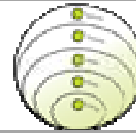




## Corresponding subjects



[Smartphones for pedagogical purposes](#)

TA2

[Technical glossary](#)

TB3

In this paper it is assumed that the reader has the most basic knowledge about the characteristic features of smartphones.

Note: The figures are the latest available figures from 2009. The rapid evolution may have caused significant changes since then.

## Operating systems for smartphones

### Introduction

When choosing a smartphone or mobile phone, it will be equipped with a certain operating system (OS). An operating system is a platform that structures the functionalities of a mobile device and makes them accessible for its user. A smartphone has higher requirements for an operating system than an ordinary mobile phone, since a smartphone's most outstanding features are its handling of WLAN (wireless network) and a broad range of applications.

### Trends and tendencies

So far, a few producers of OS dominate the global and national markets. Their dominance varies from continent to continent and even from country to country. Some OS are linked to specific phone brands, other OS can be installed on several phone brands. Generally, mobile platforms are still in the nascent stage, and any projection regarding the market growth is hard to make at the present time. Competition and the composition of OS and phone brands are changing constantly. New OS become developed, and established OS capture market shares from each other.

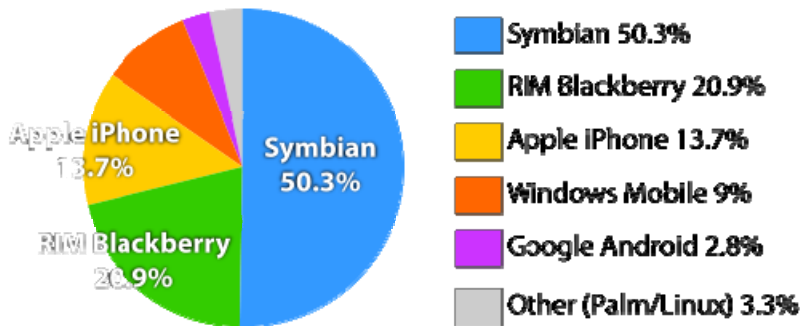
General trends are:

- End-users become more and more involved as co-developers
- Phone brands open in a higher degree to installation of different types of OS
- Development of new OS tends to build on Linux-technology (open source)
- The functionalities of all kind of mobile devices<sup>i</sup> become more and more similar, allowing OS-versions to be installed on several type of devices



## The most common operating systems

**Global Smartphone Sales, Q2 2009**



This is the global market share of the most common operating systems with sales figures from 2009.

We do not recommend any of these operating systems as especially preferable. The choice of operating system depends on the user's personal preferences and taste, and the technical environment the smartphone has to interact with.

When this project started in October 2008, the Nokia E71 was the model that most closely fit the involved teachers, trainers, students and organisers. The OS Symbian was preinstalled on this phone.

## The most common operating systems

All the abovementioned systems come regularly with upgrades. Usually a certain OS is preinstalled when buying a smartphone. The descriptions below refer to Wikipedia, July 2010.

### Symbian

Symbian has the largest share in most markets worldwide, but lags behind other companies in the relatively small but highly visible North American market. This matches the success of its largest shareholder and customer, Nokia, in all markets except Japan. Nokia itself enjoys 52.9% of the smartphone market.

Symbian-based devices are being made by Fujitsu, Nokia, Samsung, Sharp, and Sony Ericsson. Since 2009, the Symbian platforms have merged into a single platform which is now a fully open source. It has received some adverse press attention due to virus threats (namely Trojan horses).

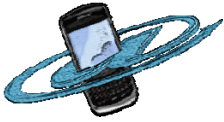
### Windows Mobile

The Windows operating mobile systems are widely spread in Asia. Windows Mobile 6 Professional (for touch screen devices) and Windows Mobile 6 Standard were unveiled in February 2007. It has been criticized for having a user interface that is not optimised for touch input by fingers; instead, it is more usable with a stylus. However, it does support both touch screen and physical keyboard configurations.

In February 2010, Microsoft unveiled its next generation mobile OS, Windows Phone 7. The new mobile OS includes a completely new overhauled interface, called "Metro". It includes full integration of Microsoft services such as Zune, Xbox Live and Bing. The new OS platform has received very positive reception from the technology press.

### Android

Android was developed by Google Inc. Android is an open source, Linux-derived platform backed by Google, along with major hardware and software developers (among others Intel, HTC, ARM and eBay), that form the Open Handset Alliance.



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This OS, though very new, already has a cult following among programmers eager to develop applications for its flexible, open Source back end. Android promises to give developers access to every aspect of the phone's operation. This lends many to foresee the promise of further growth for the Android platform – which already in 2010 seems to become verified.

### **Apple's iOS**

The iPhone uses an operating system called iOS, which is derived from Mac OS X. Third party applications were not officially supported until the release of iOS 2.0 in July 2008.

### **RIM Black Berry**

This OS is focused on easy operation and was originally designed for business. Recently it has seen a surge in third-party applications and has been improved to offer full multimedia support.

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<sup>i</sup> Mobile phones, PDAs, netbooks, tabloid pc, MP3-players, etc.