Concept of Impression Evaluation Method

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Abstract: - The concept of Impression Evaluation Method extends impression management instrumentality by a direct and proactive method which deals with stakeholders' impression causes: organization's activities, products or services. The objective of the study is to formulate assumptions about the structure of the transfer mechanism between impression input and output, with a secondary interest in obtaining knowledge on impression internal workings. The suggested system approach has been developed from a set of theories originating from decision theory, total quality management, mathematical psychology and other areas. The proposed concept is based on an impression conceptual definition and conceptual model of impression formation process provided in the first publication on results of this research [1]. Impression Evaluation Method is anticipated to be used at all stages of design and implementation of product, service or activity, beginning with the earliest stage, in order to improve the decision making process. Stakeholders' impression evaluation and management is one of the prospective trends of sustainable development. The concept provides guidelines for impression's evaluation algorithm sufficient to develop a mathematical apparatus of impression evaluation method and for further research. A discussion of the mathematical apparatus development will be published in the following paper.

Key Words: - stakeholders, impression, decision theory, emotion theory, impression management theory

1 Introduction

This paper provides a concept concerning one of the least discussed management issues: stakeholders' impression management. Impression management is important because a positive or negative impression could induce a stakeholder to either support or resist a particular activity, product or service. For an organization it could lead to different achievements concerning the expenditure of the same amount of resources.

The object of the study is stakeholders' impression management in a broad sense. The subject of the study is the stakeholders' impression process description on a functional and algorithmic level. Relying on a framework for comparison of emotion theories [2] this study addresses the following problems:

- Differentiation problem on functional level (which stimuli elicit a positive versus negative impression?).
- Intensity problem on algorithmic level (what are the mechanisms and representations that determine the intensity of impressions?).
- Differentiation problem on algorithmic level (what are the mechanisms and representations that determine the quality of impressions?).

It is commonly known that stakeholders' impression depends upon two components: the effectiveness of the management decision itself ("doing the right thing") and efficiency of its implementation ("doing things right"). In this case stakeholders' impression evaluation could provide a proactive tool to improve effectiveness and efficiency of management decisions.

The potential applications of an impression evaluation may be useful in management, economics, marketing and other business related knowledge areas.

2 Problem Formulation

The traditional approach of impression management is to create, to maintain and to improve stakeholders' impressions by the instrumentality of public and internal communication.

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The approach is necessary, but not enough. There is an actual need to extend impression management instrumentality by a direct and proactive method which deals with stakeholders' impressions causes: organization's activities, products or services. This method should apply a holistic approach to a set of prescriptive and descriptive theories with the aim to reduce the gap between attempts to identify the best decision and to describe what people will actually tend to do.

3 Problem Solution

Widely recognized "black box" research strategy is chosen in order to develop Impression Evaluation Method (IEM). The proposed IEM concept is based on impression definition and a model developed in [1].

This paper formulates assumptions about the structure and algorithms of the transfer mechanism between impression input and output. Assumptions constituting the concept are based on a synthesis and creative interpretation of conclusions found in the literature ([2], [4] - [11] and other sources), previous researches [1], [3] and on the authors' observations.

The aforementioned assumptions could be rejected, corrected, or accepted during the next steps of implementation of the "black box" strategy. Those steps are out of the scope of this paper and are the subject of further research.

In order to ensure a more comprehensive explanation some postulates of the aforementioned model and some axiomatic definitions have been provided:

- The impression formation process provides an evaluation of a given situation in terms of "positive–negative" or gradations in between, including the neutral one.
- Stakeholders' impression depends on stimuli and benchmark set.
- Stimuli are aspects of products, services or activities design and implementation as well as events in the internal and external environment that influence a person's behavior.
- Benchmarks are aggregated data objects which don't influence a person's behavior by themselves. Each benchmark has several properties related to mental representation of the most important aspects of the reference point, "improvement beyond this point has no additional value" and "completely unacceptable" psychological states. These properties provide background information for stimuli evaluation in the context of a current situation.
- The reference point defines zero on our personal gain-loss scale. In the prevailing number of cases the reference point is the status quo, but in every case the reference point should be chosen individually.
- Psychological state "improvement beyond this point has no additional value" is a situation without any losses and with maximum gains.
- Psychological state "completely unacceptable" is a situation with maximum losses and without any gains.
- A gain is a measure of anything the stakeholder obtains from the operation: money, satisfaction, etc. Gains are associated with the most attractive aspects of products, services or activities.
- A decrease in actual gains is evaluated as a loss; actual gain increase is evaluated as a gain.
- A loss is a measure of anything the stakeholder spends to operate: money, time, inconvenience, etc. Losses are associated with the most negative aspects of products, services or activities.
- A decrease in actual loss is evaluated as a gain; actual loss increase is evaluated as a loss.

The concept of IEM constitutes five assumptions provided the respective sub-sections below.

3.1 The first assumption

The first assumption is that the impression formation mechanism acts like an analog computer that uses a limited set of analog dimensionless inputs and hard-wired by evolution algorithms to transform inputs into analog dimensionless output. This assumption correlates with the characteristics of impression formation process: the process is very quick, opaque and with limited output differentiation. According to [1] the impression is expressed in terms of "negative", "positive" or gradations in between. In case of constructed "black box" impression value is within the range [0, 1]. The graphical interpretation of this assumption is shown in Figure 1.

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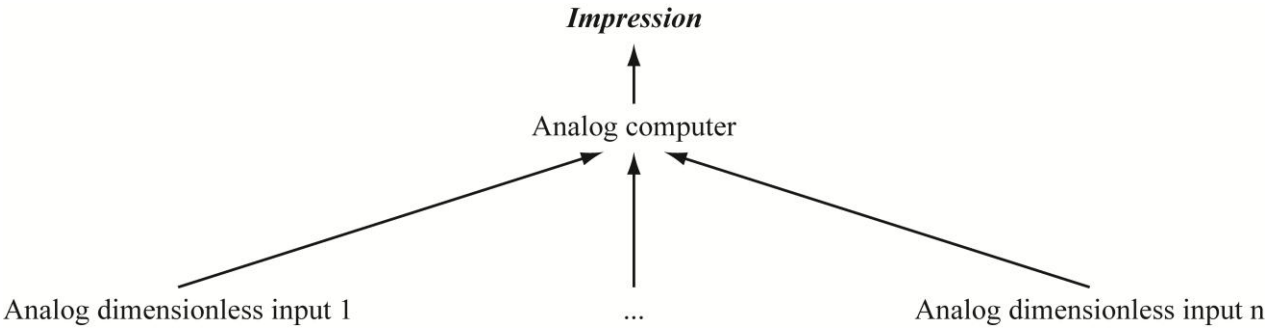

Fig. 1. Graphical interpretation of the first assumption

3.2 The second assumption

The second assumption is what gain or loss is evaluated by the following dimensionless properties: a normalized value and an importance.

It is evident that an absolute or normalized value by itself cannot provide a reliable evaluation of any parameter. It needs to be weighted in accordance with the situation, as an example: a gain value of a glass of water could be dramatically changed depending on the time when an individual last had a drink.

Gains and losses properties constitute a set of inputs for the aforementioned analog computer. These properties could be explained as follows:

- Normalized value, expresses respective gain or loss implementation quantity aspect in terms of "nothing", "maximum" or gradations in between. In case of constructed "black box", the normalized value is within the range [0, 1].
- Importance property expresses gain or loss in terms of "not important", "vitally important" or gradations in between. Importance property is evaluated as a respective gain contribution to cumulative gain in "improvement beyond this point has no additional value" state or respective loss contribution to cumulative loss in "completely unacceptable" state. In case of a constructed "black box", the importance property is within the range [0, 1] and for all aforementioned psychological states the sum of importance properties is equal 1. This assumption correlates with the work awarded the Nobel Memorial Prize in Economics [10] which had the following conclusion: "…the decision weight associated with an outcome can be interpreted as the marginal contribution of the respective event…".

Several decision theories ([10] – [11] and other sources) state that decision depends on the probability of the respective gain or loss as well as the time shift between stimuli and respective gain or loss occurrence. The authors agree with these statements, but assume that the aforementioned parameter evaluation happens after the impression formation. This assumption is based on the degree of detailed elaboration of information and sophisticated algorithms needed to process this data. This circumstance will lead to a necessity to involve a rational (cognitive) evaluation in the process.

In this case it is assumed that all stimuli and events are evaluated, with no time shift and with certain probability during the impression formation process.

3.3 The third assumption

The third assumption is made according to work [8]: cumulative gain and loss calculations happen in a two-stream mode; cumulative value of gain is calculated separately from cumulative value of loss. In case of constructed "black box" cumulative value of gains and losses calculation algorithm could be a cumulative value function [10] with modifications accordant to the subsection 3.2 assumptions (the aforementioned modified function will be referred to as a "Cumulative Function").

The graphical interpretation of the second and third assumptions for gains is shown in Figure 2. The graphical interpretation of the second and third assumptions for losses is similar to interpretation for gains shown in Figure 2.

3.4 The fourth assumption

The fourth assumption is that an impression depends on mutual combinations of gains and losses in the following states:

- The reference point state.
- The state after product, service or activity implementation.

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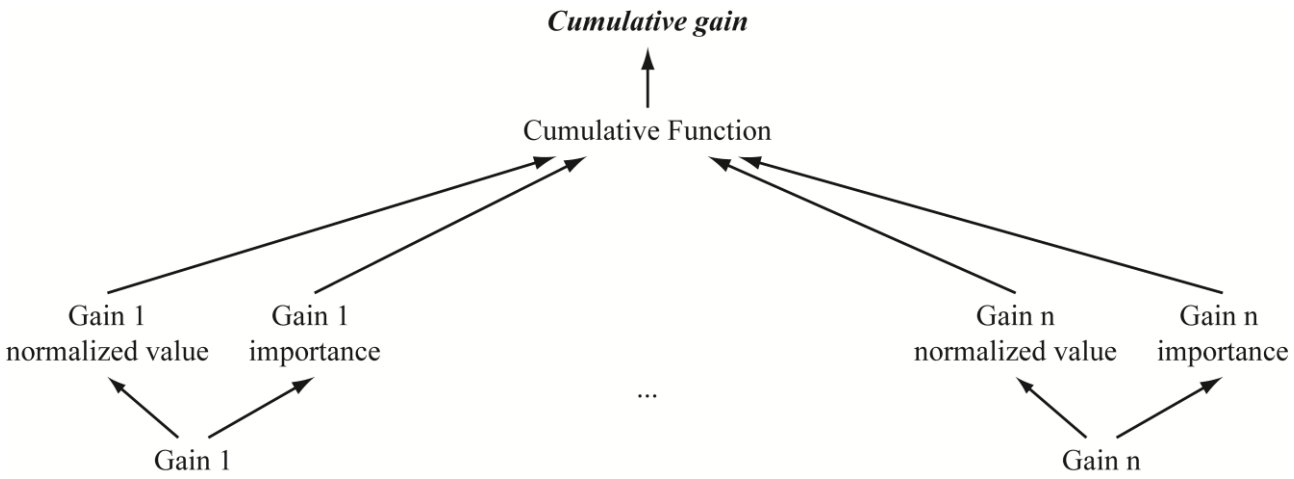

Fig. 2. Graphical interpretation of the second and third assumptions for gains

Cumulative measures of gains and losses for the "improvement beyond this point has no additional value" and the "completely unacceptable" psychological states don't depend on products, services or activities implementation. Instead, these extreme psychological states provide a boundary for evaluation of products, services or activities implementation.

Cumulative measures of gains and losses for the reference point state and the state after products, services or activities implementation are expressed by the following cumulative measures:

- Actual cumulative gain expresses the cumulative measure of actual gains ratio to the maximum cumulative gain in terms of "nothing", "maximum" or states in between. In case of constructed "black box", actual cumulative gain is within the range [0, 1] and could be calculated as actual gains Cumulative Function ratio to the maximum cumulative gain.
- Actual cumulative loss expresses a cumulative measure of actual losses ratio to the maximum cumulative loss in terms of "nothing", "maximum" or states in between. In case of constructed "black box", the actual cumulative loss is within the range [0, 1] and could be calculated as actual losses Cumulative Function ratio to the maximum cumulative loss.
- Expected cumulative gain expresses a cumulative measure of expected gains ratio to the maximum cumulative gain in terms of "nothing", "maximum" or states in between. In case of constructed "black box", expected cumulative gain is within the range [0, 1] and could be calculated as expected gains Cumulative Function ratio to the maximum cumulative gain.
- Expected cumulative loss expresses a cumulative measure of expected losses ratio to the maximum cumulative loss in terms of "nothing", "maximum" or states in between. In case of constructed "black box", expected cumulative loss is within the range [0, 1] and could be calculated as expected losses Cumulative Function ratio to the maximum cumulative loss.

3.5 The fifth assumption

The fifth assumption is that the impression is evaluated as the desirability of psychological relative wealth [12]. In case of a constructed "black box" the desirability of psychological relative wealth could be calculated using desirability of psychological relative wealth function developed in our previous work [12].

The illustration of this assumption could be a situation in which current losses are big and current gains are little. In this case some additional losses could be ignored, but a possibility to get some gain could provide positive impression if the improvement of the actual cumulative gain is relatively noticeable. Otherwise, in an opposite situation, the impression from the same stimuli could be negative. This illustration shows that the cumulative gain and loss aren't compared with each other directly, but some other algorithm is used.

The graphical interpretation of the fourth and fifth assumptions is shown in Figure 3.

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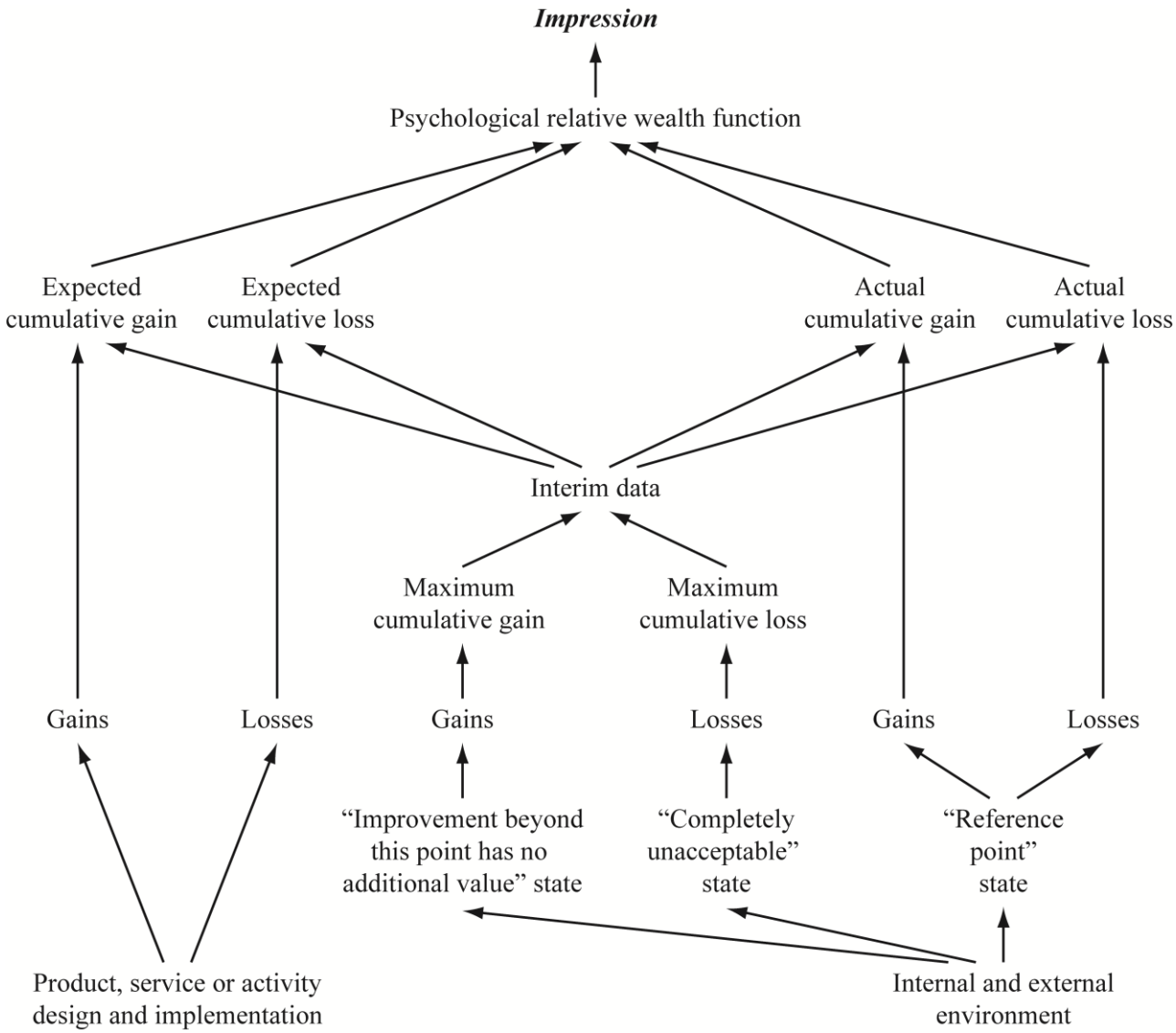

Fig. 3. Graphical interpretation of the fourth and fifth assumptions

4 Conclusion

Ancient philosophers summarized and formulated knowledge that had been collected by previous generations. In the essential work "The Republic", Plato [13] postulated that the human soul structure has three dimensions:

- Reason (rational aspect).
- Emotions (passion or spirit aspect).
- Desire (appetitive aspect).

Plato considered those dimensions as independent parameters with a different weight in determining behavior. It fruitless to discuss which aspect is most important, because they all constitute a unity. No aspect should be ignored in management decisions if the aim is to achieve sustainable development.

Impression is a very powerful leverage to maintain as a minimum two aspects of the three mentioned above. So, it is worthwhile to take into account stakeholders' impression during the decision making process in all phases of product, service or activity. The earliest phase at which IEM could and should be applied in decision making process is shown in Figure 4.

Presented in this paper IEM concept provides a theoretical basis to develop a mathematical apparatus of impression evaluation method for further research.

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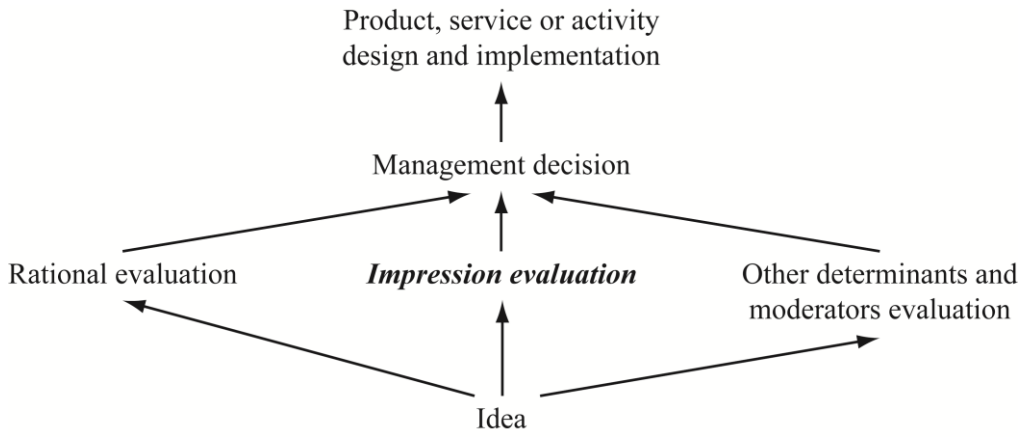

Fig. 4. The place of impression evaluation method in the decision making process

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