

# Music 2.0 in mobile phones

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**Abstract.** *Mobile phones are the most common type of portable music player device in the world today. Music 2.0 is a term used to describe new types of music services available online. This paper examines what Music 2.0 really is and if there is Music 2.0 services available for mobile phones. By studying how the term is used for classifying material available on the Internet, Music 2.0 is found to be a term for describing the revolution in the world of music caused by the use of internet as a platform. By studying a number of mobile music services it is shown that there are Music 2.0 services available for mobile phones today. The paper ends with a discussion around the results and how future mobile services must fully use the possibilities of mobile networking to be successful.*

## Introduction

Mobile phones are today the most popular consumer electronics device in the world. In 2006, over 986 million units were sold. This means that for every TV sold in 2006 (the second most popular product), five mobile phones were sold [1]. The anywhere, anytime and always online characteristics of mobile phones makes them a great tool for accessing many types of services. Personal organizers, Internet browsers, digital cameras and games are just some examples of services available in many mobile phones today. In 2005, the sales for mobile phones with support for music playback first passed the stand alone MP3-player [2,3].

The term Music 2.0 first started to appear a few years ago to describe new types of music services available online. As there seem to be few definitions of what Music 2.0 is, this paper will try to find out of what the term really means. Experts believe that mobile phones soon will become the most important channel for digital music sales [2,4,13]. This paper will therefore explore if there are any Music 2.0 services available for mobile phones today. The paper ends with a discussion about the future development of mobile Music 2.0 services.

## Method and material

The field of music related services for mobile phones is under fast development and there is a limited amount of research work available. The most important resources for this paper have been press releases from research institutes, the web pages of companies running mobile phone services, and blogs authored by people interested in online music.

The online social bookmarking site del.icio.us [6] has been used to get an insight in what type of web services that are classified as Music 2.0 by people. The findings from del.icio.us were compared with mobile phone services available today, to see if any of these could be considered as mobile Music 2.0 services.

## What is Music 2.0?

The term Music 2.0 first started to appear a few years ago to describe new types of music tools available online. It is not clear who first came up with the term. A digital music summit held in Los Angeles in December 2003, titled *"Music 2.0: Reinventing the music business in the digital age"*, was probably the first time the term was used at a big public occasion [7].

Studying what type of web sites that have been tagged as Music 2.0 at the social bookmarking web site del.icio.us, can give some understanding of how the term is used. In the end of April 2007 there were 550 different links tagged as *"music2.0"* [6]. The following tags occurred frequently together with these links and was therefore presented as related; *music, audio, mp3, itunes, radio, video, web2.0, social, community*.

"MP3" is a popular file format for digital audio. "iTunes" [8] is a popular application for playing digital media files. The tag "Radio" comes from the fact that many Internet radio stations seem to be tagged as Music 2.0 sites. The literal similarities between the term "Web 2.0" and Music 2.0 are striking and the two terms seem to have other common characteristics. The tags "Social" and "Community" are often used to describe Web 2.0, and just as for Music 2.0 there seems to be difficult to define what the term really means. The term was originally coined by Jim O'Reilly in 2004 and he has later tried to define Web 2.0 as:

*"the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them."* [9]

Many of the del.icio.us links tagged as Music 2.0 provides content that fulfil the definition of Web 2.0 given by O'Reilly. They use the Internet as platform and the content is influenced or provided by the users (for example 2a and 6 in the list below). But many of the Music 2.0 links goes to resources that can not be classified as Web 2.0. Therefore Music 2.0 is not just a part of the Web 2.0 concept.

Paul Lamere, author of the blog "*Duke Listens!*", has distinguished four different categories in the Music 2.0 concept [10]. Five more categories have later been added by blogger Ashz [11]. Most links found at del.icio.us can be sorted into one or more of these categories. Presented below are a compilation of all the categories from the two blog posts, with an example of a site or a type of tool for each category.

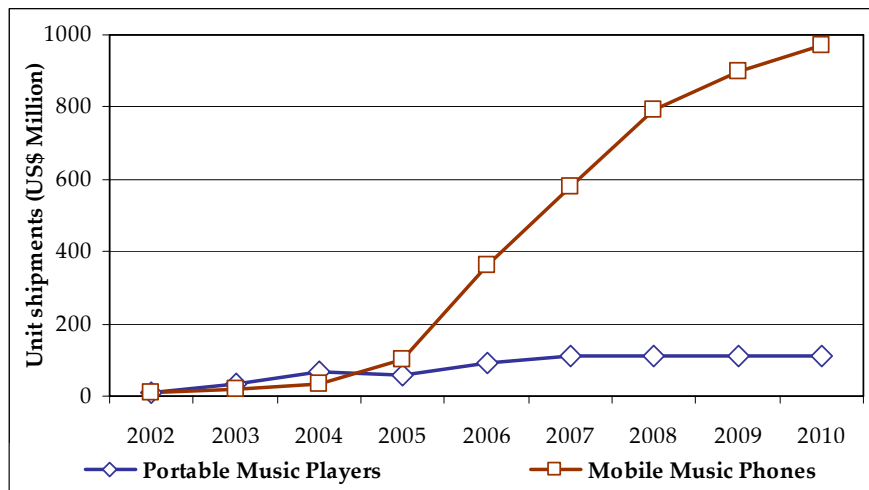
1. **Music services**; users can buy or subscribe to music, iTunes [8].
2. **Music discovery**; tools that help people to find music.
  - a. **Social**; wisdom of the crowds sites like last.fm [12].
  - b. **Content-based**; recommendations based on the music content, like Pandora [13].
  - c. **Expert based**; recommendations from people, for example music blogs.
3. **Music experience augmentation**; makes the listening experience more enjoyable, like Sleeveotez [14].
4. **Music meta data**; offers data surrounding the music, for example All Music Guide [15].
5. **Music technology**; Cross platform media players, VLC [16].
6. **Music sharing**; p2p networks, The Pirate Bay [17]
7. **Podcasting**; podcasting related services like Slapcast.com [18]
8. **Online music business**; SNOCAP [19].
9. **Network based tools for creating music**; Starplay [20].

The use of the term Music 2.0 seems to include a wide range of different software and web sites. Common characteristics for these systems are the clear connection to music and the use of the Internet as a platform. Most systems seem to have been created and launched in the last few years. The following definition, inspired by O'Reilly [8] is based on my understanding of what Music 2.0 is about:

*Music 2.0 is the revolution in the world of music caused by the use of internet as a platform, and an attempt to understand the rules for success on that new platform.*

## Music and mobile phones

Mobile phones have anywhere, anytime and always online characteristics that make them a great tool for consuming music services. A strong indication on the importance of the mobile phone for the music business is the fact that sales for mobile phones with support for music playback passed the stand alone MP3-player in 2005 [2,3]. According to a study by Strategy Analytics, the sales of mobile music phones will continue to grow and reach 1 billion sold units a year around 2010-2011 (see figure 1).

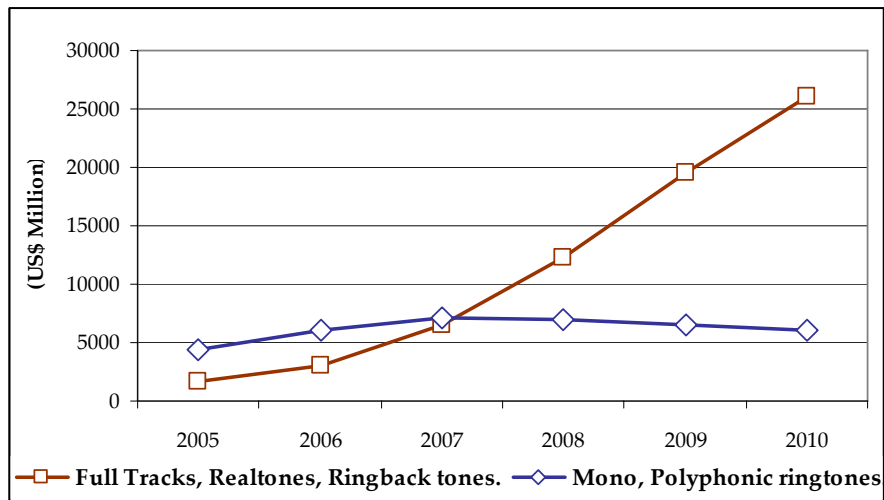


**Figure 1** Global music phone shipments vs. dedicated players [2].

A glance at the history of portable music devices reveals the importance of the mobile phone in this area today. In the 1980s and for most of the 1990s, Sony Corporation was the dominant market leader of portable music devices. Their successful Walkman brand included portable cassette, CD and MiniDisc players. When MP3-players started to become popular in the end of the 1990s, Sony lost much of their market share, and Apple Inc. became the market leader with their incredible successful series of iPod players. In 2005, the market took a new turn (see figure 1) and the Walkman now came back in form of mobile music phones. With over 60 million sold units in 2006, the Walkman phones from Sony Ericsson became the most popular portable music device on the market [3,4]. The success for mobile music phones has forced Apple to develop their first mobile phone ever. The new product is called “iPhone” and will be released in the summer 2007 [21].

The mobile music market is under fast development right now and many experts have predicted that it soon will be the most important platform for digital music sales [2,4,13]. Famous music chart magazine Billboards decided in 2004 to create a separate chart for cell-phone signals called “Hot ringtones” [22]. This was a clear indication on that mobile music had started to become a valuable

part of the music business. According to the mobile analysis firm Gartner, mobile music sales will exceed US\$32 billion 2010 (see figure 2).



**Figure 2** Total end-user spending on mobile music, worldwide [23].

### Music 2.0 in mobile phones

The previous section showed that mobile music is a fast and strong growing field, but are there any Music 2.0 services available for mobile phones today? Comparing mobile services available today with the nine Music 2.0 categories defined earlier can give an answer to that question, this was the situation in April, 2007.

1. **Music services;** There seems to be many types of mobile services available where users can buy or subscribe to music. One example is a service run by Telefonica in Spain where users with Java-enabled phones can find, sample and purchase songs. When a song is bought it is sent to the phone and at the same time a higher quality version is made available for download to the buyer's computer [24].
2. **Music discovery.**
  - a. **Social;** Phonetags is an experimental internal BBC project designed to allow users to bookmark, tag and rate songs they hear on the radio using their mobile phone. The service helps users to store songs they like for later use but also results in listings and descriptions of all music that is played on radio [25].
  - b. **Content-based;** an interactive radio for handhelds with touch screen have been developed by the author. A working prototype is available online with songs classified depending on music style, tempo and degree of happiness [26].

- c. **Expert based**; many blog hosts and online communities provide services for reading and publishing information from mobile phones, for example Blogger [27].
- 3. **Music experience augmentation**; Gracenote's MusicID [28] is an example of a mobile service for music experience augmentation. The user calls the service and provides it with a sample from a sound source. An audio-recognition system identifies the song and a text message with the artist name and song title is sent to the music fan.
- 4. **Music meta data**; There are many web sites available that offer data surrounding the music, unfortunately few of them have a user interface that is easily accessed from mobile phones [15].
- 5. **Music technology**; There are few cross platform media players available for mobile phones today. Adobe Flash Lite is a lightweight multimedia player that is available for several mobile platforms. It enables multimedia created with the popular Adobe Flash authoring tool to be played on mobile devices [29].
- 6. **Music sharing**; Users have shared material between their phones for a long time. By using IR or Bluetooth connectivity, people have been able to transmit music, phone signals and other types of information in local environments. Large scale file sharing over long distances, as seen in p2p networks on the Internet, has not yet been available to users of cellular networks.
- 7. **Podcasting**; Many mobile phones support audio recording and upload of recorded sound to the World Wide Web. The podcast service Slapcast.com takes the concept one step further by offering users to record their phone calls and automatically upload them as podcasts [18].
- 8. **Online music business**; Few services seem to be available but one example is Sony Ericsson mobile portal M-BUZZ where *"music fans can experience featured artists' full tracks, videos, biographies, gig schedules and other content, allowing them to check out tomorrow's stars up close and personal"* [30].
- 9. **Network based tools for creating music**; No services have been found.

The mobile music services listed above show that there are Music 2.0 services available for mobile phones today.

## Discussion

Music 2.0 is a broad and vague term that seems to catch almost everything that is going on with music online right now. How useful is a term that is so general that almost anything music related online can be labelled with it? Music 2.0 probably fulfils a need as a blanket term for all these online music services. But why use the number "2.0"? A common opinion online seems to be that *"Music2.0 was*

*probably the invention of instruments... Let's say sheet music is 3.0, being generous, 4.0 can be recorded music...".* The 2.0 is probably inherited from the well-known and related term Web 2.0 that was coined by O'Reilly Media in 2003.

The Music 2.0 world is under rapid development right now. Most services have been around for less than five years and new services, tools and functionality are presented all the time. The majority of all Music 2.0 services are designed for computers with a high band-width Internet connection but the number of services available for mobile phone users are also increasing. There are probably many new and innovative mobile services, unknown to the author, which also could have been included in this paper.

For the Music 2.0 category "Network based tools for creating music" no mobile service could be found. The fact that all mobile phones comes with some form of microphone is a good starting point for creating services that make use of sound input from users. Laptops are already very popular to use for music production as they are portable and easy to bring. A powerful mobile phone has many of the same characteristics as a laptop. A DJ can instead of bringing a laptop or a case with hundreds of records use a mobile phone to stream music from the Internet to a mixer. Network based tools for creating music with mobile phones is an exciting field!

There are many interesting differences between developing services for the World Wide Web versus Cellular networks. On the Internet a web site can, in theory, be accessed by all people in the world that has access to the Internet. A mobile service, on the other hand, can only be accessed if the mobile network operator decides to provide the service. In a few years, mobile network operators will probably be more of wireless Internet service providers. This will change the conditions for mobile services radically. Physical distance and country borders will be of less importance. The fact that the number of mobile phone users is and will continue to be many more than the number of traditional Internet users makes mobile services to a giant market available for all types of business.

Martin [31] has said that *"Selling entertainment products online is different from offline"* and that *"People will always choose online innovations that provide them with the content they want and the privacy they need. How the money is made and where it goes is not their concern"*. These words are important to think about when creating new music services for mobile use. There are many large scale file sharing networks available on the Internet today. They are used by millions of people to share all kinds of information, including media files. This type of communication will soon be available for mobile phones and will result in the same kind of problems regarding intellectual property as can be seen on the Internet today. Many mobile phone users already copies phone signals, music and video clips between their phones when they meet. In the future the most

popular services will be those who fully use and support the special characteristics and possibilities of mobile networking.

## Conclusion

Music 2.0 can be defined as the revolution in the world of music caused by the use of internet as a platform, and an attempt to understand the rules for success on that new platform. Music 2.0 is not just a part of the Web 2.0 concept as it consists of many parts that are not covered by that term. There are Music 2.0 services available for mobile phones today and many new and innovative services seem to be under creation right now. The future for Music 2.0 related services in mobile phones looks bright.

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