

Most clients are thick - but for how long?

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It is widely accepted that fashions are cyclical, at least when it comes to clothes. How many times have we seen the creations of the world's top designers paraded up and down the cat-walk, and recognized the styles, colours and designs of 20 years ago?

The same can rarely be said for technology. The arrow of progress is driven largely by refinement of what has gone before, and seldom turns on itself. I cannot recall installing the latest incarnation of Microsoft Word and feeling that it is growing closer to Wordstar for DOS as each version is released. There is, however, a technological trait which exhibits this apparent paradox; and it is all to do with how thick your clients are.

By clients, I am not of course referring to how portly you may consider your dear customers to be. In IT terms, a client is the part of your IT infrastructure which sits on your desk, in your hand or anywhere else you want to interact. It provides the interface between the IT and the user, and it can be thick, thin, or anywhere in between.

In a thin client environment, what you interact with is simply a portal - a communication device which acts as your agent in dealings with a centralized processing resource. The client device may be considered dumb, in the less-than-intelligent sense. Typically, a thin client is able to accept your instructions, relay them to back-office infrastructure, and provide a visual representation based on instructions received in return.

Once upon a time, actually more recently than we may wish to admit, commercial computing was based on a thin-client approach almost without exception. The ubiquitous dumb terminal or green screen is as thin as thin can get. You press a key; the terminal forwards it to a central computer along with the key presses from everyone else. Any characters received are in turn shown on the screen. Of course in reality the process is necessarily a little more complex, but the spirit of the thin client is evident.

The rationale for this approach was based primarily on the infancy of technology and the resulting commercial and physical restrictions. Computers were hugely expensive, bulky and often unreliable. It was impossible to provide each user with individual computers, and so the first generation of multi-user computers were born. They sported disks like twin-tub washing machines, spinning tape drives, and arrays of flashing lights which would not look out of place at Piccadilly Circus.

The terminals connected to these goliaths, and the communications infrastructure which supported them, evolved steadily. Displays gained colours, graphics and galaxies of super multi-function Technicolor function keys which added to the voodoo witchcraft required to use

them. Dedicated connections which connected individual terminals to the host computer were replaced by networks, which as well as simplifying cabling and management allowed terminals to be distributed further from the computer. Although the move to thicker clients was gradual, it was the widespread availability of the IBM Personal Computer which signaled the dawn of the next generation of computing. Here was a box which could fit on or under your desk which packed a computing punch comparable to the monster machinery they were set to cast into the shadows. Users of these machines were empowered with a new degree of freedom and flexibility. They could use whatever software they wanted, whenever they wanted to. What they lost were the subtle advantages afforded by a centralized approach - advantages which were not recognized until they were removed. Inter-user communications, shared data, and systems management became much more difficult than had been the case previously, although these issues were addressed at least in part by concepts such as file servers.

As personal computing became mainstream, thin-client computing did not die out completely. In situations where specialized computing resources were required, a new generation of thin client technology was born. MIT developed X Windows, and terminal emulators were developed which allowed users of desktop PCs to retain access to central facilities as dedicated hardware terminals had previously. The pace of development of desktop computing developed at a breakneck pace and the rest, as they say, is history.

In more recent times, and in this context I mean the last five years or so, thin client computing has seen the beginnings of a resurgence. The current generation of thin clients are positively bloated compared with their skinny ancestors, but at a high-level their operational and architectural concepts are comparable. A notable advocate of new generation thin client technologies is Citrix, whose WinFrame series of products have gained a significant following with corporate customers. WinFrame allows your PC to look-and-feel like a standard Windows based PC, but the donkey-work is carried out by a shared central computer. This approach provides many of the advantages of dumb terminals, few of the disadvantages, and a host of additional benefits never dreamed of in the days of the green-screen. In some ways, the World Wide Web has recently developed into 'the technology formerly known as thin client'. Web browsers are increasingly being used as a universal client - one piece of front-end software which provides the user interface to any back-end. This approach is independent of operating system, location, network and vendor. Most PCs arrive with such software installed, so many client device systems management problems go out of the window, and most existing and new systems developments can be fitted with a 'web interface'. Technologies which were envisaged to secure Internet communication implicitly also secure corporate applications based on the web. Since the web was designed to operate over the unpoliced, unreliable and ever-changing Internet, it is fast and efficient if used appropriately.

For these reasons, and many more which we are only just realizing, the web and its related technologies have become much more than the 'common information space in which we communicate by sharing information' (Tim Berners-Lee - inventor of the World Wide Web). It will need to develop to reach the level of flexibility required to replace proprietary thin-client technology such as WinFrame, but this can only be just around the corner. The forefathers of commercial computing were rightly proud of their elegant architecture with terminals and giant central computers. If they are looking down now, I'm sure they will be thinking 'I told you so.'

However in it's most recent guise, thin client technologies are proving to be anything but thick in their ability to provide us with the best of both worlds.