

# ANDROID

Android is the name of a new open-source platform for mobile phones, based on the GNU/Linux operating system, developed by Open Handset Alliance, a consortium of over 30 companies headed up by Google. To date, Android represents an attempt to give an answer to the increased request for advanced mobile services, by providing a free platform to phone operators, hardware vendors and developers. Thanks to its strong skills acquired during numerous experiences in the development, planning and creation of mobile solutions for the most popular mobile platforms (Symbian, J2ME, Windows Mobile, Iphone), Live Reply is now open to provide customers with its services also for the Android platform.

## SCENARIO

To date, there are over 1.5 billion TV sets in the world. One billion people use Internet for work, entertainment or to search for information. Since almost 3 billion people own a mobile phone, we can confidently say that this latter has become the most successful consumer good of all times.

With this in mind, Open Handset Alliance, together with Google, engaged in the development of an open-source platform, allowing to provide a quick reply to the ever growing request for innovative services not related to any particular vendor and/or operator.

Android was launched in the United States by the T-Mobile Operator with the name T1 (the hardware is an HTC Dream) in October 2008 and then reached the European shores at the beginning of 2009; at the moment, it is present in Great Britain, The Netherlands, Austria, the Czech Republic and Germany. In March, T-Mobile shall distribute T1 also in Poland.

In Italy, T1 will be launched within 2009.

And the year 2009 will be particularly fruitful for the Google platform. Besides Samsung, which has already announced the presentation of its Android phone during the "GSMA Mobile World Congress 2009", other vendors will soon introduce Android devices in the next months, thus confirming that Android is surely something more than "...yet another mobile phone operating system".

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## THE ANDROID PLATFORM

### FEATURES

Android is a complete software platform which, besides being an operating system, implements the middleware required to simplify the development of new applications by developers and/or phone operators. Besides all this, Android includes a series of pre-installed applications (browser, contacts, calendar, etc...) to enable an immediate and effective User Experience.

#### *All applications are the same*

Unlike other software platforms, like Windows Mobile, SymbianOS and I-Phone, Android does not make a difference between "native" (pre-installed) applications and applications developed by third parties, giving each vendor and/or developer the possibility to customize and/or add new features to those already present within Android.

#### *Open*

Android was developed starting from kernel Linux 2.6.X and, since its birth, it boasts a large number of developers and enthusiast supporters who, day after day, add new features and applications.

#### *Innovation means mash-up*

Android allows the complete integration between applications of various nature. For example, it is possible to use the GPS system by integrating it with the phone contacts to develop an application that may send an SMS to one's own contacts when near their house; or else to integrate Google maps with an application that indicates to the user the closest restaurant to him/her; fantasy is the only boundary.

#### *Easy software development*

With a vast set of libraries and tools, and using Java as a development language, Android is the favourite development platform for millions of developers all over the world; it is not necessary to learn a new language to develop mobile applications.

## THE ARCHITECTURE

Android has a modular structure, allowing total customization freedom, both for the hardware vendors, as well as for telephony operators and developers.



The Linux kernel allows vendors full integration with the reference hardware, while the wide range of libraries and a complete application framework enable both developers as well as mobile operators to enjoy total freedom when offering new solutions to users.

Below are some of the platform features:

- **Application framework** (a series of pre-defined software components, reusable/customizable according to the application one wishes to develop)
- **Dalvik virtual machine** (optimized virtual machine for mobile devices)
- **Integrated Browser** (based on the open-source WebKit engine)
- **Optimized graphics** (2D custom libraries to better exploit the device features; 3D graphics, based on OpenGL ES 1.0 specifications)
- **SQLite** (embedded database for data storage)
- **Media support** (MPEG4, H.264, MP3, AAC, AMR, JPG, PNG, GIF)
- **Bluetooth, EDGE, 3G, and WiFi** (support for the most popular communication standards/specifications)
- **Camera, GPS, compass, accelerometer**

## REPLY VALUE

Live Reply is the ideal technological partner for the Telco, Media and Consumer Electronics markets. Thanks to its in-depth experience, Live Reply supports its clients in the understanding of the latest technology in use and in the integration of this latter into their services.

With regards to Android, Live Reply is able to supply the following services:

- **Consultancy**
- **Android Solution Planning**
- **Android Solution Development**



Live Reply is the Reply group company dedicated to advanced services and digital contents for Mobile, Web and TV. Live Reply satisfies the requirements of Telecommunication and Media Company Operators to create a new generation of services able to leverage the conversion between media, the potentialities of the new consumer electronics and the ever-growing possibilities of customizing the “user experience” offered by the network.

In particular, Live Reply is specialized in the planning, development and distribution of services and contents on Mobile and TV, in defining Community and Entertainment services for Web, Mobile and TV, and in developing advanced applications for Mobile Devices and Set-Top-Box.

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