

System Operator Tutorial - 4) Integrating Other Perspectives

Darrell Mann
Systematic Innovation
5A Yeo-Bank Business Park
Kenn Road, Clevedon
BS21 6UW, UK
Phone: +44 (1275) 337500
Fax: +44 (1275) 337509
E-mail: Darrell.Mann@systematic-innovation.com

Introduction

In this, the last article we discuss some of the other tools and strategies we might use in a problem definition and solving context that can benefit through integration with the TRIZ system operator.

Following on from the previous tutorial article examining the introduction of a third dimension dealing with aspects of perception, personal belief and relationships, the start point here assumes that this three dimensional space-time-'interface' (Figure 1) viewing system applies to all of the aspects here. For the sake of clarity of illustration, however, we will focus primarily on the conventional space-time plane seen in the classical TRIZ system operator.

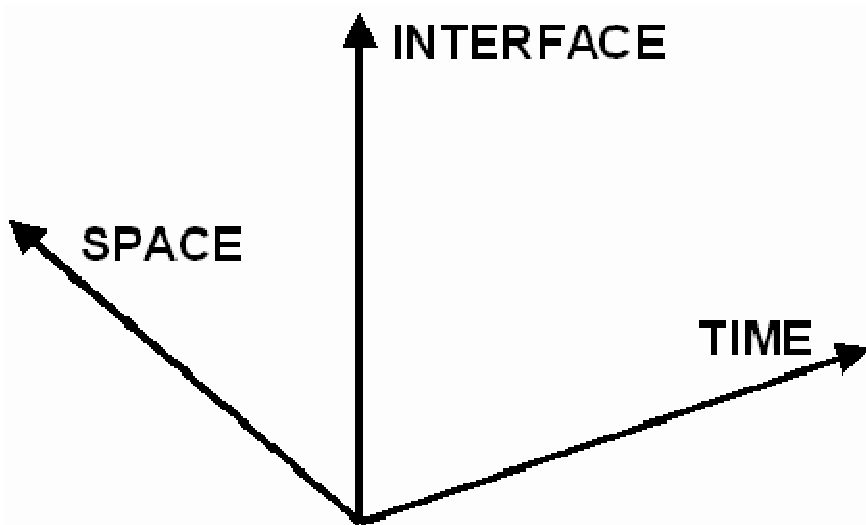


Figure 1: Three-Dimensional Space-Time-Interface System Operator Axes

Co-opetition

The Co-opetition idea of a 'value net' previously discussed in Reference 1 provides a first example of the 9-Windows being used in conjunction with other ways of scoping and framing a given problem or opportunity situation. The 'value net' idea discussed in Co-opetition (Reference 2) is of significant interest when thinking about a holistic approach to business oriented problems

- offering a much more broad reaching view than would normally be the case. In effect the 'value net' appears in each of the windows of the system operator tool - Figure 2.

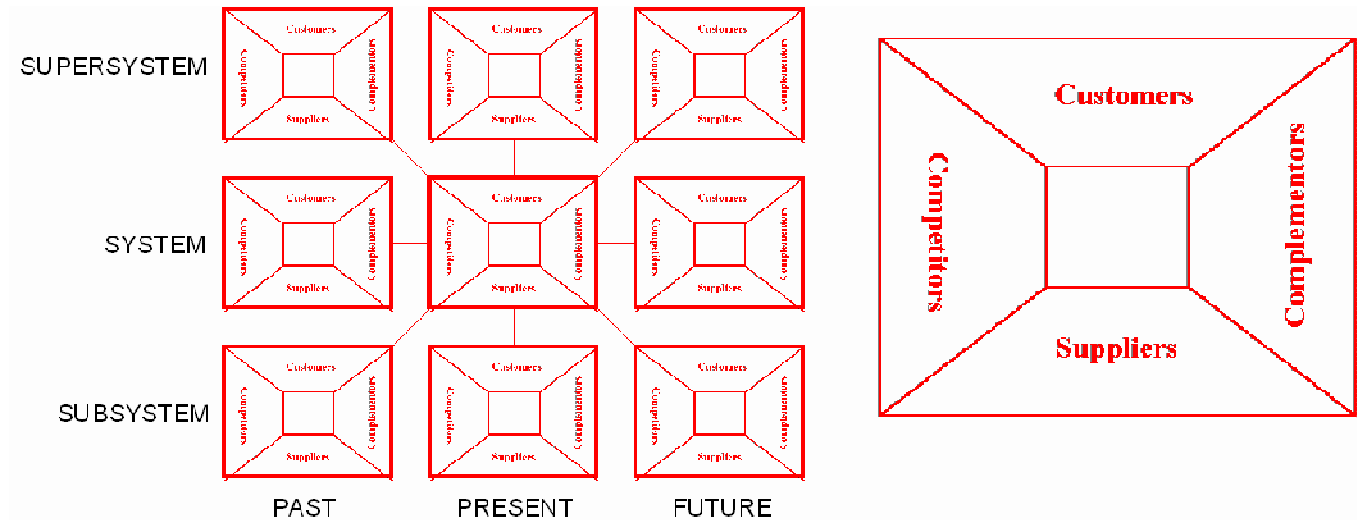


Figure 2: Combined 9-Windows and Value-Net Concepts

The importance of integrating the Co-opetition Customer-Supplier-Competitor-Complementor model with the 9-Windows emerges because, as Reference 1 suggested, the value net may well change with respect to both SPACE and TIME.

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

By way of a first extension to the co-opetition extension to the 9-Windows, Figure 3 illustrates a similar integration of the classic Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis into the system operator space-time framework.

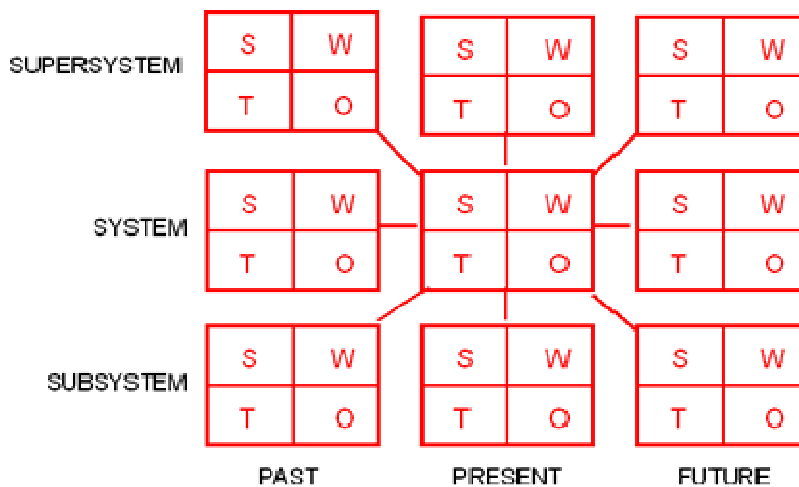


Figure 3: Combining 9-Windows and SWOT Analysis

The SWOT analysis idea is used across a wide range of technical and business areas as a means of scoping a given problem, opportunity or innovation situation. It attempts to get the person or team involved in the analysis to look at their situation from a number of different perspectives - namely, what are we good at, what are we not so good at, what are the things that could help us to become good, and what are the things that could stop us from becoming good.

Combining this thinking approach with the 9-Windows offers a number of additional useful perspectives. Of particular interest in many situations are the idea of repeating the SWOT analysis in the 9-Windows 'Future' positions and 'super-system' positions. With regard to the 'future' perspective, the idea of re-thinking the questions on opportunities and threats can be very important because it forces the team to think about not just what they think will happen in the future, but also what they think their competitors and the market will do. In a related manner, asking the same questions from a super-system perspective opens the eyes of the team to other industries beyond their own.

By way of example of both, if we put ourselves in the position of a hypothetical car manufacturer struggling with the idea of developing a commercially viable electric car then, thinking about 'threats' at the system level present (as a conventional SWOT analysis would), is likely to get us to think about what other car manufacturers are doing. This is likely to put us into a psychological inertia hole (Reference 3) that will focus our thinking onto hybrid vehicles and fuel cells. While this is undoubtedly necessary, it is far from certain that it is sufficient. Conducting the same SWOT analysis from the perspective of the super-system ought to point us at already viable electric transport systems like golf carts and postal delivery vans. According to Reference 4, it is more likely that these things will evolve and improve to take over the electric car market than anything developed by Ford or General Motors. Conducting the SWOT analysis from the 'future' perspective would further force the inclusion of solar energy and battery technology evolution (and, probably as likely, evolutionary limits), and, at the future-super-system level, global warming, choking of road systems and development of better public transport systems.

Thinking about the third 'interface' dimension illustrated in Figure 1, it is interesting to note that the idea of integrating the SWOT analysis into the different hierarchical levels of 'interfaces' (environment, behaviour, capability, belief, identity) and seeing how the analysis changes between different viewing perspectives ('the map is not the territory' from Reference 1), is already established practice in certain forms of Neuro-Linguistic Programming (NLP) - see Reference 5 for example.

Association/Dissociation

The NLP theme gives us yet another means of using the 9-Windows to better effect when we consider the strategy of association and dissociation. Reference 6 discusses the importance and benefits of being able to control whether we examine situations from either an internal (i.e. we are a part of the situation), associated state, or whether we chose to view the situation from an external, dissociated state (we are outside the situation looking in). In many ways this idea is similar to the 9-rooms idea discussed in the second part of this tutorial series (Reference 7). Figure 4 presents the basic idea more explicitly in the context of the 9-Windows tool.

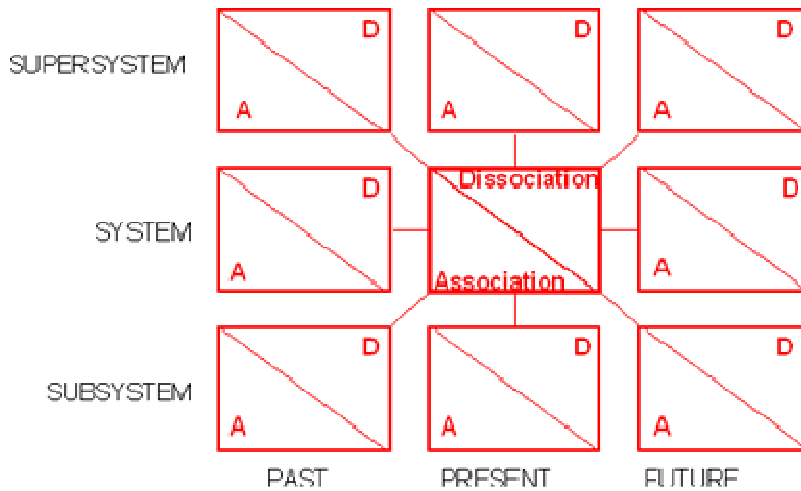


Figure 4: Combining Association/Dissociation and the 9-Windows

As described in the reference, the ability to associate and dissociate from any chosen situation is one of the cornerstones of NLP. The model already makes use of the space-time axes by, for example, helping people to solve (primarily) human-relations type problems by anchoring to past successes, and transplanting those anchors into future situations.

VAKOG

VAKOG stands for visual, auditory, kinesthetic, olfactory and gustatory. The acronym is a means of enhancing our ability to remember the five main human senses. The point is that, in a problem-solving context at least, we are often prone to not only forget any of the senses that are not already being used in the system. The use of all senses is important in many problem situations - hence the existence of Inventive Principle 28, Mechanics Substitution - (and its more closely related 'Another Sense' interpretation in a 40 Inventive (Business) Principles context), and the recent uncovering of a distinct trend in technical systems towards increasing interaction with more of the human senses (Reference 8). The point in the TRIZ/9-Windows context is that if we recognize the five senses in not just the context of the current system, but also in the other 8 windows, we can often create new problem definition and solution opportunities.

The basic idea is illustrated in Figure 5 - which hopefully also serves to reinforce the overall theme of this article - that just about any of the problem situation framing tools available to us can be re-framed 9 times into the system operator. 45 times if we chose to use the fully three-dimensional space-time-interface window structure.

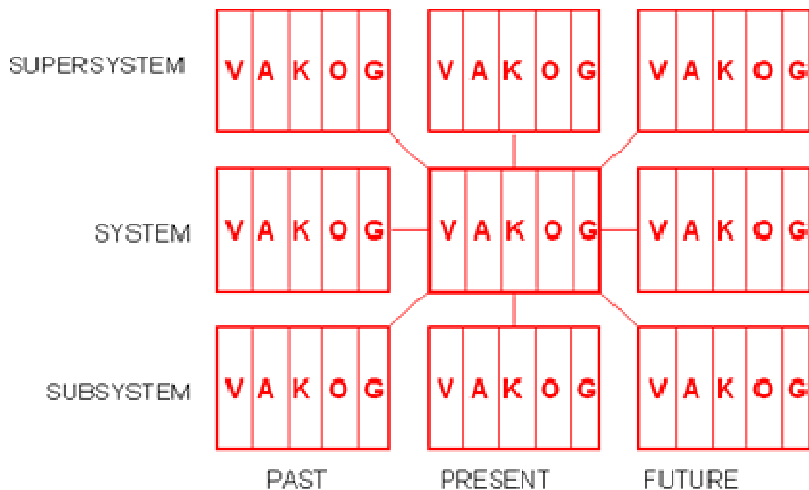


Figure 5: Combining VAKOG and the 9-Windows

Too Many Windows?

Anyone that has struggled through a SWOT analysis or an Association/Dissociation or any other analysis, will know that it can be very difficult to maintain concentration (will to live?) through all segments of the process. So what, therefore, are the chances of maintaining concentration over potentially nine times the number of segments as is being advocated by the system operator? Answer; it depends. If done in a single brainstorming session, the answer is probably as close to zero as makes any difference. If done in several sessions, or by splitting groups so that each covers different segments, the chances will increase markedly. The unfortunate truth according to a variant on Murphy's Law is that you can probably bet that the ones you chose not to analyse are the ones that contain the inventive spark that makes the biggest positive difference.

Final Thought

The system operator in whatever form we chose to use it is an important element within the overall TRIZ philosophy. Its presence is (or should be) felt in just about everything we do with TRIZ. The idea of thinking in space and time - which is what the 9-Windows are there to help do - is not unique to TRIZ. The addition of a third dimension called 'interface' or 'relationship' offers an important additional thinking direction. Whether we divide things into 9-windows or 45 or even more, we are simply using the idea of segmentation to help us **manage complexity** more effectively than we otherwise would. What we have hopefully hinted at here is that there are many more ways of applying segmentation than just segmenting in space or time. Someone out there has already solved your problem; different people like to segment things in different ways. Some will be more helpful in certain situations than others, but ultimately, the best ones will be those that fit into *your* way of doing things. Or, in the words of Buckminster Fuller:

"Start with the universe, any sub-categorisation under that level is purely arbitrary"

References

1. Mann, D.L., 'Laws Of System Completeness', TRIZ Journal, May 2001.
2. Nalebuff, B.J., Brandenburger, A.M., 'Co-opetition', Harper Collins Business, 1996.
3. Mann, D.L., 'Digging Your Way Out Of The Psychological Inertia Hole', TRIZ Journal, August 1998.
4. Mann, D.L., 'Problems And Opportunities', CREAX Newsletter, <http://www.creax.com/news/newsletternov/index.html>, November 2001.
5. Bridoux, D., 'PGPE Certified Modular NLP Practitioner Course, Module 7, PGPE, 2001.
6. Merleverte, P.E., Bridoux, D., Vandamme, R., 'Seven Steps To Emotional Intelligence', Crown House Publishing Ltd, 2001.
7. Mann, D.L., 'System Operator Tutorial 2) Changing Perspectives', TRIZ Journal, November 2001.
8. CreaTRIZ Advanced Trends Tool, www.creax.com

©2001, D.L.Mann, all rights reserved.