

Work Visually with Complex Data

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The current hype on big data may overshadow the problems inherent in complex data.

Complex data constellations, which are nothing new to large companies, are gaining importance by:

- more process information getting available to computer systems,
- demand for views of the overall picture require to correlate earlier separate information pools,
- computer power and mathematical progress making optimization computation feasible in instantly computed what if scenarios.

Complexity in above situations shows up in multiple, often not explicitly known relationships between the data items.

The knowledge worker's job is not merely to look at and understand data items in certain locations, but to find out about relationships within those data items.

The end user has to deal efficiently and safely with complexity in his day to day work.

It may be argued, that information presented as lists or common business graphics, is not the optimal solution for above task.

Look at a child given a new toy:

- It will grab it with its hands and turn it to be able to look from all sides on it.
- It will open it to see what's inside; it will twist and press to see what will happen to the toy's structure.
- It will try to combine it with other toys it already has and understands to find out if something bigger can be made out of it.

Shouldn't a knowledge worker be given the same capabilities?

Couldn't current computer assistance be enhanced to better support human brain's capacity to understand and work with complex constellations of information ?

Isn't vision, especially in a short feedback loop of applying change and viewing the result a more human way of understanding the 'whole picture' ?

In this speech we will discuss an approach which works with information based on digraphs consisting of nodes connected by directed edges and a highly interactive handling and viewing layer above it.

Pros and cons will be discussed based on real examples in the food and chemical businesses targeting logistic and production planning.

It will be shown how a complex manual planning situations and the output of a mathematical optimization computation can be examined and composed visually; in scenarios for the end user and the knowledge worker.