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KNOWLEDGE MAPS AND RESEARCH NETWORK VISUALIZATIONS

AN INFORMATION NAVIGATION TOOL FOR LEARNING AND
UTILIZING THE POWER OF DIGITAL DISORDER

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ABSTRACT

Metadata- the data about data, is a pivotal component related to the organisation of information both in physical and digital space, traditionally created by experts. A radical change in the creation of metadata started happening after the digitisation; Other than the experts and authors, when the users of information got an opportunity to classify and categorise information. This shift, introduced a new direction by making the qualitative, 'miscellaneous' characteristics of information visible, which are otherwise not mentioned in the expert-made standardised metadata. Unlike, the traditional hierarchical organisation of information with fixed paths to access information, the user-generated metadata, with its diverse tags, allow multiple understandings, paths and linkages to every information; the nature of which appears dynamic and non-hierarchical.

Keeping the communication and cognitive power of visualizations in mind, this research focuses to understand, how our increasing capabilities of creating metadata can be effectively utilized in the visualization of various academic and institutional knowledge repositories. The research hypothesised that, this effective utilization of metadata can create opportunities for an information-seeker to be aware of the diverse perspectives linked to an information object, instead of limiting to keyword centric information search. Thereby, improving the current information search from simply being an act of 'finding', to a process of 'understanding'. In which, information is not simply displayed as an object in isolation but as a web of concepts offering different vantage points and interpretations.

In order to explore and search answers for the questions, after reviewing significant literatures to provide a contextual overview, the research adopted two methods. The first one, was to critically analyse various academic/institutional network visualization projects as cases studies. And the second, was to create test visualizations to reduce the impact of the information problem experienced by the student researchers in their early days of research. By following a pragmatic, user-centric approach, the author created four test visualizations answering diverse information problems of the selected context. The test visualizations created explores the use of both user-generated and standardised metadata, and projects the power of visualizations (knowledge maps and academic network visualizations) as an information navigation tool for learning. Through the critical analysis of case studies, test visualizations, and the „learning by doing' experience, it was possible to elaborate some of the opportunities and current difficulties present in the utilization of the qualitative, user-generated metadata and standardised metadata in the visualizations of institutional and academic knowledge repositories. The wider scope of this research lies in the design of visualization based Knowledge Management and Information Management tools, and also in the design of visual interfaces for the digital libraries.