

Mobile Sync: The New World Order

Requirements and Open Source Advantages

White Paper

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Introduction

Mobile users are scrutinizing spending more than ever, seeking ways to reduce costs, but without giving up capabilities. They may consider cutting the cord on their landline, postponing a phone upgrade or switching providers. On the other hand, mobile phone and service purchases can still fly under the household or business budget radar screen as people are tempted by the occasional impulse buy.

Mobile providers that introduce compelling, low-cost services today will continue to attract new customers, grow ARPU and lower churn, at the expense of those that do not. It may not seem easy to introduce a mobile service now, but the alternative – watching customers churn and defect to the competition – is worse.

One service that is generating major interest today is mobile sync. Synchronization may have previously been the domain of advanced users but now it is becoming a required element of mobile life, due to multiple converging trends.

Mobile Sync Trends

Recent trends are making mobile sync more important for users worldwide.

- Smartphones are increasing in popularity. Sales of iPhone, Android, BlackBerry, Windows Mobile, Symbian, Palm Pre and other high end handsets are collectively forecasted to grow 35% in 2009 versus 3% for the overall device market, according to Strategy Analytics. With faster processors, more memory and increased capabilities, smartphones are becoming powerful PCs with extensive content.
- Feature phones are also storing increasing amounts of content, including important address book data, photos, ringtones, games and music. As these phones are used for more purposes, including email and social networking, it is not just an inconvenience to replace their content when a handset is upgraded or lost. The value of the content on a phone may easily exceed its purchase price.
- Users are becoming more cognizant of the need to sync their handsets to preserve and share content. At the same time, it is impractical or inconvenient for many people to plug their phone into a PC to sync. They may not have continuous access to a PC, it may be too technically daunting or they simply don't think about it. As mobile content is constantly changing, the importance of wireless sync is increasing.
- Mobile sync is being popularized by large companies. Apple MobileMe syncs an iPhone's contacts, calendars, email, photos and files to a cloud-based portal, Macs and PCs. Google provides contact and calendar sync with some smart and SyncML-enabled phones. Nokia Ovi syncs contacts with some of their devices. Microsoft My Phone syncs contacts and events between Windows Mobiles and a portal. Users are rapidly becoming conditioned to expect easy and seamless access to their mobile content, anytime, anywhere.

From an industry perspective, mobile providers are rightfully wary of Apple, Google, Nokia and Microsoft getting too close to their customers. If mobile providers do not offer wireless sync, they risk becoming marginalized as the proverbial dumb and unprofitable pipe. Sync is a very 'sticky' service in that once users find an easy and reliable solution for their handset, they get hooked on it and are reluctant to switch. This is the modern variation of the razor blade strategy, where companies give away the razor (phone) to continuously sell blades (sync and other wireless data services).

Mobile Sync is Hot... The Race is On			
	<p>"MobileMe Rocks! ...the interface is stellar"</p>	<p>"Google Sync has the potential to take over"</p>	
	<p>"Nokia Ovi is a serious sync alternative"</p>	<p>"My Phone is Microsoft's answer to MobileMe"</p>	

Mobile sync is becoming much more prevalent and strategic. The race is on – if a provider fails to offer it to their users, someone else will. This is deja vu for carriers as large companies are once again threatening and invading their turf.

Sync or Swim

Providing a mobile sync solution might seem simple but it can be fraught with challenges. Sync is like the plumbing of mobile infrastructure. It's great when it works, but when it doesn't, it can make users angry and generate long-lasting bad publicity.

Consider the recent Apple and Nokia sync service launches. MobileMe was initially plagued by service interruptions and data loss, such as iPhone contacts and calendars disappearing, and taking too long to 'push', with Apple recanting on MobileMe's 'push' ability. Apple has improved MobileMe but users still complain about data corruption. More recently, Nokia OVI lost several weeks of user contacts, which was reportedly caused by server issues. These experiences call into question the robustness of these solutions. The bottom line is that a sync service needs to perform well or users will not embrace it or use it.

Sync Challenges

Mobile sync is non-trivial to provide, as illustrated by MobileMe and Ovi. Perhaps the most difficult issue is supporting the vast diversity of devices, which is also known as the device fragmentation issue. Despite the SyncML standard, that was expressly invented for mobile sync, being in one billion phones, device makers outfit devices with custom address book and calendar apps that make a 'one-size-syncs-all' solution difficult.

Adding to this complexity is the need to sync a wide range of content, including the emergence of 'large objects' (files). Mobiles contain contacts, calendars, tasks, notes, email, social networking info, photos, files, ringtones, SMS, browser bookmarks, music, video, games, software, settings and more. Syncing all of this content is not simple.

Mobile Sync Checklist

Here are high-level requirements to consider when evaluating a mobile sync solution.

- Devices: what devices are used by your users and are supported by the solution?
- Content: what types of content can be synced out-of-the-box?
- Clients: is a native sync client or a downloaded app used on the mobile device?
- Data sources: what email and webmail systems can be synced out-of-the-box?
- Desktop: what desktop apps can be synced?
- Setup: what steps are needed to prepare a handset for sync?
- Reliability: how does the sync service operate under unfriendly conditions?
- Performance: how much server load and network bandwidth are consumed?
- Cost: what are the solution's acquisition and operating costs?
- Monitoring: what facilities exist to maintain adherence to service level targets?
- Problem diagnosis: what tools exist to find problems and fix issues?
- Technical support: what facilities exist to help users with issues?
- Standards: what industry and technology standards does the solution support?
- Conflict resolution: how is data handled when it is changed in multiple places?
- Portal: does the solution provide a web portal to access and manage content?
- Integration: how is the solution integrated into your infrastructure?
- Billing: how flexible is the solution to accommodate various billing scenarios?
- Reporting: what information is available from the sync solution?
- Branding: can the mobile clients and portal be easily logo-ed and skinned?
- Security: how does the system protect user data?
- Administration: what system and user admin facilities are provided?
- Source code: is the source code available to customize the system and reduce risk?
- Deployment: can the solution be deployed internally or hosted on your behalf?
- Future-proof: how extensible is the solution for deployment of new mobile services?
- Expertise: is knowledge about the system freely and widely available?



Sync 'em All: Open Source to the Rescue

A mobile sync solution has many facets. In addition, real world deployments always have special requirements. Adapting a commercial solution to meet them is challenging.

The good news is that an open source-based solution satisfies the majority of requirements. For requirements that are not met out-of-the-box, it is much easier to modify an open source solution, where you have complete code access and control.

Another advantage of open source relates to device fragmentation. An active open source project such as Funambol has been downloaded three million times by 50,000 developers and project participants in over 200 countries. It has more than 10,000 active servers in use by a worldwide community of developers and project members that constantly use the software on many phones on myriad networks. A vibrant open source project has a culture of free, rapid, transparent information exchange, including code contributions to fix issues. This culture, in conjunction with the world's largest virtual quality assurance (QA) community, enables an open source approach to support many more mobile handsets for sync than proprietary solutions.

A third advantage of open source pertains to perpetual support. In the unlikely event that something were to happen to the commercial entity overseeing the open source project, there are community developers and members all over the world that can help with questions. Furthermore, your developers and IT personnel can understand the solution at a source code level, which is impossible for proprietary solutions. There is no substitute for complete code access to mitigate risk.

An additional advantage of open source is lower cost. Open source is widely recognized as significantly less expensive to develop, market and sell compared to proprietary software. Software vendors that base their commercial solution on open source can pass major cost savings on to customers.

If you are interested in learning how Funambol's commercial open source solution satisfies the aforementioned mobile sync requirements, please see the appendix. You can also download Funambol open source from our [downloads page](#). If you would like to evaluate our commercial software, please [contact our sales team](#).

Don't Delay, Sync Today

Users are expecting to wirelessly sync a wide array of content between their mobile phones, a cloud-based portal, desktop apps and email systems. There is a limited window of opportunity for mobile providers to deploy wireless sync to their users and gain their loyalty before somebody else does. The enclosed requirements can help you evaluate mobile sync solutions. An open source-based solution provides numerous advantages, including complete code transparency and control, broad device compatibility, low risk and low cost.



About Funambol

Funambol is the leading provider of open source MobileWe push email and mobile sync for users worldwide. Funambol open source software has been downloaded three million times by 50,000 developers and project participants in more than 200 countries. The commercial version of Funambol has been deployed at leading mobile operators, portals, device makers, service providers and ISVs including customers such as AOL, 1&1, Earthlink and CA, Inc. Funambol is headquartered in Redwood City, California with an R&D center in Italy. For more information, please visit www.funambol.com. You can also follow Funambol on Twitter at <http://twitter.com/funambol>.



Appendix: Funambol Open Source MobileWe Sync for Billions of Phones

Funambol provides MobileWe, a commercial open source solution that syncs billions of mobile phones. This appendix describes how MobileWe satisfies the requirements identified in this white paper. As an open source-based solution, MobileWe can be readily adapted to meet the specific needs of any project.

Devices – an open source approach is the antidote to the device fragmentation issue. It enables Funambol to support the latest smart and feature phones more rapidly and effectively than proprietary approaches. Funambol supports billions of wireless handsets, including iPhone, BlackBerry, Windows Mobile, Android, Symbian, Java ME, SyncML, BREW and Mobile Linux devices.

Content – Funambol syncs several types of content out-of-the-box, including PIM data, pictures, email and files. In addition, its open architecture allows syncing of additional content types. Funambol customers have enhanced the software to sync an array of custom content, including video, audio, system software and other large objects. The Funambol sync server has been optimized to manage large objects.

Clients – one billion mobile phones contain native SyncML clients, other phones require a downloaded sync client. Funambol handles both cases – it configures built-in SyncML clients, and for many phones without one, it provides a downloadable sync app, for example, for iPhone, Android, Windows Mobile and Symbian devices.

Data sources – Funambol's open source community wants to sync data with many systems. It has enabled syncing with Yahoo!, Google, Exchange, Domino and several others. This is in addition to systems that are supported by Funambol, the company. This is made possible by an open architecture and connector APIs that enable independent developers to build interfaces to any data source.

Desktop – Funambol syncs PIM data (contacts, calendars, tasks, notes, contact photos) with MS Outlook as well as open source desktop apps such as Mozilla Thunderbird. For integration with other desktop apps, sync plug-ins can be created.

Setup – Funambol makes it easy to set up mobile phones for sync using over-the-air (OTA) configuration. In brief, an SMS is sent to a user's phone to configure it for sync. Any required software is downloaded in the process. OTA setup eliminates the need for manual configuration on supported devices.

Reliability – Funambol is based on SyncML, which was expressly designed with data integrity as a prime objective. SyncML was founded on the premise that wireless sync often occurs with intermittent connectivity. Funambol's basis on this standard protocol enables it to sync highly reliably.

Performance – Funambol software has been downloaded millions of times and is used in more than 10,000 server deployments around the world. Its usage has culminated in significant feedback about performance. This has led to a clustered design of the commercial solution in a load-balanced and fault-tolerant architecture for high performance with large numbers of users.



Cost – as described earlier, open source has lower costs of development, marketing and sales, allowing savings to be passed on to customers.

Monitoring – open source tools (e.g. Nagios, Hyperic, GroundWork) can be readily employed with Funambol to monitor its performance and operation.

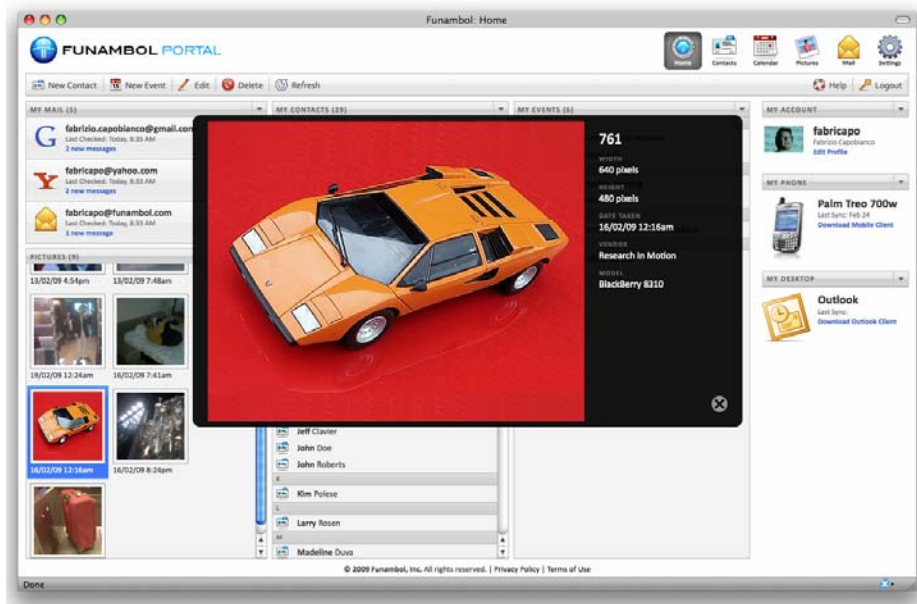
Problem diagnosis – Funambol provides integrated logging to detect, diagnose and correct a wide assortment of issues.

Technical support – Funambol provides a web-based console for support personnel to investigate the status of user accounts and make needed adjustments. The company also provides a knowledgebase of support information for use by support technicians as well as end users.

Standards – Funambol supports relevant sync standards, including SyncML (OMA DS), OMA Device Management (DM), iCal (aka vCalendar 2.0), POP/IMAP and LDAP. It supports standards for software integration, including JSON, SOAP and WebDAV.

Conflict resolution – Funambol includes an engine for managing data that can be changed in more than one place, such as contacts and calendars. This allows policies such as "phone changes override other changes" to be readily implemented.

Portal – users increasingly expect to view and edit mobile content via a cloud-based portal. The commercial version of Funambol provides a robust AJAX portal to sync content from mobiles to the web, desktop apps and email systems. The portal supports PIM data, email, pictures and other information. It provides an intuitive drag-and-drop interface in a web browser. If a mobile provider has an existing portal to use instead of the Funambol portal, the software provides a Portal API that enables the functions of the portal to be readily incorporated into a customer's existing portal.





Integration – Funambol uses industry standard components that can be incorporated into other systems. It provides APIs and source code for advanced integration needs.

Billing – user utilization data is available to accommodate a range of billing methods.

Reporting – Funambol data resides in an RDBMS that can be accessed with popular reporting tools to meet a plethora of reporting requirements.

Branding – the software's clients and portal can be rapidly branded with a customer's logo and can conform with other customer branding elements such as color scheme.

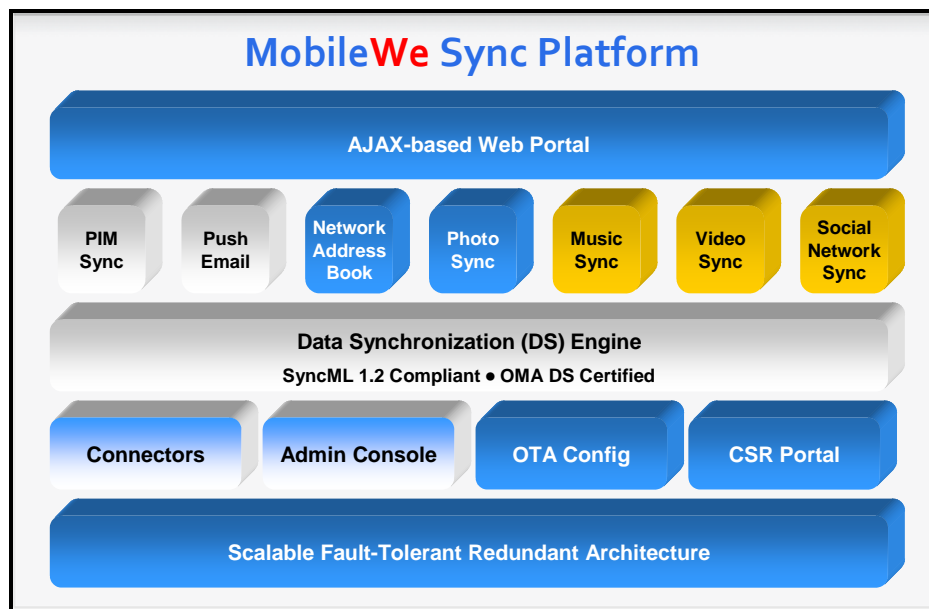
Security – Funambol performs remote authentication, uses SSL connection encryption and supports data encryption to safeguard user data.

Administration – Funambol offers an easy-to-use web interface for customer service reps that interact with end users, and a robust admin GUI for system admins.

Source code – the solution's source code is available to customers, enabling it to be fully customized and adapted for their specific requirements.

Deployment – Funambol can be deployed internally or used on a hosted basis.

Future-proof – the solution is built on an extensible mobile sync platform that enables organizations to rapidly deploy additional mobile services to their users.



Expertise – the Funambol community fosters a culture that promotes knowledge-sharing and transparency, down to the source code level.

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