The Future of Social Networking: Let everyone in, and remember they're all on the move

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Background

The NEC Network Labs in Heidelberg, Germany, has over 5 years of experience in the research and development of Context-aware technologies for mobile services. For nearly as long, we have considered the web as a platform where such ideas could flourish, and have been closely monitoring and adapting web technologies in this direction.

Since January 2008, we have been working within the iNEM4U[1] project, which strives to bring shared multimedia experiences across multiple technology domains. Social networking is a cornerstone of the project, serving as the backbone for experience sharing and content recommendation, both at home and on the go.

One of NEC's goals within the project is the extension of the Google Gears API to bridge heterogeneous context management frameworks and bring them into the web.

Challenges of Social Networking

In our view, Social Networks in general and those that aim at the mobile world in particular, face two major challenges: firstly, they have to work *for everyone* on the mobile terminal just as well as they do on the PC, and secondly they need to leverage the user's context, all the more significant for being mobile.

Let everyone in…

The perceived value of a network is tightly linked to its size: since social networks enable users to share information between them, it is imperative that not just you, but also the majority of your contacts become members of it.

While virtually any internet user may use his PC to access a social network service, mobile users are limited by the capabilities of their terminals. Facebook, for instance, provides a feature rich application for Blackberry and iPhone, but is not supporting an Android version, relying on a much poorer web access to service the rest of its users. Such attitude is not strange, considering the costs of developing and maintaining a different application for each platform.

[1] Project page at http://www.inem4u.eu

And so, while mobile platforms inevitably continue to diverge, the web remains a unifying link. With functionalities like advanced AJAX support or smart zooming in newer mobile browsers (e.g. Opera 9.5, Safari), the browser stands today as a solid application execution environment.

For manufacturers, porting open web browsers, or adapting them to comply with standards is a cost effective way to broaden the application ecosystem. For application developers, the cost of implementing multiple clients can be instead invested in making truly rich web applications, which would seamlessly work in most target devices.

In order to reinforce this trend, one must ensure that standards can keep the pace of evolving service ecosystems, and so bring web applications to the level of their OS native counterparts.

… and remember they're all on the go

The evolution of the mobile terminal landscape has boosted the development of rich Mobile Social Network applications. MySpace or Facebook (120 million users[2]), have enjoyed unprecedented success with their mobile applications for the iPhone, achieving 33% and 37% market shares. It is therefore very interesting to observe how Loopt, a newcomer launched in July 2008[3] has reached close to a 30%.

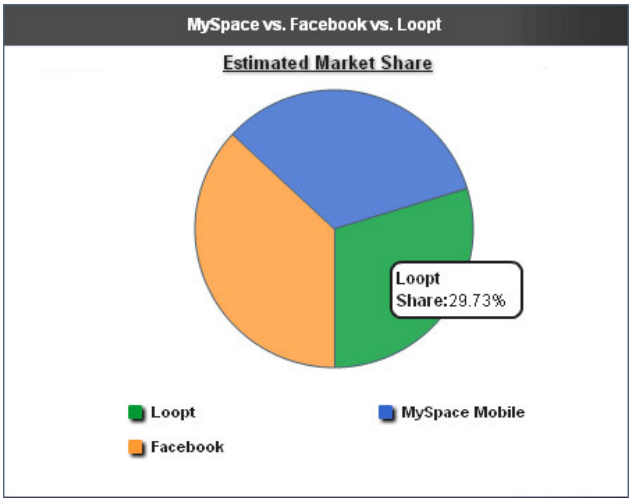

Figure 1 Market share on the iPhone (Source: www.mybefia.com)

How has Loopt, who had no users at all 4 months ago, outdone the inertia of 48.000 Facebook applications and an enormous user base? Simple: it differentiates itself by leveraging the fact that users are mobile.

Loopt does not sport a wide array of functionalities, but it's good at showing where your friends are around you, and what they are up to. By comparison, the Facebook and MySpace clients provide limited access to some of the applications that you typically use on the PC, and fail to provide the spur-of-the-moment functionality that Loopt thrives on. Understanding and sharing the user's

[2] Source: http://www.facebook.com/press/info.php?statistics

[3] Source : http://www.crunchbase.com/company/loopt

situation is the treasure chest of mobile social networking, and context-aware technologies are its key.

Herein is the problem: each device provides different interfaces and data formats for their sensor information, hindering the development of multiplatform applications.

A classic solution is provided by Yahoo's Fireeagle[4], where mobile and fixed clients can provide their position to a network side aggregator, allowing third party applications to retrieve the user's location. This type of solution, however, poses numerous problems, if we assume that there will always be more than one source of information: the web application needs to find out the user's aggregator of choice, implement its interface, and get an authorization token from the user.

Wouldn't it be better if the client side software implemented a standard API to access the context information? And given the above arguments, what about creating a JavaScript API that web applications can directly query? Google's Geolocation API[5] takes a similar approach to provide location information through the Gears plug-in.

In our view, said APIs need to be standardized to boost adoption, and should be broadened to encompass generic context information.

Putting it all together

According to Rubicon Consulting, web app users dedicate a 22% of their time in front of a computer to web-apps[6] , proving the web's potential as an application platform. We have also given arguments showing how this approach is cost effective and can reach more users, with more features.

In the area of Social Networking, we have shown the relevance of context information, and have argued in favor of providing web apps with a direct access to it.

Our vision is clear: *the web as a rich application platform, offering standardized API's to the resources of the device, be it a set-top box, a mobile phone or a desktop PC.*

This is of course no easy task. Today, web standards offer the closest thing to a unified platform, and therein lay its strength. For years now, the adoption curve of plug-ins like Flash has resulted in a split of the web capabilities. In these next steps, multiple implementations will be proof of a healthy ecosystem, but standards must lead the way to avoid fragmentation.

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[4] Web site at: http://fireeagle.yahoo.net

[5] Available at: http://code.google.com/p/gears/wiki/GeolocationAPI

[6] Source: http://301url.com/Rubicon-Consulting

In some cases, standards will propose new functionality to be implemented by browsers, and in some others, third parties will implement their own innovations and it will be up to the standard to quickly react to them. The latter can be illustrated with HTML5, originally labeled “Web Applications 1.0” and in design since 2004, but being hastened by products on the market like Google Gears.

Likewise, one must also pay attention to the improvements brought forth by close competitors like Adobe Flash and Microsoft Silverlight, with functionality well beyond graphical interface improvements. Note that we refer to them as competitors to the web because they remain proprietary solutions, and are therefore not available in all platforms unless directly supported by their owners.

Finally, one must be very careful with the underlying security models, since more functionality could often result in higher risks. The proposed approach could solve some of the authorization problems at the browser level, giving the user a better overview of where his data goes, and allowing him to interrupt the sharing of information directly on his machine.

Open questions

During this workshop, we would like to discuss your views on the presented issues. Here are some of the open questions that we would like to address:

- How would you prevent fragmentation of web capabilities, and how would that affect standard definition?
- What is, in your view, the minimum set of new functionalities that the future web should incorporate?
- What is your take on making device-based sensors available to web applications, and what uses of context-aware technologies do you foresee?

Conclusion

We look forward to discussing these topics with you, in order to make web-applications a first class citizen, not only in what regards social networking, but also in the productivity, multimedia and set-top box arenas.

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