

## **Doctoral thesis in Cluster A “Stuttgart Enterprise Model”:**

### **NEXT TAYLORISM**

A Calculus of Knowledge Work

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#### **Abstract:**

If we apply the 100-year-old paradigm of Frederick W. Taylor on the productivity-oriented organization of manual work and its corresponding scientific management to 2011, then we have to ask and answer two core questions:

- a) What kind of work do we have to deal with today in advanced manufacturing engineering?
- b) What kind of science can we use in order to develop a scientific management of such work?

Already in 1981, one of the most outstanding visionaries in management science, Peter F. Drucker, addressed these two questions with the following paradigmatic call: “The need is to do for knowledge work and knowledge worker what Taylor, beginning a century ago, did for manual work and manual worker.” (Drucker 1981: 106)

Correspondingly, the following thesis identifies and discusses knowledge work as the type of work taking place in manufacturing which is most crucial today and must be organized in new ways. Most striking is the fact that knowledge work can be understood as a certain form of communication which depends on new communication media, the human factor and social/technical systems. These circumstances require a new understanding of the coordination and control of knowledge work. From our point of view, the required theoretical background for such a new understanding can be found in the theory of social systems, which focuses on communication, and in second-order cybernetics which takes recursively-operating observers as a starting point of inquiry.

Both theoretical streams clearly override a linear understanding of coordination and control. At the same time, they substitute such an understanding of management with concepts of self-referentiality, operative closure and recursive observation. Based on these insights, we develop a theoretical model that refers to the corresponding Laws of Form.

On one hand, this model is validated by applying it to the classical form of Taylorism. It shows that Taylorism has to fight against some historical untruths, like the invention of the assembly line, and against some wrong ascriptions, like the implementation of hierarchical pyramids. Moreover, Taylorism refers to the initial rationale that first distinguishes between manual work and a science-oriented system for organizing manual work. Taylorism conceptualizes the production as a function of a manual-work-based production system. It measures manual work with time-motion studies and enables algorithmized descriptions and instructions of manual work by applying MTM. Such proceedings, and its applications, induce a tremendous growth in productivity which serves as the over-all decision-making program and offers constantly high wages.

On the other hand, we apply the developed theoretical model to empirical facts and theoretical rules about knowledge work of today in order to realize an organization of knowledge

work that operates on an elementary level. From our point of view, the basic operation that Next Taylorism is focusing on is the coordination and optimization of production processes. We have modeled this operation as a communicative one where information has to be uttered and understood. Furthermore, this operation occurs within social networks, and depends on several different eigenlogics which shape knowledge work contents.

Additionally, computer-aided data mining allows observation and management of the underlying communications, in especially email-communication and its eigenbehavior. Hereby, Next Taylorism provides knowledge workers, in real-time, with more knowledge and insights to their own operations. Additionally, it enables collaboration and the measurement of collaborative performance which can be expressed in a wage system. In our case, where knowledge workers are clearly defined as members of a formal organization but communicate in informal networks, a non-monetary oriented 'Management by Values' may only offer a delimited contribution to knowledge work productivity.

Conclusively, Next Taylorism conceptualizes the organization of knowledge work for the first time as a function which coordinates and controls knowledge work from within and which initially discusses and applies methods, the so-called MXM, on the knowledge workers.

The future of Next Taylorism as a form, which takes self-referential processes of knowledge work into account, mainly depends on its deliberate application. It is clear that Next Taylorism cannot be used as a form of external control, but rather as a potential for the useful and manageable increase of insights in knowledge work operations and its productivity.