DIGITAL CONTENT DELIVERY IN MOBILE NETWORK APPLICATIONS

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ABSTRACT: Content delivery networks (CDNs) are used in applications for content providers deliver text, pictures, audio, video, applications and services to users. The aim of CDNs is to overcome the limitations of the Internet in terms of user perceived Quality of Service (QoS) when trying and accessing content. Now day's contents are going mobile so the quality is very important in wireless mobile network. The various services and Quality of the services has been reviewed in this paper which is reported by Daniel Sjöberg. The data rate and QoS graph it is helpful to decide Quality of service.

KEYWORDS: digital, content, delivery, mobile

1.   INTRODUCTION

A CDN replicates content from the origin server to cache servers (also called replica servers), spread across the globe. Content requests are directed to the cache server closest to the user, and that server delivers the requested content. As a result, users get greater speed and higher quality. Content providers benefit from higher customer satisfaction, new business opportunities, increased revenues, bandwidth savings, reduced infrastructure costs and greater productivity. These benefits are particularly valuable for bandwidth-intensive, streaming media applications – which very soon will make up the greatest portion of Internet traffic. CDNs have been around since the mid 1990s, but these first-generation networks have become inadequate for today's requirements. The Web is now a vital tool for most businesses and an indispensable part of people's daily lives. Users are requesting greater and greater volumes of content every day. New forms of Internet content and services are emerging, such as high-definition TV (HDTV), massively multi-player online gaming (MMPOG), software-as-a-service (SaaS) and social media.

The next step in achieving content delivery success understands where your targeted consumer audience spends its time online. For example, according to YouTube, 800 million people visit the site per month. Therefore, if you want to distribute a video, putting that video on YouTube might be a good place to start. Knowing who you want to reach and how they want to be reached is half the content delivery battle. Increasingly, too, high-speed, high-quality multimedia services have to be delivered over mobile networks. These developments make the availability, quality, accuracy and speed of content delivery decisive to content providers' business success. This, in turn, calls for a new generation of content delivery networks. The 3rd Generation Partnership Project (3GPP) defines how-to broadcast multimedia content over Long Term Evolution (LTE) using Dynamic Adaptive Streaming over HTTP (DASH) technologies [1]. With the aim of better managing the available radio resources, the 3GPP proposes to combine DASH with a multicast delivery of multimedia segments to the mobile devices, using the evolved Multimedia Broadcast and Multicast Service (eMBMS) [2].Since the transmission over eMBMS can suffer from errors, the 3GPP has proposed the use of Application Layer Forward Error Correction (AL-FEC) [3] and uncast recovery techniques. In this paper, we show how this combination of digital content and mobile network recovery can lead to solve problems of communication between the broadcasting server and the multimedia players
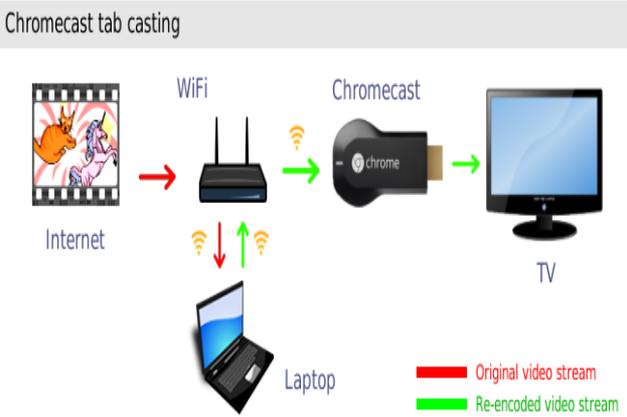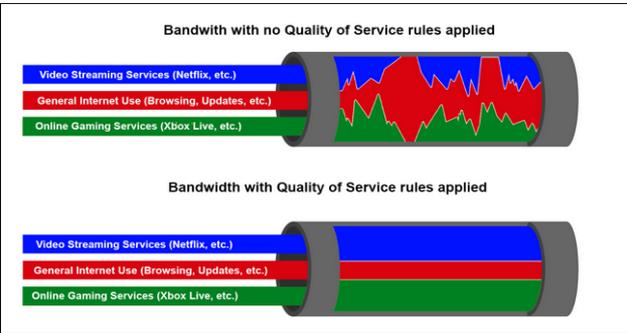
Figure 1. Content delivery networks with wifi

Figure2 bandwidth and quality of service

2. THE VERTICALIZATION OF CONTENT DELIVERY SERVICES

Traditional CDNs were horizontal – designed to deliver all forms of content by the same mechanism across all user categories. This one-size-fits-all approach is no longer viable. It does not provide adequate performance for some purposes while for others it is too costly. New CDNs will be vertical – customized to meet different content providers' specific needs. A single solution can no longer satisfy the requirements of all content providers and all types of traffic. Different services, such as voice, video, gaming and mobile roaming, require different approaches. Different content providers need different solutions depending on their business models.

Based on its extensive IP network (the worlds seventh largest and the fastest growing, with 85 percent of European ISPs connected to its backbone) TeliaSonera International Carrier is developing CDNs for each type of service requirement. The network supports all types of digital content, in any format, from any source. But solutions will be optimized for each application with end-to-end service level agreements (SLAs). Increasingly, advanced content delivery services are becoming an integral part of Telia Sonera International Carrier's offering. It is our belief that no IP carrier will survive for long without offering such services.

3. MOBILE CONTENTS

Increasingly, people and businesses expect quality content to be delivered to their mobile devices. Within the next decade, the amount of content viewed on mobile devices could well surpass that viewed on wired devices – and with equal or higher quality of experience. Content will travel freely across national borders, and users will have universal connectivity of their mobile phones, PDAs and laptop computers.

Internet TV, interactive gaming, social networking, navigation services, context aware services and other forms of rich content are keeping more people connected more of the time. And they expect to remain connected even when on the move.

This development is generating more traffic and shaping new traffic patterns. Fortunately, it is getting easier to deliver multimedia applications and services over diverse and heterogeneous wireless networks – with multimedia session continuity and retained QoS.

GRX and its descendant IPX (see text in box) are making it possible for IP based content to travel across all types of networks, fixed and mobile, with a guaranteed quality of service – and while enabling all parties in the value chain to receive a commercial return.

Figure3 Content going mobile

4. REQUIREMENTS OF QUALITY PARAMETERS

Quality of Experience (QoE) is a subjective measure of a user's experiences with content delivery, either with the delivery of a piece of content or with all content delivered by a content provider. Unless a content provider delivers optimal QoE, users will defect to the competition. QoE is a function of two factors: quality of content (QoC) and quality of service (QoS).

Quality of content (QoC) is a user's subjective, often unconscious, appraisal of the attractiveness or importance of a piece of content or of a content provider's entire offering. Is it entertaining, exciting, educational or helpful? Is it well produced, designed and written? Is it easy to find and access?

Quality of service (QoS) is an objective measure of the accuracy of content transport from the content provider, over the Internet, to the user's receiving device. It can be quantified in terms of available bandwidth, latency, packet losses, etc., and used to guarantee a certain level of a specified resource to selected traffic on a network.

If users experience freezing in video playback, color blurring, significant delays for startup or other transmission errors, then they may abandon the service, temporarily or permanently.

Quality of content is of little value unless delivered intact to the user. Quality of experience is what counts.
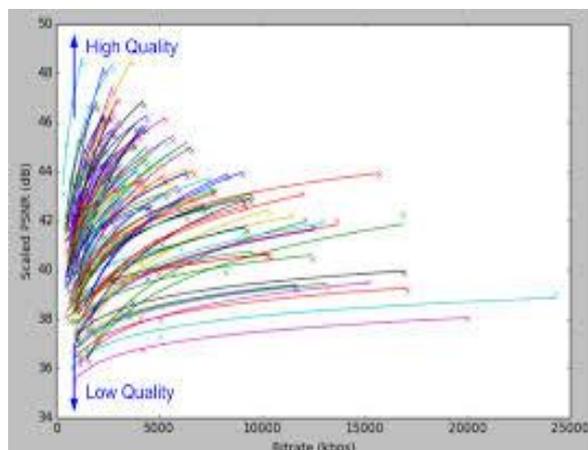

Figure4. Quality of Experience

5. Conclusion

Content delivery networks (CDNs) are used mobile in applications for content providers deliver text, pictures, audio, video, applications and services to users like mobile banking, YouTube contents . The use of CDNs must to overcome the limitations of the Internet in terms of user perceived Quality of Service (QoS) when trying and accessing content**.** Now a day's contents are going mobile so the quality is very important in wireless mobile network. The various services and Quality of the services like QOE, QOC, and QOS has been discussed.

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