

EXAMENSARBETE Cross-Platform Video Management Solutions

STUDENTER Thomas Mattsson, Andreas Olsson

HANDLEDARE Per Ganestam (LTH), Fredrik Brozén (AXIS Communications)

EXAMINATOR Mathias Haage (LTH)

Video Management Solutions for Several Platforms

POPULÄRVETENSKAPLIG SAMMANFATTNING **Thomas Mattsson, Andreas Olsson**

Supporting several platforms with an application is becoming more and more important. We have found that it is possible to develop an application sharing 100% of the source code between the platforms and compared different strategies to support several platforms.

Supporting several platforms can be done in many ways when developing an application. The most straightforward way is to develop a native application for each platform separately. A more interesting way is to develop a cross-platform application that can run on all platforms while sharing the source code between the platforms. By developing both native and cross-platform video management applications we have found both pros and cons with the cross-platform approach. We have seen that it is possible to achieve 100% code sharing between Windows and OS X while providing good performance and user experience. We have also seen that there can be platform-specific problems when using cross-platform frameworks that can be hard to track down.

The main benefits of cross-platform development comes from that the source code can be shared between the platforms. Sharing source code means that it is easy to make changes that affect all platforms, for example adding features or fixing bugs. It also means that the developers basically only need to know one programming language. The codebase size gets smaller and there is no need to maintain several platform-specific projects.

The main drawbacks of cross-platform development on the other hand comes from the technique used to make the application cross-platform. This for example is the framework or programming language used. The technique becomes a dependency to the project that can introduce limitations and cause bugs. This dependency can also be costly to remove later. We have seen that

the performance can differ between platforms using the same framework as well.

Today we use many different devices every day. For example we use Mac laptops, Windows computers at work and have Androids or iPhones in our pockets. We also expect the applications we use to work on all these platforms. "How hard can it be?" users and developers may ask themselves, to support several platforms. Developing native applications for each platform often requires a developer team for each platform and much coordination between the teams. It also means maintaining many projects and keeping features and bug fixes in sync. The approach to use cross-platform development and share as much source code as possible between the platforms should mean less maintenance work and synchronization between the platforms.

When developing an application one have to decide what platforms to support and the strategy to use to support them. The choice is often between developing separate native applications and using cross-platform development. We believe that our result can be used as a guide for this decision. Our experiences and result show that there is no one right choice. Instead it depends on the situation and on personal preference. For example developing native applications means having more control while cross-platform development can make the application easier to maintain but often introduces a dependency.