

# Invitation to our Interdisciplinary Seminar

We kindly invite you to participate in the 19th edition of our **Interdisciplinary Seminar** on  
**04 February 2022, 10-16 (Leipzig time).**

We want to take up an old academic tradition and cultivate interdisciplinary exchange on philosophical and social aspects of modern technological developments. As focus of the current seminar, we have chosen the title

## **Continuous Improvement, Engineering Systems, and Systems Engineering**

The seminar is conducted online

in the BBB room BIS.SIM <https://meet.uni-leipzig.de/b/gra-w2c-fhz-qnp>

Participation in our seminar is free of charge, but a

**registration** with [graebe@informatik.uni-leipzig.de](mailto:graebe@informatik.uni-leipzig.de)

is required. Please note that **English** is the working language of our seminar.

Prof. Hans-Gert Gräbe, InfAI, 11 January 2022

## **Announcement**

"Management is only possible if the object we manage is in motion" and "If there are no problems, there is no need for management" are two of G.P. Shchedrovitsky's key mnemonics [1]. In such an understanding, *management* is directed at improving problematic processes. This is also the topic of Business TRIZ. Methods of problem solving itself thus becomes the object of systematic investigation. One asks how the *process of process improvement* can be shaped via analysis, synthesis and evaluation. In the context of implementing such a planned process improvement, a "system as it is" is to be transformed into a "system as required" [2].

This leads to the second essential concept, that of a *system*, because goal-oriented transformation is hardly possible in a diffusely structured context. Problems must be *identified, located* and *specified* before a solution can be developed. TRIZ advises to determine within a general model of the system the *operative zone* and *operative time* as a spatio-temporal containment of the problematic process.

Often this is already sufficient to understand and solve the problem by adjusting process parameters or replacing defective components. Even more complex problems can be processed comparing them with earlier problems and their solutions to such an extent that promising solution approaches become visible also for the current problem. For this purpose, the *classification* of problems and solution approaches according to abstract patterns is helpful, as offered by the classical TRIZ with its *40 principles* [3] for technical problems and by the *theory of BPM patterns* for business processes [4].

With the concept of contradictory development of process parameters TRIZ offers one step further to deal with particularly hard problems and to leave the vicious circle, which quickly comes into effect in simple solution approaches for such a dialectical contradictory relationship between two process parameters.

In the past two semesters we analysed various management theories in more detail and found that such questions have been discussed more intensively only since the 1970s. Earlier the focus was on employee motivation (Taylor's "Scientific Management", Drucker's "Practice on Management", "Mintzberg on Management") or process improvement based on abstract principles (TPS – Toyota Production System). However, old principles of employee motivation are reaching their limits in

modern, highly flexible Business Process scenarios in dynamically changing market environments. Today, modified TPS principles form the theoretical basis of *Agile Process Management* and *Lean Production*. With the TPS concept of *Continuous Improvement*, methodologies based on systematic analysis gain new importance.

In our seminar we want to explore where both lines meet and which instruments are available to structure requirements and cope with problems in such a *continuous transformation process*. The adjective *continuous* points to diffusely structured contexts, whose diffuseness is often characterised with the words "complicated" or "chaotic" and claimed being impossible to be resolved. Systemic approaches are faced with the challenge to *disassemble and reassemble the indecomposable*, because "a system can only be operated if it is assembled". Shchedrovitsky calls this complex approach of disassembling and reassembling the indecomposable *schematisation*. It is at the core of every engineering project, which makes "Engineering Systems" as *process* a good candidate for the principal methodological design of such a *process of process improvement*. "Systems Engineering" promises a *theoretical approach* to systematise this methodological design.

What is the relationship between this theoretical insight and real experiences from practical management processes? This question will be the focus of our discussion. As always, we will prepare some impulse contributions, but above all we want to give broad space to the discussion. The working language of our seminar is English.

In our discussion we want to further explore this field of development and tension.

## References

- [1] Georgi P. Shchedrovitsky (2014). Selected Works. A Guide to the Methodology of Organisation, Leadership and Management. In: Khristenko, Reus, Zinchenko et al. Methodological School of Management. Bloomsbury Publishing.
- [2] Andrey G. Kuryan et al. (2021). [TRIZ Ontology. The second year](#) (in Russian).
- [3] [TRIZ – 40 principles](#).  
See also Darrell Mann, Ellen Domb: [40 Inventive \(Business\) Principles With Examples](#)
- [4] <http://www.bpmpatterns.org/>

## The event is supported by

Institute for Applied Computer Science InfAI

Research Academy at Leipzig University

MINT-Network Leipzig

LIFIS – Leibniz-Institute for Interdisziplinäre Studies

