

# The Stafford Beer heritage in the 21<sup>st</sup> Century

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## Abstract

1. The challenges to society at the beginning of the 21<sup>st</sup> Century demand to revisit Norbert Wiener's prediction of a "worldwide state in the next century". He made this prediction in his book "The Human Use of Human Beings" in the early 1950s. Current information and communication technologies can be enablers of this political development. I comment in a recent paper [1] that Wiener did not provide detailed arguments for his prediction and it was left to Stafford Beer, the "father of management cybernetics" the detailed proposal for new organizational forms. Furthermore I wrote that Beer's legacy was not only a theory of viable systems but a political vision of a state through the design of Cybersyn in Chile.

It is revealing that at the same time of the Cybersyn project, independently of the Chilean project, another similar project was emerging in the USSR; the father of this project, the Global State Integrated System – OGAS, was the famous Russian cybernetician Victor Glushkov. Unfortunately both projects had sad endings. Cybersyn was obliterated by Pinochet's coup d'état. The OGAS project died quietly under the rigid bureaucratic Soviet System in spite of Glushkov's extraordinary energy and efforts.

2. I propose that the time has come to revive those two imaginative societal designs. Last year I wrote about the importance of the Cybersyn experience in the modern world [2]. It will be in the best memory of Stafford if the metathorax community debated today how to enable a "nervous system" for mankind's viability, considering among other aspects the effective use of current ICTs.

3. Directions for making this possible could be:

1. Dissemination of VSM ideas as wide as possible, including communicating the "islands of VSM lovers" through a shared 'nervous system'.
2. Finding forms to integrate the VSM paradigm with the activities of the most significant ICT vendors (IBM, Oracle ...).
3. Using the VSM as an "upper ontology" for performance management, linking it to ERP, SOA, Semantic Web, theory of constraints, etc ([http://www.ototsky.mgn.ru/it/t\\_times2001.htm](http://www.ototsky.mgn.ru/it/t_times2001.htm)).
4. Supporting research connected to the VSM (Viable Software - <http://charles-herring.com/Thesis/>)

[ViableSoftware.pdf](#), Autonomic Computing - <http://www.zurich.ibm.com/pdf/ebizz/idd-ac.pdf> , National Innovations Systems (NIS) - <http://nzae.org.nz/files/%2322-DEVINE.PDF> , <http://www.sim-mfti.ru/content/?fl=415&doc=1151> etc).

5. Developing and extending the VSM itself, considering ideas such as Autopoietic Systems, biosemiotics, metasystem transition, some biological and sociological ideas which are not used in the VSM now. It is necessary to develop a VSM-II. Raul Espejo's presentation to Metaphorum-2006 about "Boundaries and Identity" may be a good example of such further development of the VSM.

I will give details of the above 5 directions in the presentation below.

- Directions 1 and 2.

Some steps to integrate "the VSM community" after the Metaphorum-2005 and Metaphorum-2006 were made. Tools such as mailing lists are a good step. Valladolid's 'Collaboration Nets' <http://www.platformforchange.org> offers possibilities but we may need consider using more established technologies. They offer more powerful possibilities and easier interfaces. We use at our MMK the Oracle HR module ( <http://ototsky.mgn.ru/it/21abreast.htm> ) . Also as clients of Oracle we have an access to their worldwide Metalink technology which uses all the tools of Oracle and the Web. Metaphorum could explore cooperating with Oracle/IBM to organize something similar for "the VSM community". It could be of mutual benefit, because vendors need deeper scientific foundations for future ICTs and our community needs vendors' help to disseminate our ideas. Already, in my contribution to Metaphorum last year [2] I mentioned the connection of the VSM with new Oracle and SAP tools (BAM and SEM).

I have tried to draw Oracle's attention to the VSM community (see the #1 supplement) but this was only a first step and much more needs to be done for such collaboration. Connection with the IBM is closer since IBM's Business Transformation Architect Doug McDavid is already in our mailing list. But of course much more work is necessary for integration in practice.

Beyond using modern ICTs to strengthen VSM activities, it is very important to find persons and organizations around the world already interested in the VSM. An example of such person is Sean Devine - author of a paper about a National Innovation System for New Zealand based on the VSM (see the #2 supplement). Can the Metaphorum community find these people "to enlarge" the list of its members world wide?

Also I have close communication with persons and organizations in Russia and Ukraine around the

VSM. Beyond Andrey Sergeev ( [http://ototsky.mgn.ru/it/vsm\\_for\\_ukraine.htm](http://ototsky.mgn.ru/it/vsm_for_ukraine.htm) ) there is an organization in the Ukraine which had close relation with the Glushkov's OGAS project and which is very interested in linking with us. Of particular interest is my communications with the author of "Self-organization: a theory elements and social application", book published in the 2005 by the URSS Editorial ( <http://www.edurss.ru/cgi-bin/db.pl?cp=&page=Book&id=23865&lang=Ru&blang=ru&list=38> ). The author explores more than 150 publications, from Ilya Prigogine to Humberto Maturana and all of Chapter 3 is devoted to the VSM. Can the VSM community support its translation into English?

A very important activity to disseminate Stafford's heritage is of course education. ICTs give a great possibility to organize worldwide distant education using Internet, integrating the experiences of community members. This should add significantly to current educational programmes. Similar to the above suggested need of "cooperation" with ICT vendors, the "VSM community" needs to find means to amplify its education activities.

Thinking about the Cybersyn project I suggested last year [1] that steps must be made to widen the visibility of the Stafford's heritage for the attention of society at large. For this purpose nothing could more significant than linking it to the work of artists. In this respect the work of film maker Enrique Rivera and multimedia artist Catalina Ossa about the Cybersyn project - is of great significance ( <http://www.cybersyn.cl/ingles/home.html> ). I suggest that disseminating their work is a relevant public relations activity for the Metaphorum community.

Of course to further all my propositions above a stronger organization of Metaphorum is necessary. Perhaps this is the time to develop a more structured institution.

- Direction 3

The VSM is important for a wide range of managerial, organizational and social activities. It is necessary to develop communications with those leading the establishment of these activities. I see two activities in this direction. The first one is about Performance Management: ( [http://en.wikipedia.org/wiki/Performance\\_management](http://en.wikipedia.org/wiki/Performance_management) ).

I've been in communication with Robert Kaplan about connecting the Balanced Score Card with the VSM. They do not know about the VSM and suggest that I make this connection (see the #3 supplement). Ahmed Khoori, Robin Asby's doctoral student has already done something in this direction. But this work, of course, needs must have much more attention. The second is the connection of the VSM with the Theory of Constraints (TOC). The TOC Times Quarterly promised to make this connection ( [file:///E:/Leo-new/My\\_site/it/papers/stafford\\_heritage21.htm \(3 of 8\)20.05.2007 0:33:28](http://www.ototsky.mgn.</a></p></div><div data-bbox=)

[ru/it/times2001.htm](http://ru/it/times2001.htm) ) but, of course, for this to happen the Metaphorum community needs to offer an “outgoing traffic”.

- Direction 4

There is a good deal of IT related research relevant to the VSM. There is only a need of adequate cooperation between us and these communities. I have a close connection with the Russian National Innovation System (NIS) group ( <http://sim-mfti.ru/content/?fl=415&doc=1151> ) and am organizing its interactions with the related group in New Zealand (see the #2 supplement). It is interesting also to study the VSM itself from the perspective of NISs to further the idea of an International Innovation System (INIS). The Russian NIS project is structuring and integrating the different stages of innovation activities (science, R&D, invention, promotion etc). This is a special topic for a future discussion. For work in national innovation relevant “organizational steps” have already been made. For instance, for the science stage it was declared the “Petition for guaranteed public access to publicly-funded research results” ( <http://www.ec-petition.eu/index.php?p=index&PHPSESSID=b2eede34844a855f70eada896a82126e> ) and I suggest that this is also a declaration relevant to the community’s scientific work. There must be great potential in organizing communications within the community around such new developments as the “Viable Software” project and the “Autonomic Computing” project (BTW the IBM’s Autonomic Computing group is very near to the St Gallen - in Zurich).

- Direction 5

Developing and extending the VSM is a more complex and long-term task but it is good move in that direction too. From the innovation’s point of view this activity is at the science and R&D stages now. I’ll only mark some activities from my point of view.

Raul Espejo’s “Bondaries and Identity” topic has close connection with Pragmatism and Umwelt ( <http://www.ento.vt.edu/~sharov/biosemtxt/umwelt.html> ). And a way of connecting it with higher levels of recursion I suggest must be connected with the Metasystem Transition of Valentin Turchin ( <http://pespmc1.vub.ac.be/MSTT.html> ).

To support the evolution of the Viable System Model, Maturana&Varela’s ideas of Autopoiesis and

Alexey Sharov's biosemiotics (<http://www.ento.vt.edu/~sharov/biosem/txt/biosem.html>) must be used .

It is also important to study what I call "second order Viable Systems" for which the VSM is an environment. It is sad but, phenomena such as corruption, or entities such as viruses, and other extreme organizations, are viable systems too and to deal with them we must have a deeper knowledge of universal laws relevant to them.

This is only a short list of possible VSM developments. For this R&D stage of the VSM "innovation process" it will be helpful to construct some type of 'Operations Room' with "electronic remote brainstorming" possibilities.

As suggested for Directions 1-2, a new level of "internal organization" for this community must be developed with effective use of current ICTs .

As a conclusion, I come down to earth; implementing all the above directions need financial support. Perhaps it is not crucial for the scientific stage of the VSM innovation process and not very important for the early steps of the R&D, but for the dissemination and especially for the implementation stages it is fundamental. A proper financial fund must be organized to support the above outlined VSM activities.

As for the CyberSyn project, its vision and imaginative societal design ( <http://ototsky.mgn.ru/it/lessons.htm> ) may be of interest to progressive societies such as Allende's Chile. For its implementation we need to organize a worldwide effort to engage people with potential for high authority and disseminate CyberSyn.

## References.

1. <http://www.ototsky.mgn.ru/it/papers/prague2006.htm>
2. <http://www.ototsky.mgn.ru/it/papers/stafford21.pdf>

## Supplements

**Supplement #1** – A correspondence with the IOUC Product Development Committee Fusion Channel Director – Debra Lilley –  
E-mail - [debra.lilley@ukoug.org.uk](mailto:debra.lilley@ukoug.org.uk)

<< As I said on the last IOUC PDC call, I have had an approach from Leonid Ototsky a Russian, who is an advocate of Stafford Beer's work. He wonders if this is something Oracle may be interested in around Fusion.

Thanksto Floyd I have a better understanding of this:

“First, understand that most of Stafford Beer's work (which is rooted in Operations Research ), culminated in the application of cybernetics to develop the Viable System Model ("VSM"). Loosely defined, cybernetics is the science of control while management is the professional of control. The VSM suggests that it is possible for systems to become self-sustaining within a particular environment, and for those systems to evolve and adapt to internal changes in that environment . The IT concepts of adaptive and self-healing systems are closely related to the VSM. The idea is that the system can continuously collect feedback from the surrounding environment, recognize changes as they occur, and smoothly adapt to those changes in a smooth, controlled fashion rather than requiring radical and disruptive change in the system or reinvention of the system .”

Is there a methodology SIG this could be part of?

I have copied this to Leonid so he can see we are pursuing his interest.

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**Supplement #2** – The email of Sean Devine around the Metaphorum-2007 .

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Hi Leonid,

The abstract is fine by me. You seem to have access to some really useful information to feed in to the model. I found that to do more in the area I needed to get some good information. I am a believer in the VSM that it provides a framework to organize thinking in the area of innovation. I also started to do some work on looking at sustainability of the biological, social and economic systems. In the end no one would fund it but I think it is still worth doing. The trouble is the VSM does not so much provide answers as highlight the critical questions.

Please send me a copy of your work when it is in a convenient form.

It is great to have your son joining you in study- you must be proud of that.

I noted your earlier email about using Skype to get access to the conference. I will look into the possibility.

Thanks,

Sean Devine >>

(Victoria Management School, Victoria University of Wellington, 600, Wellington, New Zealand) , E-mail - [sean.devine@vuw.ac.nz](mailto:sean.devine@vuw.ac.nz) .

**Supplement #3** – A correspondence with Robert Kaplan about the BSC and VSM .

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Leonid:

Thanks for sending this material along. But I have more than I can handle just continually advancing the BSC concept itself, and I can't really make all the connections to other management methodologies. It seems that this is the role you can most productively play.

r s kaplan

At 01:27 AM 2/13/2004 +0500, you wrote:

>Robert,

>Suppose it will be good if the BSC author will "turn his heard" to the VSM !

>See the attachments and the URL.

>[http://www.ototsky.mgn.ru/it/beer\\_in\\_computerra2.html](http://www.ototsky.mgn.ru/it/beer_in_computerra2.html)

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>Best,

>Leonid

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