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Eric SAMSON, , Product Marketing, Convertigo

« Deploying enterprise applications on smartphones »

Customers, consumers, partners and employees are more mobile than ever, and nowadays they want instant access to web applications, wherever and whenever.

But the multitude of different types of mobile phone on the market can quickly become a real headache for IT teams, who have to design as many interfaces as there are devices. Tablets, laptops, mini-PCs and cell phones continue to develop apace, placing ever more constraints on the information system in terms of its deployment. And of all the mobile devices that keep rolling out, smartphones have quickly become the standard and have really taken off since 2008. The “smart” tag is well-earned: in addition to their pure telephony functions, they have an operating system that can run an advanced web browser, as well as locally installed applications.

How is a company to keep up with the pace of the technology race? With the rise of the smartphone, businesses can develop competitive advantage by providing customers and employees with a new generation of mobile enterprise applications.

The world of business depends on applications – some of them very general, some highly specific – that are central to doing business and to the way the company works. They are often the fruit of hundreds of man-years of work, and now represent a vital asset that must be leveraged and optimized. Mobile telephony, long limited to a very small number of applications for a small number of users, is now the ideal medium for extending the use of these existing applications.

The world of mobile telephony is not the world of the web. The Internet developed as a highly integrated channel, with few gateways to other channels. Users communicate, search, generate content or make purchases without leaving their browsers. Mobile telephony is a very different animal: a quasi-real-time push/pull channel. Users can, for example, receive a purchase request by SMS, open an application to check stock levels, confirm the order by e-mail, and finally get confirmation by voicemail. This capacity for interaction and speed goes hand-in-hand with the very personal and intrinsically nomadic character of the mobile phone. With snail-mail you reach the reception desk, with e-mail you get through the office door, but with a mobile you’re in the pocket. This proximity corresponds perfectly to the need for urgent action, for impulse decisions, when there is no ready

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access to a web-enabled computer, when a rapid response is required, or when there is no physical or human assistance available.

The web is built on standards, for the actual terminals as well as for browsers (W3C, SOAP, etc.), which greatly facilitate deployment. Not so with mobile telephony: this is a particularly heterogeneous medium, with highly disparate characteristics, but it offers a wide range of technical advances such as GPS and camera. Deploying on mobiles is therefore about working around the constraints (usage, technologies, etc.) while cleverly maximizing the opportunities, notably by:

- Offering services that can be deployed to as many smartphones as possible
- Designing specific interfaces and ease-of-use features
- xploiting the advanced functionalities of smartphones

In 90% of cases, web applications were not designed to communicate with other applications, let alone to be run on other user interfaces, such as smartphones. As often as not, the interface of professional applications is coded in a specific programming language. In COBOL, for instance, if it is a legacy application, or in J2EE, .NET, CGI, PHP (or some other language based on an HTML/Ajax environment) in the case of a web application. In any case, smartphones cannot use the code as it stands. This limitation is due mainly to the size of the display and to the way users interact with the application, whether by pressing keys or through a touch-screen. Images, fields, buttons, tables, popup zones and menus have to be completely rethought, or at least adapted, depending on the objectives. Information has to be reorganized to ensure a comfortable browsing experience for smartphone users. The user interface is generally an organic part of all major web sites and professional applications. Programming a new interface therefore entails a long and costly effort to redevelop the business logic and processes.

Enterprise mashups offer an effective solution to this challenge. By lifting out elements of web sites in a process known as “web clipping” – a particularly useful feature of enterprise mashups – it becomes easy to capture different components of a web application. These can then be modified, resized or reorganized to fit the user interface of a smartphone. This function means that web sites can be retrieved directly and converted immediately into smartphone applications. In a single operation, this technology captures the application’s main processes, its business logic and its user interface, along with the graphic elements. It avoids a complete redevelopment, instead, it simply adapts existing web sites to new mobile applications.

With its non-intrusive functioning, enabling it to connect up with almost all Internet, extranet, intranet or legacy applications, and with any service-oriented architecture (SOA), the mashup server provides services and APIs for applications that didn’t have them, with no effort of development.

Once the new services have been deployed, they can be used by web applications, mobile applications, SOA applications (BPM or workflow, for example), or any other application capable of calling web services. The mashup server captures the business logic and processes of existing

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applications and repackages them in the form of visual widgets or web services, drastically cutting down on the usual development lead time by directly integrating previously isolated software assets.

When converting an existing application for the smartphone environment, the target can be either a web application or a native application. Each solution has its pros and cons. A web application has the advantage of being portable and therefore usable in a large number of smartphones. It can even, if necessary, be accessed from a conventional computer. It is also easy to develop, because it draws on standards and environments that developers are familiar with. On the other hand, native applications are perfectly integrated into the smartphone system, and are fast (the visual elements being downloaded in advance from an “AppStore”). This type of application is powerful, but it is OS-dependent and requires a separate development for each platform.

Thanks to enterprise mashups, developers can choose their own style of application. They can decide whether to redevelop a native interface or simply resize and reorganize the existing web user interface. And with the web services provided by the mashup server (running on a private server or in the Cloud), all mobile applications (native and web-based) will be connected directly to the information system.

The mashup server can even supply input to other enterprise applications, and fits seamlessly into a service-oriented architecture (SOA) backbone. The mashup server dynamically generates several output formats in order to handle all types of consumer application simultaneously.

The ability to offer enterprise applications on all smartphones is now within reach of every company. Once again, mashups have proved they can meet strategic challenges and help boost employee productivity. No doubt about it: we will soon be seeing mobile enterprise applications invading all of our smartphones, making mobility an operational reality in the world of business.

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