Automatic Catch-UP TV in Over the Top Networks

GAPOTT provides end-to-end optimization of content delivery systems, for the migration of a popular catch-up TV service from managed IP TV (IPTV) networks to OTT (over-the-top) delivery. It builds demand forecasting models relying on machine learning techniques and strategies to optimize OTT multimedia delivery solutions, to achieve power and cost savings whilst maintaining a high QoE.

GENERAL MOTIVATION AND OBJECTIVES
OTT delivery is a very appealing proposition that takes advantage of the internet’s ubiquity to provide flexible and globally accessible services, capable of unstraitened device targeting, while holding the promise of low delivery costs.

In spite of its appeal and many advantages, OTT delivery is not without its issues. The delivery architectures must be carefully planned and optimized to maintain a high quality-of-experience (QoE) and rational resource usage, especially when migrating from services running on managed networks with established quality guarantees.

The purpose of this project is to expand on current scientific knowledge on the issue of OTT content delivery considering the global end-to-end delivery chain: develop content delivery optimization to optimize the delivery infrastructure; the CDN to support novel OTT multimedia delivery protocols in an efficient and QoE maximizing manner:

- Understanding of demand characteristics to know the exact service requirements, demand modeling to ensure that sufficient resources are available to sustain target QoE-levels and SLAs that servers are placed close to its users, and that the chosen CDN architecture is adequate to the services being delivered.

- OTT consumption forecasts to predict when and what resources will be necessary at any given point for a higher-quality, efficient, and cost-effective operation.

- OTT caching optimization to take advantage of the static and dynamic models produced by the previous two objectives to improve the performance of a key CDN component: cache.

CHALLENGE
OTT services have been growing at a fast pace driven by a low barrier of entry, mostly because of little to no investment being required in infrastructures traditionally necessary to reach the masses. This fast-paced growth presents an opportunity for all the involved partners, but comes with several challenges, especially with regard to scalability and QoE, which must be addressed.

PROJECT WEBPAGE URL
https://www.it.pt/Projects/index/2075