

Remote collaboration in real time

Context

The widespread need in the business world for applications that allow geographically dispersed individuals to collaborate online in real time is increasingly spilling over into the private sphere.

The volume of data exchanged for private purposes is also steadily on the increase. Multimedia applications such as high-resolution pictures or films are typical examples.

Up to now, real-time collaboration has only been viable within private corporate networks, due to the high bandwidth required. This is why remote collaboration has only been an option for businesses to date. But this will change as soon as sufficient bandwidth is made available to private households.

Evolution of collaboration

Collaboration means exchanging data and information. There are two types of collaboration (or data exchange): synchronous and asynchronous. The following diagram provides an overview of the most common types of collaboration currently in use.



Asynchronous collaboration is based on delayed data exchanges with sequential processing.

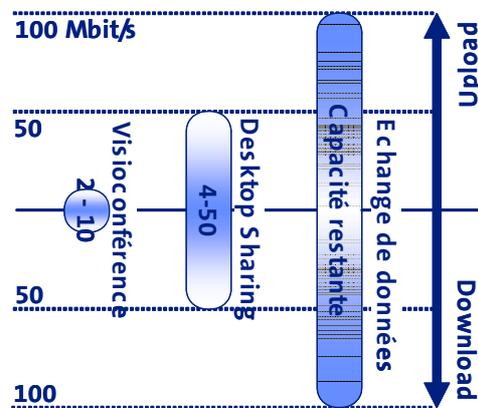
Synchronous collaboration connects two individuals in real time and allows them to either work on the same data together or check the data on each other's computer.

Demand for higher bandwidth

Remote collaboration calls for interaction and an intensive exchange of data in both directions, which is only possible using symmetrical broadband data connections.

While asynchronous procedures can be performed using conventional bandwidths, synchronous forms of collaboration are only practical with symmetrical bandwidths of around 50 Mbps or more, since time-critical applications stretch compression algorithms to the limit.

Moreover, given sufficient bandwidth, scenarios of parallel bandwidth-intensive applications such as video conferencing and desktop sharing are conceivable. This scenario features a video conference with the simultaneous exchange of large video files (>20 MB) and desktop sharing. This requires around 100 Mbps of symmetrical bandwidth.



Outlook

To make remote collaboration even more intuitive and increase the networking capability, the 3D environment of virtual worlds can be drawn on. Our example of a photography shop in the 3D world of "Second Life" illustrates how the service provider and a customer contact each other via Second Life and how this can be used as a starting point for remote collaboration with the service provider.