Modeling Network Organizations

Part 1: steps 1-5

1. Start from generic operations in a common but large industry (e.g., water management, building construction) or a problem domain (e.g., firefighting, search and rescue) that is already operates as a network of work units. There might be a physical (e.g., water, milk, building supplies) or a virtual product (e.g., information, permissions) flowing through this network, e.g., (Hoekstra, 2012). Although the product might be the main theme of interaction, we are more focused on social nature of interaction than the product itself. If there is a verbal description of the operations focus on the verbs for identifying processes and responsible individuals. Consider a process of abstraction where you generalize the work units to finitely few organizational units like divisions and departments. Abstraction will reduce the original network (by several orders of magnitude) into a small network that retains the essence of operations but hides most other detail. Focus on conditions and things among work units that form network links. This is a network organization model (NO1). This generic model serves as a reference model. As a generic model, NO1 can instantiate all NOs of its type but will not contain specific details.
2. Repeat step 1 for another problem that results in NO2.
3. Repeat step 1 for another problem that results in NO3.
4. Synthesize NO1 with NO2 for a combined NO. The result is a generalized NO (GNO).
5. Implement GNO from step 3.

Part 2: Step 6

6. Demonstrate advantages for GNO's network properties.
   a. GNO is rapidly responsive to changes in the environment.
   b. GNO is very flexible and allows for organizational changes called *plasticity*.
   c. GNO is adaptive and can change by learning and evolution.

References

A. Y. Hoekstra, 2012. The hidden water resource use behind meat and dairy, American Society of Animal Science.