



Workshop on Mobile Ajax Gemalto position paper

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Summary

Gemalto (<http://www.gemalto.com/>) provides end-to-end digital security solutions, from the development of software applications through design and production of secure personal devices such as smart cards, SIMs, e-Passports and tokens to the management of deployment services for our customers. These smart devices are complementary devices to mobile devices (like phones); they are plugged into mobile devices in order to perform operations such as authentication (SIM cards in GSM phones), storage, and application server. At the embedded software labs we are developing next-generation Java Card technology that is a Java-based (CLDC-like) software platform for smart devices. This platform provides a full-fledged Web server (compliant to Servlet 2.4 technology) to support deployment of Web applications in an embedded smart device. Such applications are then available as local Web applications served by the embedded server, accessible from mobile device browsers such as phones or PDAs. Why would one want to host a web application in such this embedded server? Because:

- they are available off-line (network is not always reachable, and connections are generally not free);
- when these applications store personal information, users concerned about privacy do not want to delegate their storage to a remote server exposed to internet piracy;
- when sensitive operations are involved, such as authentication or signature, smart devices are a guarantee of security.

Leveraging on the Ajax technology, we have built a demonstrator of personal Web applications served by a Web server in a smart card plugged into a mobile phone. The phone browser is then used by the end-user to access to his/her personal local Web applications. AJAX is a key technology in this context as it allows for a rich user experience even in the context of a small server (as small as a server able to be run by a smart card). This position paper provides some information about what we, as device manufacturer, are doing in the area of Ajax applications on mobile devices. We believe that the Workshop audience might be very interested to discover one of the smallest programmable Web servers serving Ajax applications to mobile devices.

Gemalto interest in the Workshop

The interest of Gemalto in the Workshop is twofold:

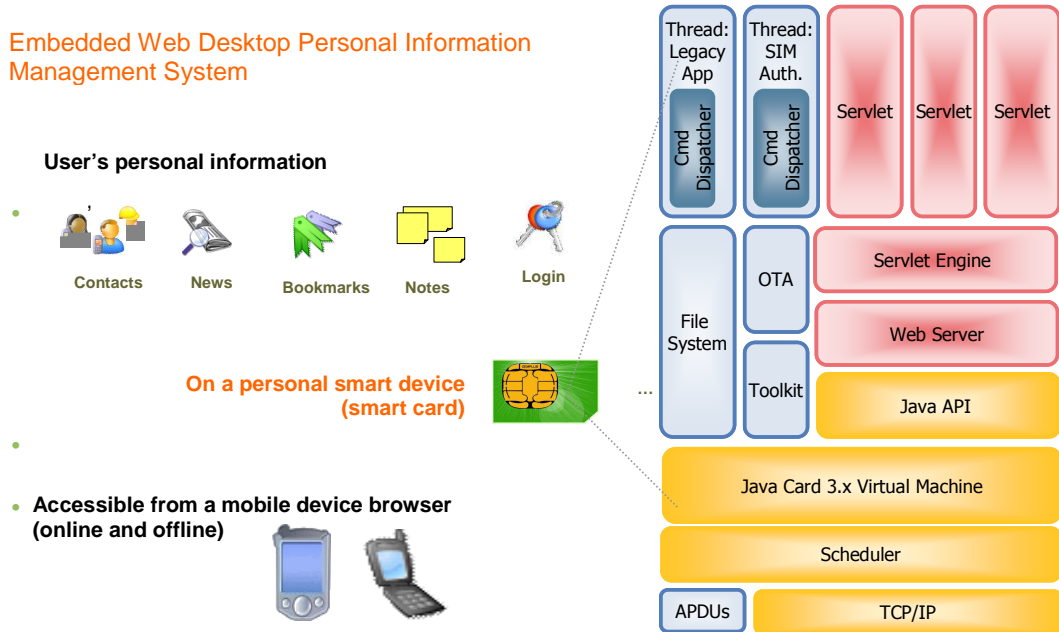
- First, we expect to discuss the interest of local Ajax applications in mobile devices and the opportunities such applications open. For instance: the value of local servers and the value of Ajax for small servers, Ajax-based mash-up of local (and possibly personal and secure) applications with regular Web applications, *etc.* To that purpose we are committed to make a short presentation as well as a short demo that we think can open new opportunities to the audience and hopefully foster interesting discussions.
- Second, we wish to participate to meet “Ajax people” and to learn from what they are doing in the area of mobile applications. Web applications (with Ajax) is an important new field of applications for us and we expect to share our experiences on models, tools, and best practices for creating, developing and deploying mobile Ajax applications.

A mobile Ajax application in a smart card (plugged in a mobile phone)

The demonstrator is an Ajax-powered Web application (called EWD for “Embedded Web Desktop”) executing in an embedded Web server part of the Gemalto prototype of the Next-Generation Java Card platform. The Gemalto Next-Generation Java Card is a Java platform dedicated to small devices (smart cards, USB tokens, appliances, toys, etc.) with TCP/IP connectivity; it embeds an extensible Web server dedicated for the hosting of Web applications. In order to use this Web server and the applications it hosts, the user only needs to plug his smart card into a mobile phone that has a browser. Note that this same smart card can also be plugged into any web-enabled device such as a PC, hence providing immediate portability across devices.

The EWD application is accessed locally from an Ajax-ready mobile phone browser (Minimo in our case). This application allows for the management of personal information: a contact book, a list of bookmarks, a list of RSS feeds, some text notes, some Web widgets and the user’s logins/passwords on Web sites. User’s can manage these data (browse, add, update, and remove) using a responsive GUI thanks to Ajax technology.

Because the application is served locally by a smart card, the application is always available whether the mobile device has Internet access (online) or not (offline). In online mode the managed data are enriched with online content: for instance, the home address of one person in the contact book can be displayed with a geographical map. The mash-up between those local and remote data is realized inside the mobile device browser.

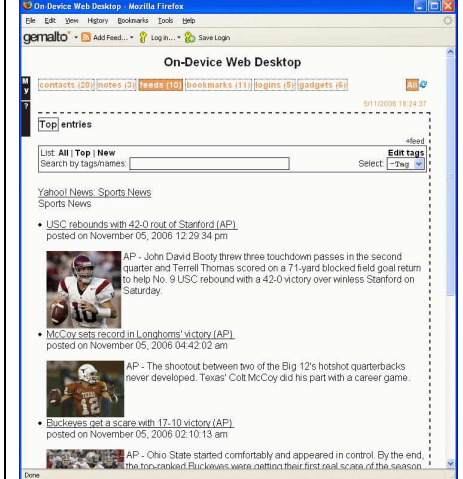


Demo screenshots

When visualizing or editing contacts information while online, address location can be displayed with Google Maps. This illustrates mashup of personal information with online applications.

The EWD news reader displays your favorite RSS feed headlines.

The EWD smart card can also be plugged into a PC, to benefit from its wider screen.



Conclusion

Gemalto provides an innovative platform for deploying Ajax applications very closed to end user. These applications can run offline, may mash-up or synchronize with other applications while online, and should be administered remotely. This original situation flavors a new usage of Ajax technology.

What do people think of such a scenario? What are its advantages and inconveniences? For such a use-case, what do Ajax brings? How to best use Ajax technologies? What are the needs on Ajax? *Etc.* Our objective during the workshop is to demonstrate the value of this scenario, to discuss the abovementioned questions, and to share our experience with actors of the mobile Ajax community.