

# TxtTV

## **Groundbreaking Teletext application for Android mobile platform**

White Paper

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## Executive Summary

TxtTV application is designed to help its user to achieve full teletext access. Its purpose is to provide feature rich mobile application which is used to read teletext from teletext service providers like Yle.

This document provides details of the why this application is important, visions behind the application, non-technical description of the solution, technical description about the core technologies used and the results of the development. Document also discusses how to set the application to running on Android platform.

TxtTV application is now available trough Wikipage. Though some bugs are still present in the code and application is not yet feature complete, the TxtTV is ready for its prime time. Some of the implemented core features include:

Feature	Description
Bookmarks	Add, remove and use bookmarks
Page caching	Cache pages to reduce network usage and improve responsiveness
Finger gestures	Application supports finger gestures
Hyperlinks	Content has hyperlinks for navigation
Browse pages	Core functionality to browse pages
Page alerter	Notify the user is certain page has changed its content
Convinien GUI	Easy to use and functional GUI

## The Project

### Vision

Text television is still widely used because of its easiness to reach relevant news information fast and when people need it. Our team sees that there is a large user base available for use of mobile text television. Though text television can be reached from the web with browser it doesn't fit well into a screen, fonts are hard to read and accessing it needs active internet connection. Our project aims to produce program that sole purpose is to provide text television, easily and always with you when you need to reach the most relevant news.

Project has it aim at producing working text television program for Android environment. Our solution is called TxTTV.

### Non-technical description

Android doesn't have a teletext viewer for YLE's teletext. We implemented such an application for Android. Browsing

the teletext with Android's own browser isn't a pleasurable experience, but using our application it is. Application will bring teletext to phone.

Because our programs sole purpose is to provide seamless and easy to use user experience it is good at what it does. This provides several advantages over programs like common Web-browsers and RSS feed readers. For example new information from certain sport events will be very easy follow through bookmarks and automatic notifications.

Greatest design difficulty was that text reader is very dependant on the internet and if there is no connection, there will be no new news. We decided to solve the problem using page store database so that pages could be viewed also without connection.

TxTTV has few features that makes it an advanced teletext reader. Page-Alerter - feature can tag specific teletext-pages that user wants to hold under supervision by the application. Page-Alerter will notify if content of a teletext-page have changed. User can also bookmark pages and bookmarked pages can be referred later by the applications gui. Contents of bookmarked pages are automatically synchronized at start of application. User may also refresh a single page through the gui and shut down the program.

## Technical desription

**Webview - widget** is used to render and show html - contents for user. The teletext - content is formatted into html and it gives possibility to wiki-like - usage of the teletext. Urls are overwritten with a callback function that handles the links between teletext pages.

YLE has hard coded umlauts so we had to come up with a creative solution. We have our own **php - file** on server that parses data from YLE and gives them to our application. Actually, our application contacts the php file as HTTP POST - contact and fetches data from it. The PHP - system works as a bridge between YLE and our software. It also made possibility of formatting content in the server and leave text processing there.

TxTTV uses **ImageButtons** for navigation elements at the bottom of the view. TxTTV also relies heavily on menu - elements, i.e. Page-Alerter and Bookmark - gui - elements are found there. Menu items are build on pop up - time. This makes dynamic icons possible, for example when popping the menu with bookmarked page, the bookmark icon tells that the page is already bookmarked.

**Hand gestures** are also implemented so the user can navigate by moving his finger accordingly. Code is divided into logical classes so maintaining the code is straightforward and modular.

TxTTV uses **SQLite - database** to cache fetched pages,keeping the bookmarks and for keeping the page-alerts. Connection to database is made upon startup of application. If database is not found, it is created. Database saves bandwidth usage, especially for longer teletext sessions and it also decreases amount of traffic for php - system.

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Androids **Toast - text** is used to notify page alerting and bookmarking. PHP - system and code's modularity makes modules for different teletext - providers possible. It can be considered for future's expansions.

## **The Conclusion**

In conclusion TxtTV extends the usage of teletext to the Android mobile platform. TxTTV solution offers good performance and high usability compared to rivalling programs and is really "must to have" solution for teletext viewers. Current program has significant level of growth possibilities, but currently it is not in such a good shape that is could be sold in Android Marketplace.

The program contains all the vital features needed, however it is possible to implement more features in the future.

TxtTV has currently some known minor bugs. Application was developed in a hurry and some user interractions and some architectural choices could be re-thought to make the application even better.