**Abstract**

Data entry tasks often involve retrieving data from one or more sources in the environment and entering it into a computer system. Switching between looking up and entering the required data can be disruptive, as it costs time resuming the entry task: people may have forgotten where they were, and enter information into the wrong fields. Furthermore, the cost to access different information sources may vary, which can further influence the disruptiveness of looking up information. In order to support people in their data entry work, it is therefore important to understand how people switch between entering and looking up data.

This thesis investigates how information access costs (IAC) affect how people manage subtasks of looking up information for a data entry task. Seven studies are reported across three chapters to understand the impact of IAC in the context of entering expenses in a finance office setting.

**The first part** of the thesis describes two qualitative studies looking at the context in which office workers in finance offices perform data entry tasks. Interview findings from Study 1 revealed that many data entry tasks have to be scheduled over time, and a critical component of data entry work is not just entering the data, but also retrieving data from multiple sources distributed in the environment. Participants explained that they batched similar tasks to efficiently complete their work, and held items in memory whilst switching between sources. Observations in Study 2 revealed that people adopt different strategies when organising information from physical or digital sources. Physical sources take time to access and participants therefore prepare it beforehand, or postpone retrieving it until a more convenient moment in the task. Digital sources are retrieved using the same device as that where the data entry occurs, and participants often interrupt their main entry task to switch between different windows and look up this information as soon as they need it. These switches can often take longer than intended, and participants were observed being logged out of the entry system, resuming the wrong data entry task, and reported it took time to resume their work after these longer switches.

**The second part** of the thesis reports three lab experiments that further test the influence of information access costs on people’s information retrieval strategies. These studies show that, in a controlled setting where participants can learn the time costs involved in accessing information, they first switch to information sources that are fast to access, and switch more frequently to these sources. On the other hand, people either prepare or postpone looking up information which takes time. [Study 3 showed that if people retrieve all data from the same source, they will reduce switches between entering and looking up data if the access costs to this source increases. As it took more time to access, offloading behaviour was observed as well, and several participants placed items they were going to need nearby, but did not use them yet]. Study 4 further demonstrates that when people have to manage multiple sources, they collect and group items that are quick to access first, and leave items that take longer to access until the end. Study 5 shows that this effect also applies in a multi-task setup: when dealing with two data entry tasks, people will interleave between tasks in order to enter items with a low IAC first. As a result, participants made more omission errors and submitted tasks before they had completed entering all the items. xx

**The final part** of the thesis reports two studies that evaluate the effectiveness of a design intervention which aims to make information access cost more salient, and gives users explicit feedback on time spent to access information. Study 6 found that using an experimental data entry task, people who were shown how long they were away for made shorter switches, were faster to complete the task and made fewer data entry errors. Study 7 evaluated the intervention with finance workers processing expenses. data replicated the findings from study 6 in-the-wild - Data from post-study interviews indicated that time feedback made participants more aware of their switches, and they tried to remain focused on looking up information and return to the data entry task on time. They postponed interruptions until a more convenient moment in the data entry task, rather than switching often and addressing an information need as it emerged.

This thesis demonstrates how looking up information influences people’s data entry work, by testing the effect of information access costs on people’s switching strategies between looking up and entering data, and evaluating how making information access cost more salient can influence their behaviour. It makes a theoretical contribution by showing how people adapt to small changes in information access costs not only by changing the number and duration of switches, but also the scheduling of these switches during the main task. It makes a practical contribution by showing how making information access costs more salient influences people’s switching behaviour, and can help people make their switches shorter, and schedule them at more convenient moments during a task.