work will most probably have a positive effect upon the financial aspects of organizational activities. All this will in turn make it necessary that a specific system of performance measuring be implemented in all the areas of crucial importance for the organizational activities. Therefore we can conclude that the process orientation really facilitates the implementation of a complex system used to measure the overall organizational performance, such as the BSC (in certain cases the process orientation is a necessary condition for the BSC implementation).

The Toyota example, presented in this paper, is an attempt to introduce the readers to the importance of the process approach. On the other hand, it highlights the importance of the BSC concept implementation, as well as the important relationships between the process approach and the BSC.

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Advertiser Perception of the Internet as a Marketing Communication Vehicle: Case Study

UDC: 004.5:659

Khalid Alrawi
Al-ain University of Science & Technology
Po Box 64141, UAE
E-mail : kalrawi47@hotmail.com

For most established businesses, the Web's main role is either to reduce costs or to add value for existing customers, but it also has a potential role in customer acquisition, and in the case of a web startup. It is a critical role. The aim of this research is to find out how the Internet is impacting advertising. The study was carried out through a questionnaire of the top executives of 200 firms in the services sectors in Abu Dhabi, UAE (Banking and Insurance industries). It examined their attitudes about the effect of advertising through the Internet.
Research findings conclude that the scope of the Internet usage in advertising is affected by managements' perceptions of the effectiveness of their web sites as a marketing tool. Result indicates that negative attitudes towards advertising through the Internet are associated with the Banking and Insurance businesses, which are the largest two sectors in the services industry.
These findings suggest that managers believe there are no economic benefits for advertising through the Internet. Based upon the sample size the researcher believes that the findings may prevail in other service industries in Abu Dhabi in particular and, the UAE in general.

1. Introduction

Recently, the Internet has become one of the most vivid topics in business and academia. The speed of development of electronic marketing has been fast by all standards. Such development has a far reaching impact on how business is conducted and perceived. In fact, the speed of development has accelerated the debate on the usefulness and its profound influence on organizations and management. Business and financial markets are recovering from earlier over exuberance about the Internet. Ang & Buttle, (2006) recognized that the fundamentals of business have not changed, that most pure-play dotcom business models were widely overoptimistic, especially in business-to-consumer (B2C) markets, and that the future role of the Internet in marketing will be largely as a part of an integrated combination of "bricks & clicks".

The Internet remains the most wide-ranging and significant area of current development in advertising. The Internet allows faster, cheaper and more personalized advertising than any previous medium. McAlister, (2005) suggested that advertising by the Internet, can dramatically reduce customer search costs and even support purchase decisions made on behalf of the customer by intelligent software agents. Therefore, it allows seamless communication over any distance, local or global increasingly. A firm's knowledge of the Internet, including perceptions of opportunities and problems is acquired to a large extent through the experience of engaging in various forms on Internet enabled-commerce,(Daniel & Grimshaw,2002). These capabilities have the potential in principle to transform many aspects of marketing: segmentation and targeting, pricing, customer service and customer relationship management, marketing communication, promotion, channels and value chain. Local advertising costs, as a barrier to entry, will be significantly reduced as the Internet makes it possible to reach a local audience more cheaply, (Hamid and George, 2005).

This new way of thinking has raised several importance issues that need further research. The main issue is the lack of meaningful research in our understanding of how managers' perceptions of the benefits and disadvantages of the internet translate into marketing decisions that may or may not involve an Internet presence, (Lanz, 2002).

The Internet impacts marketing strategy, channel management, marketing communications, customer service and business-to-business marketing. Also, permits the instant establishment of vital branches locally or even throughout the world, and allows these firms to improve their images even abroad, (Hamid and George, 2005).

This research focuses on the usage of the Internet as an instrument which is available for services institutions to expand their operations in the local market. While several studies have already addressed the importance of the Internet in services firms, however, to the re-

searcher's knowledge, such effort is not recognized that the use of the Internet for local or even global business enables them to enhance themselves in the marketplace.

The aim of this research is to assess the attitude of commercial firms in the services sector (Banking and insurance) in the UAE towards the usage of Internet advertising. This study therefore, provides an important ratification of literature as well as extending the validity of its conclusions to include other states in the UAE, or even the Gulf Region, and is intended to be representative of the entire Emirates.
The researcher expects its impact to increase steadily over the next decade, as the technology improves, its availability and usage continue to grow, and businesses learn better how to use it within their wide advertising strategy. However, the paper deals with empirical research than with theory.
The subsequent analysis attempts to address the above research questions.

2. The role of advertising online

It is certainly exciting to be at the forefront of a new technology. Just as the television in the 1950's and after, dramatically changed society, the Internet is changing society and market operations profoundly for many years to come. The Internet is the fastest growing medium in history, considering, for example, the growth rate of radio and television. The use of the Internet as advertising channel depends both on the growth in general Internet penetration and usage and on how the Internet then influences the adoption and diffusion of other products and services, (Adam (2002). In both these contexts, there is the usual caveat that one must be careful not to assume that the predictors of early adoption will also hold for later adoption. The researcher draws on the adoption and diffusion literature to propose how the Internet will develop, and found among early adopters for these firms in the sample, the primary reason for using the Web was for entertainment rather than advertising. To determine if there were differences between Internet users and non-users between these two groups in their attitudes towards technology, ownership of different technologies, and information versus entertainment needs, the researcher found that compared to non-users as they are the majority, Internet users were more interested in technology in general and the benefits it provided, especially if they thought it would save them effort of time, (Mittal et.al., 2008). They were also more likely to think that technology was both important and fun. Internet users were primarily motivated by communication/information needs but this did not appear to be because they felt time-pressured compared to non-users. A tentative implication of these findings is that the Internet may need to become more entertainment-oriented in order to attract a broader active user base.

Internet advertising and marketing will provide the revenues necessary to keep the Internet "free" and accessible to anyone with a computer and modem. As of the writing of this paper, the Internet as a commercial medium has only been in existence for three years. In three short years, however, marketers have turned the Internet into an entertaining and fun marketplace, (Cheng et.al, 2003). Emmanouilides and Hammond (2000) identified the unique many-to-many property of computer-mediated environments such as the Web. They suggested that marketing activities will be difficult to implement in their traditional form and predicted the evolution of a marketing paradigm compatible with the increased role of the consumer and of interactive technologies. In other words the collaborative potential of information technology and the Internet might react business as a game with customers rather than a game against competitors.

The demographic profile of the average surfer is marketer's dream. Although the demographic profile changes a little each day to look more and more like the average person in the United States, currently the average surfer is male (59%), in his mid 30's, educated, a business manager or executive, and has a relatively high income. The scales seem to be tipping more evenly between the genders as time elapses. Eventually, it is believed, that the average Internet user will look much like the average television viewer (Lehmann, 2005).Table (1), below summarizes the Internet indications published by the United Nations/International Telecommunication Union for the year 2005.

The demographic profile of the average user is changing as more people come online. Consequently, usage patterns are likely to change somewhat. Currently, users are often going to the Internet for research, education, entertainment, and news.

Table (1): Internet Indication/2005

	Internet				PCs
	Hosts total 2005	Host Per 10'000 inhab 2005	Users (000s)	User 100 inhab	Total (k) 2005
Algeria	944	0.29	1'920.0	5.83	350
Lebanon	6'875	19.37	700.0	19.57	409
Kuwait	2'791	10.93	700.0	26.05	600
Qatar	315	4.23	219.0	28.16	133
Saudi Arabia	16'655	6.96	1'586.0	6.62	8'476
United Arab Emirates	26'570	62.02	1'3972	31.08	850
Austria	1'284'933	1'565.75	4'000.0	48.93	4'996
France	2'335'625	386.48	26'154.0	43.23	35'000
United Kingdom	4'173'453	697.90	37'600.0	62.88	35'980
United States	195'138'696	6'645.16	185'000.0	63.00	223'810

Source: UN/ITU 2005.

A discussion of the average Internet user would not be complete without briefly addressing the geographic location of the Internet users. It is difficult to obtain an exact geographic profile on the average Internet users because they can access the Internet from anywhere in the world. Users are primarily located throughout the United States. However, it is relevant to discuss the geographic location of potential users by country and the opportunities to come for marketers advertisers as these countries develop the ability to access the Internet.

A little over a year ago, nearly 99% of the servers accessing the Internet were located throughout North America, Western Europe, and Asia. "The emerging 20 Nations," a phrase coined by Inter@active week, is a list of 20 nations which may prove to be the most lucrative Internet markets going into the 21st century. Most of the emerging 20 nations are made up of Latin America, Asia, and Eastern European countries and all share two qualities that make them extremely attractive to U.S. equipment providers: All are in their technological beginning and all are headed by governments that realize the vital need for advanced communications to sustain an economy in the new Internet frontier.

There is an opportunity not only in the United States for the Internet Advertising Industry but as more countries hook to the Internet, the opportunities will increase abroad as well. The table below (Table2) shows the "Emerging 20 Nations" as identified by Inter@active week.

Table (2): The Emerging 20 Nations

Country	Population
Argentina	34,672,997
Brazil	162,661,214
Chile	14,333,258
China	1,210,004,956
Columbia	36,813,161
Greece	10,538,594
India	952,107,694
Indonesia	206,611,600
Malaysia	19,962,893
Mexico	95,772,462
Pakistan	192,275,660
Peru	24,523,408
Philippines	74,480,848
Poland	38,642,565
Russia	148,178487
Saudi Arabia	19,409,058

Source: Inter@active week

Selnes & James (2003) argued that the Internet will prove to be a challenging advertising medium. Because the Internet is growing quickly, advertisers must try to standardize and adapt all Internet advertising communications to fit a global need. Although growth and users are primarily focused on the United States today, preparation must be taken for the users who are coming online tomorrow and the day after. These new users will most likely not be current demographic average users but will be users with differing education, age, income, and ethnicity backgrounds.

3. The online adversting industry

Barwise (2001) concluded that like most industries, the advertising industry is large and established with market leaders and recognizable corporate names. Since advertising started on the Internet in 1994, advertising agencies have had to answer client questions regarding

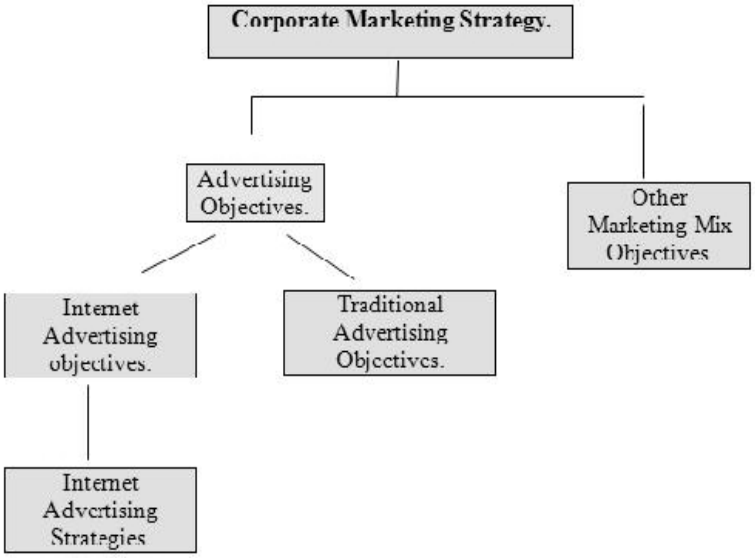
online advertising and web site development. Christensen & Tedlow (2000) explored that in this new segment of the industry, advertising agencies have had to quickly become experts in a field where researchers and academics have not yet established all of the rules and strategies; an industry where standards of practice have not been agreed upon; where outcomes are still being debated. This is a day in the life of advertising on the Internet (Fader& Hardie, 2001).

Because the industry evolved so quickly, there was barrage of new entries into this undeveloped field. Many entrepreneurs with web site development skills took advantage of corporations' need to be the first with an Internet presence. Economists and marketers have long agreed that the first entries into an undeveloped industry typically have a competitive advantage over later entries (Hammond, 2001).

As advertising agencies and marketing research companies assess the value of using the Internet in marketing activities as a tool, commercial firms will find more Innovations which will lead to faster and more cost effective for their future success. The challenge lies in both firm's creativity and logistics.

To "catch" a surfer, each company must decide upon the bait. The bait decision comes only after the why, when, and how of advertising on the Internet has been taken. One must decide why the company needs an Internet presence before creating that presence. Companies are jumping on the Internet advertising bandwagon too quickly, without first giving thought as to how advertising on the Internet fits the rest of the marketing strategy. Internet advertising should begin only after consideration of how the web site will fit into the corporate marketing strategy, (Hornby etal. 2002).

Figure (1)
Integrating the Web Site with the Corporate Marketing strategy



The web seems to be developing into an effective branding tool as well as a direct marketing tool. Those companies whose marketing objectives and strategies center around building brand awareness and consumer loyalty are taking advantage of the Internet's ability to reach narrow targeted audiences. Those companies whose marketing objectives and strategies center on educating the customer of products and product use are taking advantage of the Internet's value as a giant catalogue. The key to using the Internet as an effective tool lays in developing ads and web sites that center on the company's current marketing goals, (Van and Bekker, 2003).

When developing a web site, the company must keep three crucial objectives in mind: Attract, Retain, and Repeat .

Figure (2)
Web Site Success

The web site must attract visitors, retain them, and generate repeat visits. If these three objectives are not met, the web site will do little to fulfill the marketing objectives of the company. (Bikes & Brynjolfsson, 2000).

One key aspect of the online experience is the time taken for customers to access the information they required. The researcher believes that the potential negative effects of waiting can be neutralized by improving the waiting experience. Customers may feel negative affect as a result of waiting, but this did not necessarily impact on their evaluation of the web material itself as long as the waiting time was signaled and expected.

Lacobucci, Arabie, & Bodapati (2000) found that customer satisfaction was enhanced by quick responses to complaint e-mails.

Improving trust and reducing concerns are two distinct approaches to managing customer information. The researcher believes that when managing customer information, improving trust is more effective than efforts to reduce concern. Hoffman & Novak (2000) argued that part of customer's low trust in online activities arises from their perceived lack of control over web businesses' access to their personal information and the secondary use of this information. The solution they propose is a radical shift towards more cooperative interaction between a business and its customers. Taking a more strategic overview, Wind and Rangaswamy (2001), in a conceptual paper, propose that the next stage in the evolution of mass customization is customerization-'a buyer company strategy that combines mass customization with customized marketing'. They state that customerization requires the effective integration of marketing, operations, R&D, finance, and information, plus a substantial change in the firm's orientation, processes and organizational architecture.

4. Customers attitudes towards advertising on the web

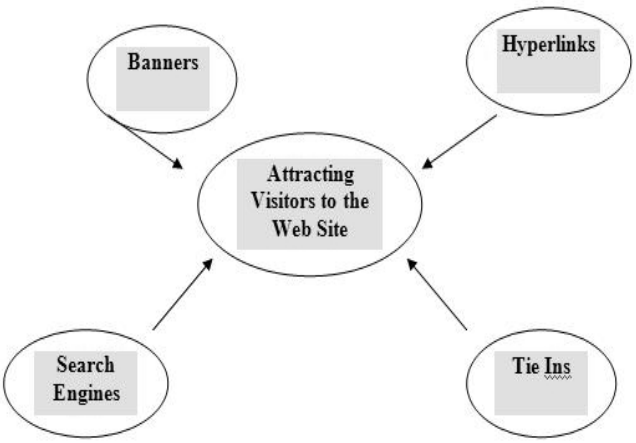
The first step to web site success is to attract initial visits to the web site. There are dozens of ways to do this. Those that seem to generate the most traffic are banner advertisements, hyperlinks, search engine registration, and tie-in promotions (Figure 3). Banners are the small, usually rectangular shaped blinking ads that attempt to gain user attention.

Hyperlinks are web site addresses listed in other web sites. When clicked upon, hyperlinks take the user directly to the listed web site. A company may pay another company to list its web site address, or it might simply be listed as a complementary service to the customer. For example www.buildingonline.com lists complementary web site addresses of hundreds of manufacturers of building materials; it also sells banner ads (Bellizzi, 2000).

Search engine registration means that the company lists its web site address with a search engine such as Lycos, Yahoo, or Alta Vista. Trifts & Haubl (2000) indicated that, although company registration is free of charge, a company may also purchase keywords, words that when typed in during a search will yield the company's web site information.

It is becoming more common for businesses to use tie-ins as a way of building web site traffic. Most companies today provide web site addresses on television, print, and radio advertisements. Many also include web site addresses on the product itself.

Figure (3)
Methods of Attracting Visitors to the Web Site



Retaining visitors is an even bigger challenge than attracting them. Surfers will move on to the next web site if their entertainment or information needs are not met. Satisfying the entertainment need can be accomplished by providing games, contests, and promotional activities. Satisfying the informational need can be accomplished by indexing and cataloging information about the company's products and service.

Dolan & Moon (2000) explained that once visitors are exposed to the web site and chose to stay a while, the company must draw them back again. The only way to generate report traffic is to give the visitor a reason to come back. Whether entertaining or informing the visitor, the site must be fresh. Continually updating the site by adding news, games, contests, new product uses, and coupons will generate repeat visits. There is no limit to the creativity a company can use to generate repeat visitors. Some web sites offer interactive chats with television celebrities or product experts.

Travelocity (www.travelocity.com) a national travel agency web site uses two approaches to generate repeat visits. Every Wednesday at midnight the "hot deals" page is updated with last minute deals on cruises and airline tickets. Travelocity also has customers pick a departure and destination city and give Travelocity their e-mail address. If the price on a round trip ticket changes by more than $25.00, higher or lower, Travelocity e-mails the respondent with flight details. Travelocity also facilitates online hassle-free purchases (Dans & Pauwels, 2001).

Once advertising goals have been established, decisions about how to advertise should be made. Although much research needs to be done in the area of the Internet web site and advertisement development, the research to date suggests two major categories: destination and information web sites.

Destination sites include those web sites that provide entertainment as a form of attracting, retaining, and repeat surfer visits. Many companies seek to entertain surfers as a means of exposing them to their brand. These companies spend hundreds of thousands of dollars to keep surfers interested, (Quayle, 2002).

The management of the Life Savers Company used the destination site strategy to capture surfer attention and has won back market share taken away by Jolly Ranchers and Werthers. Sales have dropped by 20%. The Lifesavers Web site (www.Candystand.com) helped increase sales by 20% in 1996.

Destination sites are typically used to enhance brand awareness by building consumer interest in the web site. Hence, the goal of a destination site is to get the consumer to use the site on regular basis, destination sites require a commitment to both time and money. Both are needed to continually update and add new features to the web site. Products that lend themselves to the destination site approach include convenience and impulse shopping goods. This approach does not work for products that require a great deal of explanation or are very technical in nature (Adam et.al, 2002).

On the other hand, information sites provide information, not entertainment, to the consumer in a "catalogue" format. The catalogue value of the Internet drew businesses online in the first place. Information web sites offer the customer valuable information about the products and services the business has to offer. Some information web sites look like real catalogues, offering primarily text oriented "down to business" information. Other information web sites offer helpful advice on product use, links to complementary products, and customer support, (Harris and Kimberly, 2003).

More and more information sites offer a valuable service to the customer. While they might not have the bells and whistles associated with destination sites, most have integrated graphics and contests as a way to lure customers to the site. The information web site approach is applicable to almost any product and can be easily updated with new products and services, (Woonbong et.al, 2003).

The home page usually shows whether the company has positioned its web site as a destination site or information site. However, there is some gray area in between. Some sites may be organized as an information site but includes a game, contest, or other entertaining feature. On the other hand, a destination site may include some product information and customer services such as electronic purchasing and locations where to purchase the products (Barwise & Strong 2002).

Keeping surfers interested enough to return is the only way to maintain a successful web site that meets the marketing and advertising goals of the company.

5. Research methodology

This study aims particularly to answer the following question:
Is there any statistical significant benefit by advertising through the Internet in both Banking and Insurance Sector as far as management is concerned?

The study is based on the staff working in The Banking and Insurance sectors in the city of Abu Dhabi. Employees, who are working in banking and insurance sectors, constitute the sample of this study. The sample is selected based on (200) officials. The following table describes the research population distribution.

Table (3) The Sample

Gender / Sector	Male	Female	Total
Banking	50	50	100
Insurance	50	50	100
Total	100	100	200

Questionnaires were distributed according to gender group and sector. Two hundreds completed surveys were received. 80% of the participants responded to the questionnaires. These questions were developed after careful review of current literature.

Respondents in the research sample believe that business users perceive Web advertising as more informative than valuable or entertaining. When respondents are asked to rank seven media in terms of their value as a source of advertising, the web was placed near the bottom.

The researcher compared Internet users and non-users to determine if there were differences between these two sectors in their attitudes towards technology and information versus entertainment needs. He found that, compared to non-users were more interested in technology in general and the benefits it provided, especially if they thought it would save them effort or time. They were also more likely to think that technology was both important and fun. Internet users were primarily motivated by communication/information needs but this did not appear to be because they felt time-pressured compared to non-users. A tentative implication of these findings is that the Internet may need to become more entertainment-oriented in order to attract a broader active user based.

Planning for an Internet presence requires more than just purchasing a web site. Planning for an Internet means to think about how the Internet will fit with firm's current promotional mix. In order to assess respondent's attitudes towards Internet advertising, it is necessary to calculate the Average answers for both Male and Female.

Table (4): The Average answers distribution.

The year	Banking Sector			Insurance Sector		
	Males	Females		Males	Females	
	X_1	X_2	X	y_1	Y_2	y
1	2,224	1,666	1,945	1,910	2,363	2,136
2	2,250	2,250	2,250	2,416	2,302	2,359
3	2,372	2,440	2,406	2,400	2,758	2,579
4	2,486	2,511	2,498	2,219	2,375	2,297
5	2,260	2,185	2,222	2,075	2,220	2,147
6	2,136	-	2,136	-	2,000	2,000

Where: X1, y1: represents the average answer for the Males groups in Banking and Insurance sectors respectively.
X2, y2: represents the average answer for Females groups in the Banking and Insurance sectors respectively.
X, y: represents the total average answer of the selected sample in both sectors.

Then:

$$X = \frac{X1 + X2}{2}$$

$$y = \frac{y1 + y2}{2}$$

The results reveal that most of the participants score low on the importance of advertising using the Internet or display a low belief on the usefulness of Internet advertising, as the value of (t) is (-0.113) which did not exceed the required value of statistical significance.

To be sure that the above result is not a temporarely phenomenon, the researcher apply the same procedures on another sample which consisted of (60) officials from both sectors and applying the same criteria. The calculation of the Means, Standard Deviation, and the Variance for this second sample is as follows:

Table (5)

Statistical Inferences for Both Sectors

The Statistical Technique	Banking Sector	Insurance Sector
The Size of the Sample	30	30
The arithmetic Mean	2,23	2,13
The Standard Deviation	0.31	0.43
The Variance	0,098	0,186

With such result nearly to zero, again the conclusion is that there is no significant effect for advertising through the Internet, and the H0 hypothesis is correct.

6. Limitation of the study

The results of this study are due to the conditions of the method used, the sample and the dynamic environment in which business operates. The researcher believes that such findings may be prevailing in other services industries in other Emirates of the UAE, as the same environment is prevailing. However this needs further investigation. Yet the study suffers from other limitations and drawbacks, mainly the database is not as robust as one would wish it to be. Data on advertising expenses through the Internet are unavailable or missing. Therefore, the results presented in this research should be interpreted in the light of these limitations.
The researcher believes that there are internal factors creating such negative attitudes such as the lack of experience. Such expectations need further studies.

7. Conclusions

The principle question raised in this paper is what impact does advertising have through the usage of the Internet. This study has shed light on the managers' perceptions toward the impact of Internet as an instrument for advertising in the services industries. The overriding finding of the study is that the scope of Internet usage as a media is affected by managements' perceptions of the effectiveness of their websites as marketing tools specifically in the context of services industry (i.e., Banking and Insurance).

Respondents in this study had a fairly negative attitude towards online advertising, and they believe that Internet users were more likely to respond to targeted than to non-targeted advertising.

In today's highly competitive marketplace, websites can be effective marketing tools, therefore, managements' commitments and perceived benefits are the most cru-

cial issues, thereby implying faster and cheaper to world markets. The researcher regards such perception as a healthy attitude and their firms should enhance it as an investment. While it has been known that the greater the degree of interactivity the more popular the website, for the firms in the sample, interactivity does not always enhance advertising effectiveness as it can interrupt the process of persuasion, especially when advertising are targeted.

The researcher's recommendation in this context is that firms should develop and evaluate a web-based methodology for evaluating the effectiveness of promotional websites, such as studying business-to-business advertising through mentioning or stimulating the website in print advertising and if successfully increasing site traffic significantly. Overall, in the UAE, as a developing country, Internet advertising is still a growth area within marketing communications, despite the justifiable reaction against earlier overoptimistic expectations. Marketers are still learning how to use it in terms of marketing strategy, creative execution and evaluation.

The researcher's point of view is that the future challenge would not only be to understand how each medium and format works, but also how they integrate together.

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The Strategz of the International Monetary Fund (IMF) in Financing its Member countries

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Dr Slobodan Marković, dipl ecc Biljana Lazić
Faculty of Foreign Trade, Novi Sad,
Faculty of Foreign Trade Novi Sad,

The twentieth century was marked by numerous changes whose consequences and effects we can still notice and feel. Surely,one of the crucial processes is the transition of economies of most undeveloped countries and their transformation towards the market way of doing business. Many international institutions, with the International Monetary Fund being ahead, were following and helping the described processes. The purpose of this paper is to show the main goals, tasks, organizational structure and the way of functioning of the big and first of all very important international financial institution such as the IMF. Also, there will be described the ways in which the IMF forms its financial sources as well as the possibilities of the member countries to use these sources. The main aim of this work is to present the positive sides of the Fund doing the business, but also to point out the restrictive policy by which the Fund is directed in approving financial resources, and which is criticized a lot. Another aim of this text is to show, in its final consideration, the relationship between the IMF and the countries in transition with a special regard to the relationship towards this country.

1. Introdukcion

Numerous and varied economic changes have had a significant impact upon the transformation of the overall world economy for decades. We have witnessed the *restructuring* processes of the economies of many a socialist country, which abandon the so far planned and rigid method of business doing to implement more flexible and market oriented one. Along this long and tiresome path, the developing countries encounter a large number of problems, the majority of which are of financial nature. It is very important that these countries receive "generous" aid, primarily financial, but technical and structural as well. The entire international monetary system should monitor and support the transition processes and the restructuring of national economies and show them the way into a *safer and better* future.

The International Monetary Fund is a set of international agreements and institutions that regulate international liquidity, the *convertibility* of one currency into another or into reserve holdings, as well as external balance regulatory procedures. [4, p.258Ć we can also say that the international monetary system comprises all the agreements on the international payment structures, the institutions and regulations that govern, convey and control these payments. The international monetary system objectives are primarily as follows:

- stabilization of overall economic activities and price levels;
- uniform development of international trade;
- employment and real income growth;
- exchange rate stability;
- multilateral payment system fostering, etc.

The international monetary system cannot be discussed, without mentioning a notion of monetary standard. In the beginning, the monetary standard meant a certain quantity of gold or silver representing other currencies and into which any currency could be converted. The later period of the overall monetary system development saw the change in the very meaning of monetary standard, which now means a set of all the institutions and varied payment methods applied in settling international debts and collecting international dues. The above interpretation refers to the international aspect of the monetary standard, however, it is important to point out that it can also refer to national institutions and methods of payment in the transactions within one country.

The key institutions through which the international monetary system works and achieves its objectives are:

- The **I**nternational **M**onetary **F**und;
- The **E**uropean **C**entral **B**ank and
- The **B**ank for **I**nternational **S**ettlements.

It is important to mention other international monetary conventions, unions, regional trusts, clearing organizations etc. too. They are also active within the international monetary system and facilitate its work. Common to all these organizations is that they accepted different accounting units and that they grantter period of the overall monetary system development

saw the change i*n the very* meaning of monetary standard, which now means a set of all the institutions and varied payment methods applied *in settling internatio*nal debts and collecting international dues. The above interpretation refers to the international aspect of the monetary standard, however, it is important to point out that it can also refer to national institutions and methods of payment in the transactions within one countr*y.The key* instituti short-term loans – credits to the member countries for the purpose of improving their balances of payment and regulating international payments on the basis of settling their liabilities and collecting receivables. [4, p. 260ĆThe paper will be devoted sol*ely to the method of function*ing of the International Monetary Fund and its importance in the international economic trends. Further, the key ***objectives of*** **the IMF will be highlighted**, as well as its organizational structure and the competencies of its bo the World War I, the Great Economic Crisis in 1930's, the massive destructions during the world War II, made it necessary that a unique, international cooperative institution should be established for the purpose of dealing with crucial economic issues. The representatives of 44 countries in the world met at Bretton Woods, in July, 1944 and concluded an agreement on establishing a specialized United Nations agency, to be called the International Monetary Fund, and whose headquarters was to be in Washington.

The IMF Statute was adopted in December 1945 and the member countries agreed that the surveillance and management in three important spheres should be the liability of the IMF, namely [1, p. 163Ć:

- Regulations related to the foreign exchange policy and limitations as to payments on the basis of current balance of payment transactions;
- Supplying member countries with the financial resources to correct and prevent payments disbalances; and
- roviding a forum where member countries can discuss and cooperate in solving the international monetary issues.

Today, the IMF is an organization of more than 180 member countries, mostly developning countries, and is one of the most important international financial institutions. Of course, we can also state that this is an organization that, on one hand, was largely praised for its activities, however, on the other hand, its business strategy has often been severaly criticized and contested, both in scientific literature and in diplomatic circles.

1.1. The IMF's tasks and objectives

In a nutshell, the basic task of the IMF is to aid member countries that suffer financial problems and are faced with the balance of payment deficits. Such countries lack their own means to settle their debts, therefore they hope that, aided by the IMF, they will be in a position to define and conduct a set of stabilization measures and "revive" their economies. The Fund's task is also to foster the relations of trust with its members and be unbiased in analysing and finding solutions to their problems. It is important that the Fund's activities be flexible and adjustable to individual situations in every problem experiencing country. The Fund is expected to avoid the fixed pattern in granting aid to its members and to reduce a too strong an impact of highly developed countries when important decisions are to be made.

In accordance with the Statute adopted, come of the most important objectives the IMF will try to achieve continually are:

- promoting international monetary cooperation;
- supporting member countries in resolving various problems, primarily financial ones;
- maintaining the forein currency stability;
- growth and fostering a multilateral payment system on current transactions;
- clearing foreign currency limitations in order to promote international trade;
- fostering income growth, high rate employment, development of manufacturing capacities based on the growth of international trade;
- financial support to member countries in order that they avoid balance of payment disbalance and difficulties.

Whether the Fund is really devoted to achieving the above mentioned objectives and in which ways it embarks on accomplishing those tasks will be the subject of the following chapters of this paper.

1.2. The IMF organizational structure

For the purposes of a comprehensive analysis, we will briefly quote the IMF basic bodies. According to the Statute, the organizational structure of the Fund is made up of:

- The Assembly of Governors;
- The Executive Board;
- The Managing Director;
- The Council.

The decisions made at the Assembly of Governors and the Executive board are binding for all the member countries. The Executive Board is the instance where most conflicts arise among the countries on dif-

ferent levels of development and where the economic power based authority of one country often prevails over the force of arguments of the countries whose development level is lower. [6, p. 87Ć In its long history, the Fund has founded a number of subsidiary bodies that also contribute to the fund's activities, and these are: the Interim Committee for the international monetary system issues, Group 5 and Group 7.

2. The IMF sources of financing

There is a number of well known methods the Fund uses in obtaining funds for financing. It is very important that these sources be permanent, reliable and available at any moment. Obviously, the most reliable source of financing is the quotes provided by the member countries, paid at the moment a country joins the Fund. Also important are the loans from the member countries, various rates and taxes short-term loans – credits to the member countries for the purpose of improving their balances of payment and regul**ating international payments** on the basis of settling their liabilities and collecting receivables. [4, p. 260ĆThe paper will be devoted solely to the method of functioning of the International Monetary Fund and its importance in the international economic trends. Further, the key objectives of the IMF will be highlighted, as well as its organizational structure and the competencies of its boaid in that 25 percent of the quota is paid in special drawing rights, while 75 percent is paid in the national currency of a respective country, and this is the amount the fund keeps as assets on the account with the member country's Central bank. The quota may be said to represent the importance and power of a certain country in the world's economy, and is at the same time the benchmark in all the financial relations between the member countries and the Fund. The body in charge in the Fund does an audit on the quotas periodically and state whether it is necessary that the quotas of certain countries should be raised and in which manner the increase should be distributed among the member countries, to mutual satisfaction. The quotas may be increased only in case the member country improves its position and its relative share in the overall world economy, otherwise the desired increase is not possible. This issue is a frequent subject of debates in the fund, since it is impossible to satisfy the desires and interests of all the member countries. Therefore the rise in quotas was usually in favour of highly developed countries, and to the disadvantage of the developing countries.

The size of the quota determines:

- The volume of loan the country can get from the Fund;
- The number of votes the country has when it comes to deciding in the Fund (when joining the fund, each country is granted 250 initial votes, and at each 100,000 special drawing rights of its quota it gets one more vote);
- The country's participation in the allocation of special drawing rights (the country with a higher quota is entitled to a larger number of issued SDR).

The member countries with highest quotas, and consequently with the largest number of votes in the fund are: [8Ć

1. U.S.A (17.6%)	1. France (5.1%)	7. Saudi Arabia (3.3%)
2. Japan (6.5%)	2. Great Britain (5.1%)	8. Canada (3.02%)
3. Germany (6.2%)	3. Italy (3.36%)	9. China (3.03%)
		10. Russia (2.8%)

On the basis of the above data, it is not difficult to see which countries have a final say in making all important decisions in the International Monetary Fund and why it is they who are against raising the quotas of other member countries.

3.2. Loans granted by the fund

It is true that the quotas of the member countries are a very reliable source of revenue and make the better part of the capital in the fund, however, the assets the fund borrows from various international monetary institutions, member countries and other creditors cannot be neglected. The loans are by all means an important additional source of finances. As to the borrowing policy the Fund pursues, the rule is observed that full loans and unused credit lines should not exceed the limit of 50% - 60% of total quotas.

Over the decades of the Fund's activities, two arrangements of borrowing have especially been important:

- General arrangement to borrow (GAB) and
- New arrangement to borrow (NAB).

The General arrangement to borrow (GAB) was concluded in 1962, between the IMF and ten highest developed countries in the world. Switzerland was to join the arrangement later. The fund was entitled to borrow the financial assets from eleven developed countries, according to the set conditions, at a market interest rate. The assets were most commonly borrowed for the purpose of improving the current, disbalanced situation within the international monetary system.

Table 1. *Chart of member countries participating in GAB, with the amounts of assets put at the disposal of the IMF* [5, p. 404Ć

The GAB member countries	Amount (in SDR billions)	The gAB member countries	Amount (in SDR billions)
USA	4,250.00	Canada	892.50
German Bundesbank	2,380.00	The Netherlands	850.00
Japan	2,125.00	Belgium	595.00
France	1,700.00	Sveriges Riksbank	382.50
Great Britain	1,700.00	Total:	**17,000.00**
The National Bank Of Switzerland	1,020.00	Agreement on association with Saudi Arabia	1,500.00

The potential amount of assets the Fund is entitled to use within the GAB can be found to amount to 17 billion of special drawing rights, with the additional 1.5 billion put at disposal by Saudi Arabia, within the associate agreement.

The New arrangement to borrow (NAB) was concluded in January 1997, between the iMF and 25 member countries. The need for this additional source of financing resulted from frequent crises and the increasing financial needs of the member countries. Today, this arrangement has a form of a credit agreement between the fund and 26 countries that lend their funds under specific, agreed conditions.

Table 2. *Chart of member countries participating in NAB, with the amounts of assets put at the disposal of the IMF* [5, p. 405Ć

NAB member countries	Amount (in DSR billions)	NAB member countries	Amount (in SDR bilions)
Australia	801.00	Kuwait	341.00
Austria	408.00	Luksemburg	340.00
The Central Bank of Chile	340.00	Malesia	340.00
Belgium	957,00	The Netherlands	1,302.00
Canada	1,381.00	Norway	379.00
Denmark	367.00	Saudi Arabia	1,761.00
The German Bundesbank	3,519.00	Singapur	340.00
Finland	340,00	Spain	665.00
France	2,549,00	Sveriges Riksbank	850.00
Monetary government of Hong Kong	340.00	The National Bank of Switzerland	1,540,00
Italiy	1,753.00	Tailand	340,00
Japan	3,519.00	Great Britain	2.549.00
Korea	340.00	USA	6.640.00
		Total:	**34,000.00**

The conclusion can be drawn that the countries presented above provide the total of 34 billion special drawing rights which the Fund is entitled to use within the New arrangement to borrow if the need for additional financial assets arises.

3.3 Revenues from rates and taxes

This aspect of income does not make an important part in the total aamount of assets the Fund has at disposal, however, it is not negligible. By collecting the rates and taxes, the fund encourages the member countries to employ the borrowed funds in as short a period as possible. We distinguish among the three most common types of rates and taxes:

- Commission – this is applied to all the transactions of purchasing currency from the fund, other than purchase within the *reserve tranche* is paid at the moment of transaction, in the amount of 0.5% of its value.
- Tax on stand-by and *expanded* agreements – is paid in the amount of 0.25%, however, only at the unused amount of borrowed funds, at the beginning of every twelve-month period.
- Time tax – is paid on the amount of stand-by funds that resulted from the purchase of convertible currency from the Fund, paid for by the national currency, and which the fund keeps in the currency of the member country.

3.3. Special drawing rights

The introduction of special drawing rights into the international monetary system is an attempt to secure international liquidity in an organized manner, independently from national monetary policies. The basic goal of the creation of the new monetary mechanism within the IMF was to provide a long-term supply of assets of international liquidity in case of their scarcity. [1, p. 170Ć

Special drawing rights were introduced in 1969, for the purpose of overcoming an especially bad situation in the international monetary system and they are now one of the IMF's most important sources of financing. The fund issues the SDI periodically, most commonly in a five-year period, and trats them as a very important instrument in solving the international liquidity issues.

On the basis of its quota proportions, each country is granted a certain amount od special drawing rights which it may exchange for a convertible currency, through the Fund, every time it feels in demand for the particular currency. The special drawing rights system is based on the member countries' voluntary accession and participation. If one currency is in demand, the country whose currency it is is obliged to sell it. The upper limit of 300 percent of the value of the quota is the point beyond which the member country may, but need not sell its currency. The relationship between the member countries, that are simultaneously the players in this system, is based on the obligation of the country with a surplus in its balance of payment to receive the transfer of specialdrawing rights from the country with a deficit in its balance of payment, and grant it the convertible currency as a counter value. The surplus country accepts this obligation only on condition the Fund itself issues guaranties that it shall be entitled to exchange these special drawing rights for the assets of international liquidity whenever it choses to do so.

It is important to point out that as early as 1972 the special drawing rights have been implemented by the Fund as the accounting unit in its transactions, and are now largely used in the transactions of numerous other international institutions. Over time, the value of the special drawing rights was defined differently, to be based today on the values of the world's four key currencies: the US dollar, the British pound sterling, the Japanese yen and the euro. The so-called "currency basket" includes the currencies of five member countries of the Fund that achieve the largest scale exports in a five-year period, and these are: the U.S.A., Great Britain, Germany, Japan and France.

4. The IMF remittances to member countries, advantage or disadvantage?

In addition to the basic aid it provides to the member countries, which means the financial aid, the International monetary fund also provides the technical and expert aid, is engaged in solving numerous problems in the field of commerce and economic growth and, as such, represents the central institution of the international monetary system. The IMF member country, encountering balance of payment problems of primarily temporary and short-term character, is entitled to claim the necessary financial means from the Fund. The credit granted from the Fund is actually a financial support to the economic stabilization programme of the member country aimed at overcoming the troubles in economy and in its balance of payment. The Fund supports the adjustment programme with its own finances or by catalysing from numerous sources. [4, p. 263Ć

The chance that a member country be granted the necessary funds from the Fund is defined, primarily, by the amount of the quota paid, but also by the gravity of the balance of payment problems, by its readiness to conduct a stabilization programme and by the overall economic situation in the country.

The International Monetary Fund will grant the necessary budgets only after they have been satisfied that the stabilization programme, mutually agreed upon between the Fund and the member country, to be conducted in the respectve country is justified and efficient. The Fund may grant the *resources* in the form of:

- Regular drawing rights
- Drawings within financial facilities.

We will proceed by giving a detailed explanation of key characteristics, advantages and disadvantages of both forms of using the Fund's resources.

4.1. Regular drawing rights and stand-by arrangements

The regular drawing rights within the IMF primarily include the reserve tranche and the four credit tranches.

The reserve tranche is such a type of drawing the Funds resources where the Fund's reserves are increased in the currency of the respective member country up to the amount of 100% of its quota. In the beginnings of the Fund, the mentioned fixed portion of the quota was paid in gold, therefore the drawing within the reserve tranche was known as the "golden tranche". The rule adopted later specified that 25% of the quota need not be paid in either gold or American dollars, but can be paid in special drawing rights or in other convertible currencies, upon the prior consent of the Fund. The amount the country may dispose of in the form of reserve tranche is obtained in that the amount of the fund's receivables in national currency is subtracted from the value of the national quota resulting into a positive balance. The reserve position of the member country changes over time and may range from 0 to 100% of the quota, depending on the size in which the Fund does transactions with the country's currency. The right to drawing within the reserve tranche can be exercised rather easily, since the applications of the member countries on this basis are not part of the agendas of regular meetings of the Fund's supervisory bodies; such transactions are almost automatically approved of.

The member country encountering a balance of payment problem and a general disbalance of its own economy may apply to the IMF for the loan and exercise its right to it, but under special conditions. If it is the short-term and easily soluble problems, and the country simultaneously makes its best efforts to solve them, it can obtain the resources from the Fund within the first credit tranche. On the contrary, when the country suffers serious balance of payment problems and needs larger amount of resources to solve them, it is obliged to submit to the Fund the stabilization programme with the economic policy measures it plans to implement if it desires to realize the drawing rights in higher credit tranches (the second, the third and the fourth).

The strategy of crediting the member countries is carried out in four stages, i.e., four credit tranches, each of which covers 25 percent of the national quota. With each subsequent credit tranche the credit conditions become significantly stricter, which is one of the main reasons that many countries avoid applying to the Fund for money. The credit tranches are distinguished in the following way:

- The first credit tranche – the drawings that increase the Fund's reserves in the member country's national currency to the amount from 100% to 125% of its quota.
- The second credit tranche – the drawings that increase the Fund's reserves in the member country's national currency to the amount from 125% to 150% of its quota.
- The third credit tranche – the drawings that increase the Fund's reserves in the member country's national currency to the amount from 150% to 175% of its quota.
- The fourth credit tranche – the drawings that increase the Fund's reserves in the member country's national currency to the amount from 175% to 200% of its quota.

The stand-by arrangements, contrary to credit tranches, are rather simply and urgently approved of, without too much formality. These arrangements were introduced into the regular practice of the IMF in the 1950's and are limited as to the amounts and the period of time they can be used. When approving of this form of credit, the Fund defines the obligations, i.e., the standards the member country must comply with during the stand-by arrangement period. Further, the respective country is obliged to submit to the fund a "letter of intents" in which it expressly stipulates all the stabilization measures it plans to implement for the purpose of improving its balance of payment position, and which are in accord with the defined objectives of the fund. A very important element of the stand-by arrangement is the so-called "clause on consultation" which is of binding character for both parties in the arrangement. Since the granted monetary sum is divided into several time defined tranches, the above clause allows for the Fund to have a constant control over the realization of the previously agreed objectives, as well as an insight into the overall condition on the basis of which to decide whether to approve of the subsequent trances of the stand-by arrangement to the country. If the Fund's bodies in charge find that the

country does not implement the stabilization programme in accordance with the regulations of the agreement, they first send that country a report on the state of affairs they observed, and, in case no remedy is made by the member country, further payments as per stand-by arrangement are cancelled.

4.2. Drawings within financing facilities

Over the decades of its work, the IMF granted a large number of various financial facilities and thus aided the member countries that at one time encountered the balance of payment and othe economic problems.

*The **C**ompensatory **F**inancing **F**acility* is an additional opportunity to use the Fund resources, besides the reserve tranche, the credit tranches and the stand-by arrangement. The main objective of this type of financing is the mitigation of the balance of payment difficulties of the member countries that are both the producers and the importers of primary products. These countries do need financial aid in case of a sudden and unexpected fall in the prices of the primary products on the world market. The granted resources can be used in a short-time period, on condition the disorders in a respective country are due to the action of external factors, that the said country could neither control nor prevent their disastrous impact. The Fund will otherwise refuse to grant help to its member. Such a form of financial facility is relatively rarely used, primarily because of the short-term period of use and a temporary effect upon the improvement of the economic situation in the financed country.

*The **C**ompensatory and **C**ontingency **F**inancing **F**acility* is in many ways similar to the previous type of facility. Entitled to this kind of aid are the member countries that encounter the economic disbalances resulting from the shortfall in export earnings or the excess costs in import of cereals (the rise in import prices and interest rates). The amount the country can qualify for under this condition is 122% of its quota, on condition it has used all the previously mentioned types of financing. It is important that the total indebtedness does not exceed the amount of 70% of the overall credit arrangements concluded between the respective country and the IMF.

*The **B**uffer **S**tock **F**inancing **F**acility* is one more type of aid the Fund provides for its member countries. This facility becomes important in case of unfavourable trends and disbalances on the international raw materials market, and certain countries are no longer in a position to acquire enough supplies for an undisturbed production process. In such situations, the Fund can provide the necessary financial resources up to 50% of the national quota value of the member country.

*The **O**il **F**acility* was first implemented during the oil shocks in 1973 and 1974. In this case, the IMF objective was to provide aid for the countries-importers of oil that suffered significant disbalances due to the high rise in oil prices in the period. The oil facilities amounted up to 75% of the national quota value, they were oriented exclusively towards one sphere of business activities and were mainly temporary and short-term in character.

*The **E**xtended **F**und **F**acility* resulted from the constant claims from the member countries that a new form of financing be introduced which will be of long-time character of use and pay-off period and at the same time be approved in larger sums. These funds are especially granted in two cases: [3, p. 37Ć

- When the economies of the member countries suffer a disbalance of payment due to the structural disorders in production and on the market, and when the price and cost dispabalnce is largely present;
- When the economies of the member countries are characterised by a slow growth and an inherently poor state of the balance of payment which makes the active growth policy impossible to pursue.

In such cases the resources are granted for a period of three years, in the amount of not more than 140% of the national quota value. The member country qualifying for these extended facilities is obliged to periodically submit to the Fund the explanation of the measures and activities undertaken for the purpose of stabilization of economic flows.

*The **E**nhanced **A**ccess **P**olicy* means a greater opportunity of access to the IMF resources. If a deficient member country needs a larger amount of financial resources, exceeding the value of credit tranches and extended facilities, the enlarged access policy can be implemented. Prior to that, the Fund has to be satisfied as to the gravity of the problems the country suffers and the adequacy of the measures it implements to improve its balance of payment and its economic situation. In introducing this form of financing the main idea is that the policy be temporary in character and that it be implemented up to the moment of the increase in the member countries quotas, because it is then that the conditions for drawing larger sums of resources within the regular drawing rights arise.

*The **S**upplementary **F**inancing **F**acility* is such a form of financing deficit suffering member countries that need more resources than they can qualify for within regular arrangements, and with longer periods of use and pay

back periods. In order to satisfy these needs, the IMF concluded an agreement on loans with fourteen suficit experiencing countries which agreed to place certain resources at its disposal under previously agreed, specific conditions. The countries granted the supplementary financial facitilies are obliged to pay the debt back in the period of three and a half to seven years.

*The **S**tructural **A**djustment **F**acility* was introduced for the purpose of providing financial support to developing, low income countries, on a concession basis in the period from 1981 till 1991. The primary aim was to give financial support to the member countries faced with a long-lasting balance of payment deficit, support their stabilization programmes and allow for them to use the resources on a longer term basis. Prior to using the facility, the country was obliged to prepare, together with the IMF and the World Bank, a three-year economic policy programme it intends to implement in the coming period of its financial recovery.

*The **E**nhanced **S**tructural **A**djustment **F**acility*, as well as the previously mentioned one, proved to be a very efficient and most frequently used measures implemented towards the stabilization of the economic activities of the deficit suffering countries. To pay the resources on this basis, the IMF uses its own resources accumulated from preferential loans and the rich countries' donations. The user country can qualify for the resources of up to 190% of its national quota value.

*The **S**ystemic **T**ransformation **F**acility* was introduced with clearly defined purpose and objective in the period of the largest-scale transformations of the developing countries' economies. This type of facility was available to all former socialist countries in their transit from planned and rigid economy to the market economy. Furthermore, one objective was also the improvement of relationships and political dialogue between these countries and the IMF. These countries were entitled to use the resources to the amount of up to 50% of their national quota value, in two tranches, under extremely favourable conditions.

On the basis of the review of the facilities offered by the IMF to its member countries we can conclude that certain forms are founded on rather favourable conditions, therefore they were used far more frequently in relation to other, short-term and ineffective facilities.

5. The IMF policy of conditionality

The policy of conditionality the IMF pursues in granting resources and providing aid to the member countries is a most commonly criticised and challenged field of the Fund's business activities. The policy of conditionality was introduced into the regular financial resources approval procedure in the 1960's and means a certain security for the Fund that the member countries will use the funds in accordance with the previously defined conditions and that they will pay the money back in an agreed period of time.

5.1. Conditionality policy implementation and member countries' critical attitudes

The member country of the IMF experiencing the balance of payment difficulties and a falling trend in economic activities is entitled to apply to the Fund for a necessary amount of financial resources to solve these problems. The question is: is this really a starting point in the country's recovery or is it something virtually different? This is the issue the IMF and the highly developed countries, on one side, and the developing countries, on the other, have never reached an egreement about.

It is the attitude of the Fund that it ensures a rational use of the borrowed resources and their timely servicing from the part of the financed countries. The Fund also uses conditionality as a mechanism to monitor the operationalization of the previously concluded stabilization processes which in the first place include the structural and the balance of payment adjustments in the area of money supply, budget deficits, currency rates, liquidity, solvency, etc. Prior to obtaining the needed resources, the member country is obliged to submit to the Fund the so-called "letter of intent" to be analysed. In this document the country agrees that its objectives and policies will comply with the regulations stated in the IMF Statute, that it will be strict in implementing the stabilization programme previously concluded with the Fund, and that it will mak its best efforts towards improvement of its balance of payment position in order that it be in a position to pay the resources back in as short a period as possible. The severity of the conditionality principle depends primarily on the type and volume of the resources granted to the member country, but also on the length of the period it will use them. Thus we can conclude that it is only the reserve tranche that is automatic and unconditioned. With all other financial mechanisms the Fund is fully entitled to either grant the resources or to decline. As already mentioned, when using financial resources in the form of credit tranches, it is only in the first tranche that the conditions are relatively favourable and mild, gaining sharply in strictness with each subsequent tranche.

The member countries that were in a position to use the resources provided by the Fund in any way are generally severe critics of the conditionality policy. These countries maintain that the fund pays little heed to the real

and current situation in the problem experiencing country, but rather implements a fixed programme of stabilization measures that is expected to ensure positive outcomes. The Fund's programmes often do not take into consideration individual political and social conditions, the level of economic development of individual countries, nor the internal and external factors that actualy generate the problems. The Fund insists on the fast recovery of the country, neglects the development approach to problem solving and its only aim is to recover its resources, safely and in the shortest period possible. Having the previous in mind, many countries prefer any other form of crediting to the financial deals with the IMF. When such attitudes of the developing countries towards the conditionality policy and *approval* of the resources by the IMF are taken into consideration, the next question arises: who is really right and who is to be trusted, the Fund's officials or the financed countries?! It might be most sensible to weigh the arguments of either parties and believe that either is partly right.

Even if the developing countries wish to borrow freely in the capital market and conclude financial deals with other creditors, they cannot evade the IMF. The Fund plays an important role on the international financial market reflected in that the international banks increasingly link their estimates of the country's credit rating with its "good" relations with the Fund. It is evident that the conditionality employed by the Fund is the basic source of trust, which is why this institution is highly reputed on financial markets and with international banks. The international banks condition the loans to a country by its prior concluding a credit arrangement with the IMF. Hence many developing countries apply for the resources to the Fund, mainly or exclusively for the purpose of obtaining a "certificate" to get a "green light" to use the necessary financial resources on international market. [2, 132Ć

The developing countries keep criticizing the Fund for its conditionality policy and insist on more liberal conditions in using financial resources. They maintain that the fund should pay more attention to real causes of the problems, the factors that really caused a problem situation, the national interests and objectives of each individual country. Many countries believe that the IMF is in fact a financial institution that protects the interests of the developed countries and follows the principle that rich countries should be made richer, and poor countries should fall into yet deeper poverty. Many countries are evidently bitter and dissapointed and the only way out of this situation they see in relieving the conditions, in the implementation of more flexible measures and in raising the quotas within the IMF. An interesting example is that of Slovenia, which in the period of its own transformation and recovery decided not to accept the IMF project, employed its own experts in the execution of the stabilization programme and completed it successfully.

6. Critical account of certain aspects of the IMF activities

The conditionality policy was subject to much criticism and disapproval from the part of certain officials and member countries. Furthermore, some maintain that the Fund pursues an inadequate monetary, fiscal and foreign trade policy as regards the financed countries.

In the analysis of the proposed stabilization programme, the IMF takes special care about the measures of monetary and fiscal policies, with special emphasis upon interest rates raising. The primary goal of the Fund is to limit the crediting activity of the central and commercial banks in the financed country in the course of implementing the stabilization programme. On one hand, it means limiting the credit amounts that certain banks grant to certain clients, and, on the other hand, the increase in the credit costs, i.e., the interest rate growth. If the country, however, experiences significant inflation problems, the policy of increasing the interest rates could only further aggravate the situation. If this is combibed with the fiscal control the IMF conducts as part of its stabilization programme, it becomes evident why certain countries avoid the aid it offers. In such conditions, the prospects that the *problem experiencing* countries will make any improvement are poor, as the investors have no interest in investing money in such economies. Thus, despite the IMF's "*best intentions*", the transition country becomes increasingly poor and sink into an ever more serious economic and debt crises.

Part of the IMF stabilization programme is also a measure related to the liberalization of foreign policy, that is, lifting the obstacles in foreign trade and limiting the role of the state in the country's economic relations with other countries. In the developing countries, the consequence of the the liberalization of foreign trade was a surge of inexpensive products from the countries with highly productive economies, which further resulted into an abrupt fall of the national industries, wage reduction, unemployment and the overall impoverishment of the country.

Namely, the IMM further worsened the situations in many countries since its programmes of fiscal strictness and restrictive monetary policy frequently resulted in high interest rates, sometimes over 20%, sometimes exceeding 50%, and sometimes even higher

than 100%. In such conditions, starting business and setting up new companies was made virtually impossible. [7, p. 205Ć

7. The past and the present relationships between the IMF and Serbia

At the Bretton Woods conference, when the IMF and the World Bank were established, one of the participants was the then SFRY. The period when the Yugoslavia's relations with the IMF were at their highest was that between 1980 and 1991, when seven stand-by arrangements were granted, the total amount of 3.5 billion special drawing rights. Until the end of this country, the Fund granted twelve stand-by arrangement. The decision of the Board of executive directors of the IMF of 14 December, 1992 was that the SFRY did not exist any longer, consequently, it could no longer be a member of the Fund. The conditions were simultaneously stated under which the successor countries may "inherit" the membership, and Serbia and Montenegro inherited 36,52% of the assets and the liabilities of the former SFRY. [9Ć The Republic of Serbia and Montenegro was granted a new stand-by credit in 2001, to be consumed in four equal tranches of 50 million special drawing rights each. Naturally, all the above explained conditions as to the policies of business activities, conditionality and financing the member countries had to be fully observed by our country. Serbia and Montenegro were further granted a three-year financial arrangement on extended financing, amounting to 650 million special drawing rights. The said arrangement supported the operationalization of the programme of economic stabilization and reforms in the 2002 to 2005 period and could be consumed in a number of credit tranches of 50 million special drawing rights each.

The Fund set a large number of conditions that Serbia and Montenegro had to comply with prior to being allowed the access to the resources. The conditions mainly referred to: macroeconomic policy and fiscal system reforms, liberalization of foreign currency and trading systems, restructuring of banks and large state-owned companies, increasing the amount of foreign currency reserves and relieving inflation pressures, reviving the production processes, introducing a new tax system, pension plan reform, etc. On concluding the negotiations between the representatives of the IMF and the Government of Serbia the Minister of Finance announced that a successful conclusion of the arrangement with the IMF leaves no doubt as to the further cooperation with the World Bank, which so far was also successful. As regards the reduction of the public debt from the previous 170% to 44%, a positive assessment of the Serbia's credit worthiness is no surprise. A positive decision of the IMF will produce a domino effect upon a succession of economic parametres related to investments in this country, the effect of which is yet to be seen. [9Ć

8. Conclusion

On the basis of the objectives, tasks and work methodology presented, a conclusion can be drawn that the IMF is by all means a significant monetary institution that operates on an international scale. Its policy of conditionality as well as its close links with highly developed countries are, however, much criticized. The very fact that the U.S.A. may veto a large number of important decisions, related, among other, to the admission of new member countries, increasing certain quotas or granting resources to the member countries, reveals that the US and other powerful countries largely control the Fund's operations and direct its activities for the purpose of achieving their own objectives.

The fact that the IMF really offers a range of opportunities to member countries to use the financing resources in the form of reserve tranche which is unconditioned and automatic, the four credit tranches and numerous facilities is undisputable. The question, however, remains as to whether all these are *supported* by "generous" intents of the IMF, whether it really wishes to provide aid to the problem country, fully apprehend its problems and execute an individually *planned* stabilization policy, or is only interested in recovering the granted resources in as short a period as possible. The answers to this questions range in number and variety, some justifying and supporting the IMF policy, some preferring the attitudes of the developing countries that the conditions are far from favourable and that its policies are destructive for their economies. The member countries primarily insist on being granted longer periods in which they could use and pay back the borrowed funds, on raising the quotas and on *observing* the national objectives and policies. The advocates of the IMF policy, however, maintain that the stabilization programmes are professionaly designed, adapted to each country, that they do not threat their national sovereinty and it is only by their implementation that any positive affects may be achieved in the economic relations and the foreign trade of *disbalance of payment encountering* countries. The IMF explains its *possible errors* and failures by the fact that a large number of countries apply to the Fund when it is already too late and that in such circumstances, in the presence of deep economic crises and overwhelming foreign debts some

substantial improvements and solutions to a large number of problems are hardly possible.

A specialized international institution, the IMF has obviously so far granted financial and expert support to numerous member countries, made efforts to improve their balance of payment positions and stabilize their economies. The facts show that in certain cases the Fund succeeded in its efforts, however, in a large number of countries it only caused more serious problems and deeper economic crises the results of which hit the pauperized population the hardest.

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Bond Yields and Yields Vaeiations on Bonds in Montenegro

UDC: 336.761(497.16)

dr Vladimir Kašćelan[1], mr Borko Božović[2]
[1]Faculty of Economics, Podgorica
[2]The Central Bank of Montenegro

The issue discussed is bond yields and yields variations on bonds in Montenegro. Specifically, we consider the frozen foreign currency savings bonds (FFCS bonds) and bonds issued to compensate the insured through the State-operated pension and disability insurance system (PandD bonds). Both classes of bonds are issued by the Central Government. Both are zero-coupon bonds, and mature in tranches: FFCS bonds mature annually, from 2004-2017 (as by tickers: OB04-OB17), while PiO bonds mature semiannually, from 2008-2011 (as by tickers: P08P, P09P, P09D, P10P, P10D, P11P). The former are issued to compensate natural persons whose foreign currency deposits became frozen, amid the collapse of the banking system during 1990's (at the time State-owned), while the latter are issued to compensate for the controversial adjustment of pensions and other remunerations during the July 2002 - December 2003 period. The aforementioned bond classes are considered for various reasons, the most important being their highest trading volume among all the bonds. In addition, let us mention that after the new capital markets had been established in Montenegro, only one corporate bond issue was achieved.

1. Introduction

The 2005 – 2008 period is taken under consideration. It is for various reasons that this period is chosen.
The primary one is that there was almost no trading with bonds before 2005, therefore, the 2005 – 2008 period may be absolutely representative for the analyses. As far as the formula for yield calculation is concerned, various approaches are possible; however, here we will do the annualization observing a complex interest account and on a (real) premise that the year lasts 365 days. We will use the so-called effective annual yield. The formula goes as follows:

$$(1 + discount/price)^{365/number\ of\ days\ till\ maturity} - 1 \quad (1)$$

On calculating the yields, we present three curious sets of facts:

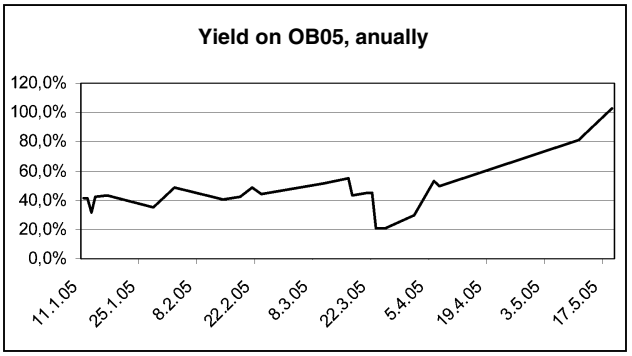
1. The yields on series of FFCS bonds are unstable; specifically, each graph "rises" abruptly towards the end of the period presented in the graph (2005-2008.), that is, shows an expansion upwards. A similar situation is repeated in the PiO bonds. For example, in P08P they plummet, and then rise abruptly. In P09P, P10D and P11P: after a plummet (especially in P09P), there is a gradual, however, striking rise.

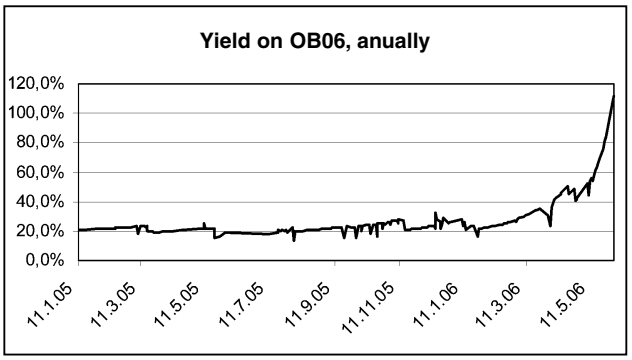
2. The yields differ greatly from one FFCS bond set to the other. For example, in OB05, the yields amounted up to about 40%, then fell to 20%, to rise again up to over 100%. In OB06-OB08 they remained around 15-20% for quite a long period (depending on the series), to rise dramatically a couple of months prior to maturity. The yield on OB10 was for a long time steady, about 10%, to rise in 2008. Similarly, the yields on OB15-OB17 were for quite a long period at about 4-5% (depending on the series), to rise, roughly, from the end of the first half of 2007 onwards. The situation is similar with the series of PiO bonds. For example, in case of P08P we are dealing with hundreds percents of yields. After the fall, in P09P, the yields go from 20% to 60%. With P10D i P11P, the yields range from 20% to 40%. A rare "regularity" is observed in the movement of P09P, P10D and P11P: after plummetting at the beginning, there comes a rise, and in such a way that the yield on the series that matures earlier exceeds that of the later maturing series.

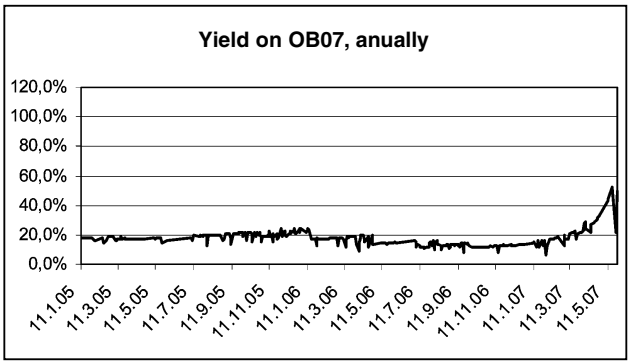
3. The yields on the series of FFCS are rather high. This estimation is valid for all the series, except the OB15-OB17 series, from the moment (period) of the rise. The situation is similar with the series of PiO bonds. For example, the minimum of all (average) yields is 20,5%.

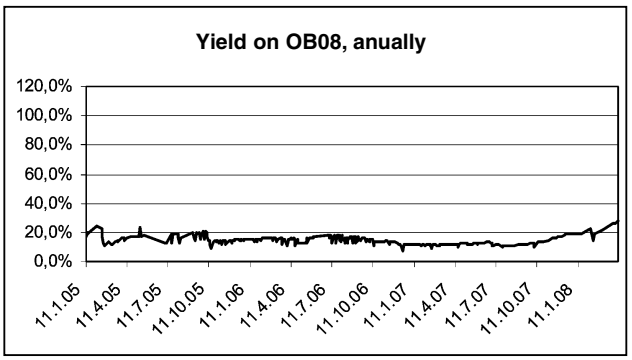
The yields on certain series are graphically presented as follows.

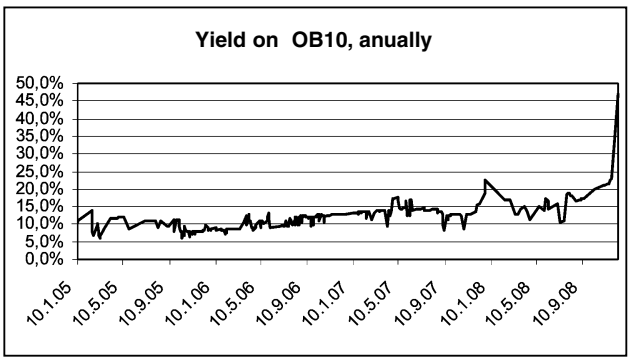
Graph no. 1 – *Yields on FFCS bonds*

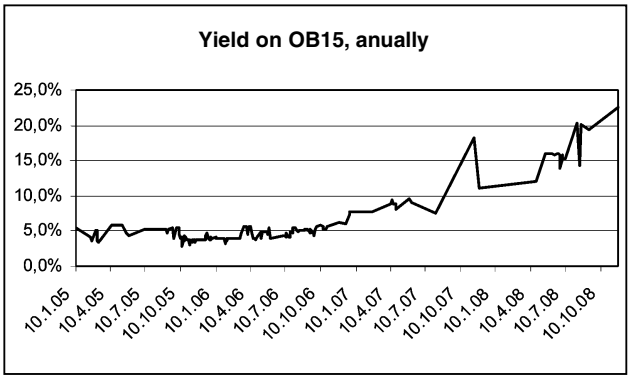


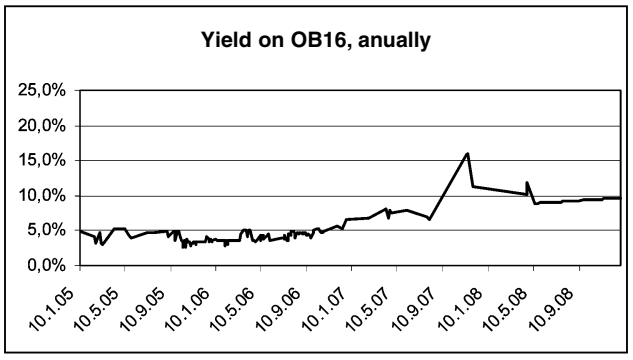


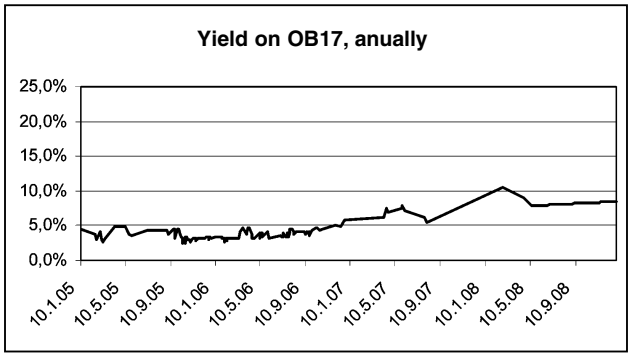






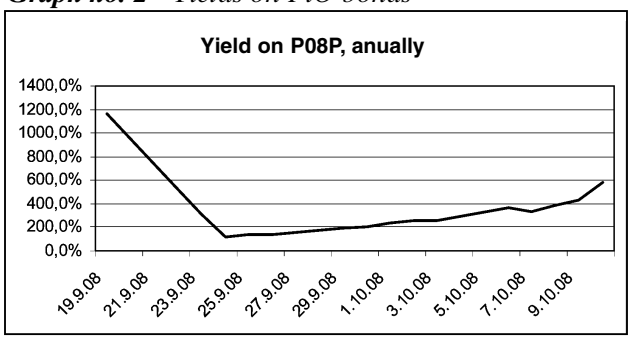


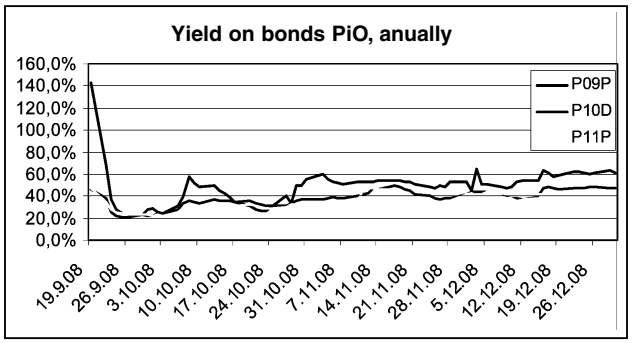




Source: Montenegrostockexchange, NEX exchange, authors' calculations

Graph no. 2 *- Yields on PiO bonds*





Source: Montenegrostockexchange, NEX exchange, authors' calculations

2. Possible reasons for yield growth

Let us first consider the yield amount. This will lead us to a discussion on what the investors' perceptions of credit and other risks of investments into Montenegrin state bonds (partly the risk of a change of interest rate) are.

Generally, it is not easy to find relations between the economic theory and the practices of the developed countries.

Among the FFCS and the PiO bonds, it appears that only the OB15-OB17 series and perhaps the OB10series, had a "meaningful" yield, from the moment (period) as we already mentioned, in case of OB15-OB17 in the range of 4-5%, while in OB10 they were about 10%. Why "meaningful"?

The yields on bonds must be compared to any other classes of assets (with risks comparison, which, at least to a rational investor, gives a complete layout of the investment.) Let us then compare the bonds under study with other classes of assets available in Montenegro.

As far as shares are concerned, setting a relationship there is problematic. The share market "exploded" in spring 2007, earning enormous yields to those who invested in, e.g., 2005. (when, objectively real trade began). After that peak was reached, however, the fall ensued that lasted until as long as the end of 2008, bringing the indices back to the values from the last quarter of 2005.

It is the same with real estate, the prices of which formed a balloon, almost parallelly with the share prices balloon. The real estate prices continued to rise after reaching the price peak on the share market and stopped at the end of 2007. The plummet, sincerely, did not ensue like that on the share market, however, it was significant, followed by a significant fall in trading. In spite of the sellers trying to maintain the same price levels, at the end of 2008 hardly anything could be sold at the prices recorded one year earlier.

The comparison of yields on bonds with the yields on shares and real estate is meaningful if volatility is taken into account. Share prices rose extremely, then plummetted equally fast; the real estate prices did not fall as much as that, however, with the forecast for the year 2009, nobody can say they will not. The yields on bonds, on the other hand, however changeable, are steadier still compared to those on shares and real estate. We are, however, left with the impression that the period of observation is too short if we attempt to give any estimations of the sort. Similarly, the shares and the real estate assets classes largely differ from the bonds by the way in which they earn yield. The return on the discount bonds is quite known on condition they are kept until maturity, provided the issuer answers his obligation. The shares, on the other hand, do not mature, and earn the yield either by dividends (that cannot be known beforehand), or in the form of capital profit or loss. Similarly,the real estate does not mature, and earn yied either by the rent (that can be known beforehand, better than dividends in case of shares, however, up to a defined deadline), or in the form of capital profit/loss. Likewise, the real estate is generally considered to be a type of non-liquid assets.

Apart from the other (actually alternative, and much less present) asset classes available in Montenegro, there is a practically only one class, which is not enlisted, but is widely present and has to be discussed – a fixed time (savings) deposit account. And it is here, it appears, that the first serious illogical issue is born The reason is simple: the interest rate that the banks pay to fixed time deposits (that is, returns to the investor) amounts to 6% annually. Fixed deposits are not negotiable, that is, they do not behave as securities, as do the bonds, however, they are, by the manner in which they earn the yield, rather similar to the discount bonds: the fixed deposit matures and earns a fixed interest, known in advance.

Why, then is the yield on fixed deposits so much lower compared to the FFCS and PiO bonds (except the above mentioned exempts)?

Basically, it is the risk that defines the yield, that is, the risk is the basic determinant of yield, at least for a reasonable investor. But then, the basic risk component (or the key risk type) is the credit risk.

If we analyse the credit risk of investing into the state bonds and into the fixed deposits of the privately owned banks – it is common sense that the state bonds should be a less risky investment, however an investment with a lower yield. The state is a debtor that has a budget at disposal, and this is contributed by all who do business on its territory. The state is also authorised to impose taxes and to, e.g., raise tax rates. Or, if the worse comes to the worst, it can pay off its debt by increased emissions, in collaboration with the Central Bank[1]. The commercial bank can hardly do anything like that. This is, of course, what "economic theory" advocates. Normally, the U.S.A. Treasury cannot pay a manyfold interest rate on its debt, as compared to the interest rate paid by the Citigroup or the Bank of America. If we compare the case of Montenegro to that case, the situation would be the same, which would be an absolute

[1]However, Montenegro cannot do it, because it uses the euro, actually the foreign currency, as an official means of payment. This fact, however, does not significantly affect the conclusions that ensue further in the text.

nonsense. The situation in Montenegro is all the more absurd, because the deposits in the banks are protected by the State (the Central Bank of Montenegro, The Deposit Protection Fund, the Ministry of Finance), and then, this same State is expected to pay a higher rate on the debt it emitted itself.

It is not easy to continue the comparison by using the credit ratings, since not one of Montenegrin banks is rated, which shows the low de facto ratings in fact. The explanation is, however, just that: as regards the credit ratings, the credit rating of Montenegro is worse than that of the banks-owners of the Montenegrin banks, as well as than the states these banks come from – in the sense that, the "mother" bank is behind its "daugter"; and perhaps the state from which the "mother" bank is – therefore it is normal it pays a bigger interest rate on its debt. The following table presents the history of the credit ratings of the four best known banking groups present on the Montenegro market, including the ratings of the State itself, all in the 2005 – 2008 period.

1 – Credit ratings, long-term debt in foreign currency, 2005-2008 period

Societe Generale		OTP Bank		Nova Ljubljanska banka		Hypo International AG		Montenegro	
source: S&P		source: S&P		source: Moody's		source: Moody's		source: S&P	
date	rating	date	rating	date	rating	date	rating	date	rating
until 15.11.06.	AA-	until 30.07.08.	no rating	until 24.04.07.	A2	until 28.03.07.	Aa2	until 27.03.07.	BB
15.11.06.	AA	30.07.08.	BBB+	24.04.07.	Aa3	28.03.07.	A2	27.03.07.	BB+
15.02.08.	AA-	17.11.08.	BBB						

Source: Bloomberg

Such argumentation is, by all means, disputable. The banks in Montenegro are (regardless of the fact that they are owned by some of the well known banking groups) nevertheless independent entities, accountable for their business acctivities, securing their credit worthiness by their own reputation and financial position. There is, of course, the argument that a well known banking group would not risk its reputation for "*a small bank somewhere*" in Montenegro, and in case of a crisis, it would normally support the "daughter" bank – however, this approach has its flaws. In the first place, the crisis would probably go public, which might well endanger the bank, and besides, that well known banking group might not want to rescue that inefficient and incompetitive bank in Montenegro, especially in the current global crisis that is a peril to a parent bank which also suffers from insolvency problems, and by no means has surplus of assets to rescue its subsidiaries worldwide. It even may have assets to rescue one, however, not all of them. And which criterion will it use to decide which subsidiary to rescue?

However, even if we agree with the above mentioned arguments, there remains a question: what about the banks that are not owned by such well known groups, but are subsidiaries of not so famous banks, entities from the area of former Yugoslavia, or national legal or natural bodies? Shouldn't their deposits earn higher interests? They should. This, however, is not the case in Montenegro. The banks here offer similar passive interest rates (roughly, 6% or a number of percents higher), and then still less than the State gives to pay off its own debt.

Where is, then, the problem? In the investors' ignorance, in the bond market insolvency, in the inefficiency of the bond market?

By the way, the problem could be observed via the relationship between the demand and offer. In the fixed time deposit accounts the offer of capital is on the depositors' side – they offer free assets, whereas the demand is the banks' – they need the assets. In case of bonds, as discount securities, we have both the demand and the offer, with various economic sectors as owners or as prospective owners. (Primary owners are those that are first indemnified by the State by way of bonds.) Let us note that both the offer and the demand are incomparably greater in case of fixed term deposit accounts (in amounts, as well as in the number of participants, especially on the side of the capital offer), as regards offer and demand on the bond side. As regards such relationships, we could conclude that the yield on fixed term deposit accounts are lower due to greater offer, and a relatively low demand[2].

[2] We say "relatively", mitigating the evaluation, although 11 banks, that are now present in Montenegro, is rather a small number compared to the number of buyers and sellers in the bond market. Competition, however, doas exist among banks, therefore the demand for deposits cannot only be observed and studied by the number of banks.

All these, however, do not answer the question: why is the relationship between the offer and the demand on two observed instruments such, i.e., which are the forces behind those offers and demands?

The answer to this question seems to be simply in the combination of a number of the causes mentioned. Let us make a short review of them:

1. *Distrust in the State as a debtor*. The doubts and fears of investors that the State will not settle its debts, i.e., that it will postpone the settling, can be fully understood. Simply, the sad memories of the investors of 1990's, of the times 10-15 years ago, when many people lost their life savings, are still fresh. Or, let us not go so far back, remember the years 2002 and 2003, when the State did not settle its debts towards pensioneers. Finally, the bonds themselves mean the State's redemption towards those it did not honour in due time. Why should we believe it will now? Objectivelly, there are arguments in favour of that, however, *trust* is, as we well know, something that needs time to recover, once it is lost.

2. *Investors' ignorance.* The capital market in Montenegro is a young market, only several years old. Economy has been a market economy for just a short period. The society, too, goes through a difficult transition period when knowledge is, unfortunately, rated rather low. Therefore, there is no wonder the ignorance and misunderstanding survive.

3. *Investors' dormancy (inertia).* Investors find it easier "not to think" and simply make the surplus of liquidity into fixed-term deposits with a bank. This is what they are familiar with, what they have been used to for years; and, finally, where they come, draw cash, pay bills, apply for credits, etc

4. *Market insolvency*. There is, of course, no internationally adopted scale for the exact measuring of liquidity (different coefficients are possible: e.g., relationship between trading and capitalization, or trading and GDP, etc.,), however, it is all so obvious that we do not need such a scale to conclude that the bond market in Montenegro is rather insolvent. Over a four year period, from 2005 to 2008, about 80 million euros were traded. The figure includes both primary and secondary trading3. Having in mind the number of working days at the stock exchange (about one thousand), we can calculate that, by a working day, 80 thousand euros were traded, with only 50 transactions by a working day. As regards the total number of transactions and the stock exchange trading, the number of transactions with bonds amounts to 9%, whereas bonds transactions participation amounts to 5,5%. Not to mention how small the bond market (capitalization) is and how small a number of players in the market is.

Insolvency repudiates investors who do not believe that they will be able to cash (at not much lower a price) the bonds if they happen to need the cash before the maturity date. On the other hand, they know that they can cash the deposit before the end of the fixed-term period, however, with a loss of interest.

It is important, however, to know that inslovency may also be the consequence, since, if potential players do not enter the market, they make it less liquid.

5. *The transaction costs, especially in case of PiO bonds.* The transaction costs are not an important problem of the bond market, however, with small amounts, in transactions with PiO bonds, they may slow down the market, that is, make it inefficient. In almost 35 thousand transactions only 4 million euros were traded, making the average transaction value of not more than €120. Since the buyer has to pay a broker the commission of €12, which makes as much as 10%, it is a big stimulus and an "average buyer" does not enter the transaction and does not take the opportunity to gain[4]. He has to annul the cost of the €12, which means that, having in mind only the case of waiting for the maturity date (in no case the sale, or new purchase after the sale – which would incur even larger transaction costs), he will receive at least €132 at maturity, which further means that the purchase at any price higher than €0.91 does not pay.

3. Yields variations

In the context of the risk from the interest rate changes, it is essential that the *trends* of yields, that is *changes* in yields, not the *levels* of yields themselves are observed. Although it is obvious that they are related. (In this sense, discussions on the levels of yields on bonds, from the above paragraphs, are a logical and appropriate introduction into the analysis of yield variations).

[3] As to the primary trading, it here means the primary sales of municipality bonds as well as the bonds for the road system rehabilitation. Also, we here include the primary trading with bonds of NLB Montenegrobank, although the stock exchanges (for no known reasons) do not include this fact. As to other types of bonds, although their innitialization is named issuing, these are actually teh so-called dry emissions (without new money, i.e., as debt securitization), therefore there is no primary sales of other types of bonds.

[4] In practice, commissions are €10-15. Here, €12 was taken for the purpose of simpler (and more obvious) calculation.

As we well know, the method of duration and convexity is good in estimating the interest rate, but only as long as the question of a real opportunity for the rates to be changed is not asked. In other words, the method of durations and convexity only shows the "potential" of the bond price to react to the interest rate change. However, if that does not happen, the potential cannot be employed.

It is for this reason that, in studying the interest rate risk, the volatility of interest rates must be taken into account. Here, we will use a number of elementary, intuitive parametres to analyse the volatility of state bonds yield in Montenegro and compare it with that of the US state (federal) securities. We will disregard the method of duration and convexity. Besides the above mentioned flaw of the method, in the case of the Montenegrin bonds we have one hindering reason: there are no coupon bonds. As the non-coupon bond duration, by definition, equals the bond maturity itself, that would leave us little space for any productive analysis.

Let us, then, analyse the yield variations on OB05-OB08, OB10, OB15-OB17, P08P, P09P, P10D and P11P series. We will survey the period 2005-2008, using the standard deviation and variation coefficient as indicators. We are, of course, aware of the shortcomings of the indicators we use, however we believe they are the most intuitive, and they will, on the other hand, serve well enough in the concrete case, regardless of their shortcomings. The results are presented in the following table.

Table no.2 – *Yield variations, the Montenegro state bonds*

Bond series	Standard deviation, %	Variation coefficient, %
OB05	17.9	37.7
OB06	13.7	50.4
OB07	5.2	29.8
OB08	2.9	20.2
OB10	3.6	30.7
OB15	3.7	63.7
OB16	2.6	46.6
OB17	2.0	42.1
P08P	246.1	69.8
P09P	16.4	33.7
P10D	7.8	20.5
P11P	7.0	19.8

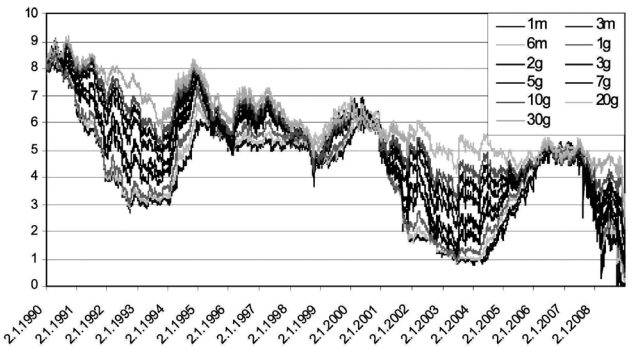
Source: Nex exchange and Montenegrostock exchange; Đauthors' calculations

One regularity that can be observed is that the standard deviation falls in the series that mature later. If we look at the variation coefficient, however, we will notice that, relatively, it is not the case with the FFCS bonds, but only with the PiO bonds. We could also (partly) conclude that the variations in yields are on the average greater in the FFCS bonds, in relation to the PiO bonds (especially if the extreme P08P series is excluded). Beside this one, it is hard to find any other regularities.

Let us for a moment return to our discussion on the difference in the yield amount on the fixed-term deposits and bonds in Montenegro. We will note the difference in the yield variation in bonds, in relation to yield variations in deposits. Compared to the yield on bonds, the yields on deposits are (almost) constant. This argument may join the others on the list, in favour of the expelnations of the lower level of yields on deposits. Because, clearly, the investor finds such yield variations unfavourable. The investor who would have to sell part of his portfolio (if in need for cash), might risk to obtain considerably less than he paid for the bonds[5]. On the other hand, the depositor would only lose the interest, or part of interest. This argument cannot, naturally, be all in favour of the higher level of yield on bonds, contrary to that on deposits, since there is always a solution to keep the bonds until their maturity date, in which case the interest rate risk is eliminated[6].

Let us now look at, e.g., debtor securities issued by the US Treasury[7]. The observation period is the years 1990-2008.

Graph no. 3 – Yield on American debtor securities, %



Source: The US Treasury

[5] Generally, this is a disadvantage for any active investor into bonds. In fact, it is here that the interest rate risk essence is.

[6] The probability that the bond will be kept till the maturity date is rather real and comparable, since the depositors in principle do not make fixed-term deposits to break the deal lated..

[7] It is clear that the USA cannot be compared to Montenegro, both in the size and in economy, and in the size and the level of development of money markets. Anyway, the comparison may even be useful in drawing the conclusions that follow.

Note the significantly lower yield levels compared to the securities issued in Montenegro. On an average, in this period, the yields on the US Treasury securities ranged from 4-5%. As we see, however, the yield variations on American securities are also striking. This is clearly shown by the variation coefficient.

Table no. 3 *– Yield variations,the US Treasury securities*

Maturity	Standard deviation, %	Variation coefficient, %
1-month	1.5	61.1
3-month	1.8	44.6
6-month	1.8	43.0
1-year	1.8	40.7
2-year	1.8	37.1
3-year	1.7	34.0
5-year	1.5	29.2
7-year	1.5	26.6
10-year	1.4	24.3
20-year	1.0	17.0
30-year	1.3	19.7

Souce: The US Treasury; authors' calculations

We will point out that the standard deviation and the variation coefficient depend on the observation period. Here, we observe the entire 1990-2008 period. The variations would have been smaller had some other been observed, for example 1995-2000. (see the graph). This, however, does not change the conclusion that the yield variations on American debtor security are present. The yields are significantly lower compared to those in Montenegro, nevertheless, the variations are almost equally present.

What is, however, behind the variations in the yields on securities issued by the US Treasury? Primarily, it is the monetary policy of the FED, the US Central Bank. On the basis of the economic conditions (primarily inflation, and then growth) the FED changes its so-called *federal funds target rate,* the interest rate at which the business banks, mostly over night, lend each other the resources they keep as statutory reserves with the FED (the so-called federal funds). The FED targets this interest rate, that is, it attempts to achieve it through the operations on the open market. It is clear that the interest rate on the securities issued by the Treasury, especially the short-term ones (since the transactions with federal funds are very short-termed) must correspond with the interest rates on federal funds. In addition to the US monetary policy impact, some other factors condition the yield on the Treasury issued securities. For example, the crisis situations on money markets direct the investors towards the Treasury securities, since these are considered to be the safest instruments.

On the other hand, what is it that causes the variations in the yield on the Montenegro state securities? Using the euro, i.e., the foreign currency as the official paying instrument, Montenegro obviously has a "no money policy" central bank. Montenegro is not member of the EMU, however, it may be expected that the ECB monetary policy affects the yield range. This, however, is not the case, since the yields do not show any correlation with the ECB decisions on the referent interest rate.

Let us stop here for a moment. In a way, we could maintain that the risk of the change in the interest rate on the Montenegro state bonds conditionally "does not exist" since the interest rate(s) affecting the price cannot be "identified". In this sense, we can talk about a risk of "price change", which changes without a direct influence of interest rates on the market. Such an attitude, however, cannot be correct. Montenegro *is* affected by the influences of interest rates on the money markets of the developed countries. The interest rates approved of by the banks in Montenegro and the changes in the levels of these interest rates may serve as rough approximation.

It is by no means easy to understand what is it behind the yield variations on the Montenegro state bonds, that is, what the explanation to these variations is. Take the series OB15, OB16 and OB17. These are the series whose prices fell inexplicably from the autumn 2006 towards the end of 2008[8]. Or, equivalently, from the level of 5%, the yields became two, three and at one moment four times as high (in series OB15). It is really difficult to explain what caused this. Would the abrupt rise in yields (fall in prices) mean that the state became a worse debtor, less credit worthy than before? This is, of course, nonsense, because 2007 was an even better fiscal and economic year (the most successful after the break of the SFRY), and so was 2008 (although slightly worse than 2007). Or, we may wonder what it was in autumn 2006 that showed that the state was to become a worse debtor (ever, until the end of the maturity period), what could not be foreseen before 2006. Using a different approach, the market may have "decided" in 2006 that the OB15-OB17 series were overpriced, returning low yield on credit risk, and consequently lowered the price, increasing the yield? Hard to believe.

[8] **Also, with enormously lower trading in comparison with the period till autumn 2006.**

One reason we did not state earlier is the option of purchasing property (shares, real estate) in the state ownership, paying by bonds. This option is valid for the property the state pronounces available to purchase by bonds. It is evident that when the property is announced for sale by bonds (actually, already as early as the announcement is anticipated), the bond prices rise (lowering the yield), due to the increased interest in the bonds. This reason, however, only partially explains the problem we analysed.

Finally, we come to a conclusion that it is the same factors that are quoted to be the causes of the yield *level* (compared to other classes of assets) that affect the *changes* in yields; to the above mentioned factors should be added the yield variability factor and the factor of using the option of state owned property purchase that we identified somewhat later. All these factors simply – by their strong joint action – cause the yield growth (fall in prices), i.e., by their weaker joint action they cause the fall in yields (rise in prices). None of the factors, however, can fully explain the yield levels and changes.

As far as the interest rate change risk is concerned, apart from rough approximations, it is impossible to accurately identify the interest rate that affects the range of prices (yields) on bonds in Montenegro, that is, the institution that this influence starts from.

4. In place of conclusion: Interest rate risk as investors' problem in Montenegro

In the end, it must be pointed out that the interest rate risk, at least so far, has not been the primary risk and a big problem of those who invest in bonds. The reason is simple: trading is low, a vast majority of investors chooses to keep the bonds until the maturity date. There is a large number of primary owners that decided to keep the bonds until their maturity date. Or, in the majority of other cases, a new buyer will keep them until theeir maturity date, or, using the 1:1 parity, buy portions of state property, or pay taxes, or electricity supply bills – and the option of resale and yield by capital gain comes last. (Resale can be a solution when the bond has left the deep discounts and its worth comes to €0.9 or €0.95, with the maturity date far ahead, therefore it seems a better solution to sell at that price and recover liquidity, than wait for the maturity of the bonds. Or, as a last choice, a new buyer will sell the bonds if he finds himself in demand for liquid assets.)

As far as the financial sector in Montenegro is concerned (in the first place the banks, the investment funds, the pension funds, the dealers), the participation of FFCS, PiO and restitution bonds in their portfolios is negligible. And even among this small number of bonds they possess, the majority are "classified" as securities that are kept until the maturity date. In such a case, according to the International accounting standards (that is,"formally"), the investor is not obliged to adjust the change in the value of the bonds in balance statements, which is fully justified and is only a proof of the economic essence of the phenomenon.

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Manufacturing Operations Strategy - osvrt

Hill, T. Hill, „Manufacturing Operations Strategy“, Palgrave Macmillan, 2009

In the practice of a large number of companies strategic development is related to the marketing decisions that primarily define the character and the trends of the strategic future, whereas the operations follow this set path and occupy the position in the tail of the process. It is widely believed that the operations management is the same as operational management and that the operational managers actually deal with short-term, daily tasks. The dominant strategic orientation of the operations management, on condition such a dimension is recognized at all, is reactive, rather than leading and creative. The meaning and the importance of the book “Manufacturing Operations Strategy“ is in that it highlights the importance, the role and the contents of the operations management in defining and execution of the companies’ strategic development. This book resolves all the ambiguities and clearly states the contents of the basic concepts, methods, categories and principles of the strategic operations management. It points out the numerous issues and areas that are in practice the responsibility of the managers on the strategic management level, but have so far been neglected, although they are of crucial importance for the performance and competitiveness of their companies. It is in this sense that the meaning of this book is twofold: firstly, it presents the area of strategic operations management in a systemic and comprehensive manner, and, secondly, it introduces the managers from the practice to a large

number of concepts, applicable methods and techniques, principles and experiences of the strategic operations management.

The book consists of twelve chapters with numerous analyses and presentations of case studies. The chapter titled "International Comparisons" depicts a general environment in which the managers work worldwide, accompanied by the research and concrete comparisons of various situations and practices in the world in the last 30 years. A general conclusion can be drawn that the countries that clearly defined the importance and the contribution of operations to improving business achievement recorded far better results compared to other developed countries that retained traditional, unchanged approach.

A severe competitive struggle that started in 1980's has been accelerating ever since and changing the business environment and the managers' philosophy. The manufacturing companies in a majority of developed industrial countries tried to survive by restructuring and downsizing their operations. This triggered important changes that continued in 1990's and are still accelerating in the new millenium. Contrary to these new challenges and clearly expressed changes as regards the recognition of the importance and the role of operations management in the strategic area, practices change at a slow pace, especially in the Western companies. The traditional approach where only short-term, operational dimensions of operations management are recognized and where the strategic role is related to finances and marketing is still prevailing. This book stresses the importance of operations strategy as the essential strategy if the companies wish to be competitive in the national and international markets. In the absence of operations strategy, they are destined to perish, their survival is endangered, hence the probablility that their market share could ever rise at all is very small. In conclusion, it is necessary that the strategic operations management be consolidated, both theoretically and in practice.

Special attention is paid to the development of operations strategy and the principles and methods underlying every step leading to its creation are elaborated thoroughly. The outputs of operations strategy whose general objective is to "couple" the operations with the customers' needs are analysed in detail.

In an effort to define the key processes as precisely as possible most managers turn to the critical issue of technology selection. The technology strategy defines the scope of business operations, therefore numerous options are identified and analysed. The choice between the pull or the push technology is only one strategic dilemma, and the solutions and answers are found in the field of situational theory by which "everything depends on the context and the situation", therefore the key to define the technological strategy is the search for the right correspondence and fit-ins with concrete external and internal circumstances in the company.

Defining the detailed profile of the product is part of strategic decisions on coupling the relevant market and operations dimensions of each product. When investing into technology and processes the companies observe the complex relations and "trade-off" in business that any such decision brings.

The strategic issue of the company's focus is analysed in a separate chapter, especially the principles and concepts dealing with operations focusing. The extent to which the company will maintain the focus is a strategic issue and a strategic decision for the company. In time, due to the market requirements dynamics and the relatively fixed operations opportunities, companies normally become less and less focused. Therefore it is necessary that a permanent balance should be established between the demand for change and the relatively fixed operations boundaries within which the business operations are carried out. The issues of focusing and diversification lay in the core of the strategic responsibility of operations management which is in charge of, among other things, a stable and stready long-term development of operations that in the first place ensure the survival, and then the growth and the development of companies.

An important strategic operations management domain is defining the boundaries for business activities, through the decisions on whether "to produce or to purchase" and the supply chain management.

Financing and accounting, as well as performance measurement are presented in the context of operations strategy, especially in the area of investment decisions relevant for business operations.

The case studies occupy about 150 pages of the book and provide a detailed analysis of the operations management in well known companies such as Zara, Dell, Apple, Hoffman Tobacco and others, engaged in a variety of industries. Numerous examples, descriptions of concrete situations related to the questions and problems dealt with in all the chapters are one additional quality and contribution this book offers towards a better understanding, improvement and a larger scope application in the strategic operations management practice.

Dr Maja Levi-Jakšić

Manual for Authors

TITLE OF PAPER IN ENGLISH
(two lines at the most)

Marko Markovic[1], Ivan Ivanoviæ[2]
[1]Faculty of Organizational Sciences in Belgrade
[2]Faculty of Economics in Belgrade

Abstract - *These are instructions for preparing papers that will be included in the jou rnal. Your papers should be prepared according to the instructions.*

1. INTRODUCTION

Papers have to be written in English. Original papers should be typed one sided A4 format (210x297mm). Use margin 2,5 upper, 2 cm lower, left and right.

Maximal length of paper is 8 pages including tables, text, pictures, literature and other appendices. Pages are numbered with graphite pencil in upper right corner.

Send two copies of the paper (original + one copy) and diskette in format MS Word 6.0.

If the last page of text is not filled up, the columns on the last page should be even, of the same length.

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2. SUBTITLE (SIMULATION MODEL) (example: SIMULATION MODEL)

In the middle of the first page, after one empty line, insert English title of the paper. Use font Times Roman Bold 14 pt.

The name of authors and the names of their institutions in font Times Roman 10 pt. should be centered as in the model given at the beginning of this instruction..

Other parts type in two columns 0,5 cm in between. Paper is typed normal space and double space between paragraphs. Font Roman 10 pt is recommended. Beginning of the paragraph is typed at the very beginning of the columns.

The title of the paper and names of authors are followed by short abstract in Italic. All subtitles are typed in Bold, capital letters same sized as in the previous text (not smaller than 10 pt).

3. SUBTITLE (example: COMPARATIVE ANALYSES)

$$\sigma^2(r_p) = E(\sum_{i=1}^{n}[r_{p,i} - E(r_p)]^2) \qquad (12)$$

All equations type in one column, numerated at the right side, as illustrated.

4. CONCLUSION

All figures, tables or graphic presentations are adapted to the width of one column. If necessary, when the figures do not fit in one column, use the width of the page , and then continue as previously, in two columns. See the figure below.

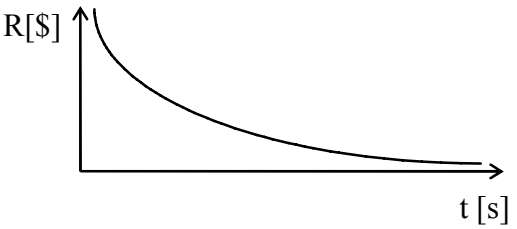

Figure 1. Graphic presentation of results

REFERENCES

Only the literature related to the problems and main ideas presented in paper should be including and ordinal numbers of the references type in angular brackets.

Literature in text has to be quoted in angular brackets to the order of their quotation . For example in [5] it is shown that. The example of literature is shown below.

[1] Banks, J. and S.J. Carson., Discete - Event System Simulation Prentice - Hall, New - Jersey, 1984.
[2] Bodily, S., “Speadsheet Modeling as a Stepping Stone”, Interfaces, vol. 16, No.5, pp 34-52 1986.
[3] Protic D., Simulation of work on Airport Belgrade. Proceedings of work, SINFF-N, page 75 -81. Zlatibor 19