

## POSTAL SYSTEM STRATEGY SELECTION BY APPLYING MULTICRITERIA ANALYSIS

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**Abstract:** The paper presents the methods by which postal organizations adapt strategically to significant changes in the external environment in order to survive on the market and gain new possibilities for prosperity. It is proved that only planned changes can accelerate the speed of adjustment to new conditions. By studying environment demands and the ways postal administrations have implemented changes, it can be concluded that there exists a general model of postal system transformation. After reviewing the available transformation scenarios that are applicable to all postal operators, the paper proposes the selection of postal system development strategy by applying multicriteria analysis.

**Keywords:** Strategic management, scenario, transformation, strategy, multicriteria analysis.

### 1. STRATEGIC MANAGEMENT IN A POSTAL SYSTEM

Taking into consideration the studies of strategic management models in postal systems and the regularities recognized in the formulation and application of successful postal operators' strategies, the following observations, which refer to other operators as well, can be made [1]. A transformation of a traditional postal service is inevitable and should start immediately. Post management and employees should take over a leading role in this process in order to solve the problems of the changed role of postal operators. A universal service must be preserved, not necessarily in the form used at present, by maintaining the concept of a reliable, available and affordable (in price terms) delivery. There is no clear mandate for the privatization of the posts at the time being. Developed postal administrations in cooperation with their governments implement growth strategies, provide system flexibility and become competitive companies. Senders that are also involved in discussions on postal service transformation, become particularly important. Postal industry representatives in the world understand the need for postal

system transformation and recommend that the severity of this problem should not be underestimated. Yet they emphasize that without strategic changes the postal systems will not be flexible enough to environmental factors nor will they be able to adequately follow quick and continuing changes in business environment.

By emphasizing the importance of postal system development scenario and the methods of postal system transformation, the general models of postal system transformation are determined and the development of a strategy model in a postal system is proposed. The selection of an optimal strategy is performed by applying multicriteria analysis methods.

Changes should be radical in order to fulfil the strategic goals of postal operators, integration of workflows (production-service) as a basis of business integration. Only a postal organization viewed as an integral whole can behave commercially and acquire new selling skills. This is why, to some extent, a postal organization must develop as a response to continuing changes in its environment.

## **2. POSTAL SYSTEM DEVELOPMENT SCENARIO**

Most postal operators use two basic types of scenarios: exploratory, starting from the present and past and leading to a probable future, and anticipatory or normative, made according to different visions of future [9]. It is common practice to make more than one scenario for a period longer than 10 years. Practice has shown that the scenario can be used as information basis for checking alternative strategic options, i.e., there where changes are structural and the environment is subject to a significant degree of uncertainty.

In order to estimate the adaptability of different strategic options, the probability of the occurrence of each scenario is established as well as the probability of the consequences of the selection of alternatives under each scenario. By producing alternative scenarios the postal operators are given greater possibilities for testing the strategic options. Management is stimulated to reflect on future events so as to identify better such possibilities and dangers to the enterprise as can be often hardly foreseen. The enterprise should be prepared for unpredicted events in order to react promptly as is required in critical situations [2]. If there exists a plan prepared in advance (a scenario), the enterprise reacts not only quicker and with less damage to its economic position but also more rationally. In the absence of such plans, postal operators have to improvise and this always makes their situation more difficult. The criticality and probability of events are recognized. This is exactly the area in which the scenario method proves to be very useful in economic practice [5].

The scenario method allows postal operators to formulate not only flexible plans but flexible strategies as well. This is done by constructing scenarios for the most probable, optimistic and pessimistic future. When the most probable scenario is analyzed, the strategy is then conceived in such a way as to be relatively effective in both the pessimistic and optimistic case [1].

The main forces can globally be presented through a few basic entities operating in the postal service market which must be taken into consideration in the production of scenarios and formulation and application of strategies to permit postal operators to adapt to environmental factors: technology and its substitution, liberalization and deregulation,

globalization and competition, new needs of buyers, macroeconomic conditions, international alliances, etc. [2].

### 3. POSTAL INDUSTRY TRANSFORMATION

The transformation of postal service operators in developed countries is implemented in cooperation with the Government. Financial aid is obtained to provide commercial flexibility and contracts are signed for financing the universal postal service; after that, long-term plans of postal business transformation are made. Thus, with the help of the Government, the transformation of postal business is successfully started and carried out. From these transformation plans it is possible to isolate the common characteristics that are important for the transformation of any postal operator. A financially independent state-owned company is established with a certain commercial mandate. The post, telecom and a bank service are separated from one another. A licence regime is publicly administered by a regulator. The service is gradually demonopolized with a decrease and reorganization of the post-owned postal network and with network expansion through contracting according to various model, most often according to a franchising model. The market opens for private operators who are allowed to perform delivery service. The ultimate goal is to achieve profitability to a certain, specified deadline, and the final goal is to privatise the service. An aggressive strategy of acquisitions and global strategic reorientation is implemented. Information on expenses and quality is publicly announced [4].

The final goal of postal system transformation is the provision of an efficient, reliable and innovative service that will satisfy the various economic and social needs of nations in the future. Of course, a fundamental structural transformation of an institution such as a postal system will last for years, and while planning this process, events in a coming decade or even in a longer future period have to be foreseen in order to permit the postal system to adapt more successfully to its position and the social role it has to overtake.

### 4. MODELS OF POSTAL SYSTEM TRANSFORMATION

There are three models that may be used for implementing postal system transformation[11].

#### 4.1. Transformation into a Government agency

Application of this model would solve the conflict among the goals arising from the existing Law on postal services, i.e. the provision of postal services, on one hand, and the promotion of market competition, on the other. The postal operator would be focused more on its function of a primary state service and less on the market where user demands are mostly directed to the private sector. With fixed network expenses and a reduced volume of services, this model would probably require financial support by the state for covering the costs of universal service. As a Government agency, the postal operator will offer a minimal assortment of products&services, eliminate a range of

currently available services and adjust its manpower to a changed offer, maintaining simultaneously a powerful retail network. Yet, numerous facts suggest that the postal operator's perspective as a Government agency cannot be promising on a longer run, having in mind global changes.

#### **4.2. Transformation into a market oriented state enterprise**

In this case the universal service also retains its importance for the nation and it is necessary to maintain it on an adequate level. However, the provision of an acceptable price of the basic service requires, at the same time, the postal operator's efficient and flexible participation in modern economy. These goals could be achieved by maintaining the state property of the enterprise, in the sense of the protection of public interests, and simultaneously applying the management tools used by private market-oriented companies. In such a case the postal operator would be the provider of both traditional and today's products and services and would implement a pricing policy based on market conditions.

As far as citizens, senders and employees are concerned, the transformation of a postal operator into a market-oriented state enterprise guarantees a lasting commitment to the provision of a financially self-sustainable universal service. Higher pricing and financial flexibility will provide the enterprise with alternative income sources in the case of an inevitable reduction of the physical volume of consignments as well as with numerous benefits resulting from the further promotion of added-value services that represent a complement to the basic assortment of services. Legislative measures that have to be taken for enterprise transformation purposes will also require a compromise and a vision shared among all the interested parties. A fact that must not be forgotten is that no success is guaranteed in any way to market-oriented enterprises.

#### **4.3. Transformation into a denationalized company**

In this case managers would be given all management tools characteristic of private companies, whereas the Board of Directors would supervise their work and represent the shareholders' interests. Also, denationalization would completely eliminate the protection of postal operators by the state from failures on the market. At the same time, this would solve the numerous regulatory problems that could limit the governmental agency model.

As a denationalized company, the postal operator would offer to its users the products based on market requirement. The universal service would probably be provided under contracts between a regulatory body and various operators, with the present national postal operator being one among them. The price of this service would be established in accordance with market conditions and advanced sales techniques, together with commercial discounts offered.

As far as citizens, senders and employees are concerned, the postal operator's transformation into a denationalized company may be considered as a great chance for success on the market of telecommunications, financial services, logistics and advertising. The risks are an inevitable reduction of the number of employees, cease of governmental support, and possible bankruptcy which has been out of the question so far.

The use of this model requires some legislative measures in the area of delivery service in order to ensure adequate maintenance of universal service.

## 5. STRATEGY MODEL DEVELOPMENT IN A POSTAL SYSTEM

Finally, the choice of a strategic model within which the postal operator will function in the future represents a political decision as well. After estimating the implications that might result from each of the possible models and analyzing the mission, vision and basic values of a majority of successful postal operators, one can reach the following conclusions concerning the model that should be considered as the most adequate for the development of postal operators in a few coming decades.

Transformation into a governmental agency does not represent an optimal direction for the future of postal operators. Namely, although it guarantees the safety of support to the postal operator's basic values and mission, this model does not provide the stability of a national delivery network. Legal guarantees cannot eliminate numerous problems concerning the employees, the lack of capital and problems related to the service itself. Such problems would be even more prominent in case of a reduced volume of consignments (first of all those sent by natural persons) when the postal operator could not finance the universal service and other public obligations. Even the very traditionally oriented countries (for instance Japan) do not support this model, except for a very short transitional model of transformation.

On the other hand, the model of a denationalized corporation is inadequate or, to say the least, seems to come too early for the functioning of a majority of postal operators in the near future. Namely, it remains unclear whether this organization would strongly support the existing basic values and mission of postal operators. Corporate culture would inevitably be changed in a profit-oriented organization even if the issues of public interest remained a subject of corporate decisionmaking. In addition, at present privatization is not a sustainable option because of financial reasons and investors' interests in a company operating primarily on a declining market would not be great. Although postal operators' resources are significant, we must not forget the amount of their indebtedness and financial obligations. Complete privatization will represent an adequate solution in the future when postal operators gain market experience and stable finance. Focus groups would express strong opposition to privatization what would influence governmental attitudes.

The model of a market-oriented state enterprise is the most promising for postal operators' transformation into an entity capable of providing universal service at acceptable prices in the 21<sup>st</sup> century economy. The basic mission of the enterprise will not be changed and the corporate vision will still be directed to providing services to each citizen.

### 5.1. Aims of a postal enterprise

To define aims is a basic task of both a company and its managers. Aims are the main management instrument of successful postal operators. Mission operationalization through aims is expressed by indicators such as growth, profitability, efficiency of resource utilization, contribution to owners, contribution to users (prices, quality,

reliability), contribution to employees as well as contribution to society, i.e., a state. It is especially important to understand their priority and the level they relate to; in addition, it should not be forgotten that people fulfil aims better if they are familiar with them and participate in their formulation. The following types of aims may be found in a majority of operators considered: survival, efficiency of functioning, progress, profit, income, presence on the market, growth, development, provision of service, intention to be larger, more efficient, make profit, be profitable.... All these aims may be described as **tangible**, but there are also some very important **intangible, nonquantified aims** relating to development of company management skills, employee satisfaction, work ethics, relations with trade unions,... [8].

We have considered the aims by classifying them into a few key areas: market position, innovations, human organization, physical resources, financial resources, social responsibility, productivity, profit responsibility. Postal operators responding successfully to market requirements and competitors' behaviour treat their aims having in mind creation of values and independent market operations. All other aims encompassed by the post's mission (development of organizational relations, employee motivation, social and ecological responsibility, improvement of organizational culture) are the aims derived from the three basic aims: render/provide a (postal) service suited to market conditions at national and foreign markets; create values for the employed, state and clients; be productive to enable the enterprise to develop and grow.

## 5.2. Design of alternative post development strategies

In reference to the electronic substitute of traditional service and business deregulation, technology and user requirements, the posts should employ a defensive strategy, on one hand, and use the opportunities in all these changes for business expansion, on the other. Those strategies are related by technologies that should play a crucial role in the development and innovation of postal operations. From the regional point of view, technologies should cover a network, new markets. From a horizontal point of view, technologies should increase the size of items, speed of delivery, reliability, tracing and tracking of changed financial offers, while from a vertical point of view, technologies should (or already do) enable hybrid mail, direct marketing, e-business, registered e-mail, certification on behalf of the state.

A strategy is not seen as the adjustment between resources and aims; it is seen as the expansion of aims in order to achieve something that is considered inachievable. Strategy means more than the allocation of resources to alternative projects; strategy is the motivation to overcome the limits of resources. It should enable a competition by competency which is a basis of a dominant position on the market. It is very important that the characteristics and expertise of managers are adjusted to a strategy that should be implemented in order to accomplish desired performances [5]. The orientation of a majority of posts to a symbolic style in the process of strategy creation, based on a mission and vision in the future, finds its ground in the analysis of external and internal environment as well as posts' resources and recognition that a strategy cannot be realized by a formal structure and planning systems; it is impossible to create a strategy only through internal adjustment processes, and that, unfortunately, strategy creation cannot be influenced by all the employees. Strategies used by successful operators could be

divided into three groups [8]: Strategy of business improvement, strategy of business expansion and strategy of business diversification.

By the **strategy of business improvement** the posts should prepare themselves for implementation of other strategies that represent a continuation of the development of postal service. Business improvement should encompass all activities accompanying postal services. In order to speak about business improvement, or about a competitive position on the market, it is necessary to synchronize the following activities that are invisible to users: update the method and procedure of processing the items in postal centres (processing must be automated and informatized); adjust the organizational structure to environmental requirements (organizational relation in implementation process and mechanical relation in the phase of exploitation, contingency model with adhoc organizational structure and participative management); direct the system management to the provision of services, educate employees in the use of new technologies; stimulate and award innovation in the basic process of the provision of services, through suggestions of the employed; reduce administering to an optimal extent.

**Strategy of expansion** implies two types of relation between a service and market: implementation of an existing postal service to a new postal market (expansion of the volume of services) and implementation of a new postal service to an existing postal market (market expansion). In other words, enterprise expansion is directed to a new service or a new market. This strategy is very important for the posts because basically it is built on the already mentioned strategy of improvement (development of an existing service on an existing market) and is simple to apply.

New postal markets should be sought in areas where this service has not been used so far: trade through postal distribution channels; insurance of property and persons (insurance policy); tourism and catering industry (reservations); press and publishing; and especially the development of small and medium size enterprises through a distribution network of postal channels.

As in the previous strategy, the emphasis has to be placed on a service user. This strategy is very important for the posts, because only new services and new markets can be considered as an advantage. As a possibility for implementing new services on an existing market, the posts should find an opportunity in their integral service with an extensive use of marketing. New services mean services from the following areas that are easily adjustable to the process of providing a postal service: financial services, trade services, information-communication services...

**Strategy of diversification** implies the implementation of new postal services to new markets while retaining the existing ones. In practice diversification is accomplished through a horizontal, vertical and conglomerate growth.

Horizontal diversification is a natural continuation of expansion. The motives for horizontal diversification can be internal and external. The most important internal motives are: possibility of using R&D results relating to existing services, greater use of knowledge, capacity and other competences, the importance of existing service on the market as well as the possibility of service flexibility. The most important external factors refer to: developments in market needs for new services, development of science and technology, partners' requirements, competition behaviour, governmental measures.

Vertical diversification implies that the company, besides the provision of postal service, enters other areas of the provision of services which represent separable wholes and which are the basic activity of business of other independent companies (passenger

transportation, travel agency, printing...). It would enable further promotion and expansion of technological basis, and horizontal diversification would expand a particular market share.

The effects of horizontal diversification result from the relation between technology and marketing, while vertical diversification enables savings in advertising costs, package costs, storage and transportation costs, etc. [8].

Conglomerate diversification is a form of growth in which the company includes in its production (service) program products (services) which belong to various branches of activities. The company's growth is achieved on the basis of diversifying technology and market and products (services). By expanding the scope of its activity the company moves away from basic process. Having in mind long-term aims of the posts and without neglecting the interests of society as a whole, the posts that have not undergone reforms will have to essentially diversify their operations, primarily because of the conveniences offered by new computer and communication technologies. Posts will tie their perspective to the intensive use of information technology, e-commerce and Internet. Large investments in implementing a global network, strategic alliances, transnational market shall require adjustments by smaller national operators. Otherwise, it may happen that national operators, especially in transition countries, become the providers of traditional postal services only and these will significantly decrease for a longer time period.

## 6. CHOICE OF OPTIMAL POSTAL STRATEGY

We have performed the choice of optimal strategy by applying multicriteria analysis methods, having in mind the fact that these methods may be used efficiently in strategic management. In the past ten years practical problems have been treated very often as multicriteria tasks. The constraints of single-criterion treatment and the possibility of defining practical problems by numbers or linguistic descriptors and obtaining the solution by applying mathematical methods by simultaneously taking several criteria into account have justified the increasingly extensive use of multicriteria analysis and optimization methods.

The problem we have to solve is to choose the best alternative according to all criteria considered simultaneously and rank the alternatives taking simultaneously all criteria into account. The following methods are on our disposal [9]: Electre, Promethee, Conjunction and Disjunction, Topsis, AHP, Max-Min, Max-Max... It is not easy to evaluate, compare and classify them, because they are based on different attitudes to multicriteria analysis and request different preference information from a decision maker. It is also important to emphasize that there is no single superior method appropriate for solving all multicriteria analysis tasks. The significance of case-based reasoning systems for the choice of a multicriteria analysis method lies in the adjustment of the best method to the actual situation being treated [7]. By formalizing the procedure itself and developing a computer system a decision maker is assisted in choosing a method adequate for solving the stated multicriteria problem.

### 6.1. Problem statement (strategy parameters and ranking criteria)

On the basis of the proposed strategies, we will define criteria meeting the mentioned parameters of each business strategy. Each mentioned parameter can be defined by one or more criteria that may be of a quantitative, linguistic or binar value. All criteria are not of the same importance so it is necessary to assign a weight to each criterion. The existence of other preference information is also expressed. Criteria are expressed in different measurement units and scales so they are hard to compare and are completely or partially conflicting.

The procedure of formulating the problem of the choice of an optimal strategy of the posts starts with determining the attributes of mentioned strategy alternatives. Each alternative is described by a number of attributes (criteria) and the final goal is to rank the alternatives by all criteria simultaneously. In this way we will obtain the priority of an alternative in order to ensure the alternatives to be implemented according to their rank, taking all criteria into account simultaneously.

Alternatives and criteria are presented in a matrix table, alternatives (strategies, there are 3 of them) in rows and criteria (performances affecting strategy choice, there are 14 of them) in columns.

To make the problem of optimal strategy choice the most suited to a managerial approach, i.e., to a manager's skill and willingness to capture the problem, we have decided to express all criteria by linguistic expressions, as is allowed by multicriteria analysis methods. Linguistic expressions have also been introduced because of the fact that we deal with predictions where greater accuracy in the future is not guaranteed by numbers from the present.

As can be seen, the importance of criteria weights is not equal and determination of the importance of a certain criterion depends on a manager's skills.

We should emphasize that the definition of criteria (attributes) has no special restriction, whereas their treatment has to be rigid [6]. In addition, indifference and strict preference ranges must be defined for all alternatives for each criterion. It is assumed that two alternatives will be equally good according to one attribute if and only if the difference between attribute values is smaller than a prespecified  $p$ , where  $p$  is an indifference threshold [6].

Using the available literature, experience gained through work in a post organization and subjective judgment, we have proposed the following criteria (that are applicable to other postal operators as well) [8]:

#### 1. Strategy Implementation Time Period

A strategy itself is always based on a range of actions which have to be undertaken during a limited time period. We have primarily taken into consideration here the need for the shortest possible strategy implementation time, so that we can use all the opportunities and capabilities and avoid all dangers and weaknesses of the posts. Within this criterion, it is necessary to pay special attention to the mobilization of public awareness of the need for postal system reforms.

This is one among the more important criteria, so it must be assigned a relative importance coefficient  $W_1 = 4$ . This criterion shall be minimized.

## **2. Capabilities of Postal Resources for Strategy Implementation**

This criterion brings its exactness as the unity of total human, material, information and technological resources considered in relation to the needs for postal services in the nearest future. If resources are not distributed properly in relation to structural reforms (regardless of the scenario), growth in a market segment where the post is weak may cause a great loss in its total market share..

This is also a very important criterion so it must be assigned a relative importance coefficient  $W_2 = 4$ . This criterion shall be maximized.

## **3. Post's ability to overcome threatening weaknesses and dangers**

While defining this criterion, we have had in mind the future post's role in the socialdivision of labour: in what way the post can meet its future role in the existing conditions or conditions that will be created, in what way the post will prevent its technological dependence and the lack of a defined technological development policy and stimulate innovative activity of all employed. At the same time it is important to enhance and improve process and operations safety.

This criterion is assigned a relative importance coefficient  $W_3 = 3$ . This criterion shall be maximized.

## **4. Possibility of using strength and opportunities**

After recognizes its position it is important for Post Office to use advantages of its products and service based on e-transfer, new technologies and new ways of communications. Opportunities from business environment depend on a way of their accomplishment and way of use of existing advantages, as well as advantages based on foreign operators experiences. Unless these processes connected among themselves during consideration, then the results will be insignificant.

This criteria is awarded relative importance coefficient  $W_4 = 3$ . This criteria shall be maximized.

## **5. Capability of meeting users and market needs**

How can be fulfilled users and market requirements. Since any market does not remain homogeneous longer, users must always be offered a greater service value. Purchaser's taste is always changing as well as market segments. Post Office must have such a strategy for meeting reforms in purchasers requirements, covering the market in as greater services volume as possible, and services with additional value. This capability shall be analysed for longer period of time because Post Office's survival depends on timely recognition of users needs.

This criteria is awarded relative importance coefficient  $W_5 = 4$ . This criteria shall be maximized.

## **6. Capability of achiving quality of European Union**

This criteria emphasizes importance of qualitative provision of postal service through comparision with standards of the European Union, within time limits of

transfer, availability, regularity and reliability both in domestic and international traffic. Measuring of quality becomes a constant responsibility and implies organization which is oriented to users. This capability must be treated dually through permanent enhancement of exploitation of traffic facilities in Post Office's business as well as through enhancement of service technological standards. Use of valid standards shall find its superstructure through constant improvement of quality level of provision postal service to users. This criteria refers to all employed workers in Post Office. It must not be forgotten that users face postal service quality with their own eyes in a range of details: from counters workers to postmen uniforms.

This criteria is awarded relative importance coefficient  $W_6 = 4$ . This criteria shall be maximized.

### **7. Capability of providing funds**

Choice of any postal system activity is greatly influenced by capability of providing funds, their investment and refund in the sat time. It depends on regular schedule and division of available funds into processes, their optimal use and acquiring competency for new investments. We have not found it necessary this criteria, closely connected with the set time for realization, to be particularly, because according to examples of successful operators we determined that funds were not predominant criteria as it is often pointed out in our theory and practice.

This criteria is awarded relative importance coefficient  $W_7 = 4$ . This criteria shall be maximized.

### **8. Reaction to competition behaviour,**

This coefficient shall refer to elements determining profit, to price, volume and expenses. It shall refer to all relations appearing due to network extent, real service bids, estetical values, and Post Office's brand and advertisement as a reliable institution existing for centuries. How Post Office shall use its tangible advantages is a key strategic decision. Further possibilities of Post Office at the services market will depend on capability of choosing reaction to competition behaviour. Strategy makes sense only when observed in comparision to competition. Without competition there is almost no need for strategy.

This criteria is awarded relative importance coefficient  $W_8 = 3$ . This criteria shall be maximized.

### **9. Importance of management skills**

In order to recognize favourable opportunities and make constant analyses of existing conditions, propose better solutions and formulate the plans for realization of tasks, efficient and effective management is necessary. Experience is not sufficient component anymore for correct making decisions, you need knowledge from new technics and technology as well as modern methods from operational research, marketing, economic sciences, organization and management. These skills must be regularly arranged in all functional entities. They imply taking responsibility and motivating coordinators through team work.

This criteria is awarded relative importance coefficient  $W9 = 4$ . This criteria shall be maximized.

#### **10. Importance of new technology and knowledge**

Besides the fact that new technologies shall optimize processes and operations in basic services, they shall create a new service as well; it is not enough existing service to be improved by new technologies. Future position of Post Office depends on abilities of creation of new services adjusted to environment needs. Existing knowledge can be added by more knowledge which shall be a constant obligation through permanent training of workers, respectively of improvement of management. While choosing strategy this criteria allows innovative contribution of the employed through necessary propositions and suggestions as well as creation special services for research and development when new services are exclusively based on new knowledge and information and communication technologies

This criteria is awarded relative importance coefficient  $W10 = 3$ . This criteria shall be maximized.

#### **11. Influence of organizational structure,**

Level of adjustment to requirements in the environment depends on flexibility of existing organizational structure and its stability in longer period of time. It is necessary to have in mind basic principles of organizational structuring, centralization or decentralization in order to fulfil aims of Post Office. Organizational structure must adapt to so that it could meet environmental requirements and realize a chosen strategy successfully. Organizational structure enables rational use of staff, consistency of expertise and transfer of knowledge from one service to another through one of possible organizational models.

This criteria is awarded relative importance coefficient  $W11 = 4$ . This criteria shall be maximized.

#### **12. Influence of organizational culture and total values**

Common system of values of the company management, its managers and workers allow transfer of knowledge, unity of organization, realization of all members of organization as well as direction of emotions of the employed. Having in mind that organizations consist of people it is very important how their mutual relations are solved and how their behaviour is connected with quality performance of assignments, greater motivation, capability of innovations and mutual communication itself. Values and beliefs which are stated shall be harmonized in all entities, on the contrary, if there is no mutual respect, trust and consent there will be no chances for further growth and development of Post Office. Post Office today changes its existing organizational culture considering that it has not created a new one.

This criteria is awarded relative importance coefficient  $W12 = 3$ . This criteria shall be maximized.

### 13. Readiness of workers to accept reforms

Due to the fact its people there is a great unpredictability when relational behaviour of workers is concerned. Unless the workers are engaged in reforms and are clearly introduced with their future role and position, a great rejection of reforms might occur, especially considering that a condition of each reform is realization of its inevitability. So reforms need knowledge that must be obtained and acquired over and over. This is not a problem with market economies as much as it is important in transition countries. Readiness for accepting reforms is connected with reform size of organizational culture so only by knowledge existing behaviour and habits can be overtaken and new values adopted.

This criteria is awarded relative importance coefficient  $W_{13} = 3$ . This criteria shall be maximized.

### 14. State influence and legislative frames,

Probably this is most important criteria if the monopolised company is observed which takes care of postal communications operating. However, here this problem is observed within the state's operating in market economies, which is to lessen influence and enable conditions for investment and development. Therefore, the state shall be imposed by different postal service whose aim is doing business according to market conditions and successful integration of postal service in international traffic. So, it should a powerful company which may bring the state a range of privileges, from development of small and middle size companies, especially in rural areas, to integration of all citizens in the country.

This criteria is awarded relative importance coefficient  $W_{14} = 3$ . This criteria shall be minimized.

## 6.2. Strategy choice by use of the method PROMETHEE AND PROMETHEE II

Multicriteria assignment has been presented in table 1. During choice of a model experience in solving the same choosing problem is used. It is important to emphasize that strategies have been ranked here in order to determine the strategy which has a priority in given circumstances (development tendencies, factors of external and internal environment, Post Office resources, funds...). It goes without saying that all three proposed strategies don't fully include one another but you are supposed to choose a strategy which can meet certain circumstances best, and in a longer period of time it can influence by itself on conditions at the postal domestic and international market.

Complexity of a strategy choice are impeded with constant reforms of certain criteria whose influence is very difficult to estimate. If funds are provided, if the deadline shall be fulfilled and if conditions at the market would change in the meanwhile, how reforms would be accepted by the employed workers and if Post Office requirements would be efficiently realized by Government (now, and let's say shareholders later). This is a permanent process Post Office has to dedicate itself, on the contrary it won't be able to meet either their clients needs or requirements at the market. Set aims are described with a few parameters, respectively criteria which are conflicting so we have to observe them all simultaneously. While setting aims (goals) and by their closer defining through

indicated and separated within this work a subjective estimation of the author's work is expressed. In creation of aims a few men should participate and it should be their primal activity. It is important to emphasize that the author's work preference is smaller so it is necessary they are estimated again in the specific period of time. Decision on extending PROMETHEE method is made because of more preveliges which this method make seperate. It is a quite developed and applicable method which has its practical foundation in a range of solved assignments. Secondly, we are given a chance to simultaneously face influences of all criteria. Thirdly, the set problem is solved by strategy ranking and we are given hierarchy for further development and application of chosen strategies. Fourthly, and not less important, it allows solving problems by use of programme package of MCDM (Multi Criterio Decesion Making System) version 1.0 elaborated at the Institute of Mihajlo Pupin. Package programme allows use of 99 alternatives and 29 criteria. Mentioned programme package operates under available operational Windows system.

So alternatives are given through three mentioned strategic options while choice parameters are given through 14 relevant criteria. Transformation of mentioned conditions into conditions necessary for solving by PROMETHEE method is carried out by pragmatic evaluation of linguistic relations awarding the aimed function in a sense of maximizing and minimazing certain criteria influences is shown in table 1. Also importance evaluation of certain criteria has been done (normalized).

**Table 1:** Assignment's susposition, display of linguistics values as number values

A / K	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14
Improvement strategy A1	2	6	1	1	4	2	6	4	1	1	1	1	4	3
Expansion strategy A2	4	4	2	2	6	4	4	6	2	2	3	2	6	2
Diversification strategy A3	6	2	3	3	2	6	2	2	3	3	2	3	2	1
Aim (max/min)	min	max	min											
Relative importance coefficient W	4	4	3	3	4	4	4	3	4	3	4	3	3	3
Preference function	IV	V	III	III	IV	IV	V	III	III	IV	IV	IV	IV	IV
<i>q</i>	1.5	2.0			1.5	3.0	2.0			1.5	1.0	1.0	2.0	1.5
<i>p</i>	2.5	2.5	1.8	1.9	2.5	4.0	3.0	3.0	1.5	2.0	1.5	1.5	2.5	2.0
<i>s</i>														

For each criteria  $F_j(\cdot), j = 1,2,3,\dots,14$ , a generalized criteris is formed according to definitions of Brans and Mareschal (1989) through parameters describing functions ( $q$  – trace defining field of indifference,  $p$  – trace defining field of strict preference).

Multicriteria preference index is defined according to the following:

It is important to indicate that multicriteria preference index is defined according to the following:

$$\pi(a,b) = \frac{\sum_{j=1}^k W_j P_j(a,b)}{\sum_{j=1}^k W_j}, (\sum_{j=1}^k W_j = 1)$$

where  $W_j = 1, 2, 3, \dots, K$  - densities which associate each criteria given as real numbers.

Multicriteria index shows preference measure of alternative "a" comparing to alternative "b" and as 1 as closer is, preference is greater. Here all criteria are observed simultaneously.

Further for each alternative input, exit and clear flow are defined.

**Exit flow** indicates how many alternatives "a" excel other alternatives:

$$\phi_{(a)}^+ = \sum_{x \in A} \pi(a, x)$$

**Input flow** indicates how much other alternatives excel alternative "a".

$$\phi_{(a)}^- = \sum_{x \in A} \pi(x, a)$$

**Celar (net) flow** is defined

$$\phi_{(a)} = \phi_{(a)}^+ - \phi_{(a)}^-$$

By PROMETHEE I method alternatives pairs are compared. We can read preference of one alternative comparing to other from the matrix of domination which is indicated in table 2.

**Table 2:** Matrix of domination

Alternative	A2	A1	A3
A2	0	1	1
A1	-1	0	1
A3	-1	-1	0

Number 1 in the matrix indicates that alternative being in the type the unit (1) belongs is dominant (preferential) comparing to the alternative being in the column which the unit (1) belongs to.

About -1 from the matrix counts the opposite.

Number 0 indicates that there is no preference of one alternative over other.

Order (formation) of alternatives according to PROMETHEE I method is A2, A1, A3. The order is indicated in table 3.

**Table 3:** Order of alternatives by PROMETHEE I method

1.	A2	Expansion strategy
2.	A1	Improvement strategy
3.	A3	Diversification strategy

Final order of alternatives is determined by usage of PROMETHEE II method. Table 4 indicates order of alternatives according to values of the net flow  $F$  (3).

**Table 4:** Complete order of alternatives by PROMETHEE II method

	<b>F</b>	<b>F+</b>	<b>F-</b>
<b>A2</b>	0,184	0,264	0,080
<b>A1</b>	- 0,081	0, 214	0,295
<b>A3</b>	- 0. 103	0,213	0.316

By PROMETHEE II method is determined that alternatives are ranked the same as by PROMETHEE I method that is the optimal chosen strategy of expansion. Development strategy of postal service shall be carried out by implementing new services at the existing postal market and expansion of existing service at the new market. For performance of this strategy it is necessary to define appropriate structure and implement the systems of value which may successfully contribute to realization of this strategy in the set time of 3 years the most, in opinion of the author of this paper.

In order to realize how choice will behave in case of modification of relative importance coefficient (how much the rank is stable), we ensure within what limits relative importance coefficient may vary ( $W_j$ ), when the order (rank) of alternative does not change meaning that the best alternative remains so. Results are indicated in Table 5. Rank is stable because it can endure aberrations in comparison to all determined coefficients within the limits given in table 5.

**Table 5:** Interval of stability

<b>K</b>	<b>W</b>	<b>Interval for the whole order</b>	<b>Interval for best alternative</b>
K1	4	3,275 – 21. 275	0 – 21, 275
K2	4	2, 912 – 29,912	0 – 29, 912
K3	3	0 – 3,699	0 – 21,056
K4	3	0 – 0,3713	0 – 21,402
K5	4	2,555 – $\infty$	0 – $\infty$
K6	4	0 – 6,175	0 – 66,175
K7	4	2,912 – 29,912	0 – 29,912
K8	3	1,695 – $\infty$	0 – $\infty$
K9	4	0 – 4,653	0 – 20,853
K10	3	0 – 0,5,175	0 – 59,175
K11	4	0 – 0,6175	0 – $\infty$
K12	3	1,912 – 28,912	0 – 28,912
K13	3	0,825 – $\infty$	0 – $\infty$
K14	3	0 – 5,175	0 – 59,175

By this according to assignment choice is finished. For chosen criteria and proposed relative importance coefficients has been indicated the best alternative comparing to all criteria simultaneously, and complete order of alternatives is determined at the same time.

## 7. CONCLUSION

State has an important part in transformation of postal business. However, a new role of the state is not to help postal organizations but provide regulatory conditions for all operators and ensure passing of the regulation of licence regime. Financial help is necessary in order to provide universal service and allow Post Office to create verified services without monopoly at the market. Passing of the Act on Postal Services, rights and responsibilities of all participants are regulated. Strategic analyses and long term plans of transformation serve as basis for Post Office to operate at the market in order to accomplish profitability and allow development and grow. Special attention shall be paid to maintenance of postal market, either by implementing the new services or implementing additional value services. Strategic unions represent reality due to global nature of postal service.

At the market Post Office may use its advantages by use of the process of strategic management. It may successfully formulate and apply distinctive and long term strategies following reforms in environment and its ability to timely meet chalanges. By usage of multicriteria method assignments of choice of alternatives can be efficiently solved as well as their ranking in simultaneous observation of all alternatives and criteria. It is proposed by example of strategy choice of postal system development.

We shall not forget that reforms are constant and there are no permanent solutions which would guarantee survival at the changeable market.

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