

# Music & the Internet

## MUMT301

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# Plan

- Syllabus and guidelines
- NIN Ghosts I-IV and the New Music Economy
- Class-by-class overview
- UNIX/Linux commands
- Questionnaire / Homework

# NIN's Ghosts I-IV

- <http://ghosts.nin.com>
  - free listening and high quality partial download (email required)
  - different alternatives (formats and packages)
  - album's art for free (email required)
  - “The end result is a wildly varied body of music that we're able to present to the world in ways the confines of a major record label would never have allowed - from a 100% DRM-free, high-quality download, to the most luxurious physical package we've ever created.” (Trent Reznor, March 2, 2008)

# NIN's Ghosts I-IV

- “Ghosts I-IV is licensed under a Creative Commons Attribution Non-Commercial Share Alike license.”
- <http://remix.nin.com>
- <http://www.ninwiki.com/Multitracks>
- <http://www.ninremixes.com/multitracks.php>
  - Pioneering “stem mixing”
  - Arcade Fire’s Colin Stetson and Sarah Neufeld
- <https://soundcloud.com/zardonic/nine-inch-nails-35-ghosts-iv-zardonic-remix-2008>
- [https://archive.org/details/10-ghosts-iinin-remix-by-antuan\\_graftio](https://archive.org/details/10-ghosts-iinin-remix-by-antuan_graftio)

# NIN's Ghosts I-IV

- The Ghosts Film Festival
- [https://www.youtube.com/watch?v=\\_gnjAH6uMxc](https://www.youtube.com/watch?v=_gnjAH6uMxc)
- <http://creativecommons.org/weblog/entry/13915>
- Trent Reznor Digg Dialogg interview

# NIN's Ghosts I-IV

- The core of the *Ghosts I-IV* project is not the set of tracks recorded in Reznor's studio, but the relationship of the artist with his fans, and the thousands of remixes, videos, comments and blog posts that his community of fans uploaded to his website

# Transformations in the music industry

- Several transformations in the media environment have had tremendous impact on the structure and logic of the music industry
  - Phonograph recordings by end of 19th century
  - Broadcast radio programming in the 1920s
  - Magnetic tape in the 1930s
  - Compact cassette in the 1970s
  - Deregulation of media ownership in the 1990s
  - Shift from physical to virtual in the 2000s

# The “Cloud”

- Used as a metaphor to denote the Internet since the late 60s
- Used as a useful and vague enough symbol that could be used to summarize all the resources, cables and gadgets connecting computers at the nodes of a network

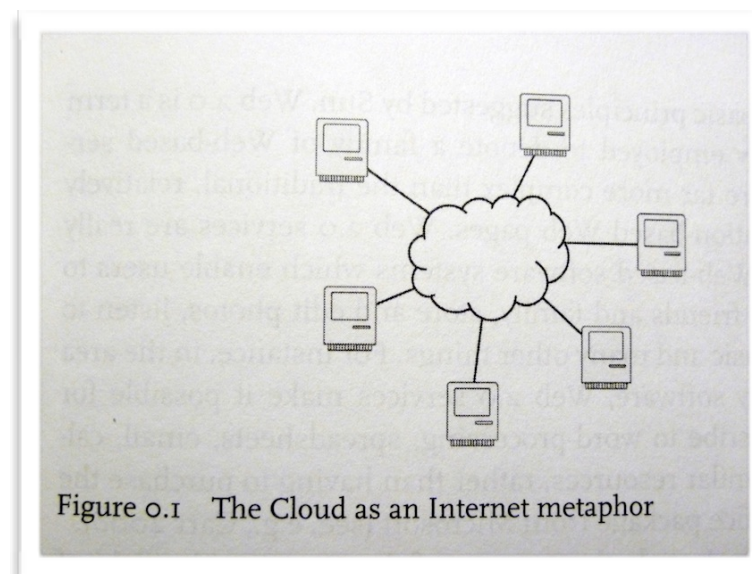


Figure taken from Wikstrom, P. 2013. The music industry. Digital media and society series. 2nd edition. Polity Press, Cambridge, UK.

- Sun Microsystems: “The Network is the Computer.”
- Web 2.0 followed the path of the Sun Microsystems’ slogan



# Web 2.0

- Term usually employed to denote a family of web-based services which are more complex than the traditional, static information-based Web pages
- Fully-fledged Web-based software systems enable users to do word processing, create spreadsheets, synchronize calendars, socialize with friends, store and edit photos, and ...
- listen to and remix music, rather than purchasing standalone software packages

# Web 2.0 and the music industry

- Allowed to shift its centre of gravity from the physical to the virtual
- CDs to MP3s to Web-based music services (YouTube, Spotify, Rdio, Tidal, Pandora, Last.fm, ...)
- Music is no longer owned and collected by mainstream audiences – music is in the Cloud
- New music industry

# New music economy

- Three dimensions (tensions) between the old music economy (OME) and the new music economy (NME)
  - Connectivity vs. control
  - Service vs. product
  - Amateur vs. professional

# New music economy (connectivity vs. control)

- The new communication technologies have a different structure from the previous hierarchical media
- Connectivity indicates how well members of a network are connected. Higher level of connectivity in a network indicates that most of its members are connected to each other

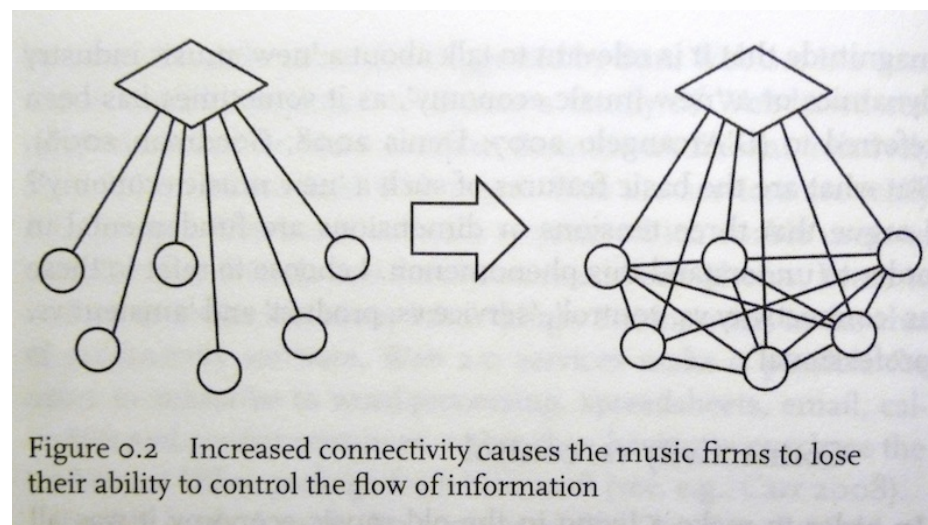


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- In the OME everything was about control. In the NME everything is about connectivity
- In the OME there was low level of connectivity. The NME dynamics is characterized by high connectivity and little control

# New music economy (service vs. product)

- In the OME the content (music) and the medium (disc) were inseparable
- The music industry was clearly made up of physical goods
- In the NME, as soon as any kind of information is uploaded to the Cloud, it is instantly universally accessible to everyone connected to the Cloud
- In the NME, it is difficult to charge the audience for discrete chunks of information. The economic value of providing access to an individual track is infinitesimally close to zero
- However, people may be willing to pay for *services* allowing them to help in searching and discovering in large amounts of information
- Music industry nowadays can be seen as a *service* valuable for both, audience and artists

# New music economy (amateur vs. professional)

- The talented, creative artist is still the centre of gravity in the music industry
- In the NME the relation between the artists, their art, and their audience has changed
- Increased connectivity of the audience and various kinds of music production tools have enabled “non-professionals” to create, remix, and publish content online
- Not everyone is a musician, but there is a larger share of the audience creating and uploading music

# New music economy

- All these changes have been driven primarily by the development of digital information and communication technologies
- The music industry entered into the “digital age” by means of digital technologies introduced:
  - in music production and recording during the 70s
  - in music distribution, i.e., the compact disc in the 80s
  - in music promotion, talent development, and every remaining part of the music business during the last part of the 90s and 2000s by means of web-based technologies

# Course outline

- MyCourses
- Final project
  - Software project with description (1–2 pages)
  - Music project with description (2–3 pages)
  - Research paper (4–6 pages)
- Review of some previous final projects
  - Chris Middleton's Drum Sequencer: site
  - Jackson Hoffart's Soundcloud Mixer: site
  - Cole Barbour's EP with Internet music tools: release
  - Ben Miller's algorithmic composition project: description
  - Kaz Takasugi's research paper on Intellectual Property: paper



BREAK

# UNIX command line crash course

(for those who never have used a command line)

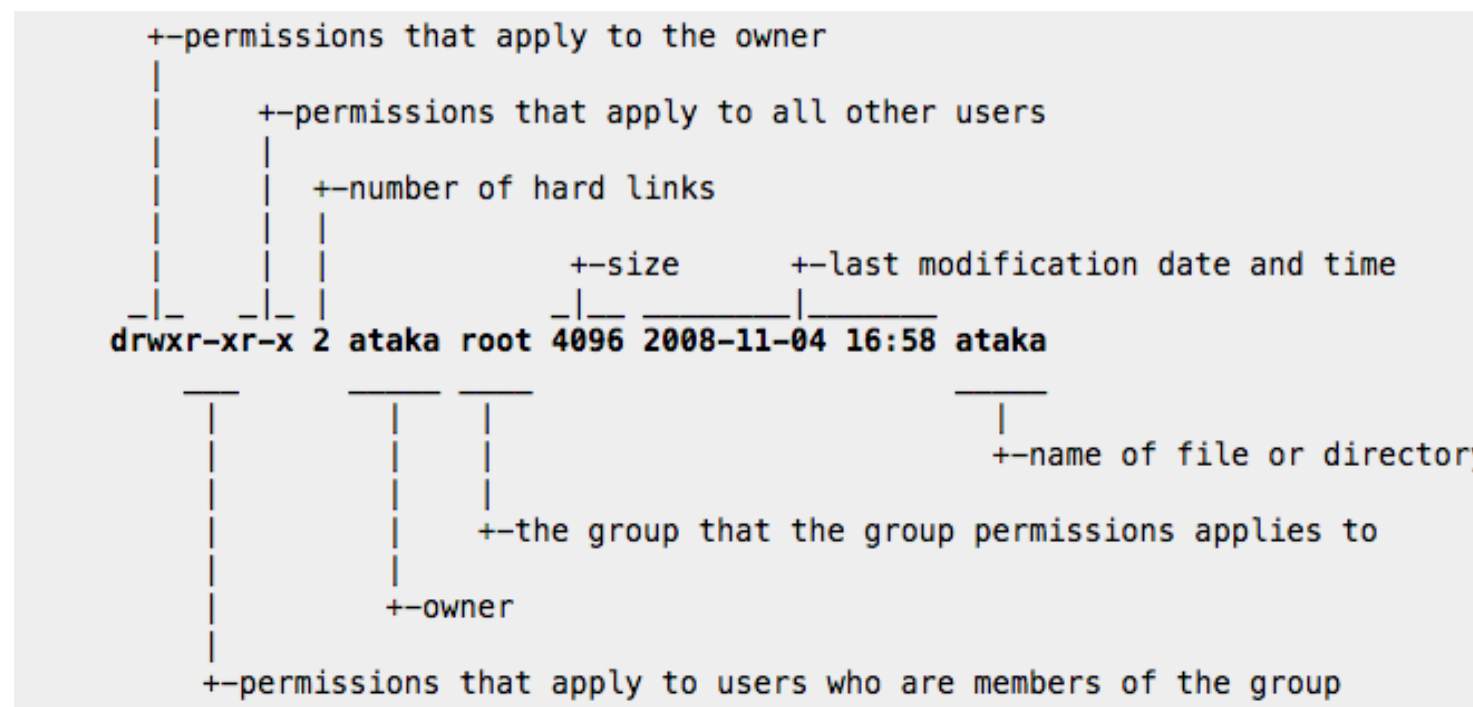
- `ssh` is a program (short for Secure Shell) for logging into a remote machine and for executing commands on a remote machine. Logging in using SSH:
  - `ssh yourusername@www.xxx.yyy.zzz`
  - `ssh gvigliensoni@132.206.14.130 pass: gvigliensoni1234`
- `passwd` is a tool on most Unix and Unix-like operating systems used to change a user's password
  - `passwd`
- `man` A man page (short for manual page) is a form of online software documentation
  - `man command`
- `pwd` the `pwd` command (print working directory) is used to output the path of the current working directory
  - `pwd`

# UNIX command line crash course

(for those who never have used a command line)

- `ls` list directory contents, the “-a” flag list all files in the current directory, the “-l” flag shows the contents as a list

- `ls`; `ls -a`; `ls -al`



- `cd` also known as `chdir` (change directory), is a command-line OS shell command used to change the current working directory

- `cd dirname`; `cd .`; `cd ..`; `cd ~`; `cd /`

# UNIX command line crash course

(for those who never have used a command line)

- `mkdir` The `mkdir` (make directory) command is used to make a new directory.
  - `mkdir dirname`
- `rmdir` (short for remove directory) is a command which will remove an empty directory
  - `rmdir dirname`
- `mv` (short for move) is a Unix command that moves one or more files or directories from one place to another.
  - `mv myfile mynewfilename`
- `cp` (short for copy) copies files and directories.
  - `cp sourcefile targetfile`
  - You can copy entire directory trees with a single command using the '-r' flag
    - `cp -r Folder1/ Folder2/`
- `rm` (short for remove) is a basic UNIX command used to remove objects such as files, directories, device nodes, symbolic links, and so on from the filesystem.
  - `rm filename; rm -i filename`

# UNIX command line crash course

(for those who never have used a command line)

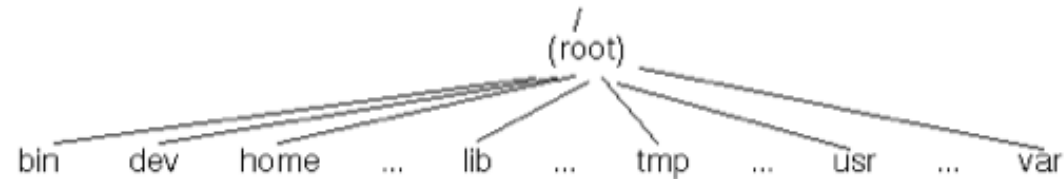
- `cat` (short for catenate) is a standard utility that outputs the contents of a specific file and can be used to concatenate and list files.
  - `cat questionnaire.txt; cat questionnaire.txt questionnaire2.txt`
- a pipeline is the original software pipeline: a set of processes chained by their standard streams, so that the output of each process (stdout) feeds directly as input (stdin) to the next one.
  - `command1 | command2`
  - `ls -l | grep gabriel`
- The character `>` will redirect input into or output from a command
  - `command > outfile`
  - `cat questionnaire.txt questionnaire2.txt > all_questionnaires.txt`
- `scp` (secure copy) allows to securely transfer files between a localhost and a remote machine, or two remote machines
  - `scp SourceFile user@host:directory/TargetFile`
- Text Editors: `nano`, `vim`

# UNIX hierarchical structure

- The UNIX/Linux Directory/File Hierarchy
  - UNIX/Linux maintains directories and files in a hierarchical structure, called a tree structure.
- When you first open a terminal window, the UNIX shell expects that you are in your home directory. At the start, this is called your current "working directory" (i.e., your position within the directory tree)
- Pathnames can be *relative* or *absolute*
  - An *absolute pathname* includes the file's complete path starting with the system's "root" directory, which is always named "/"
  - A *relative pathname* for a file is a name that is given "relative" to your current working directory
- Each directory in a Linux system contains two special files "." and ".." that can be useful when constructing relative pathnames. The file named "." means "the current directory," and the file named ".." means "the parent directory"

# UNIX hierarchical structure

- Is organized by a root directory and its subdirectories
  - taking a look at the files in a Linux root directory “/”



- Each subdirectory is organized by having files and folders for different purposes:
  - `/bin`: these are the executable programs that comprise the GNU/Linux utilities.
  - `/lib`: home of many libraries
  - `/usr`: application programs and libraries not part of the UNIX/Linux system
  - `/home`: user accounts
  - ... and many other folders

# Review

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- Course outline
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- Resource links in MyCourses
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- Course online link