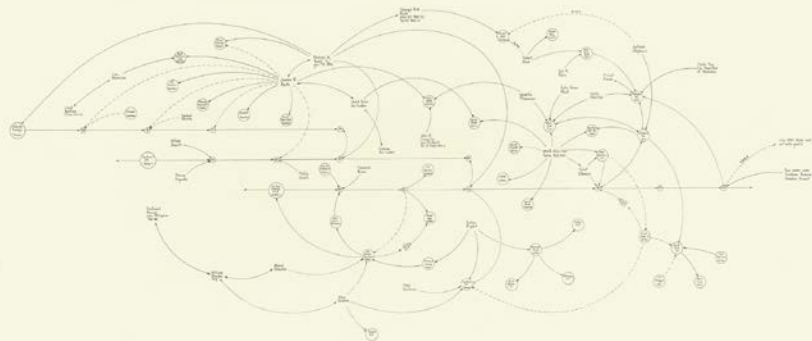



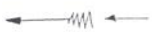




Digital Art Research and Knowledge Processing



- Some type of influence or control 
- Some type of mutual relationship or association 
- Flow of money, loans or credits 
- Sale or transfer of an asset 
- Blocked or incomplete transaction 
- The sale or spin-off of a property 

A drawing by Mark Lombardi. "George W. Bush, Harken Energy, and Jackson Stephens, ca. 1979-90 (5th Version), 1999". Taken from [1].

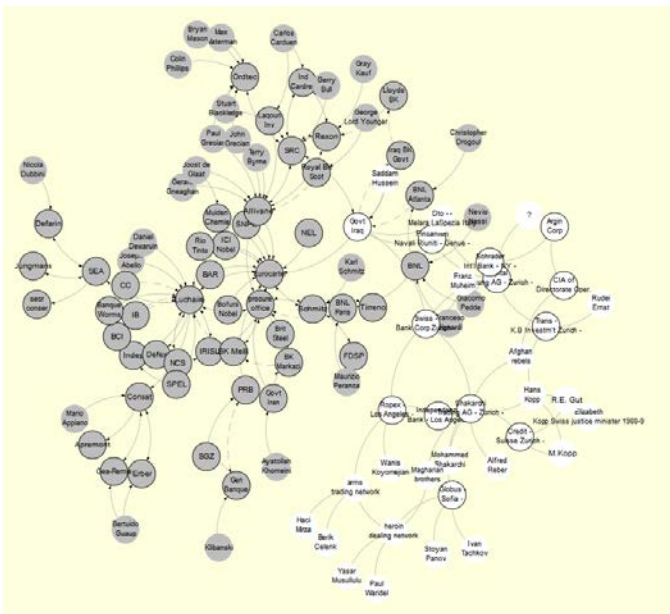
We do digital research on the artist Mark Lombardi (1951-2000) as an experiment in methods for digital art history [1]. Lombardi's works depict networks of actors involved in scandals on money laundering and weapon deals like the Iran-Contra affair. Nodes are persons or organizations and edges represent vague relations such as "association", "influence" or financial transaction". We manually digitize these networks and publish them at <http://www.lombardinetworks.net> in GraphML format together with an OWL ontology which allows for exposing the factual knowledge as Linked Data.



Notes during digitization

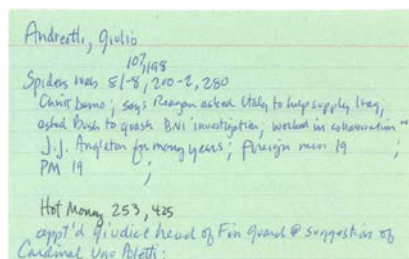
Services on the data are implemented as textual search on labels of nodes or as an index of which actors appear in which works. For exploration of the works we visualize the networks with nodes linked to Wikipedia information on the actors. We generate synthetic drawings from joining multiple original networks that overlap in actors. Calculating the difference between the preparatory versions of his works allows for more insights into their genesis.

Computer science research can also profit from researching art. A multitude of methodologies on automated extraction and processing of information from digital sources to make knowledge explicit has been developed. But, there are areas, especially outside of the typical exploration space of computer science with potential to understand the human dimensions of knowledge acquisition like intuition, vagueness, doubt and emotions.



A synthetic drawing generated from two works (denoted with grey and white) interactive on the Web

Artists like Lombardi examine the world for associations, derive viewpoints on facts, represent them as artworks, and hence can be considered as knowledge engineers. Processes in art can inspire new ways for knowledge modeling and information processing. The source material from Lombardi - about 14000 handwritten index cards - and his network drawings in digital form would form a gold standard for benchmarking automated approaches.



An index card with information on a person. Taken from [1]

[1] Hobbs, Robert Carleton; Richards, Judith (2003). *Mark Lombardi: Global Networks*. Independent Curators International.
 [2] Robert Tolksdorf. Initial report on digitally researching the network drawings of Mark Lombardi. Technical Report TR-B-13-03, Freie Universität Berlin, 2013.
http://edocs.fu-berlin.de/docs/servlets/MCRFileNodeServlet/FUDOCs_derivate_000000002861/TR-B-13-03_TolksdorfLombardi_FU_TR.pdf

