



Design for viable organizations

The diagnostic power of the viable system model

Power of the
viable system
model

Markus Schwaninger

University of St Gallen, St Gallen, Switzerland

955

Abstract

Purpose – This paper attempts to underpin the theoretical claim of the viable system model to specify the necessary and sufficient preconditions of organizations for viability.

Design/methodology/approach – A number of case studies are explored.

Findings – The evidence documented in the paper both corroborates the model's claim and provides evidence of its enormous diagnostic power.

Originality/value – The cases documented here cover a wide range of applications, thus underlining the vast potential of the VSM. The case studies exemplify the unparalleled strength of the model as a conceptual framework for better organizational diagnosis and design, and can therefore be used for didactic purposes.

Keywords Organizations, Cybernetics

Paper type Research paper

1. Introduction

The purpose of this paper is to document a number of applications of the viable system model (VSM) and therewith visualize its extraordinary power as a tool for the diagnosis and design of organizations. The VSM is an organizational theory developed by Stafford Beer, the father of Management Cybernetics (Beer, 1979, 1981, 1985, 1989). As a theory, it is distinctive in several respects, in particular in view of the claim it makes. This theoretical claim is as follows:

A social system is viable if, and only if, its structure fulfils a number of requirements, which the theory specifies. Concretely, according to the model, a viable organization must dispose of five managerial subsystems and their interrelationships, as set forth by the theory:

- (1) *System 1*. Management of a basic subsystem.
- (2) *System 2*. Coordination of subsystems, attenuation of oscillations between them.
- (3) *System 3*. Operative management of a collective of subsystems.
- (4) *System 3**. Auditing and monitoring channel.
- (5) *System 4*. Management for the long term, relationships with the overall environment.
- (6) *System 5*. Normative management, corporate ethos.

Any deficit in this structure will inevitably prejudice the viability of the organization.

It must be added that the structure, outlined here only in a rudimentary form, is recursive: also subsystems (e.g. divisions) and super systems (e.g. a holding) should be structured in accordance with the same principles.



The exceptional strength of this claim lies in that not only necessary but sufficient structural preconditions for the viability of a social system are established, according to the theory of the VSM. To the best of the author's knowledge, no other organizational theory makes a claim as strong as this one.

One would assume that evidence contradictory to the contentions of the VSM has been found. The surprising fact is, however, that the model has not been falsified but, on the contrary, corroborated by the growing empirical evidence from VSM applications. The purpose of this paper is to contribute to the corpus of pertinent case studies. The author was involved as an external consultant in each of the five cases that will be reported here.

2. Case one: transformation of a company

The first case dealt with is the transformation of a Swiss insurance company, Zurich Switzerland Company. It is the main company, with about 4,000 employees of the Zurich Group, an international insurance corporation. The transformation had direct implications for about 85 per cent of the staff, who thereafter found themselves members of different organizational units, or had new bosses, etc. In addition, the project gave important impulses for the ensuing transformation of the overall group.

At the outset, the Chief Executive Officer (CEO) of Zurich Switzerland and his management team decided to embark upon a strategic positioning and, if indicated, reorientation. A project team of 15 top and higher managers was formed and a small external team of consultants hired to support the project. The key facilitators in this venture were the internal head of the corporate development unit, and externally the author as the project leader with the consulting firm. Both of them were well acquainted with the VSM and with Organizational Cybernetics in general. They did most of the facilitation and conceptual design work in the project.

To diagnose the strategic position, the project team did a thorough analytical work. Several workshops including the whole project team plus the consultants were held, in which results were reviewed and the next steps defined. After a few months, it had become clear that the main strengths of the company were in the business with corporate clients as well as in dealing with complex insurance and risk management issues. Also, several important insights into different aspects of the business had emerged. The project headed towards the design phase. Several teams were formed to pursue key issues such as human resources, organizational redesign, and distribution channels. More people from these teams were mobilized for these tasks. Also, team members started to diffuse intermediate results among their own staff, thus involving them in the knowledge building and decision-making process.

The furthest-reaching decisions taken were:

- to orientate the company towards customer problems rather than products;
- to strengthen business with corporate clients; and
- to expand the international business.

The main implication was fundamental organizational transformation. The compass was a conceptual redesign of the organization in terms of the VSM. The emphasis was on the structuring of the basic units and their management (System 1). The reorientation was fundamental: it is no exaggeration to speak of a paradigm shift.

The radical change to which the strategy team aspired, and which was eventually also accomplished, is schematically shown in Figure 1.

The traditional structure was a functional one. The main units, apart from staff units (human resources, finance, controlling, administration, corporate development), were four large departments marketing, underwriting, claims, and sales. The first three were centralized in Zurich, the last had about 80 branches across the country, grouped regionally. The first three were sub-structured according to product groups, of which automotive insurance was the largest.

The new structure was to group the company activities around two basic customer problems, those of individual clients and those of corporate clients. This was the core of the paradigm shift. Before the decision was taken, its multifarious aspects and

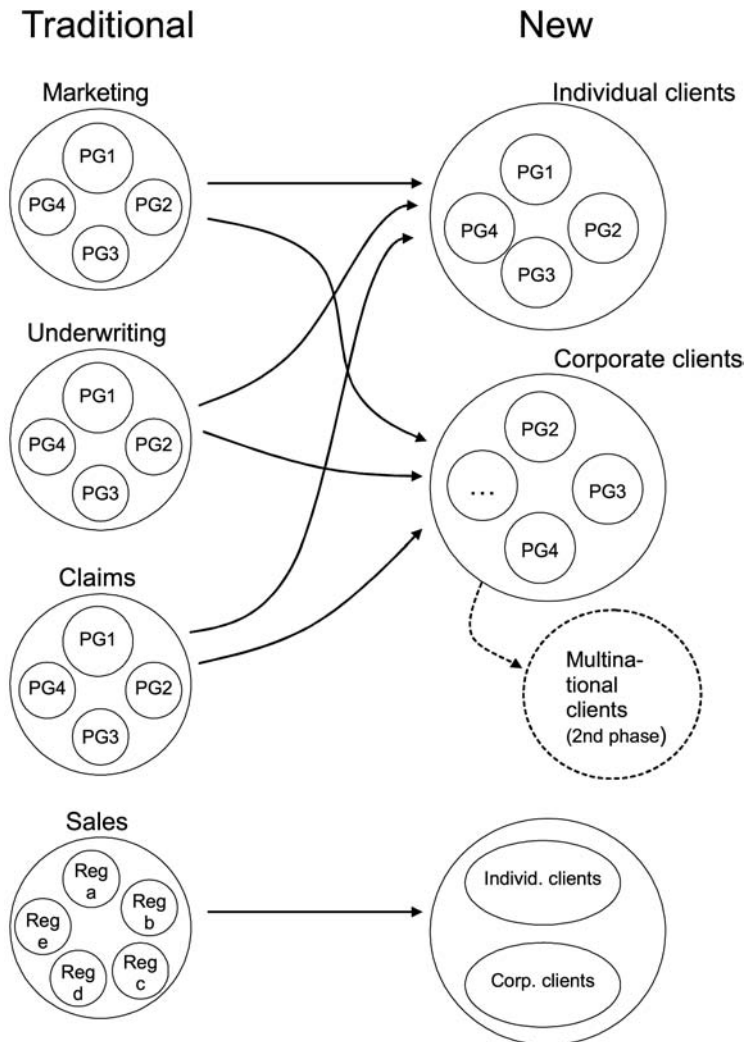


Figure 1.
Structuring of basic units

implications were thoroughly examined from the most different perspectives. The approach appeared to be robust.

The delineation of the new borders of the basic units was likely to be highly durable. The units were designed to be clearly identifiable businesses in their own right, and viable organizations within the whole. In a first phase, the subunits in the new divisions were planned to be structured along traditional product-lines. Later on, a grouping into business units according to more specific customer problems or client groups would be relatively easy. Formerly, an embodiment of this new kind of structuring was the international department. As part of the corporate division, it was conceived as an autonomous business unit from the start. In a second phase, it was envisioned to turn the international business into a separate, autonomous division. This step was taken within about 2 years. There were also some questions of demarcation, though of secondary importance. "Should small business be part of the first or of the second division?" "Should farmers be attended to by a separate business unit, and where should this be located?", etc.

As far as the sales organization was concerned, it maintained its regional structure. However, in all the regions a specialization between individual and corporate clients was pursued, with, in the control mode, a slight dominance of the customer problem criterion over the regional criterion. The claims department was re-organized, in the first phase, by means of an internal differentiation between individual and corporate business. At a later stage, these component subsystems were integrated in the individual and corporate divisions, respectively.

After the conclusion of the consulting mandate, Zurich put the new plan into practice. Everybody in the company was affected, most people to a large extent. The transformation was accomplished within 6 months. People were transferred, locations were transmuted, equipment had to be moved, and 300 computer applications were completely changed or overhauled. Follow-up interviews conducted after a reasonable five-year space showed surprising and most welcome results. The whole transformation had been realized smoothly and without noteworthy resistance. Practically all members of the company had embraced the new orientation and adapted to it quite easily. In terms of strategy, the intended strengthening of the positions in the corporate and international domains was a full success. This had led the top management at the group level to adopt a similar organizational model[1]. In terms of the VSM, this means that a reorganization of the corporation at two levels of recursion had been realized.

Early on in the new millennium, 20 years after the project, the author approached the President and CEO of the Zurich Group for a second follow-up. The interviewee commented that the original project had been the bedrock upon which the foundations for a new orientation had been laid. The management had learned a new approach to strategy and organization, which was the key factor in the rise of the group and its international projection as a financial service organization.

We have not analysed here how the management structure at the meta-systemic level (Systems 3, 4, 5) evolved during and after the project. The redesign of a meta-system is the theme of the second case.

3. Case two: redesign of a meta-system

Editora Abril is a renowned media organization in Brazil. It is famous for its journals and magazines as well as books in the domains of travel and culture. Veja, one of its leading

products, is the fifth largest weekly magazine in the world. The second business field is television channels, and the third, telephone books. In this market, Abril holds a share of 80 per cent, which makes it a high-volume product in a country of 180 Mio People.

Editora Abril got in touch with the author while he was a visiting professor at the Fundação Getúlio Vargas business school in São Paulo. The person who contacted him was the firm's assistant of the vice president of corporate development and human resources. The mandate was formulated very briefly, being simply a request to take a look at the structure of the top management, because there was some uneasiness about it. Over lunch, in which the assistant gave a brief sketch of the status quo, she handed over a bundle of documents for further study. These were very enlightening, and a longer interview with the assistant ensued. From there on, the author started without delay to write a report on the situation and formulated suggestions addressing the diagnostic points (Figure 2).

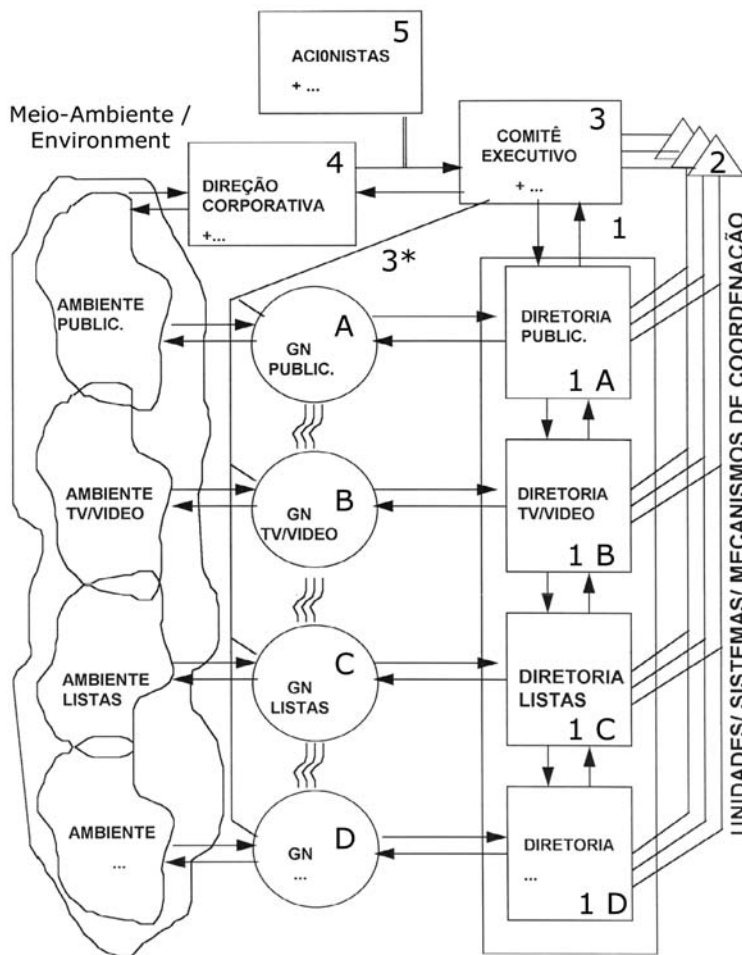


Figure 2.
Corporate structure in
terms of the VSM

A study of Abril's organizational chart showed that the governing bodies of the corporation were made up of three teams:

- (1) Shareholders (Acionistas do Grupo Abril);
- (2) Executive Committee (Comitê Executivo – COMEX); and
- (3) Corporate Directorate (Direção Corporativa).

The job descriptions of these three groupings were clear and seemed straightforward enough. From the point of view of a conventional organization analysis, it would have been very difficult to discover what the problems of that organization actually were. One would have had to engage in multiple interviews, data gatherings, document studies, etc.

An analysis on the basis of the VSM, however, brought a clear pattern to the fore, which was quite instructive.

In short, the sum of the tasks accomplished by these three teams amounted to a full-fledged set of everything that a meta-system has to provide. Also, the tasks listed appeared to make perfect sense and to be complementary. In the light of VSM analysis, however, a problem surfaced. This emerged as soon as the tasks were classified into the categories of logical levels of management as set out in the VSM, namely, operative, strategic and normative.

The ensuing step was to group the tasks accordingly. They were classified into Systems 3, 4 and 5 tasks, and each of the teams was in essence conceptualized as the embodiment as one of these levels. Also, the principle of recursiveness was introduced. A suggestion for the organization of the meta-systems at both corporate and divisional levels was formulated (F. 2, 3).

The results were presented to a group of persons around the vice president for development and human resources. The group was apparently relieved to be shown a way to achieve smoother operation and higher effectiveness of the corporation's meta-systems (Figure 3).

4. Case three: enhancing cohesion

This is the case of Togo, a small corporation in the chemical industry. It was made up of three companies, the largest being in Switzerland. The second company was an acquisition made in England, and the third a joint venture in the USA. Togo produced anti-corrosives, adhesives, and insulation materials.

The founder and CEO of Togo was an extraordinarily dynamic person, a high-energy player developing the company at a vigorous pace.

He sought the support of consultants for his efforts to build up the organization. In retrospect, Togo showed the following picture, if we look at it through the lens of the VSM. All three companies were well managed and healthy. Their managements reported to the corporate management along the System 3-1-axis. However, the corporation as a whole did not reveal much cohesion. The CEO travelled a great deal and was therefore in constant contact with the basic units (System 3*). He knew pretty well everything going on everywhere in the company (Figure 4).

However, mutual coordination and alignment among the three companies were weak. This is expressed by the broken lines representing System 2 (Figure 4), although System 2 was not completely non-existent. There was, for example, a technological coordinator who provided the exchange of recipes and people between the laboratories

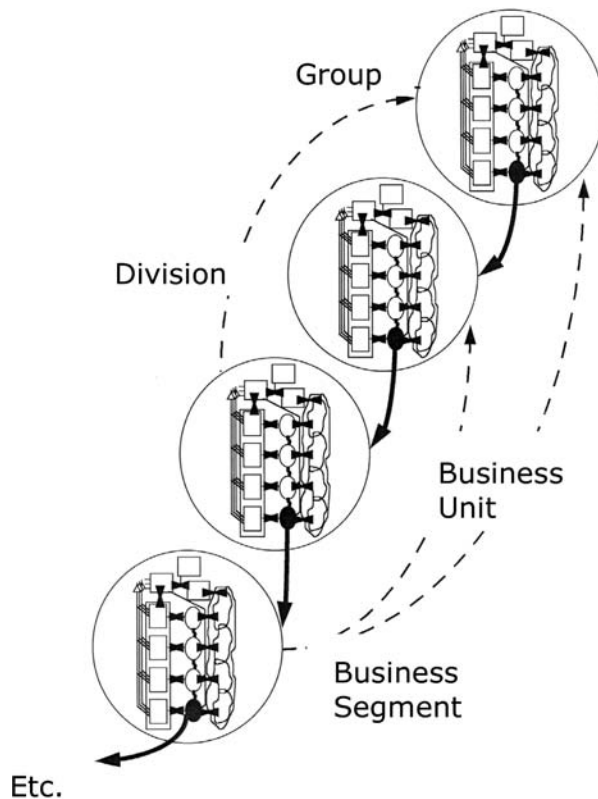


Figure 3.
Structure with several
levels of recursion[2]

in Switzerland, England and the USA. Nevertheless, there was no corporate planning and information system.

System 4 was almost non-existent, and so was System 5.

Whereas each of the three companies revealed a strong knowledge of and concern for its own environment, there was hardly any systematic examination of the environment of the corporation as a whole. Admittedly, the CEO was interested in these issues, but he did not pursue them consistently, nor were the signals coming from the outside and concerning the long term gathered and processed coherently. Also, corporate ethos, basic values and norms were hardly perceptible, or, if so, debated.

The main issue for which the CEO was seeking support was to enhance the cohesion of the company. He felt that although the three units were very dynamic, the whole was in danger of falling apart. The second issue was that a process of strategic reflection had to be started. The ensuing project had two phases, which were mastered in 3 months, thanks to demanding goals and exceptional commitment on the part of all those involved in the project.

The first phase was the formation of a strategy team of 12 persons from all three companies and the corporate headquarters. A strategy and a corporate policy were elaborated in two workshops, and, in an immediately subsequent second phase, a corporate planning and reporting system was established. This was a major

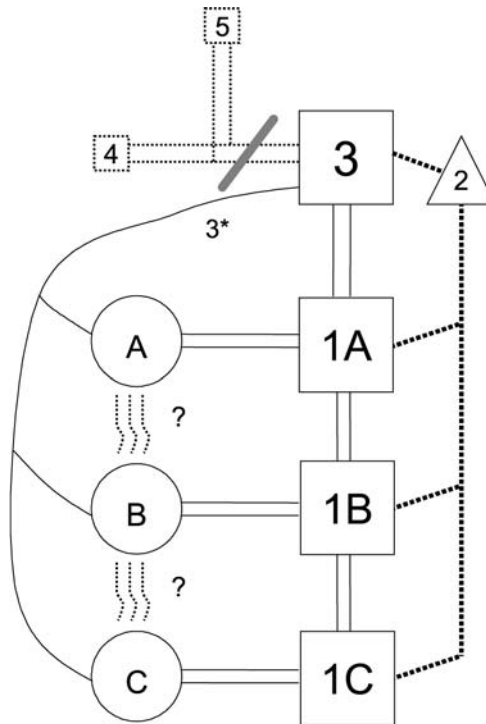


Figure 4.
Diagnosis based on the
VSM

reinforcement of the corporation's System 2. In a planning workshop, the participants accomplished the full planning for the next period as well as the first round of an management by objectives (MBO) process for the coming year. It was very helpful that all the planning templates were drawn up in two languages, English and German. This corresponded to the requirement that a System 2 should translate the languages of the systems. Also, the direct relationships among the three companies (squiggled lines in Figure 4) were activated; the conversations in the workshops giving a strong impetus.

The main objective, to enhance the cohesion of the corporation, had been fully achieved. In addition, Togo also had a clearer strategic outlook when the project was finished. More details are published in Schwaninger and Rusch (1982).

5. Case four: developing strategy

Kur- und Klinikverwaltung Bad Rappenau (hereafter termed K&K) is a provider of health services. At the time of the project it owned a share of 50 per cent of the bed capacity of Bad Rappenau, a resort in southern Germany. The company was constituted by three clinics, a hotel, and a comprehensive bathing and health facility. Bad Rappenau has a salt spring with the strongest brine in the country. Moreover, the resort enjoys a high reputation for the cure of rheumatic and bronchial diseases, as well as psoriasis. Clients are mainly patients financed by public insurance providers. K&K approached the consulting company of which the author was a member at the time. In a first meeting, the general manager of K&K outlined the situation of the company.

It was in good condition, but there was trouble ahead. Changes in the regulatory apparatus were due, and this would lead to a crisis of health resorts in general. Eventually, K&K and the consultants agreed on realizing a project leading to a strategy that would strengthen the viability of the firm.

In fact, a diagnosis of K&K in terms of the VSM showed that the “inside and now” (Systems 1, 2, 3) was indeed solidly embodied and well functioning. However, there was clear evidence that systems four and five were weak to non-existent. The general manager’s “hunch” that the firm, albeit well functioning at the moment was heading for a crisis, could thus be confirmed on structural grounds.

The main activities of the project were two workshops of 3 days each, completed within 6 months. It was possible to assemble an outstanding group of people to participate in these workshops:

- all members of the Board, including the Mayor of the town;
- the general manager and two of his central staff; and
- the managers of the five sites of the company.

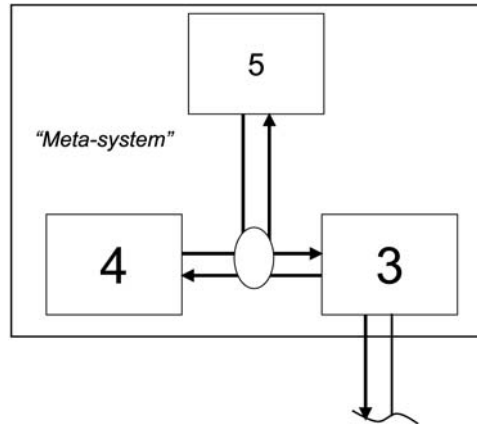
It must be noted that the management of a clinic normally includes a medical superintendent and an administrative superintendent. For this reason, the group assembled for the strategy project was an interdisciplinary one with people of medical, commercial-administrative and technical backgrounds. The workshops included demanding analytical work as well as a weighty decision process. A fundamental insight generated was that Bad Rappenau was not a tourist but a health resort. One important decision was the inclusion of a new syndrome into the portfolio of indications attended to by K&K facilities. Another decision was for a strong ecological engagement, including a substantial upgrade of the outdoor facilities, necessarily accompanied by a reduction of concrete and asphalt structures (“green in, grey out”). Also, a mission statement was jointly elaborated. One astonishing feature of the project was the extremely fertile collaboration across disciplines. It was especially novel to see medical doctors working at strategic plans and programs, which had nothing to do with the domain of medicine as such. The resort crisis came as foreseen, but the difference for K&K was that after the project it weathered the storm quite well, at least better than most other such resorts.

Five years after the project, a follow-up including multiple interviews and document analysis was made and minutely documented in a book (Schwaninger, 1988). According to the data, the company prospered in the years after the project. Besides consolidating and expanding its activities, it increased both value potential and operative performance. The value of the company grew vigorously. In addition, the firm contributed significantly to its municipal environment. It was the strategy project, which had moved the points for K&K’s prosperity in the years thereafter. One also could ascertain a strong learning effect with the managers involved in the project, in the sense of both first- and second-order learning.

At the outset, there had not been a System 4, and for that reason, whatever there was of a System 5 collapsed in System 3. In other words, a dialogue about the future of the company was lacking, with the consequence that there was no role for a System 5, whose main task would be to moderate the interaction between Systems 3 and 4.

The new strategy team was at the core of the solution (Figure 5). It introduced a language, which was new to the company: the language of the long term.

Figure 5.
The solution – formation
of a System 4



The innovation consisted in the fact that from then on discussions about quarterly results (Systems 1-3) were separated from those about strategic development (System 4) of K&K (Davis, 2005). In Cybernetic terms, the System 5 ceased to collapse in System 3, because the managerial “meta-system” was complete. The reason was that, contrary to the past, the new approach to managing the firm that both the “inside and now” as well as the “outside and then” were anchored in the organization (Figure 5).

The project reported here was not just a one-off job. On the contrary, the System 4 work initiated therein was continued internally over the following years. To conclude, K&K is an impressive case demonstrating the potential value of building up a System 4 with adequate capacity.

6. Case five: examining corporate ethos

Around the turn of the millennium, the author was involved in a large project by means of which the Contraloria General de la Republica, the national auditing institution of the Republic of Columbia, intended to redesign its auditing approach. This project, on which five Colombian and two European consultants collaborated, included multiple consulting activities, workshops and the training of about 300 auditors.

Contraloria General was responsible for auditing all institutions of the Colombian State and also all those industrial firms in which the state had a stake. One of the main thrusts of the project was the effort to provide auditing teams with a capability for a more comprehensive, systemic auditing as opposed to a merely bureaucratic and exclusively financial type of audit.

These auditors were trained in applying the VSM to the organizations, which they had to review. In several workshops, the author set about a VSM diagnosis of organizations such as Telecom and Ecopetrol, together with the responsible teams of auditors. These real-life “exercises” resulted without exception in powerful diagnostic points and valuable insights.

The case in point was Ecopetrol, a provider of oil and gas, and the largest corporation in the country. The main diagnostic point from the aspect of structural analysis was System 5. The corporate mission was the provision of the whole country with fossil energy. However, there was another objective conflicting with this mission: Ecopetrol was at the same time expected to generate maximal profits, which were then

to be channelled into the public household in order to compensate the national budget deficit. These contrary and competing missions amounted to split the corporate ethos. In the language of the VSM, the System 5 of Ecopetrol had to be diagnosed as the root cause of an institutionalized schizophrenia.

More details about this case have been published (Reyes, 2000).

7. Conclusions

The five cases reported herein were located in different contexts, so they vary according to industry, size, mission, and products of the respective organizations. Even so, the VSM has been applied, in all of these cases, as a conceptual tool for the diagnosis and mostly also for the design of the respective organizations. VSM has proved to be an extraordinarily powerful instrument. It not only enabled a better understanding of the cases under study, but it facilitated the work enormously. Analysis was much more efficient, because the “right” questions were asked from the start, and, what matters more, a lot of unnecessary ones were avoided. Data gathering was much more focused than in cases where other, less theoretically well-founded, frameworks were used.

None of this proves that the VSM or its claims are flawless. However, the evidence gathered here speaks for itself.

A suggestion for future research is to examine, on a broader empirical bases, whether the claims made by the VSM theory hold true. Pertinent research by two doctoral students of the author is already under way (Crisan, 2006; Frost, 2005).

Notes

1. A crucial advantage was that the head of corporate development of Zurich Switzerland was called into the same role at the group level 2 years after the project.
2. See also Schwaninger (2004).

References

- Beer, S. (1979), *The Heart of Enterprise*, Wiley, Chichester.
- Beer, S. (1981), *Brain of the Firm*, 2nd ed., Wiley, Chichester.
- Beer, S. (1985), *Diagnosing the System for Organizations*, Wiley, Chichester.
- Beer, S. (1989), “The viable system model: its provenance, development, methodology and pathology”, in Espejo, R. and Harnden, R. (Eds), *The Viable System Model, Interpretations and Applications of Stafford Beer’s VSM*, Wiley, Chichester, pp. 11-37.
- Crisan, C.-I. (2006), “Beers viable system model und die Lebensfähigkeit von Jungunternehmen – Eine empirische Untersuchung”, PhD dissertation, University of St Gallen in press.
- Davis, I. (2005), “How to escape the short-term trap”, *The McKinsey Quarterly*, 25 April, Member Edition, available at: www.mckinseyquarterly.com
- Frost, B. (2005), “Lebensfähigkeit von communities of practice im organisationalen kontext”, PhD dissertation, University of St Gallen.
- Reyes, A. (2000), “An instance of organizational learning: the case of the colombian general accounting office”, in Allen, J.K. and Wilby, J. (Eds), *Proceedings of the World Congress of the System Sciences*, Toronto.
- Schwaninger, M. (1988), *Anwendung der integralen Unternehmungsentwicklung. Beurteilung von Konzept und Methodik anhand einer Pilotstudie*, Schriftenreihe des Management Zentrums St Gallen, Band 4, Haupt, Bern & Stuttgart.

Schwaninger, M. (2004), "What can cybernetics contribute to the conscious evolution of organizations and society?", *Systems Research and Behavioral Science*, Vol. 21, pp. 515-27.

Schwaninger, M. and Rusch, T. (1982), "So haben wir ein zeitgemässes führungs-system eingeführt", *Management Zeitschrift IO*, Vol. 51 No. 5, pp. 193-6.

Corresponding author

Markus Schwaninger can be contacted at: markus.schwaninger@unisg.ch, www.ifb.unisg.ch