



Figure 5: *Taskr* prototype for a test workflow on Oracle Peoplesoft

application, thereby reducing the usability when rendered on a small screen.

6 DISCUSSION

Security: Most enterprise applications require the user to log in (either explicitly or through a single sign-on service) before any workflow can be executed. The requirement of log in usually does not restrict the number of workflows that qualify as spot tasks as the username and password can be treated as fixed parameters. The login username and password required are required by *Taskr* to execute workflows on most enterprise applications. The login parameters constitute sensitive information and can be encrypted and stored on the local device using services like keychain API for iOS. When the spot task has to be executed, these parameters can be encrypted and sent to the server using transport security such as SSL. Alternately, this sensitive data can be stored in the cloud isolated within enterprise network and hence be protected by enterprise firewalls. The user can then be restricted to using *Taskr* within the enterprise network. If the application server allows it, a continuous login session can be maintained at the *Taskr-server* using the stored username and password.

Evaluation: *Taskr* requires accurate fingerprinting of UI elements to execute the workflow. While we discuss the fingerprint technique used by *Taskr* in Section 3 and implement it in the prototype, we do not evaluate it for correctness. We plan to investigate this in the future. We implemented *Taskr-client* and server for twitter, email and native app usage modalities. However, we only conduct subjective tests on the native mobile app modality. We plan to implement a few other modalities and extend the testing in the future.

Extraction rules and Translation tables: *Taskr* relies on manually constructed rules for information extraction and fixed translation tables. For the prototype, we constructed these rules for most elements defined by the HTML5 standard. However, many web applications use elements defined by third party UI frameworks. We plan to extend these rules for some popular UI frameworks used by web applications.

Extension to other workflows: *Taskr* helps users mobilize simple workflows that can be described as spot tasks. This restriction limits the number of workflows that can be mobilized. We plan to relax these restrictions to include workflows that can be described

as a sequence of spot tasks, and also other general workflows in the future.

7 CONCLUSION

In this paper, we identify a new granularity of mobilization - spot tasks, and argue that it empowers the users to drive the mobilization efforts themselves. We present *Taskr* a do-it-yourself mobilization infrastructure and implement a prototype through which users can mobilize spot tasks and execute them through a mobile app, Twitter or Email. We then evaluate it with users and show its benefits.

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