Data visualization has experienced tremendous growth over the past years. Visual information displays are widely available in home and consumer settings, e.g. newspaper websites, government agencies and demonstrations of data analytics. Interactive visualizations help users zoom into, traverse and manipulate data elements and groups, identify relationships between parameters, and generate and test temporal and other patterns with a view to helping users gain insights into complex data. Useful visualizations have been shown to reduce the perception of system complexity and improve system usability. However, visual approaches for **complex tasks in the context of business information systems** employed in various industries (financial, manufacturing, healthcare, education and others) remain largely unexplored.

The Bentley Visual Methods for Real-life Systems (**RealViz**) interdisciplinary group of researchers is **now looking for partner companies** willing to participate in the next stage of a Bentley–funded research study on **effective visually-enhanced user interfaces for complex real-life tasks.**   The research team consists of faculty from the CIS, IPM, IDCC, and Mathematical Science departments. with experience in the areas of system design and usability, visualization, and process-intensive business applications. Team members have completed NSF as well as commercially-funded projects.

Collaboration with Partner Organizations for Creating Interactive Visual Interfaces for Workspace

In this study, we seek **to investigate how interactive visual interfaces can improve system usability and to develop principles that will help software companies design visual interfaces for effective manipulation of data and processes**. Employees in the contemporary workplace are expected to perform complex data analysis and manipulation tasks, which they must perform using a variety of software systems. Many of those systems have obsolete, obtuse and unnecessarily complex user interfaces.

Existing studies show that visual interfaces reduce users' perception of task complexity and thus should lead to more successful adoption as well as wider and more effective use of organizational systems. We are seeking to partner with companies looking to accomplish one or more of the following goals:
(a) Understand how their internal systems are actually used in the workplace for interacting with and manipulating complex data and processes, identify bottlenecks in the effective use of the software by employees,
(b) Develop a set of recommendations and a prototype design/implementation of a visual interface for accomplishing a task or a set of tasks,
(c) Collaborate on the design and implementation of a novel, visually enhanced interface.

The primary methods of research in this study include interviews, observation of the use of organizational systems for task (a) above, and work with system designers and developers (tasks b and c). We request that each partner organization allows us to interview several users of the target organizational system and observe their everyday work. Every session will typically last for about 20 to 30 minutes. We are open to advising a student from the collaborating organization in their Masters/PhD work related to the above goals. We are also asking that partner organizations assign a liaison to act as the main contact person with the Bentley team.

Benefits for Participating Organizations

Throughout the research period, the research team will provide the partner organizations with reports concerning:
• General employee perceptions regarding the system(s) targeted in the study
• Specific usability issues affecting the way employees, in aggregate, are using the target system(s)
• How target system(s) are used in the organization and possible challenges associated with system use
• Training efforts that the company should undertake related to the target enterprise system(s)

Partner organization will also be key contributors to advancing the state of interactive visual interfaces in workplace.

Maintaining Confidentiality and Publishing Results

The research team will keep the identities of the companies that participate in the research confidential. While summary findings and conclusions will be published in academic conferences and journals as well as shared with participating companies, all corporate identities will be hidden, as will any information that might identify individual participants. Partner companies will have an opportunity to review manuscripts before they are submitted for academic peer-review and will be able to request reasonable changes to better conceal their identity.

For further information contact: Dr. Tamara Babaian, e-mail:tbabaian@bentley.edu, phone (781) 891-3161