Defining Your Journey to Better End-User Computing

The VMware® Vision for End-User Computing

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WHITE PAPER
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The VMware Vision For End-User Computing

Your End-User Computing Journey Isn’t Straightforward

Planning how to equip your workers for their everyday IT needs through End-User Computing (EUC), used to be far easier: everyone had a PC, some were portable and some were tied to a desk. The main questions to answer were the choice of model and supplier, but once those had been answered, deployments could proceed almost automatically. Now it’s much harder.

The last few years have brought a rapid expansion in the range of technology decisions you need to make. Smartphones and tablets have gone mainstream, challenging the “everyone gets a PC” assumption, and many users now require or expect multiple devices. Globalization and connectivity have lead to far more dispersed workforces and advances in mobile technology have brought new ways for them to connect.

Developments in virtualization have yielded a range of new options for packaging and delivering capabilities to workers. Software loads can be customized with far greater ease, making it practical to give each user only the applications they really need. Platforms and applications can be distributed or centralized, often with no visible difference to the user. And then there’s this thing called the Cloud – we all know it’s going to be important, but we haven’t quite grasped just how yet.

Suddenly you have choice – a valuable commodity, provided you know what you want to do with it. Dealing with these choices is exposing all sorts of fundamental questions for IT organizations to answer. Users are more sophisticated now, so how much and what kind of support do they need? Can and should they work with their own devices or applications? What does this mean for sensitive data – where will that be and what business risk does that bring? How much control should IT really assert in making these technology choices?

End-user Computing can no longer be merely a linear journey of upgrade and replacement. The path ahead is complex and diverging, so you need to decide which direction to follow for each group of workers. You can only do that if you know where it is that you want to go.

This White Paper outlines how we can help you make those decisions – in short, VMware’s Vision for the development of better End-User Computing.
Under Pressure From Every Direction

Before setting out on our journey to better End-User Computing, we must understand where we are today – and for most of us, and increasingly so, it’s not a good place. IT is under pressure from every direction and it often seems that nobody is happy. IT seems to be caught in a vicious spiral driven by four high level forces.

First there’s the budget. If you include devices, operating systems (OS), applications, the tools to manage them all plus related labor, then EUC typically consumes 25 to 40% of the total IT budget. Most cost is operational - maintaining, operating and supporting current assets. Most projects to deploy new capabilities are big, consuming high-levels of resources and affecting large parts of the workforce. And if you do manage to deploy new capabilities, they rarely deliver any demonstrable return. Naturally, the general trend is to try to spend less.

The next major force is compliance. Many devices and software are full of security vulnerabilities that we struggle to plug. With raised expectations of transparency, you need to show what was exposed when and how. Risks are going up and spend going down, so risk per dollar spent is increasing. The most natural response is to standardize and lock-down – it’s usually perceived as the only way to manage the risks.

This brings you into conflict with the needs of the business. By locking down the EUC environment, you make it harder to change the footprint of the workforce. Harder to expand or contract, conduct merger and acquisition activity or deal with staff adds and changes. EUC is seen as a cost of doing business, not an enabler of new productivity and most organizations try to reduce the EUC footprint to minimize effects of the resulting inertia.

And so to the users and straight into conflict with the power of consumerization. With growing levels of technology knowledge and sophistication, many end-users have raised their expectations of how technology should support their work and have come to regard EUC as holding them back. They know how to do better and increasingly flout your controls to ensure they can do so. This makes IT seem less relevant, which raises the next question – why are we spending so much? And so, we’re back to budget once more.

We need to break out of this vicious spiral before the next big wave of investment and before we have to go round again ... and again.
Defining Your Journey to Better End-User Computing

Haven’t We Been Here Before?

This vicious spiral isn’t new and the current iteration at least has been developing for a number of years - so what’s different? The answer is that many of you are now facing the next big wave of EUC investment: your next Windows OS migration, with its accompanying hardware refresh. To complete this, you’ll need to repackage your applications, revisit your management and security processes and retrain your staff.

If you are planning a Windows 7 migration, then you know you have a limited time now to complete it because vendor support for your current OS is set to expire. Through 2013, this migration will probably consume a significant part of your IT budget and resources. Whether you want to or not, you have to re-invest in your EUC capabilities now – so how can you do so in a way that helps you break out of the spiral? How should you exploit all of those new technology choices to start making EUC better?

The risk here is that you just redeploy newer versions of what you have already. The lifetime of hardware and operating systems deployed this year and next will probably take you through 2016 – so ask yourself some uncomfortable questions. How good will these capabilities look then? What about the need to improve employee mobility and collaboration? How does this get you any nearer to exploiting the Cloud?


Take a look again at the current desktop paradigm. You have files and folders, inboxes and outboxes – even a trash can. This isn’t the office of 2011 – it’s an automated version of one from the 1970s. We just don’t work like that any more.

Worse still, the operational overhead is mainly driven by devices and operating systems – not by the elements we really should be focused on: the applications and data that support the processes of business. We are held back by the “real estate” of EUC, distracted from our real objectives.

To make EUC better, we need to set ourselves some serious objectives for the next 4-5 years. Let’s aim to:

- Refocus on users, applications and data – and relegate devices and operating systems to more of a supporting role.
- Make the environment easier and less expensive to run
- Give better support to the business in dealing with the external events in a fast changing world
- Help users to work productively from wherever they need to with as much choice as we can give them in the equipment they use
- Increase our level of control, auditability and risk management

Lofty goals, maybe – but achievable and necessary: after all, this is not just about technology, it’s about how your users work through technology. It is the productivity of your organization’s number one asset: people.
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Problem: What You Have Now Is Too Big To Fail

Of course, if we could just start again, it would be much easier. With all the knowledge we’ve learned through 30 years of EUC – and with the benefit of retrospective wisdom – we could design a better EUC environment. But designing it isn’t the challenge – it’s getting there from what you have now without disrupting the work and productivity of users.

Every organization has many EUC applications and most of those are still dependent on the predominant desktop OS – Windows. Applications tend to have long lifetimes of deployment and spawn many interdependencies – both technical and in the business. Some applications, particularly those developed in house, play critical roles interconnecting disparate systems or business domains. For as long you need these applications, you will need the desktop OS to support them.

A ‘rip and replace’ approach simply isn’t an option – you will need to replace those OS-dependent applications iteratively over time. This has already begun: newer applications will often be server or web-based and the periodic need to migrate OS encourages a preference for OS and browser-neutral applications wherever possible. However, the process is slow – Gartner estimates that the cross-over point to a majority of OS/browser-neutral applications will occur in 2012 and that it won’t be until 2017 that the OS-specific population drops below 30% (in most asset portfolio approaches, that’s the point at which you can make a business case for accelerated replacement).

All of this means that Windows-based applications (and so the Windows OS) will continue to play a part in your EUC environment for some time to come – probably through the end of this decade and beyond.

So, you’re not in a comfortable place. How can you break out and get to a position where your End-User Computing is flexible, agile and able to respond to the demands of the business?
Breaking the Spiral – How to Make Things Better

As an industry-pioneer of many of the technologies required to break out of this vicious spiral, VMware has developed a strategic Vision for End-User Computing – an ordered and systematic way of defining and implementing an organization’s EUC strategy.

VMware sees the change from the tightly-integrated PC-centric model of today through to a more efficient, agile and cost-effective cloud-based paradigm – where the end-user can work whenever, wherever and on whatever device they want – as an evolutionary journey, consisting of three main phases:

In Phase 1, use your next wave of EUC investment (likely to be the imminent migration away from Windows XP or Windows Vista) to improve what you have now. Exploit the established virtualization technologies (such as VMware ThinApp for application virtualization or VMware View for desktop virtualization) to repackage your current EUC assets, making them easier to handle and less dependent on the configurations of other assets around them. Centralize wherever you can, to simplify management and improve your control. Be selective: you don’t have to virtualize every application or every desktop to access these benefits. The resulting reductions in integration complexity and operational overhead will yield savings that you can re-invest.

For Phase 2, your objective should be to establish a new application services platform in the cloud (private, public or hybrid) and to embrace this platform with your enterprise policies. This will allow you to handle both desktop- and cloud-based resources with common processes and tools – to IT, the desktop- and cloud-based application platforms will look like one logical “place”. You can now deploy new capabilities and move EUC applications to your cloud without additional overhead. The shift from tightly coupled Windows applications to loosely coupled or entirely decoupled ones will expose marginal returns that provide a business case for accelerating the process.

In Phase 3, continue this process iteratively, gradually whittling down the application “payload” in the desktop OS. As this payload gets smaller, the operational savings will continue to grow. Eventually there will be nothing left and you can complete your escape – to your Cloud.
Phase 1: Repackage and Relocate

The first phase will comprise multiple steps:

Since this is a journey, you need to begin by ensuring you understand what you have now. This will highlight where and how the repackaging options can be applied.

Begin with the applications and prepare for the OS migration. Virtualize as many as you can. Also ensure that you establish (and communicate) “rules” for what new applications should look like. It won’t help on your journey if you are reducing the application payload, while business users are simultaneously adding to it.

Having reviewed your application portfolio in step 2, you will identify many opportunities to rationalize and simplify. Eliminate duplicate versions and those you don’t need. Begin piloting (server-hosted) virtual desktops for the most rationalized image builds.

Begin your OS migration. For the users you intend to support through virtual desktops, synchronize the rollout of these two projects.

Take stock of local and federated user requirements – where applications or drivers for specific peripherals must be installed by local administrators or even the users themselves. Use desktop personas to extend your virtual desktop deployment to as many users as possible.

At the end of this phase, you will have simplified your application payload for all users and your platform delivery for some desktop users. You will also have gained device independence for virtual desktop users.
Defining Your Journey to Better End-User Computing

What Do You Need, What Do You Have Now?

Any journey comprises three main components: a start point, an end point and some steps in the middle. Describing the start and end points is critical to planning, but our language for doing so is weak because the traditional definitions we use for user needs are out-dated. “Knowledge workers” are often most of the workforce, whereas if the objective is to match technology to user requirements then calling someone a “power user” is not very helpful.

To define user requirements, think about what they need in business terms: where will they work and how will they move? How much control can you give them over the applications and data they use? What applications do they need? Who else do they need to work with and how? You will need to do this for both future and current requirements – to define your start and your end points.

Your understanding of the start point may not be as complete as you want. For the last 15 years, PC management best practice has been to maximize standardization – this offered the most guarantees of ensuring applications would work as needed and the best way to reduce operational costs. But the drive for standardization and predictability also created an implicit drive to equip every user with the same device and software load. It established a “one size fits all” mentality that is both inefficient (when everyone gets the same size, no one gets the right size) and a barrier to change.

As a result of the one-size-fits all approach, very few organizations now have a complete view of where users are over-equipped (whereas users tend to tell you if they don’t have enough). You need to understand this before you can fully identify deficiencies in what you have now and opportunities for cost savings.

When planning your end point, make sure you consider what your organization really needs: how much more elasticity for business growth or transformation, what kind of baselines should be set for performance, availability and security.

When Re-deploying Applications, Why Not Do It Better?

When migrating operating systems, you must test and package your applications before deploying them on the new platform. Having reviewed your application portfolio (and hopefully rationalized it), the applications you intend to redeploy will present you with three options:

- Re-packaging, for the ones that don’t present problems for the new OS
- Remediation, for the ones that have present challenges that you can address (either through upgrades to the application or a work-around)
- Replacement for the ones that present insurmountable problems.

For those you intending to repackage, make virtualization your preferred approach. A virtualized application runs in its own little “bubble”, making it isolated from other applications around it and decoupled from the configuration of the operating system. This significantly reduces your integration overhead, making the application far more portable. Virtualization also delivers immediate cost savings during the migration, since there is no need to do regression testing on an application that’s been virtualized.

You won’t be able to virtualize every application; some have complex inter-dependencies or need direct access to drivers, but this won’t necessarily be a problem, provided your virtualized and non-virtualized applications can be stored and delivered using the same processes and tools. There is only one application virtualization product in the market place that can do this for every software distribution tool and application depot: VMware ThinApp. ThinApp can also be used to overcome issues with browser-based application dependencies.
For the applications you replace, make sure the new ones will not require the same level of attention (and repackaging) the next time you migrate by selecting operating system- and browser-neutral approaches. SaaS applications and those based on a web-services platform, such as those in VMware’s Zimbra collaboration suite, should be your preferred options.

Virtual Desktops: The Value of VMware View

A (server hosted) virtual desktop is a full, thick PC environment (“image”) run as a server virtual machine (VM) and accessed remotely from a thin client or other device. You may call this VDI, the term we at VMware coined when we first created the market, but here we will focus on the desktop and not on the infrastructure below it. Virtual desktops were first deployed back in 2002 and market interest has accelerated over the last 4-5 years. Today, almost every organization plans to deploy virtual desktops at some point for some of its users.

The appeal is that a virtual desktop offers a short cut to a thin client. Server based computing appealed to many organizations as a way to centralize operations and management, but proved difficult to implement across whole application portfolios. Most organizations were able to centralize some applications, but very few were able to centralize all. As a result, they were unable to eliminate the desktop OS and often ended up adding to, rather than eliminating complexity.

With a virtual desktop, there is no need to reengineer each application – you simply pick up the whole desktop bubble (the OS and all that’s in it) and move it to the data center, where it runs as a virtual machine. When we first launched our full VDI offering in 2006, we made the broker software through which the user connects compatible with standard enterprise policy languages, which means that the virtual desktop can be managed with the same management processes and tools as a physical one.

View, our virtual desktop product, offers two primary modes of deployment: dedicated, where each image is managed individually, and “pooled”, where the same image structure is used for all users. Pooled images deliver the highest levels of operational efficiencies and cost savings, but have traditionally only worked well for the more uniform user requirements. With improvements in “persona” approaches, these cost savings are being extended to more user types.

One of the main reasons that pooled virtual desktops have drawn so much attention is that their efficiency benefits increase with the number of users. Since each user image is managed in exactly the same way, a pooled virtual desktop is standardized and automated by default. This delivers diminishing marginal costs in operations, whereas a traditional PC comes at a constant marginal cost. In other words, every user you add to a View deployment costs less than the previous one.

This attribute creates a natural drive to extend virtual desktop deployments to as many users as possible, but there are functional limitations: to the applications that will work well (since the user interface is separated from the point of execution); to the access devices that can be used (since a client is required to access the broker); to the types of users that can be supported (individual driver and application requirements are harder to support).
With the latest release, View 5, we have extended the range of addressability in all three of these key dimensions. Through improvements in the PCoIP protocol, we’ve further expanded the range of applications that work well and made dramatic reductions to cumulative bandwidth requirements. Our growing range of View clients means a greater range of access devices can be used. Persona management expands the scope of the user types that can be supported through a pooled View deployment. More applications, devices and users – but at lower cost: we’ve also taken advantage of the latest developments in our market leading VMware vSphere platform to further drive down the associated operational and capital costs in the datacenter.

View 5: Your PC, But Better

- Works with even more applications
  - Up to 75% bandwidth reduction
  - 3D graphics, Unified Communications integration

- Works with a growing range of devices
  - View Client For Android
  - Other clients on the way

- Works for a growing number of user profiles
  - View Persona Management

- Lowest Opex, Falling Capex
  - vSphere 5.0 Platform Support

Any virtual desktop deployment can (and probably should) be expected to grow. But you must always ensure that you stay within the boundaries of viable deployment – stepping outside these will bring problems and cost penalties that quickly undermine the operational benefits. The best virtual desktop supplier is the one that delivers the most robust product and that never encourages deployments to move too fast. Only VMware fits that description, but that’s hardly surprising – we invented this market: nobody understands it like us.
Phase 2: Extend Productivity

The second phase of your journey can begin in 2012 and will also have multiple steps:

1. Start by extending your enterprise policy into the cloud, to encompass a new services platform. Initially this platform will be used for SaaS applications, but you will steadily extend its capabilities as you move applications from the desktop to the cloud.

2. Next, review your desktop application portfolio to decide what can be moved to your cloud services platform, when and in which order. At the same time, extend your virtual desktop deployments by providing check-in/out capabilities for laptop users. For secure laptops (where you manage and control the OS), it will be the persona that's checked-in/out, not the (much bigger) virtual machine.

3. Deploy all new applications on your cloud services platform, and make web-services your preferred architectural approach - to maximize modularity and ensure that all new capabilities are extensible and support scalable, collaborative workflows.

4. Extend the capabilities available from the cloud services platform to include settings, links to data and capabilities equivalent to those delivered through the desktop persona. Use virtualization capabilities on smartphones and tablets to synchronize this cloud-based persona with mobile devices.

5. Add virtual desktops to the catalog of capabilities available through the cloud broker... Synchronize the contents of desktop and cloud personas, so the same capabilities can be accessed from any device. Deliver desktop-as-a-service to any mobile device.

At the end of this phase, you will have radically simplified your deployment processes for new applications and have achieved full device independence for all users and capabilities.
Your Policy, Your Cloud: VMware Horizon Application Manager

Horizon Application Manager is VMware’s emerging cloud services platform. With Version 1 on controlled release in the US and availability in the rest of the world scheduled for early in 2012 – this is the only product of its type available in the market today. Horizon Application Manager is the key enabler for your journey, as you transition EUC assets from the desktop to the cloud. The driver for this is compatibility with your existing enterprise policy framework – which allows you to treat Horizon Application Manager as an extension of the desktop domain.

Although we refer to Horizon Application Manager as a platform (for ease of explanation), it is actually a cloud identity hub that provides a single point of access and management for federated and potentially disparate cloud based services. Initially, only SaaS applications are supported, but the range of EUC services that can be accessed will be gradually extended to cover the whole scope of user requirements. It will be the extension of this range of services that enables your gradual (and managed) migration away from the traditional, tightly coupled desktop environment.

The user logs on to Horizon Application Manager through a cloud broker, which provides secure, single sign-on to a portal that serves as an application catalog. The SaaS applications available through this catalog might be hosted by different providers and each require their own log in credentials, but Horizon Application Manager hides this complexity from the user. Think of this as an enterprise app store, controlled through your policy objects and where you have full control over content. An administration console is used to manage the allocation of user entitlements – helping you to allocate and revoke as required.

Horizon Application Manager – your desktop policy in the Cloud
Simplify Your Steps Forward

With a cloud services platform based on Horizon Application Manager in place, you can begin reaping some immediate benefits. New SaaS applications are easy to add to the catalog using cloud application connectors. Entitlements are easily adjusted; you can make any application in the catalog instantly available to additional users. Entitlements can also be managed holistically, so a change in user status can be quickly applied even if the entitlements affect services from different sources that use different credentials. If a user leaves your organization, you can revoke their credentials for all services assigned to them through a single operation.

There are no additional or hidden integration costs for SaaS applications, so the costs of deployment are immediately visible. This transparency, combined with detailed usage reporting yield something that has long been missing for EUC applications: a direct line of sight between costs and results. Since the catalog of services is viewed through a portal, it is device-independent by default.

These characteristics will enable you to take much tighter control over the direction and pace of your ongoing EUC journey. New services are, by definition, discrete, so they can be added one-at-a-time as the capabilities of the Horizon platform extend. The Horizon project is agile, meaning you can expect frequent updates, and there is much on the roadmap: published applications, virtualized applications, enterprise applications, personas and so on.

Extend Cloud-Based Productivity

As you make your journey from the desktop to the cloud services platform, the business perception of EUC investments will change. This will begin to accelerate your escape from the vicious spiral.

The line of sight between service costs and results will mean that new capabilities can deliver demonstrable marginal benefits – you will be able to associate EUC investments with revenues, instead of just costs. Moreover, each step you take can now be small, so you can balance your investments in new capabilities with the availability of budget and resources – this is very different to the “big project” nature of most current desktop investments.
Operational costs will decline too, with the elimination of integration complexity and overhead. There will still be ongoing costs, but these will increasingly be driven by usage rather than maintenance and support. The faster you move your EUC services from the desktop to the cloud, the faster these benefits will accrue.

Shifting the primary application base to the cloud will also help with another key change – the shift towards the workflow-based applications required for more collaborative working.

**Deploy Capabilities For the Next Generation**

PCs were initially designed to be standalone devices – universal connectivity only came later. You can see this characteristic still reflected in many current applications, which are designed to act on single objects and files. Consider one of the most ubiquitous items in business – the presentation. Typically produced using one of the most widespread applications in the market which might make very nice slides, but becomes much less effective when multiple parties co-author the content. When working with colleagues on collaborative input to files, we must either impose our own version control mechanisms manually (“OK - I've got the master file now”) or waste time reconciling information later. This application simply doesn’t represent the way we really work or want to work now in terms of process – it imposes its own process on us.

Sliderocket – which VMware acquired earlier in 2011 – fixes this, enabling teams to collaborate on the same presentation material concurrently. No more manual version control, no more wasted time. As you move your applications from the desktop to the cloud, one of the main inhibiting factors will be the availability of such next generation applications to replace those you have now. This is why we’ve made forays into the application world – to ensure you can carry on making this journey with applications designed for real-life workflows, and not for oldfashioned files and folders.

Entirely cloud-based capabilities assume the permanent availability of a network connection that you are happy to use. In the real world, that may not always be the case – perhaps there genuinely is no signal or bandwidth available, or perhaps you just don’t feel secure in a specific location. Offline capabilities will still be needed sometimes and to use them will require mechanisms for creating secure footprints on the user’s device. For PCs, that’s straightforward thanks to our decade of history in desktop virtualization, but on mobile devices it presents more of a challenge, due to the fragmented nature of mobile devices and their smaller computational envelopes. Our Horizon Mobile enables the creation of a robustly sealed environment on mobile devices that supports all compute and communication functions. This environment can be synchronized to your cloud persona, supporting a seamless copy of your EUC workspace.
Phase 3: Move To Your Cloud

The final phase of your journey will take you through the second half of this decade and complete your escape to your cloud:

1. Begin by inverting the relationship between the desktop and cloud brokers – make the cloud services platform your primary workspace through which the desktop is accessed (as another service).
2. With the shift in workspace emphasis from the desktop to the cloud, the desktop persona will diminish in importance. Drive down user dependence on this component, eventually eliminating them from your environment completely. The traditional desktop environment will now only exist to support the “long tail” of your legacy applications.
3. Complete the move to your cloud by iterative replacement of legacy, OS-based applications with next-generation, cloud-based alternatives. Once the last application is moved, the desktop OS will no longer be needed.

At the end of this phase, you will have completed the journey from the PC-based age of End User Computing to a new era of choice – where you can focus on users, applications and data.
Horizon Application Manager: Your Broker for End-User Cloud Services

As the range of EUC services and capabilities supported by your cloud services platform extend, the center of gravity of each user’s work will shift steadily from the desktop to the cloud. Initially their cloud-based services will be resources accessed through their desktop workspace (whether virtual or physical), but gradually this relationship will invert. Their primary workspace will become the cloud platform, with the desktop their means of access. Eventually, the desktop will become just another one of the services accessed through the cloud broker.

The Horizon Application Manager you initially deployed for SaaS applications has now become a unified application catalog, that supports:

- SaaS applications
- Web-services-based collaborative applications
- Virtualized and published desktop applications
- Enterprise applications

These are all administered and managed through a common range of infrastructure services that apply your policies, monitor usage and support accurate financial management. The services will be a hybrid of private and public, but this distinction will be masked from the user by the single Horizon portal.
The Emergence of a New Kind Of Workspace

What the user sees now is no longer a desktop, but a workspace that gives access to all of their services. This workspace will be available to them from any location and through any device. Where and how individual services are provisioned doesn’t matter, since the point of integration is always in the cloud. The workspace will be policy controlled, with application access and local capabilities dynamically adjusted according to entitlements, location and context of use.

With attention to devices and operating systems no longer crucial, IT organizations will finally be able to focus on the things that really matter: on making sure that applications work as needed, that corporate information is adequately secured and that users have what they need to maximize productivity.

The decisions you need to make for end user computing will once again seem straightforward. You have escaped to the cloud and the journey, for now, will be complete.
The Rewards At Journey’s End

Let’s summarize how the EUC environment has changed for the better in the eyes of all parties involved. For the business, EUC is no longer an impediment to change and growth. Mergers and acquisitions can be concluded more rapidly, offices can be opened (or closed) at much lower cost and return on investment measured directly. With the greater granularity of control afforded by the cloud services platform, there are also dramatic improvements in the securability of EUC assets and the auditability of user transactions.

For users, there will be much more flexibility for them to work with the devices and (in some cases) the applications they prefer – although improved reporting and auditability may also expose them to more measurement of their relative productivity with their preferred alternatives. They will feel that they have more of a voice in decisions about the tools they use for work – that their contribution is more democratic.

IT organizations will have escaped from the vicious spiral that afflicts them today. Per user costs will be significantly lower and focus will have shifted from their cost to the business to the benefit they can bring to the business. Best of all, they can now satisfy everyone – the complete opposite of the situation today.

Embarking On the Journey: The Role of Professional Services

Hopefully, after reading this White Paper it should be clear that by following a simple and reproducible methodology such as VMware’s EUC Vision, most organizations will be able to navigate their way through a journey towards a more agile and efficient End-User Computing environment, with applications mostly or all in the Cloud.

Whilst the methodology may be simple, implementing it and navigating along the journey can be far more complex and difficult, and clearly – the stakes are high. VMware would strongly recommend working with a skilled partner to help you to discover and plan the best route for your organization’s EUC strategy and of course, to execute the plan in a cost-effective and risk-minimized fashion.

VMware’s Professional Services organization (PSO) would be an ideal choice to help you navigate through the maze of choices along the way, as would any of our skilled Channel Partners. PSO (and our Partners) are able to provide products, services, knowledge, skills and strategies that map onto any and all of the individual stages making up the three phases in the VMware EUC Vision.

If and when you decide to embark on the VMware EUC journey, we would advise that you contact your account manager to arrange for an initial engagement with a representative from PSO or with an accredited Desktop-Competent VMware Partner to get you started.
The VMware Vision for Better End-User Computing

Let’s conclude by looking at the Vision for End-User Computing that we at VMware strive to deliver.

“Computing” is now under the hood – focus has shifted to users, applications and data. Any application can be accessed, but control over entitlements is under tighter IT control than before. Any device can be used to access those applications, but how device capabilities can be used is also closely managed by centralized policies.

IT will have achieved greater control, by managing less and managing better. It will also have greatly simplified its processes of management and support, since these will be common across all applications and user devices.

This really will be Better End-User Computing.
Additional Resources

Additional information and other material can be found on the web:

**Blogs:**

**Product Pages:**

**H2 2011 EUC Vision Campaign Page (inc. EUC Vision Videos):**

**About The Author**

**Brian Gammage**

is best known as a Vice-President and Fellow at Gartner where he led their global research into the evolution of client computing. He left in early 2011 to join VMware as its Chief Market Technologist for End-User Computing.