BACKGROUND

One element of a legally defensible job analysis is the inclusion of a thorough task analysis, or the examination of discrete tasks required of the job (Brown, 1996). However, in today’s knowledge economy, how a job analyst gains access to tasks carried out by knowledge workers (e.g., accountants, computer programmers, etc.) is often limited by the constraint that an individual interacting with a computer presents. In traditional, manual labor jobs, recording tasks conducted allowed for recording of observable, discrete units of work such as chopping and lifting. The interface with a worker and his/her computer prohibits a job analyst to get a clear picture of the work for at least three reasons: 1) the speed of the work, 2) the amount of information, and 3) unrepeatable analytical processes. Thus, the goal of the present effort is to evaluate how the use of eye tracking and screen capture technologies impact observation and analysis of the cognitive tasks conducted by knowledge workers.

RESEARCH QUESTION

How can eye tracking and screen capture (i.e. oculometric) technologies impact observation and analysis of the cognitive tasks conducted by knowledge workers?

METHODOLOGY

Phase 1: Survey

- "While working in shipment, if I need to go to waybill to make a correction, once the comment box pops open I cannot go back to shipment to get info I may need for the comment. I have to write stuff down before I go there or go out and start over to find that info if I forget." - Study Participant

Phase 2: Scenario Eye-Tracking

DATA AND RESULTS

Phase 3: VPN Eye-Tracking

Phase 4: Eye-Tracking Interview

Please refer to the computer screen next to this poster for visualization of the data collected.

CONCLUSIONS

- Modify the methodology to the cognitive task being performed.
- Expand eye-tracking cognitive task analysis with a traditional job analytic survey.
- Utilize eye-tracking technologies in two stages to capture both controlled and uncontrolled responses.

KEY REFERENCES


ACKNOWLEDGEMENTS

- Special thanks to Union Pacific Railroad for their participation with the study and their agreement to release heatmap images. This project would not have been possible without their support and willingness to participate.
- Thank you to UNO’s College of Business Administration for their support of my Graduate Assistantship and facilitation of the relationship between UNO and UP.