



# Podcasting at the University of Stavanger

## Case study



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## Problem statement

Since 2001, the University of Stavanger has produced digital e-learning content in various forms, mainly published on the web. Over the years, the increasing prevalence of iPods, mp3 players, mobile phones and other mobile media players made it natural to offer some of the content as downloadable podcasts for mobile playback.

Specifically, we needed a podcast solution online, for part time students on the Bachelor degree course in nursing. The flexibility of mobile content supports learning styles not normally used in traditional education. In the online education of nurses, the availability of podcast learning content simply makes it possible for these students to *tailor their studies around their lives* in a way not previously possible.

In addition to regular web publishing of e-learning content, this led to the following new challenges:

- Technical production of audio and video as genuine podcast formats which support playback on mobile devices.
- Publishing of podcasts in a way that makes them easily accessible and downloadable to mobile devices.

## Production

### Formats

In order to produce podcasts in a genuine form as content which is playable on most mobile devices, the University of Stavanger focuses on the following formats:

- Video: h.264 in MP4 container
- Audio: mp3, ACC or m4a/ACC (enhanced podcast)

There are of course other technologies and file formats which can be used, but the h.264/MP4 and mp3/ACC approach is proven to be versatile when it comes to playback on mobile devices.

### Conversion of regular audio and video media

The first approach to podcasting at the University of Stavanger was the process of converting regular video and audio material to podcast format. Videos which were previously published on web servers, streaming servers, Learning Management Systems and DVDs etc, were converted to h.264/MP4 format. The conversion between formats can be done by various software products, e.g. Sorenson Squeeze, Adobe Media Encoder etc.



Image 1 – podcast from regular video material

### Podcasts as spinoff from digital learning modules

The University of Stavanger produces e-learning and multimedia in numerous forms where spoken text is often used both as a pedagogical tool and to increase accessibility. The extraction of this

spoken text into audio podcasts, has given a new usage: a lightweight repetition media for mobile playback. This process can be considered as reuse of media, thus it is economically viable. The technical aspects of this are also simple, since extraction of audio from various formats into ACC or mp3 can easily be done by affordable software.

### Podcasts as spinoff from Mediasite “lecture capture” presentations

The University of Stavanger uses Mediasite, a lecture capture system from Sonic Foundry. This system produces multimedia streaming content which is not immediately accessible and downloadable on mobile devices. In order to offer presentations which are originally recorded using the Mediasite system as podcasts, the presentations have to be converted to video or audio files. Since Mediasite records high quality multimedia with lecture graphics, the best approach is to retain the visual elements of the original lecture by producing video podcast. This can be done by using the *Rich Media Vodcast Utility* which is a software component specially designed to convert Mediasite presentations into h.264/MP4 media. This workflow makes it possible to make high quality and cost effective video podcast from lectures venues across campus.

**Kommunikasjon i praksis**

- Kursuke 8-15 + andre samling tar sikte på konkretisering av undervisningsopplegg knyttet til hovedområdet *kommunikasjon*.
- Vi skal også fokusere på utvikling av studentenes egne ferdigheter på feltet.

Uke 1-2	Uke 3-7	Uke 8-15	Uke 16-21	Studier
Introduksjon	Språklæring	Kommunikasjon	Språk, kultur og samfunn	Forbered eksamen

Samling 1    Samling 2    Samling 3    Eksamen

Image 2 - Video podcast from Mediasite presentation

## Enhanced Podcasts

In some cases, the University of Stavanger has enhanced podcasts by using the following approaches:

- Adding graphics and chapters to audio podcasts by using e. g. Apple GarageBand. (m4a/acc).
- Adding chapters to video podcasts, known as mp4 chapters.

It is worth mentioning that these two approaches only affects playback on Apple devices. The reason is that this functionality is not standardized and only implemented by Apple. On all other devices playback will perform like normal media playback without chapters or graphics.



Image 3- Audio podcast enhanced by adding graphics and chapters

## Publishing

### RSS publishing

A traditional technique for publishing podcast is by RSS, which is a XML format that is being used for publishing frequently updated content. The advantages of RSS from the publishers' point of view are that content can be published in a standardized format. The users on the other hand are free to choose the RSS reader software of their choice. When subscribing to these RSS feeds using RSS readers, users will be automatically notified about new episodes, and the software can be set up to automatically download new content.

Initially the University of Stavanger developed a simple web service where users could subscribe to RSS feeds based on different podcast categories. Later this service was partially replaced by the university's site on iTunes U.

### Publishing to iTunes U

As one of the first two universities in Norway, UiS started publishing podcasts to iTunes U during 2009, when iTunes U first was open to universities outside the USA. The main goal of this was to take

advantage of iTunes's reputation as a well known arena for music and media publishing. Thousands of users access this service daily as their media player, music store, RSS reader etc. A section of iTunes Store, called iTunes U, is dedicated to learning institutions as a free store for the distribution of educational material. Once accepted by the Apple verification process, the University of Stavanger was then able to build its own site on iTunes U. The audio and media content is still hosted from the university's own servers and the different categories are posted to iTunes U by RSS feeds, which are strictly formatted with iTunes U's specific tags. The fact that the podcasts are still published by RSS means that they are also easily published outside iTunes and easily read by any RSS reader software.

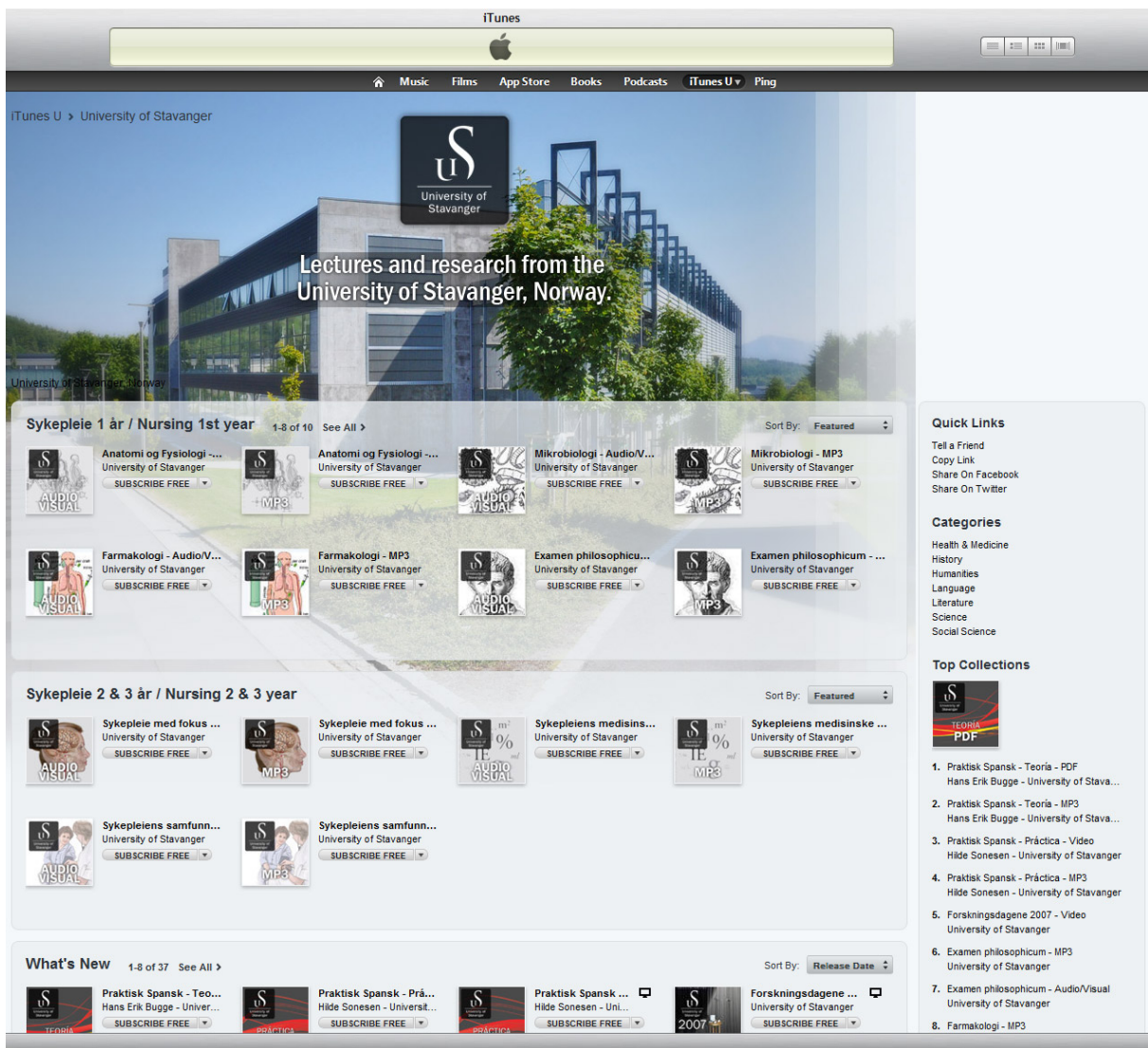


Image 4 - the University of Stavanger's site on iTunes U

The statistics from iTunes U show that podcasts from the University of Stavanger are downloaded in their thousands every month by users all over the world. This proves the advantages of using such a well known service when it comes to gaining publicity and reaching students.

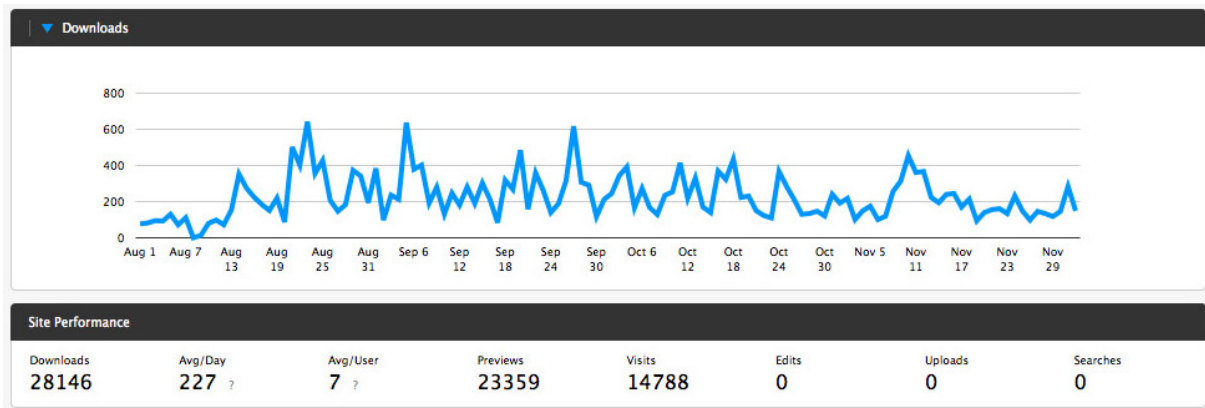


Image 5 - statistics from the University of Stavanger's site on iTunes U - August 1<sup>st</sup> to December 2<sup>nd</sup> 2011

Of course, the fact that iTunes U is a public arena must be taken into account. For specific learning content, for example content covered by copyright or special permissions, iTunes U will not necessarily be the most suitable publishing platform.

### Future publishing demands

The concept of podcasting is based on downloadable and accessible mobile media. This increases flexibility when it comes to time and place for the use of the media, since no network connection is required. Still, most of the audio and video consumption today takes place in the form of streaming media in various formats and technologies. The next step at the University of Stavanger will be to consolidate several fragmented services into one portal which can serve both streaming and downloadable content through a user friendly, cross platform system. The process of establishing such a system is not yet completed but one of the systems that has been evaluated for this purpose is *MediaCore*. This is an online video platform which can be used to organize and deliver video content for both desktop and mobile devices. It can also organize videos from YouTube and Vimeo and can also generate RSS feeds for iTunes U.



## Conclusion

The University of Stavanger publishes media using various systems, formats and workflows. The main advantages of podcast formats are mobile accessibility and playback. Because of the simplicity and predictable behavior of these formats and the way they are published, they might continue to be popular among students for some time to come. However, streaming services are gaining popularity also on these devices, due to the rapid development in mobile devices and mobile internet. The traditional podcast formats and new streaming services will probably complement each other on mobile devices over the next few years.

## Contact information

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