From Radio to R@dio: broadcasting in the 21st century

PAULA CORDEIRO
ISCPS –Technical University of Lisbon
pcordeiro@iscsp.utl.pt

Abstract:
Online broadcasting, online music services, portable music players, digital receivers, mobile phones and podcasts are different ways to access music and entertainment. All these platforms represent a whole new scenario for media and forces radio to change the business and communication model, transforming the radio concept we used to know. MP3 players for instance, or devices such as mobile phones are shifting the balance of power away from radio as tastemaker toward consumers' ability to select, hoard and arrange their music. Multimedia is changing radio discourse. Radio listening gave way to online navigation and interaction. To where does all this lead us? The proposed abstract will focus on the transfiguration of audio contents, both in terms of journalism, entertainment and advertising, as well as the mutation of the listener in direction of a relation between the one who listens to radio and is also a web user of radio websites, presenting the concept of R@dio, as a definition for the new broadcasting context in the 21st century.

Keywords: Online broadcasting, online music services, music, media, radio, business, listener, Internet

Introduction

This paper focuses on changes occurring in audio consumption, considering web-based content, radio forms of broadcasting and narrowcasting, to characterize the transfiguration of audio contents, in terms of production, assembly and consumption. This will produce proper categories of web-based audio content, as online music services colonize the web and radio has become r@dio, competing for people's attention among all available audio contents. Our approach to online music services as potential competitors for radio aims to understand characteristics that differentiate them from radio and find common features between them. In both cases, structure of media files distribution uses streaming software, that is, on demand or live webcast. Online music services correspond to a very broad category, including all sorts of online services that allow us to listen to online music, weather is music uploaded from our computer, streamed songs on YouTube video aggregators, licensed songs in websites, or community build playlist available online. Baring this in mind, we develop an analysis of radio in relation to music websites, to find common features and categorize the variety of web-based audio content and services. As Herring (2010), we question established methods of content analysis adequacy to analyse convergent interactive web content using HTML. Therefore, we use a descriptive website analysis combined with systematization of structural features (text components) to identify and describe patterns in website content, while applying traditional content analysis techniques that will help us to interpret these websites characteristics. Using websites self-definition on "about" page, we hope to fit established categories of web-based

audio content. Part of this paper explores some definitions of web-based audio categories and categorization of online features. Considering changes in communicative processes in media (Cordeiro, 2010), new media ecology (Deuze, 2007) and peer production (Benkler, 2006), further analysis will be enriched by examples of a defined sample of web-based audio content, to find common features in content, interactivity and accessibility of these sites, in relation to radio. To follow our objectives, in June 2011, 14 websites were analysed, selected from three different sources:

- General Google search for 'music streaming';

- Music website heat map;

- Responses from a sample of Portuguese music experts (ranging from radio professionals, including program directors and radio hosts; music marketers, podcasters and record industry professionals), who shared with us their preferred websites for online music listening; news search and music download.

- Music websites with streaming or download with more than 100.000 monthly visits include Youtube Music, Pandora, Playlist, Grooveshark, Last FM, AOL Music, Rhapsody, eMusic, Vevo, Reverbnation, and Soundcloud. From these, we looked at Youtube Music, Pandora, Playlist, Grooveshark, Last FM that were also mentioned in our experts sample. Google search included We7, The Hype Machine, Songza iMesh, Noisetrade, rcrdlbl, Weenradio, iMeem, Seeqpod, Mog, Fairtilizer, Soundflavour, Liveplasma, Spinjay, MysongCast, Magnatune, Music anywhere, Mysongcast; Ourstage; Purevolume; Jamwave; Opsound; Itbreaks, Jelly, My Way, Cotonete and Deezer. From responses of experts we added to this last group of analysis others like: Jango, Finetune, Mixcloud, Stereomood and Musicovery, to find common features between sites with different popularity. We also developed a short questionnaire to find most popular websites in Portugal and then, to decide which to analyse with further detail. Therefore, from a sample of 1796 Facebook users we had 115 answers in three days of online inquiry, corresponding to a 15% response rate, with an age rank between 18 to 54 years old. Average educational capital of the sample, knowledge of radio industry and desire for music is high – respondents are part of a special interest group in Radio (practitioners, fans and listeners). From these, 88% uses the web to listen to music, mainly for the availability (72%), accessibility of online music, while at work (79%) and variety (51%). Although our respondents claim to listen to music online, they are not regular users of most of our website sample. Referred websites commonly used include Last FM (9%), My Way (9%), Cotonete (7%), Grooveshark (5%), Musicovery and Mixcloud with 4% (being those used at least once a month). Baring this in mind, our sample of websites include: YouTube, Pandora, Playlist and Last FM, since these are music websites with larger traffic data (music website heat map); Finetune, Stereomood, Jango, My way, Cotonete, Musicovery, Grooveshark and Mixcloud (those referred my Portuguese music experts and Facebook users) and a categorization of Google "music streaming" search results, to properly fit other websites in previously defined categories. We added to the analysis best representatives of r@dio in Portugal, to find differences between concepts of radio and r@dio, as well as web-based audio content: TSF and RFM.

Mass Media in interconnected world: media consumption becoming something new

Media networks provide transnational flows of content with influence in our everyday life, representing a macro-level of cross-border interconnectedness and interchange with impact in lifestyles, social attitudes and individual experience. Convergence in telecommunications, electronics and computer science came to unfold networks to broadcast and narrowcast media and creative contents. Consumer is today in control "of what and when she watches, of what and when she reads, of whether to pay any attention to you" (Garfield, 2009: 14). Mass structures that defined interconnectedness are collapsing, facing audience fragmentation between self-media. Media are distributing both in analogical and digital platforms, connecting with audiences in as many channels as possible, while computers and smart phones are replacing every form of non-interactive media. Digital communications dynamics ceases older communications practices associated to technology and media. However,

where are in a transition period in which people both incorporate Internet in their lives, according to their individual needs, beliefs, attitudes and daily routines, and use radio, television and newspapers, maintaining also traditional communication and social interaction practices. From this combination of online and offline contexts results an hybridization of practices, building an interactive dynamic communications system that provides the primary basis for technology diffusion including media and Internet, concerning mainly new channels of communication used by media, that transform them into self media. Internet is becoming main infrastructure of communications, competing as a media gateway with traditional media not only for audience's attention and time, but also as the mediator for most communicative processes challenging media efficiency (Cordeiro, 2010). Internet portrays different levels of adoption in contemporary society. Nevertheless, as contributed to change individual behaviours, media practices and professional routines, related to different dynamics of technology adoption, as Rogers (1964) approached and related to innovation.

The process of diffusion of innovations is highly dependable on the social context. Perceptions of its importance and advantages influence this process, as well as communicative channels used. Rogers (1964) defined profiles of reaction facing innovation that we relate with levels of experience with technology: innovators have high levels of experience with technology and are heavy users of Internet, defining online trends by developing open source software and online applications to mostly used websites. The degree of experience with technology decreases from this profile ahead, since early adopters are less intense Internet users and are less experienced with technology, using software and applications that innovators create. The early majority are those who start using technology by professional determinations, integrating this utilization in their lives, using technology and online tools by time or their expansion. The late majority rarely uses Internet and adopt technology to their daily lives by social determinations, through the substitution of analogue with digital practices, routines or devices. Laggards, as Rogers (1964) defines, can be those who avoid technology, who we see as those that try to keep their social life away from digital environment, not using cell phones, Internet or any other digital devices. Ortega Santamaria (2007) defines Internet users evolution according to their knowledge structure and experience in different usage contexts, from an initiate user to an expert user, depending on their learning and experience traces, to approach a definition of the user 2.0 profile, those using tools and applications in ways that allow to differently organize and use their knowledge. This will be someone who produces, distributes, shares and cooperates with a socializing behaviour in social networks (Ortega Santamaria, 2007).

In digital age, the way fragmented audiences relate with media and each medium is approached in a technological basis, to identify social effects of the implementation and usage of technologies. Bruns (2008) approaches web 2.0 environments as a collaborative and participatory structure that enables the produsers and produsage model. Different from Tofler's (1980) prosumer or Benkler's (2006) peer producer, produsers are hybrid producers and consumers; produsage corresponds to a shift from industrial production towards a collaborative engagement of communities of participants (Bruns, 2008). These are contributing to improve traditional production value chain, by implementing the produsage value chain, including content development space and contributions from public domain or commercial sources. This allows the creation of valuable content, as well as commercial or non-profit harvesting of user-generated content and services to support content development in an environment that also has commercial activities by users themselves (Bruns, 2008). The social web, with social networks and social media represent contemporary Internet usage as a virtual space for worldwide publication of all kinds of contents. The way people communicate and companies relate with consumers have had boundless changes for the last years. Consolidation of social web, due to Internet access, mobile web, downsize of access charges, lower storage prices with larger capacity that has led to new practices and routines, representing the end of technological limitations that for decades restraint communication channels and forced them to be unidirectional.

Internet penetration around the world, growth in intensity of use, as for frequency and time of connection has consequently been involving people in communication processes. Media research follows these trends, observing changes from closed media to open media in relation to consumption and production, to define the emerging new media ecology (Deuze, 2007). In this scope, Lüders (2008) approaches personal media as opposed to media, pointing out some social implications of digitalization: personal media will be a combination of accessible communication with possibilities for mediated interaction, approaching media as institutional or professional asymmetrical structures. Online social networks and social media are wrapping individuals contributing to consolidate the user generated content stage, by associating individual creativity to online tools, consolidating the horizontal flow of communication in which communication is established between a community of many-to-many, allowing self communication, without the mediation of institutionalized media. Taking Easley and Kleinberg (2009) behaviour and dynamics in networks in account, one should understand behavioural and structural connectedness, that interplay different aspects, on linkages between people and actions consequences for every connection in the system. Media organizations, companies and brands are reasoning strategic actions in networks attempting to draw attention of individuals whose interactions take part in larger aggregates, as "people are influenced by the behaviours their neighbours in the networks, the adoption of a new product or innovation can cascade through the network structure" (Easley and Kleinberg, 2009: 24) Web has strongly contributed to dilute media power, that for a very long time has been questioned and is now democratized, as Cover (2006) states, while approaching relation established between technology and audience participation.

Although people have always had the ability to produce content, contemporary approaches of consumer as a co-creator have popularized user generated content, those broad activities engaged in by media users that make their most creative production available to others. At the same time, content creation tools get popular and easy to use and distribution platforms allow a wider circulation of user generated content, as result of media convergence and blurring boundaries between media organizations and audiences (Jenkins, 2006; Benkler, 2006; Croteau, 2006; Couldry, 2006; Gauntlet, 2000; Cordeiro, 2010). Interaction established between media, sources of media and consumers have established a different context in media marketplace. Media have expanded their current portfolio of services and revenue streams: instead of owning content, media must own the platform of interaction, becoming a sort of content retailer where people, content owners, content producers, service providers and networks get together, as result of convergence empowering consumers by dissolving some old barriers to content creation. This has transformed radio concept, business and communication model, by seeking to control consumption trends around customized, interactive, searchable, scheduling and social tools. Studies around media production (Jenkins, 2004) still do not relate producers and consumers of media content while these have become one. In this sense, there are different approaches to media studies, analysing media as practice instead of production or media effects, with media becoming "the open set of practices relating to, or oriented toward, media" (Couldry, 2006: 34), focusing on context and media consumption practices, as well as consequences of specific content in daily life (Couldry, 2006: 43).

Current two-way symmetrical consumption model is represented by a multidimensional audience willing to have time shifted, place shifted and device shifted content, provided by dynamic web services that allow to have real-time on demand content combining different possibilities, in relation to consumption desires. This audience is using social networks and social media as a tool to comment, create, transform, co-create and share a community level of experience managed by engaging hyperlinked media. People and content are in the centre of conversation, using media as part of the process, since web 2.0 tools have allowed them to improve their media experience. We approach contemporary media ecology (Deuze, 2007) as a circular model of sharing that emergence of converged devices also boosted to surpass old linear and vertical distribution model. Slot and Frissen (2007) explored five categories of web user roles, based on observational data, that were sub-divided into more diversified roles: 'consume' category includes reading, viewing, listening, downloading, buying, playing and

searching sub-roles. 'Create' category include customization and personalization; creation and production of content; as well as contributions. 'Sharing' category includes publishing, uploading and sending to others; in facilitate tagging, recommending, filtering, subscribing and channels are included; finally, for 'communicate' category, sub-roles included are message sending, commenting, rating and chatting.

New economy and radio

Flichy (2007) talks about the evolution of Internet towards a definition of new economy, from an emerging model outside the market economy to a new economic discourse based on a different approach, with cooperation and free exchange in online business. Follows by explaining how Internet is consolidating as a new global marketplace: from the virtual mall in early 90's to push media system and interactive media allowing on-to-one advertising, under a collaboration system and collective intelligence that favours the participation of all Internet users with value associated people's contribution. A very good example is Anderson's (2006) approach of the long tail, while forgetting mega hits and going for millions of niche markets, using recommendations systems and letting people review and suggest your work. Nevertheless, the available infrastructure is supported by a commercial structure with shared forms of advertising and targeted advertising based on patterns of consumption or published content (Andrejevic, 2009). It will be a new conceptualization of intellectual value, based on usage and attention, highly dependable on people's time and interest in relation to trusted sources of content and service providers of selection, interpretation and content customization. Attention is a mental engagement on a particular item of information, and as items come into our awareness, we attend to a particular one, and then we decide whether to act (Davenport & Beck 2001: 20). Today's economy results from technology shaping business models in a framework about people and content, relating experience and content socialization. Media, companies and brands relate online with consumers, internet and users with profitability in relation to earned reputation and trust, by shared links and conversations, as well as information on interactive applications and free web services, like email. Andrejevic (2009) remembers that click-stream activity, patterns of social networking and Internet search behaviour represents increasingly detailed forms of monitoring producing valuable information for customization of consumption-oriented strategies. Not only Internet is about sharing, but also about trust, an emerging approach that comes from disbelieve in advertising and re-emergence of one of the oldest promotion techniques: word of mouth, as an alternative for advertising supported media and services. Interconnection between interactivity and attempts to "more effectively influence consumers (...) on the shared business model of swapping convenience, access and information for willing or unknowing submission of increasingly detailed forms of monitoring" (Andrejevic, 2009: 43).

Knowledge of consumer activity is fundamental for media activity as well as knowledge of media brand appeal for those experiencing interactive services, social networking, blogging, viral marketing and emergent lifestyle media. For radio, choices made concerning search and selection of audio. Content, exchange and sharing behaviours are key issues to understand today's needs, most valuable assets and different niches. Within radio listeners, we can find different consumption approaches to radio and interactive media, since radio stations enabled audiences to choose their level of interactivity with content and sharing experience in social context: from total passivity (for instance, those solely listening to FM broadcasting in analogue devices such as auto-radio) to full immersion. Both create new challenges for radio broadcasters, most particularly concerning development of converged content for converged devices These relate in a sharing environment that let's radio stations as part of this, coping with audiences. Instead of having exclusive ownership and re-packaging content for multiple platforms, broadcasters have to create specific forms of content in result of more sophisticated consumption behaviour, which values content over media. As Fuentes et all (2011), we understand that in content economy, content structures the social capital of media, companies and brands, as content without links has no value. From the relation between content and links arise conversations that connect people and media. The end of supply

chain, if we consider content, distribution channels and devices can now be the beginning, since consumers organize their time in cross media consumption (Cordeiro, forthcoming), in relation to a converged media experience, facing the evolution of the marketplace, from media to a personalized media experience in a social context of participation. Social media isn't about technology, but about people, those no longer seen as consumers, clients or users, but people in full relation, sharing ideas and content, giving opinions and generation conversations in which media also take part (Fuentes et all, 2011).

Today, media marketplace is a conversation, an interconnection from people to people in a new economy, designed to be a trust and sharing economy (Fuentes et all, 2011), with multi platform strategies to be in all available platforms and to take part in all possible conversations. In the beginning of XXI century, we now have different contexts, concerning radio: although from national to local broadcasters in Portugal all of them are streaming their broadcast content, we do have different velocities of change, since even within larger radio companies, radio stations are relating to this new paradigm differently, depending on consumer activity and listener profile. Nevertheless, radio today equals a combination of broadcasting and streaming with web-only music channels. Some are also provided by terrestrial FM broadcasters, combining online player to listen to streamed broadcasts and multimedia content available in web-only radios (web radio) and web-only music channels, for a listener that combines broadcasting reception with online streams, a social network profile and a social media usage. As the number of Internet users grows, user generated content gets more popular, professional and amateur content producers interact among media generated content and branded generated content. This enrichment of radio produces new narrative strategies that contribute to the development of radio as something much more than playing music listeners want to. By giving them additional features, radio will be relevant to them. By talking with them about things that matters and finding ways for them to include radio in their conversations, radio will surpass the "generic hit machine". These are a dozen online and part of the business model equation, enlarging radio business opportunities and audience growth online, competing and thriving content alternatives, while most important changes are occurring in platforms, content, listeners, competitors and branding, if we think of brands in radio and radio as a brand.

Web-based audio content. Is there a place for radio?

Deuze (2007) talks about the convergence of cultures of media production and consumption, exploring the increasing participatory media culture. Slot and Frissen (2007), state that users are crucial for developing information society. Doubtless, media are, and will be, part of people's lives. Radio is still important for people: music, company and news are key programming features that people relate with, regarding radio (Cordeiro, 2009). On the other hand, music is something that people cannot live without; with some stating, to be the most missed entertainment in a desert island (Collopy and Bahanovitch, 2009). As music is also one of most important features in radio, we found that people are heavily consuming music in streaming services, while frequently listening to online radio (Cordeiro, 2009). Therefore, while media, as for radio consumption, is in a process of change, music consumption has already changed. In just over five years, digital business has grown to account for 40% of total music sales (units), as Nielsen (2008) reports. Changes are in format and place of music buying: some are still interested in 'owning' music (Collopy and Bahanovitch, 2009) although buying songs instead of albums in online music stores (like iTunes music store, Amazon MP3; Napster or Rhapsody). Those still buying albums, like those buying songs, prefer to do it in online music stores rather than cultural retail chains, listening to music (in this decreasing order) in devices such as computers, MP3 players, radio, mobile phones, television and still, CD players (Collopy and Bahanovitch, 2009). Youtube became the number one place for music, since one out of every three videos on Youtube is related to music or a music video (Sysomos, 2010). By allowing people to create their video playlists and relating to other websites, like Musictonic that enable to watch music videos and discover new artists,

in automatic continuous playback, combining related artists from Last FM and music videos from YouTube, the community website became highly popular.

Radio stations broadcast over the Internet, distributing a single content source to simultaneous listeners. Streaming is used to easier the download and play content, allowing people to listen to the files while downloading them (without storing downloaded content in computers). Some examples of streaming software include PeerCast; Flash Media Server; Wowza Media Server; Flumotion Streaming Server; Firefly; Windows Media Services; Broadwave; Shoutcast. This happens for web radios and FM terrestrial radio stations know as Internet radio or online radio, an audio transmitting service using Internet and streaming technology to generate real time audio, reason why most FM radio stations use it to broadcast their FM programming in real time. Nevertheless, we do prefer to call web radio to those audio projects that are only using streaming technology to generate real time audio; online radio or Internet radio to the FM radio stations that use the Internet and streaming technology to broadcast their FM programming in real time. However, what kind of radio are we talking about, while approaching FM broadcasters that are also streaming FM content and producing web-only audio content, as well as all sorts of multimedia content? Formerly known as radio, we have proposed to call these broadcasters r@dio broadcasters (Cordeiro, 2010a; forthcoming), for the combination of linear with non-linear distribution model. Although defined by digitalized processes, practices and routines, these have different sorts of content: from speech based content combined with music, to multimedia content combining audio with video, pictures and text, to music only channels. If radio is a sound media, with an audio message that combines voice with other sounds (like music, sound effects and silence) in a broadcast model (Cordeiro, 2010b: 255), than r@dio will be a sound-based multimedia with narrowcast and on-demand model and, as Herreros (2001) would say, with a totally different message. Therefore, if loosing it's original features – speech and live broadcast – radio will be something else (Cordeiro, 2010). If we think of all the characteristics that were introduced in radio distribution structure and message, we do have something different from before. However, while people are creating valuable messages based in speech, we do have radio.

Today the concept needs to be updated to refer to every interactive, hyper textual, multimedia and convergent features, including non-linear narrowcast model that enables people to share, listen on-demand, to repeat, remix and mash up, search and customize, innovative features that constitute what we have already proposed of r@dio (Cordeiro, 2010a; 2011). There is so many available online content that, for instance, a webpage that aims to have diversified music content and actual or factual information, as well as multiple applications can be a music portal. It unifies different sources, presenting a broad list of artists, events and news with FM radio streams, web radios and music channels. It can also have a customizing section, to personalize radio stations and music channels, as well as applications to listen to music, create and manage playlists. It is different from a radio portal, which is a webpage that aims to have diversified radio content and actual or factual information as well as multiple applications radio related. Once again is an aggregator of different sources, presenting a broad list of FM radio streams and web radios. Examples of radio portals (listening) include deezer; slacker; live 365; skyfm; di; weenradio and examples of music portals (listening) will be pandora; songerize; songza; ourstage; finetune; purevolume; hypem; musicovery; blastro; thesixtyone. Since it became possible to find and storage any kind of files, web based audio content became popular.

Advances in servers and digital storage technology led to the development of digital music and/or audio online libraries, web based platforms that allow managing and sharing music and audio content. Examples include faitilizer; maestro; musiplayer.fm; deezer; mp3tunes; music.anywhere.fm; mysongcast, grooveshark. Web based audio content refers to this kind of services, with large collections of music and audio, as consumers are increasingly customizing music platforms to better suit their individual needs. Music listeners are downloading individual tracks and assembling their own sequence of songs in web-based music services, which allow replication with the creation of playlists through platforms such as iTunes, Spotify and Last FM. There are also

multi-portals, websites that have the most diversity in formats and contents, aggregating music, radio stations sharing applications and files managing applications, like cotonete, seeqpod; deezer; jango. Most common is to find music platforms or Communities, an online community that gathers users through music and offers the possibility to create personal playlists, using a peer-to-peer network to generate music playlists from each user personal library, like last fm; imem; etree; mog; soundflavor; ilike; opsound; liveplasma; spinjay. There are also online services that help artists to connect to music fans, exchanging music, which is legally and freely distributed online, enabling viral promotions. Examples would be noisetrade or rcrdlbl, for instance. As for the kind of relation established with users, we have found three categories: streaming, as for listening model download, for the possession model, and upload, representing the sharing - on the cloud conceptualization. Music portals and other sorts of 'streaming' websites are in most cases listening only websites, combining free access (no registration and site-managed playlists only); free access with registration (in most cases for costumer relationship management purposes); free access with registration, including the possibility to manage playlists, interact and share with other users; paid registration with unlimited features. 'To have' category, includes downloads, with legal paid download with or without subscription; legal free download with or without registration/advertising; and illegal download in peer-to-peer networks, those computing or networking distribution application architecture that allows peers to participate, and share a portion of resources, being both suppliers and consumers of resources. Concerning on the cloud content, regarding upload and storage websites, these are highly dependable on user's internet access framework, rivalling with iTunes and Spotify popularity, being music streaming services similar to online music services or web based music services but enabling users to access their entire music collection from almost any internet-enabled device, like music anywhere does. Another popular feature and competitor for radio listener's attention is podcasting, that became quite common after the success of iPod and refers to media files (audio or video) available online and downloaded using web syndication. It is non-streamed webcast and available on-demand. Online music services, as well as content aggregators, including podcasts aggregators are media and user generated content engaging sources that empower audiences and erase former forms of media. Podcasting promotes on demand niche media, balancing linear, horizontal and on demand flux, in a media marketplace in which most important is to be the platform owner, defining terms of access, practices and usage, rather than being just content owner, as convergence makes consumption more sophisticated, enabling a new relation between valuable content and value created.
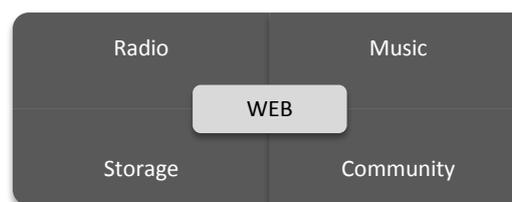

Figure 1. Relations between web, music and radio

Web-based audio content common features

YouTube Music is a video-sharing website, to discover, watch, upload and share videos, inspired and inspiring social media development and community, reaching a wider diversity of audiences, engaging them by the rational and emotional side of videos. For artists, it's a great tool to reach out at lower costs, with viral potential and feedback from audiences, about what they think on music video aesthetics. These videos are engaging audiences and giving people a voice, allowing others (rather than only content creators) to share original, remixed and mashed up content, something that as taken the idea of viral videos to a whole new level. Pandora's success results from their approach to arrange and oared people's musical tastes, by organizing broad music genres and styles to fit in listeners own personal taste. Pandora Internet Radio is an ultra-personalized-radio

project that provides maximum customization of music to their users and a personalized radio service from the DNA of each song. For this, uses a program that searches musical tastes of each individual and same time, the so called DNA of songs, discovering characteristics of each to establish best possible relation, generation a stream of songs that people like based on how previous tracks were rated. Playlist is the most on the cloud project available now. Assumed to be a music community, Playlist allows users to create playlists according to mood genre, activity and occasion, available to share, recommend, and follow and to embed in users websites or blogs. With same community approach, online music service search engine and music recommendation application, Grooveshark uses similar recommendation system like Pandora and a following system, similar to Twitter that allows users to share songs. Another good representative of web 2.0 is Last FM, more socially slanted since it was created in 2002. It began as an Internet radio station and music community site becoming, later, as many others, a music recommendation service, focusing on the music each user plays to recommend more music. Using the audio scrobbler plug-in Last FM finds songs each user likes or plays the most, building a detailed profile of each user's musical taste by recording details of songs the user listens to in each device or platform (Internet, computer or MP3 players).

MUSIC PORTALS	MUSIC PLATFORMS/COMMUNITY
Songza	iMesh
Finetune	Last FM
Musicovery	Mixcloud
Deezer	Hype Machine
We7	iMeem
Mixcloud	Grooveshark
Stereomood	Seeqpod
Pandora	Mog
Last FM	Fairtilizer
My Way	Soundflavour
	Liveplasma
	Spinjay
	MysongCast
	Magnatune
	Youtube
	Mysongcast (indieland)
RADIO PORTALS	**AUDIO LIBRARIES**
Cotonete	Faitilizer
Weenradio	Maestro
Deezer	Musicplayer
Slaker	Deezer
Live364	Mp3tunes
Sky FM	Mysongcast (indieland)
Di	Grooveshark
Jango	
Last FM	
WEB-BASED MUSIC SERVICES	**MULTIPORTALS**
iTunes	Cotonete
Spotify	Seeqpod
	Deezer
	Jango
ON THE CLOUD	**ARTISTS PLATFORMS**
Music anywhere	Ourstage
Mysongcast (indieland)	Purevolume
Playlist	Jamwave
	Opsound
	Itbreaks

Figu

**Noisetrade
rcrdlbl**

re 2. Online music categories

Further analysis of website sample allows us to say that music drives their activity, with available songs and tracks to listen to, as well as news content, biography and artists information, like discography being common features. Music content, therefore, is available on streaming, with storage facilities and attempts to develop e-commerce. Business models in use are based on generated traffic and advertising revenue, combined with paid subscriptions. Radio stations add FM live stream and an archive of programs, podcasts, pictures or videos. In these two cases, pictures and videos reinforce radio's communitarian sense; strengthen also by providing some of this content in social networks. Nevertheless, communitarian sense in radio, or even in r@dio, structured through radio speech communication, contests, call-in shows and currently, by events organized or sponsored by each radio station. Most commonly web-based audio content websites fit in different categories, combining different approaches, like online music service with community and online music services with on the cloud content. As radio websites are the only ones that have speech, they belong to one single category. Combining our definitions of music and radio portals; music platforms/communities; audio libraries; web-based music services; multiportals; on the cloud and artists platforms, we managed to organize websites in these categories, baring in mind their self-definition ('about' menu) and available features in websites, as for: content; interactivity; registration or subscription, for most referred websites available in Portugal and for unregistered users. This ever-growing variety of online music services is forcing radio to adapt and change communication, relation and business model, as radio consumption changes, mostly in relation to platform of listening, rather than concerning time spent listening to radio, engagement with radio brands or replacing radio with online music services.
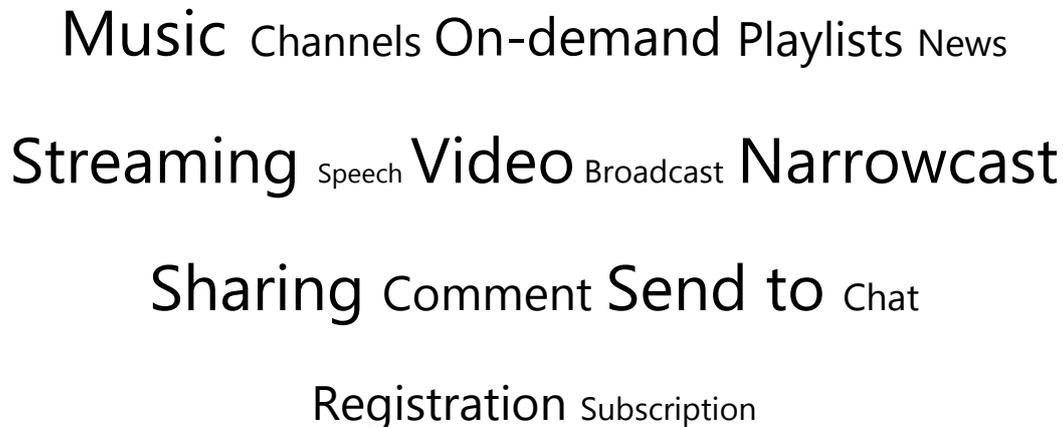
Music Channels On-demand Playlists News

Streaming Speech Video Broadcast Narrowcast

Sharing Comment Send to Chat

Registration Subscription

Figure 3. Cloud of features in websites: content; interactivity; registration

Conclusions

The way people communicate and companies relate with consumers have had boundless changes for the last years, as result of consolidation of social web, due to Internet access, mobile web, downsize of access charges, lower storage prices with larger capacity. That has led to new practices and routines, representing the end of technological limitations that for decades restraint communication channels and forced them to be unidirectional. Deuze argues that "continuous blurring of the real or perceived boundaries between making and using media by

professionals as well as amateurs ('pro-ams') has been supercharged in recent years – particularly in terms of its omnipresence and visibility online" (Deuze, 2007: 245). This is a challenging social phenomenon, represented by the blurring of producer/consumer profiles through digitally enabled relations. Creative work is becoming a commodity, although for most people with no recognition for its intrinsic value, if we consider high levels of piracy in different business areas and cultural goods. Most particularly in music even if, as we analysed, is becoming an available commodity in many different platforms and approaching concepts. Music itself is consolidating as a radio competitor, since online music services ubiquity, variety; availability and sense of community can replace radio as a music source provider. We have found enormous differences between radio and web-based audio content. When we look at differences between r@dio and these websites, we found that r@dio can be richer, by adding the human touch, feelings and intuition that perfect algorithm – although human produced – still lacks. Even if FM radio broadcasters in analysis may represent interesting r@dio propositions, combining traditional features of radio with items that transform them, availability, variety and accessibility are strong items that move people from these brands into others, more customizable and appealing, consolidating, by the day, their online prerogative, like YouTube or Last FM are doing. Radio stations, even if r@dios, like TSF and RFM are strengthening the sense of community around their brand, producing relevant content and engaging people in social networks. However, will it be enough?

References

Anderson, C. (2006). *The Long tail: why the future of business is selling less of more.* New York: Hyperion

Andrejevic, M. (2009). 'Critical media studies 2.0: an interactive upgrade'. Interactions: studies in communication and culture 1 (1): 35-51

Bahanovich, D. Collopy, D., (2009). *Music Experience and Behaviour in Young People*. UK Music: University of Hertfordshire

Benkler, Y. (2006). *The wealth of Networks: how social production transforms markets and freedom.* New Haven, CT: Yale University Press

Bruns, A. (2008). 'The Future us User-Led: the path towards widespread produsage'. Fibreculture Journal, Fibreculture Publications. Available at http://eprints.qut.edu.au/12902/ (10.07.2011)

Cordeiro, P. (forthcoming) *From Radio to R@dio: broadcasting in the 21st century*

Cordeiro, P. (2010 a). "From Radio to R@dio: Terrestrial Radio and Digital Platforms. How Multimedia Is Changing Radio." Sounding OUT 5 8 – 11 September 2010. Bournemouth.

Cordeiro, P. (2010 b). *A Rádio e as Indústrias Culturais*. Lisboa: Livros Horizonte

Cordeiro, P. (2009). "Generations and Online Media. The Study of Baby Boomers, Generation X and Generation Y Relation With Radio." Media+Generations Conference Proceedings Book (2011). (ed) P. Lang. Milan.

Couldry N. (2006) *Listening Beyond the Echoes: Media, Ethics, and Agency in an Uncertain World*. Boulder, CO: Paradigm Publishers

Croteau, D. (2006). 'The growth of self produced media content and the challenge to media studies'. Critical Studies in Media Communication. 23 (4): 340-344

Cover, R. (2006). 'Audience Inter/Active: Interactive media, narrative control and reconceiving audience history'. New media and Society, 8 (1): 139-158

Davenport, T. H. & Beck, J. C. (2001). *The Attention Economy: Understanding the new currency of business*. Harvard Business Scholl Press

Deuze, M. (2007). 'Convergence culture in the creative industries. International Journal of Cultural Studies'. Volume 10 (2): 243-263

Easley, D. & Kleinberg, J. (2010). *Networks, Crowds and Markets: reasoning about a highly connected world*. NY: Cambridge University Press.

Flichy, P. (2007). *The Internet Imaginaire*. Cambrigde: MIT Press

Fuentes, M., Curtis, J., Garcia, Y. & Toca, A. (2011). *Sentido Social*. Barcelona: Profit

Gautlett, D. (2000). *Web Studies*. London: Arnold

Herreros, M. C. (2001). *La Radio en la Convergência Multimédia*. Barcelona: Gedisa

Herring, S. C. (2010). *Web content analysis: Expanding the paradigm*. In J. Hunsinger, J., Allen, M.& Klastrup, L. (Eds.), The International Handbook of Internet Research. Berlin: Springer Verlag. Preprint: http://ella.slis.indiana.edu/~herring/webca.preprint.pdf

Jenkins, H. (2004) 'The Cultural Logic of Media Convergence'. International Journal of Cultural Studies. Vol. 7 no. 1 33-43

Jenkins, H. (2006). *Convergence Culture: Where Old and New Media Collide*. New York University Press

Lüders, M. (2008). Conceptualizing personal media. New Media and Society, 10(5): 683-702

Muratore, C. (2008). Measuring Music Consumption THE NIELSEN COMPANY. Available at ww.narm.com/Research/Nielsen09.pdf (10.07.2011)

Ortega Santamaria, S. (2007). 'Evolucion del perfil del usuario: Usuarios 2.0. No solo usabilidad. 6' Available at: http://www.nosolousabilidad.com/articulos/usuario20.htm

Slot, M. Frissen, V. (2007). 'Users in the 'Golden' age of the information society'. Observatório (OBS*) Journal, 3: 201-224

Sysomos Inc (2010). 'Inside YouTube Vídeos - Exploring YouTube videos and their use in blogosphere - Michael Jackson and health care dominate'. Available at: http://www.sysomos.com/reports/youtube/ (10.07.2011)

Rogers, E. M. (1964). *Diffusion of Innovations*. Glencoe: Free Press.

Uricchio, W. (2004). 'Beyond the great divide: collaborative networks and the challenge to dominant conceptions of creative industries'. International Journal of Cultural Studies. Volume 7 (1): 79-90.