

Streaming video is challenging the game consoles

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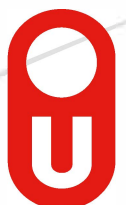
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Streaming video is challenging the game consoles

In 2009 the OnLive company (www.onlive.com) announced that it wanted to distribute games via streaming video. They've received a lot of scepticism, scorn and jeering. People felt it was impossible because it would require too much bandwidth and produce unacceptable delays during play. Last year the company launched their Cloud Gaming Service for which they now received respect from all sides. Game consoles are greatly challenged by a formidable, new competitor.

In the 1970s video games were only available in arcades. Pac-man was the first big arcade blockbuster. It took until 1982 for the domestic video games market to take up, when Pac-Man became part of the standard Atari-2600 video console and greatly accelerated its sales.

Basically there are four techniques to deliver games to people's homes. In agreement with the Atari approach the real gamers still use video consoles such as Xbox, Wii or Play Station. They run their games from DVD or Blu-ray, while at the same time they connect to the internet for the competition with others players. Also many games are played on the computer, initially through floppies, later with CD-ROMs, DVDs or today increasingly through the web. Mobile phones and tablets are rapidly growing platforms for gaming, which naturally exploit the device's network communication function combined with GPS sensor data. Finally, cable companies increasingly use the set-top box for offering games directly on TV, which is a major new strategy because the TV is still the main access point to the people's homes.

All networked gaming solutions using a remote server have to deal with two major challenges. First, they need to provide a good synchronisation of the game. If players are informed too late about relevant changes in the game, the logic and causality of the game play are undermined. If you've just eliminated an opponent, you don't want to be taken in by the same opponent soon after. Secondly, platform independence: the segmentation of the market in different hardware platforms is a potential growth restriction. Nobody likes to be reminded of the pitiful problems of the incompatible video formats VHS, Betamax and V2000 frustrating the video market in the 1980s.

Synchronisation problems can be compensated for by having sufficient local computing power available, so that short-term predictions about the course of the game can be made locally, while being deprived of timely status updates from the server. The more calculations can be dealt with locally, the less communication with the server is needed to synchronise the game. This is a main advantage of the current generation of game consoles.

In set-top boxes this is all different. These are simple, dull devices, lacking any substantial computing power. Consequently they need to rely on the remote server and have to send a lot of data back and forth for synchronisation. This often fails due to limited bandwidth. Occasionally, solutions are sought by putting an additional, local server installed in the meter cupboard, but this is quite inconvenient.

OnLive now offers a streaming video solution for the swift transfer of highly compressed data between a thin client (such as the set-top box) and the remote gaming server. This only works when the streaming signal can be encoded and decoded very efficiently, so that the signal can respond very quickly to the controller signals of the player. Exactly in the field of video compression recent advances, for instance in projects such as SPEG (Scalable MPEG), pave

the way for these new streaming solutions. And now surprisingly there is the commercial service OnLive, which has shown that it works well in standard HDTV (720p) and a minimum speed of only 2 Mbits/s. This offers the great new perspective that all gaming will be accessible directly from the cloud while using thin clients without the need for dedicated gaming hardware, no more hassle with disks, downloading or installing and no hardware incompatibilities: streaming games.