Holonic models for productive organizations

Supervisor

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Context and thesis topic

Complex systems studies and simulations require to take into account complex systems characteristics. Simon has stated that numerous complex systems exhibit a more or less hierarchic structure [Simon, 96]. The idea is that the architecture of a complex system can be explained and understood using hierarchical organisation structures.
Koestler has proposed the holon concept in order to merge holistic and reductionist points of view [Koestler, 67]. A holon is a self-similar entity that can be composed of holons as sub-structures. The underlying intuition is to use models of system with entities of different granularities. It is then possible to recursively model subcomponents of a complex system until the requested tasks are manageable by atomic easy-to-implement entities.

This PhD aims to explore holonic modeling concepts to represent productive organizations like in [Cossentino et al, 10]. The resulting models will be simulated according to the methodology defined in [Galland et al, 20].

Bibliography

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