Connecting People, Applications & Technology.

Tablets & Desktop Virtualisation – Is it for me?

A PW Data Group Technical White Paper

Executive Summary

Since the introduction of the iPad, Apple has managed to convince consumers that the tablet is a desirable device to carry around. Although Apple was not the first tablet to market they have since the launch of ipads set the bar for others to challenge. Android devices such as Samsung and HTC are steadily gaining momentum and with the introduction of Windows 8 which Microsoft has specifically been developed to challenge in the tablet space there will be a host of new devices trying to bridge a gap between a laptop and a tablet. This consumer phenomenon is driving the delivery of mobility and the challenges of "bring your own device" BYOD.

The challenge for all organisations or businesses is to understand why this consumer focussed device may be of benefit to the organisation and how these types of devices can be integrated it to the IT landscape, without compromising security or increasing the costs of IT delivery and support. In addition it is important to understand the effect these devices will have on the infrastructure – particularly wireless and internet traffic.

This white paper highlights some of the challenges, areas that should be considered and the benefits to all organisations as a result of tablet and desktop virtualisation. It will also help you to understand at a high level what the technology is and how it can be deployed, whether virtualisation is right for your organisation and most importantly, the benefits that you and your business will receive from implementing a virtualised environment.

The Tablet – will it replace desktops forever?

IT departments are coming under increased pressure from their employees demanding flexibility to do their jobs. Irrespective whether the sector is Education, Local Authorities, Health or All businesses the challenges of mass adoption of the tablet and what this means to the current desktop and laptop landscape.

The mobile phone and laptop are being replaced with Smartphone's and touch screen tablets enabling users to shift a significant part of their IT away from traditional desktop or laptops. A lot of this move away is down to the consumer success of Apple and Android platforms with Microsoft Windows 8 tablets soon to join the party.

"Tablets have replaced laptops for many uses because of their lightweight and longer battery life, but there remain important distinctions between devices"

These devices capitalise on ease of use, internet and the availability of large numbers of free or paid for apps that are available through stores. With the consumer expectation in mind is not surprising that employees want and expect to use their own devices for work purposes (BYOD) While this seems pretty easy for the employee it does create challenges with connectivity and security for the employer that need to be addressed.

Whether business owned or BYOD the rules should be the same to simplify the management process with key areas for consideration being;

- All tablets are vulnerable and should be considered open to being compromised and connected to unsecured networks.
- Define groups of users and their security risks / requirements. Not all users are the same and can be managed as affinity group to ease the burden on the IT and share the responsibility of risk with the business.
- Protect Data whether on the device or off premise as this is still vulnerable once the device is compromised and can connect to the central data.
- Secure Tunnels of data connection to protect sensitive data. When on or if data is too sensitive leave the building it should be "locked down" on the server and never move offsite.

"Business and IT need to work together and define groups of users for security"

- Partition Work and home – irrespective of whether it is a company or employee device there will be a need to allow some personal use as well as the company use but keep them segmented.
- Bait and Switch – compromise on some demands of the user e.g. the device, to ensure the applications are from trusted sources and less trustworthy applications cannot be loaded on to the device.

Accenture and Vodafone's – Transforming the Mobile Workforce study revealed that participants primarily used their tablet computers for internet browsing and email, which increased their productivity and enable collaboration. These devices are also suited to reading and presenting documents but have limitations in creating and editing documents, hence the need for laptops and desktops.

The Applications – What can I run on my device and how?

A quarter of all devices used at work are Smartphone's and tablets and will not be running windows which by default means they are unable to run the major enterprise applications which are predominately windows based, unless these applications are available in the Apple or Android App Stores. If Virtual Desktop Infrastructure (VDI) is not an option then IT departments will have to develop their own native apps which is both time consuming and expensive to support.

A new type of application management is required that recognises not just the identity of the user and their security profile but also the devices used and how they connect to the network. This aggregation of the workspace unifies the delivery of desktops (local, full hosted or published) applications and data through a single users interface.

Virtual Desktop Infrastructure allows programs and enterprise applications that have no apps, or from a performance or security perspective are better suited to be run from a server to be operated on any device in a virtualised state.

"Over the next year the number of IT organisations who have implemented at least some desktop virtualisation will increase"

The two fundamental forms of desktop virtualisation are;

- Server – side virtualisation – the client plays a familiar role of a terminal accessing an application or desktop hosted on a central presentation server and only screen displays, keyboard entries and mouse movements are transmitted across the networks. This

approach is based on display protocols such as Citrix's Independent Computing Architecture (ICA) and Microsoft Remote Desktop Protocol (RDP). This approach has previously been referred to as terminal services however with increased server virtualisation a Virtual Machine on a central server is used to host a single virtualised desktop.

- Client – Side Virtualisation – is where the applications are streamed on-demand from central servers to client devices over a LAN or WAN. On the client side, streamed applications are isolated from the rest of the client system by an abstraction layer inserted between the application and the local operating system. Application streaming is selective in the sense that only the required application libraries are streamed to the users' device. The streamlined application code is isolated and not actually installed on the clients system.

"The deployment of virtualised desktop trails the deployment of the virtualised server environment"

Challenges of Tablets and Desktop Virtualisation

Organisations are showing a lot of interest in tablets and desktop virtualisation as this functionality is coming in to the organisation by demand of employees and by stealth. However from a business infrastructure and networking perspective there are concerns in a number of areas.

- From a networking perspective the primary challenge in implementing desktop virtualisation is achieving adequate performance and an acceptable user experience for client to server connections over a WAN.
- Networks traffic changes – the types of traffic change and need to be managed and prioritised.
- Tablet performance can be limited by what can run on the tablets – e.g. iOs will not run flash programs. Application performance is determined by the performance of display data across the network.
- Wireless coverage and performance – increased wireless devices puts additional pressure on any wireless network deployed in both bandwidth and the number of users and the coverage. Where as before meeting rooms and offices were the main coverage areas now hallways, communal areas and toilets may need to be covered to provide the experience the mobile worker requires.
- The variety of devices and the ways these are secured and connected to the virtual environment and network. This requires user and device management that segments business and personal environments.
- No offline Working – Using a thin client requires network connectivity to the data centre and so if there is no connectivity no access!!

Before implementing tablets and Desktop virtualisation, IT departments and organisations need to understand the impact on the business and the network. Through careful and considered planning of the project and help in the understanding of what is required and the order of events to achieve success.

Business Benefits & Lessons Learnt

The following are the main features and benefits that companies can expect to see from the introduction of tablets and desktop virtualisation. These benefits have tangible or intangible benefits on the company and can be used to help build a business case as justifications for a move towards virtualisation are:-

1 – Reduced Capital Costs

With the introduction of virtual desktop and tablets in the organisation the capital costs of laptops and desktops can be reduced. There is the possibility of reducing this further by introducing a BYOD policy that allows your employees to use there own devices which could be at no cost to the company or at a subsidised rate.

Older equipment can continue to be utilised is a virtual environment as they are effectively acting as displays only with all processing being completed on the server. This means the total cost of ownership reduces as you get a greater utilisation from your server environment.

2 – Simplified Management and Reduced Management Costs

Centralising the desktop environment can reduce costs and labour as all the management is completed from one place. This simplifies the deployment of the applications and management of the groups of users to their devices as there is no software on the individual devices therefore reducing some of the need for on-site IT staff.

3 –More Agile and efficient IT

With the increase in server and desktop virtualisation comes the ability for staff to work remotely with easy access to their office desktop and applications wherever they are, with support readily available. Advantages Include;

- High Performance functionality always available = no matter what the users location is
- Desktop Management is streamlined and simplified
- Enhanced Disaster Recovery – get users working quickly following a problem.
- Users can use any device any where providing they have got connectivity to the central environment.

4 –Lessons Learned

Some key lessons we have learnt as we move from the labyrinth of technology and information that is available and differing opinions and facts that need to be considered.

- VDI increases the server side complexity especially if you have limited server virtualisation
- End users typically don't like change so prepare to wow them with something different to gain acceptance – their one device!!
- Once they use it – end users like it especially having their desktop available from anywhere
- Good planning of users, applications and devices is key to success
- Significant cost and efficiency benefits to the organisation and the individual