

March 27, 1986

GENERIC DESIGN

[A possible short course for the Carl Kranz Gesellschaft]

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Generic Design is a new science. It has been developed by John N. Warfield using a "Domain of Science Model" to discipline its development.

This new science consists of foundations, theory, and methodology. It has been applied in several types of applications, ranging from organizational design to the design of defense systems.

Generic design is a form of top-down conceptual design, disciplined by its use of five "consensus methodologies". These methodologies are used for generating design options, organizing them into design dimensions, testing for dimensional interdependence, arraying in decision sequences, choosing sets of options to form design alternatives and, finally, for choosing a particular alternative using a method called "tradeoff analysis".

Generic design is an iterative process, producing as a basis for making design choices a hierarchy of structures called "quads". The uppermost quad is a four-level hierarchy, containing the title of the system to be designed, the clusters of dimensions that are interdependent, the set of all dimensions, and the sets of options that make up the several dimensions.

Any one option whose design is not yet established can become the title of a subsystem and the top level of a new quad that is also the bottom level of the quad just above it.

Generic design takes place in a specially designed situation room, uses a skilled facilitator who is expert in the consensus methodologies, uses the consensus methodologies, uses computer software for carrying out Interpretive Structural Modeling (ISM) and tradeoff analysis, and involves a group of participants who provide the substantive knowledge to identify the design options, dimensions, clusters and alternatives, and who may select the particular alternative to be pursued to implementation.

In the Domain of Science Model, the foundations furnish postulates to the theory. The theory furnishes criteria for selecting methodologies, or for creating them. The methodologies clarify the design environment and the roles, and provide the means for carrying out design activities. The applications furnish feedback to correct deficiencies in the science, thus becoming part of a circular, recursive, ongoing development process.