



ITDirector - VMware's ambitious virtualisation vision raises some real questions

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VMware places itself at the centre of the cloud computing vision, seeing itself not only as the chief software infrastructure provider for cloud computing, but also as the catalyst for a rich partner ecosystem that it sees as delivering additional software, hardware, and services. VMware's vision is broad, rich, and ambitious – offering nothing short of a fundamental reshuffle amongst the current hardware and software vendors. The question is; does VMware have the necessary clout to successfully execute the game plan?

VMware's vision for computing is rooted in the concept of self-contained operating system containers that can be freely moved between various computing domains.

Starting at the individual device level, VMware has the concept of "workspace personalities" – individual virtual machine environments running on the same desktop or mobile device. This is nothing new, desktop virtualisation was, in fact, the genesis of VMware as a company. However, the vendor now foresees at-will migration of the workspace from the personal device to a cloud hosted environment and back again, as working habits and network availability change. Work in the office, connected to the LAN and your laptop acts basically as a netbook, with the virtualised desktop hosted in the data centre and the laptop basically performing presentation services. Enable "road warrior" mode by checking out the workspace from the cloud and onto the laptop, at which point the device provides full computing services for the now locally hosted guest OS. Re-dock to the corporate network and data synchronisation takes place.

Recently VMware demonstrated cloud hosted CAD/CAM and other highly graphics performance oriented desktop software running smoothly, boosting graphics delivery speed using hardware assist. Further delivery of this aspect of

VMware's vision is not a technical problem; it is merely one of network speed availability and user acceptance of the model.

For the data centre, VMware uses the term "software mainframe" to refer to the idea of a shared, high availability, high performance computing platform that is hosted on a range of distributed physical machines. Hosted operating environments are intended to be moveable on the fly from one actual physical machine to another using vMotion. The term "software mainframe" might be more accurate, however, if the mainframe in question was one designed by now defunct Tandem Computers, which launched a range of high end processors in the 1990s in competition with IBM mainframes. Tandem's frames were characterised by their fully redundant hardware design with hot swappable components, supporting workloads running under the watchful supervision of the Guardian operating system.

VMware is of course also a proponent of true cloud computing – data centres hosted and operated not as in-house IT departments, but rather hosted elsewhere by an internet accessible service provider with computing services consumed on a subscription basis. The vendor extends the idea of desktop "check in and check out" to also foresee data centre level workloads migrating smoothly back and forth from in-house clouds to service provider clouds as needs require. In-house clouds co-exist with external clouds to deliver what is referred to as "private clouds".

Such a vision includes the idea that new capacity can be added to the runtime environment in a hot swappable fashion as computing demand grows. Indeed, companies may enter into a contract for a certain configuration and level of computing capability, with the understanding that provision also exists for temporarily



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exceeding those bounds should an especially high peak processing load be experienced. The service provider simply allows the hosted environments to consume more CPU, memory and storage than provisioned under the terms of the standard contract, up to the total physical capability of the hosting machine. Demand that exceeds even the physical bounds of the workload can be shifted to a larger physical machine using vMotion.

Such a concept decouples data centre growth from some fundamental processing performance concepts - including that of Moore's Law. As a consumer of flexibly scalable computing services, it becomes far less relevant what the processor chip speed and power demands are, though the capacity and resilience of the network will get a whole lot more focus.

Along the way the industry status quo is bound to get a shake out. Starting inside the server - chip manufacturers like Intel and AMD will find that their brands have far less traction when the IT decision makers never set eyes on the physical hardware their services run on. "Intel inside? Who cares when I just want my workload running inside some cloud somewhere that has the best price, performance and hosting terms". No less than Microsoft is already struggling with the erosion of their lucrative desktop OS and productivity suite markets as desktop upgrade cycles slow in a recessionary economy, and it will be further threatened by cloud hosted workspaces environments running on netbooks, Microsoft's salvation may yet lie in how it leverages its position as the access window of choice to the cloud with Internet Explorer on as many devices as possible.

VMware meanwhile realises that the vision is bigger than they can possibly hope to deliver by themselves. US\$1.9B is an impressive revenue figure for the vendor (2008 reported revenue): however, the scope of change involved in its vision requires a far higher degree of influence in order to deliver than \$1.9B buys. In recognition of this failing, the vendor has built a rich partner ecosystem comprising hardware, software and services vendors.

However, the partner ecosystem includes software vendors that will surely see their existing businesses disrupted should the cloud computing vision come to reality. There is a Faustian sense of compromise woven through the strategic partnerships that VMware has entered into with the likes of Cisco, Symantec, and a host of other systems management and infosecurity vendors. For instance, VMware's ability to use the features of its virtualisation to deliver high availability and disaster recovery threatens incumbent backup and recovery vendors including the largest player in this space; Symantec.

VMware's partner ecosystem also includes cloud hosting providers that have used the vendor's products to deliver net hosted computing services. Indeed, it seems that most of the innovation regarding how virtualisation might be applied is taking place within this hosting provider partner ecosystem, while the virtualisation infrastructure provider concentrates on technical innovation for the platform itself. VMware paints itself as providing the infrastructure that delivers virtualisation, while the actual cloud hosting is delivered by the partners in their ecosystem using their products.

This approach begs another question: if VMware's vision does succeed, will it leave the vendor in the strategically important position? Infrastructure providers generally find themselves marginalised to a position of little influence as the real innovation, buzz (and far greater share of wallet) is taken up by those companies that used the infrastructure to deliver interesting things. VMware ought to be careful where this game will leave them on the field as it plays out.

Lastly, the cloud computing vision is one that might just be achieved, though not with VMware as the sole enabling virtualisation platform vendor. Microsoft is active in the wings with HyperV, though Redmond will have to build its own support and partner portfolio to match VMware's. All the while dealing with a reputation of their own for stepping all over partner's offerings in the longer term. Citrix is also not to be lightly dismissed from the future of desktop



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virtualisation with both a rich and proven technology set as well as a solid set of sales partners in the channel.

VMware leaves the overriding impression that it has a solid vision of the IT future, something lacking amongst many other vendors which often can't see beyond their own product plans. The company's capacity for delivering robust and feature rich technology seems both well developed and proven by historical offerings.

Doubts remain however over the capacity for the company to deliver on such a broad ranging vision. VMware's partner ecosystem is a fair strategy for dealing with that shortcoming, however rumblings of discontent are already to be heard amongst those partners as those partners see the virtualisation vendor continually erode their value by adding new capabilities into its own product set. VMware also ought to be mindful of the adage "Be careful what you ask for"; being an enabling infrastructure provider, even if you're a good one, isn't necessarily the best place to be in the longer term.



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Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of an organisation's environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to advise on the realities of technology adoption, not the promises.

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