Using Proximity Information Displays and Audit Log Information to Motivate Users to View and Maintain Access-control Policy

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Tuesday, June 1, 2010
1:00 p.m.
GHC 4405

Managing access to shared information, such as photographs and documents, is an emerging difficult issue for end users who are accumulating an increasingly large and diverse collection of data that they want to share with others. Current policy management solutions require a user to proactively seek out and open a separate policy management interface when they want to review or change their access-control policy. This may be acceptable to users if they are engaged in a primary tasks such as “Give Bob access to vacation pictures,” but, for the majority of users, such tasks are uncommon. Consequently, access-control policies are rarely reviewed or even glanced at. Historically, security administrators and auditors helped fill this gap by actively checking for issues on behalf of users, but in the age of Facebook and Flickr users have no professionals double-checking their work. Users need a way to review their access-control policies that fits into their normal workflow.

To enable users to better understand the implications of their access-control policy as well as how it is used we need to provide greater transparency to end users. In this thesis I am proposing the use of proximity information displays to make users more aware of how their resources have been used in the past and how they could be used in the future. Proximity information displays are interface components that have the following properties: 1) spatial proximity to resources, 2) glanceable, 3) show useful and interesting information, 4) allow layered data exploration, and 5) make it easy to segue to policy modification. They are referred to as proximity information displays because information is always placed in close proximity to where resources are displayed on the interface. As the user navigates through their files, or other resources, the proximity information displays will update so that displayed information is always only about the displayed resources. How to best implement each of the above properties in proximity information displays in a way that best supports awareness of data usage and policy implications will be the focus of this thesis.

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Thesis Summary: http://www.cs.cmu.edu/~kami/proposal.pdf