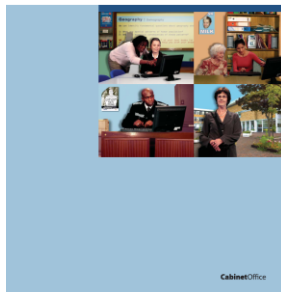


# Transformational Government

*The Microsoft Response*

 HM Government

**Transformational Government**  
Enabled by Technology



*Microsoft UK*  
3 February 2006

**Microsoft®**

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## Executive Summary



Microsoft welcomes the open consultation on the *Transformational Government* strategy and the drive for the three pillars of **citizen/business centric services**, **shared services** and the **professionalisation of IT**.

The Prime Minister's preface makes clear that

*"The future of public services has to use technology to give citizens choice, with personalised services designed around their needs not the needs of the provider." (p1)*

We fully embrace this overall guiding principle, which places the citizen at the centre. In making this response we:

- make clear our willingness to re-think our engagement model with the public sector
- present ideas for the development of shared services into areas like communications and mobile working
- contribute suggestions in areas such as identity and audience segmentation where we believe there are valuable experiences to be shared
- reference existing examples of transformational projects that illustrate well the types of technology-enabled change that are possible
- highlight some of the major industry trends that will create a significant impact over coming years

The critical factor is how these high level aspirations become successful implementations: and how we develop the building blocks and programmes that deliver on the vision. Microsoft is committed to engaging in partnership across public, voluntary and private sectors to help make this transition happen. We are willing to listen and change the way in which we operate in order to play our part in being supportive, and effective, agents of change.

On the global stage, we have recently made significant updates to the way we think about software – moving to a vision that supports the idea of software as a service. We believe there are lessons from these recent developments, such as Windows Live and Office Live, which could prove highly relevant to the shared services agenda.

Technology clearly has a profound ability to impact public policies ranging from education to transportation, from the environment to assisting the disabled into work. We believe that technology's implications need to be better understood at the inception and design of policy itself – not merely further downstream in its implementation and administration.

We have used the phrase *'helping to make the UK the best place to learn, live and work'* for several years as our driving vision and passion in Microsoft UK. The UK government is well placed to make rapid progress on this agenda by building on many of its existing foundations.

We look forward to playing a constructive and innovative part in helping take forwards this agenda – and making truly transformational government happen.

## Summary of key points



This section summarises key points made in the body of this submission. For the more detailed narrative, see **Annex 1 – Vision**.

### Citizen/Business Centric Services

- adopt a versioned approach, avoid big bang
- build on what already exists: a lot of the required infrastructure is already in place
- undertake detailed audience research directly with citizens and businesses
- clarify the governance and consultation models to be used in the development of services for citizens and businesses
- improve the business processes, interactions and channels available to citizens and businesses – not just the IT
- clearly define the roles, responsibilities and services of the voluntary, private and public sectors
- extend partnerships with third party channels, such as online Internet service providers, as well as digital and interactive TV providers, mobile phone operators and access points such as Internet Cafes and public libraries, and through third party intermediaries, to make multi-channel services a reality
- work with business to reduce the impact of “red tape” by encouraging a self-sustaining marketplace of small and enterprise business applications automated to interact with government systems: aim to remove a large amount of the existing manual and paper-based bureaucracy from the system
- consider secondees from the private and voluntary sectors who could bring insight into the specific needs of different audience groups and help shape truly innovative services that deliver against those needs

### Shared Services

- rationalise email servers and deliver improved communication, collaboration and information sharing architectures alongside the move to shared services HR and Finance systems
- take advantage of advances in integrated e-mail security and encryption technologies, coupled with the technology industry’s support for 64-bit capabilities, to reduce the number of regionally hosted mail hubs to provide secure communications and collaboration services to other agencies, including local authorities. This will enable trustworthy regional collaboration connected over the Internet without the need for expensive separate private networks
- rapidly adopt flexible ways of working – and truly mobile public sector workers – to transform the way public sector workers can access information and improve frontline services (and personal job satisfaction), reducing paperwork and unnecessary admin
- transition the Civil Service risk/reward model, governance regime, procurement policies, relationship with suppliers, business processes and technical architecture together to deliver true transformation
- move on from the first generation of online paper forms: produce adaptive interactive forms capable of capturing the data required in more effective and more comprehensible ways – to improve the quality of the user experience and reduce inefficiencies and duplication

## Customer Service Centres

- use reform of public sector call centres to take the very best of what is currently possible and adopt that as a new benchmark standard: use the public sector as a catalyst to help raise the level of expectations of call centres operated in all sectors
- transform existing call centre applications with new tools that aggregate and access applications already in use: rapid progress is possible if the right intercept strategy is adopted
- ensure personalised and integrated citizen services provided by call centres observe appropriate privacy, security and data protection measures

## Human Resources, Finance and other corporate services

- as services are rationalised and shared, don't lose existing best practices such as simple user account provisioning and the benefits of single sign-on
- look to exploit close partnerships between the existing PC desktop environment and the main providers of corporate HR and Finance systems: users do not need to use the backend systems themselves, but can continue to use their familiar PC desktop application tools as intelligent interfaces to those systems, a huge productivity gain in terms of minimising deployment and training issues

## Common Infrastructure

- build on existing infrastructure such as the GSI
- take advantage of convergence (with IP based services) to improve service and channel integration and drive down costs (eg. with Voice over IP)
- make smarter re-use of innovative public sector solutions by taking greater advantage of initiatives such as the Shared Solutions Network (SSN)
- consider the extension of approaches such as SSN to more than just software – they could become a rapid way of disseminating processes, business change models and other wider solutions of more general value and interest
- ensure that the move to more effective re-use of existing components and common infrastructure addresses the associated changes to project responsibilities, risks and rewards
- adopt consistent governance processes to ensure that all technology systems and providers adhere to the same high standards that the OGC ITIL sets out

## Data Sharing

- promote cross departmental collaboration to support activities such as criminal investigations, disaster relief, crisis situations or just the regular rhythm of government business: solutions already exist that can make this happen quickly, and their exploitation will enable the public sector to become more efficient, minimise potential loss of life and reduce the administrative burden on public employees
- utilise standards-based technologies and off-the-shelf collaboration facilities to host regional hubs providing secure and rich inter-agency collaboration services: and, if required, provide those same capabilities to non-governmental agencies (and interfaces to other governments where international co-ordination is required)
- build on the existing public service model already in place – which enables the various separate identifiers in use across government to be joined-up under citizen control and for information to move securely across government
- define clearly the rules and processes that govern who has access to data and with whom it can be shared – to balance the needs of improved, timely access to appropriate information and the provision of joined-up services with respect for security and privacy

## Information Management

- reform e-GIF to transform it into a true, pragmatic delivery model for high value interoperability

- exploit the existing investment in public sector desktop environments by using these familiar office applications to interact with backend information systems, enabling users to have access to appropriate information without requiring new skill sets and applications to learn
- use those same PC desktop tools and familiar interfaces as smart business intelligence clients, enabling managers and policy-makers to have real-time operational and planning information available on their desktops

### Information Assurance

- recognise that well-designed security and privacy policies mutually reinforce each other and consult widely with experts from all areas when scoping projects
- apply the use of Common Criteria products where appropriate
- continue to build on best practice such as ISO 17799 and the world-class advice available from the UK security and privacy communities

### Identity Management

- preserve multiple identity contexts where they are relevant: it's good security and good privacy practice ...
- ... but be realistic about where changes make sense (there is a good case to be made for taxes/benefits becoming more closely integrated for example)
- exploit the existing holistic industry approach to identity management that is already enabling a variety of identity management solutions to interoperate – avoiding trying to cherry pick the 'Betamax' from the 'VHS'
- intercept and use existing digital identities rather than constructing entirely new parallel identity systems – and help co-ordinate the many UK initiatives in this area
- look at alternative identity models, such as the Austrian Bürgerkarte, as inputs to developing truly holistic approaches
- avoid indexing all citizen records across all government domains on the same identity number (such as National Insurance Number): it runs counter to best industry security practice and could produce major security and privacy compromises of the type Canada and the USA are trying to design **out** of their systems

### Technology standards and architecture

- conduct appropriate supportability and infrastructure reviews to take nugatory cost out around hardware, systems integration and consultancy, operations, software and maintenance
- foster practical inter-vendor interoperability labs to fast-track the development of proven data interoperability reference models and solutions that will help underpin the transformational government agenda
- use these labs and their outcomes to inform a revised and revamped eGIF

### Professionalism

- include the wider IT ecosystem not just Civil Servants – given the mixed private/public model that actually delivers most UK public services
- ensure coverage of all IT professionals engaged in delivering public services in the work already being developed with the British Computer Society (BCS) and others to develop a professional programme
- recognise that IT is only one part of major change projects and ensure all associated skills, not just IT, are included in the plans

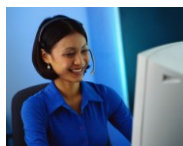
### Additional Observations

For the more detailed narrative underpinning this summary, see **Annex 2 – Additional Observations**.

Microsoft is willing to:

- *contribute to the development of “... a day in the life of ...” scenarios that will help to illustrate and bring alive the way that public services could be working at various points in the future – to help this vision reach beyond the technical community*
- *help organise and participate in a cross-industry event or series of events showcasing the best examples of transformational government that have already been achieved in ways that will resonate with the general public and mainstream media, enabling them to understand the promise of this agenda*
- *contribute examples of best practice and learnings to help identify success criteria – and blockers – to transformational initiatives*
- *work with our partners and the wider industry and consumer and business contacts to help provide feedback and inputs to achieve meaningful citizen and business centric thinking and services*
- *participate in innovation workshops that look at how risk/reward models can best be developed to drive a new culture better able to support successful change programmes in the Civil Service and across the boundaries of public/private partnership*

## Transformational Solutions – examples in action



Our support for this ambitious vision is not some abstract theory: Microsoft has already been working in partnership with a wide variety of public sector organisations to develop IT-enabled transformational solutions. These projects provide insight into the way that technology is already enabling public sector organisations from local authorities to police to central government to work in new, more efficient ways. And to deliver services that better meet the needs of the citizen.

There are a variety of new and existing projects in the public sector that provide valuable insight into the benefits that can be taken when truly transformational approaches and outcomes are achieved. We highlight briefly a few of these below.

### New solutions

- **secure inter-agency collaboration**
  - enabling collaboration across organisational boundaries in a secure way, with access to information based on users' roles and existing digital identities
- **eBenefits**
  - enabling citizens to claim all benefits to which they are entitled in one easy interaction, removing the need for multiple forms and claims through many different agencies with a dramatic streamlining of processes and productivity
- **CRM (Customer Relationship Management)**
  - providing comprehensive citizen service request case management and workflow
- **BSF (Building Schools of the Future)**
  - the deployment of technologies and new pedagogical models that provide improvements to the teaching and learning processes for educators and students alike

### Existing solutions

- **Government Gateway**
  - with some existing 7 million citizens and business accounts already, the UK Government Gateway provides single sign-on to all online government services (local and national) and provides the infrastructure for secure inter-agency communication (enabling a single electronic submission to be routed to more than one agency or department). This infrastructure underpins the likes of the eBenefits solution mentioned above.
- **Collaborative management of information**
  - providing comprehensive life-cycle management of document creation, collaboration, sharing and archiving and retrieval
- **TIS (Trust Integration Server)**
  - Providing rapid integration between the various parts of the NHS and ensuring single sign-on facilities to local, regional and national NHS resources

### Broader Transformational Approaches

- **SmartBeat**
  - enabling police officers on the beat to have rapid access to vehicle and personal information in support of their frontline work. This technology reduces the time officers need to spend in the station doing paperwork and enables them to spend an extra hour per shift out on the beat.
- **MOD use of improved IP stack (estimated 10% savings per annum)**

- improvements to the networking stack will enable the MOD to reduce their annual satellite communications bill by an estimated 10% per annum

## Solutions Sharing Network (SSN)

Microsoft has been working in partnership with public sector organisations to develop the Solutions Sharing Network (SSN). This innovative model enables transformational solutions to be shared between interested users, enabling smart re-use of best practice technologies that support the transformation agenda.

SSN provides a community of interest (such as local government) with a web-based collaborative environment for building government solutions, creating best practices and sharing knowledge. Benefits of this model include:

- enabling the public sector to benefit from community oriented development
- offering a very easy to use and user friendly collaboration environment
- support for business and technical information sharing
- providing a secure, trusted environment
- hosting by government for government
- allowing the public sector to manage their intellectual property within an open environment

In the UK, the infrastructure is already deployed at a local level and rapidly gaining traction as a way for the public sector to more rapidly access and re-use smart solutions.

## Other Perspectives

### Scotland, Wales and beyond



It is important that the *Transformational Government* initiative recognises the distinctive devolved nature of Scotland and Wales. In the time available we have not fully developed our specific plans for these nations: but we will be ensuring that our own strategy takes account of their distinctive needs and aspirations.

Of course, there are UK-wide issues that will impact Scotland and Wales too – and it is important that the underlying technological framework that delivers the *Transformational Government* agenda is sufficiently flexible to allow local autonomy where needed and required, whilst still ensuring ease of interoperability and integration of services for UK-wide initiatives.

Beyond Scotland and Wales, there are also other regional initiatives, such as in the North East and North West, together with specific issues in larger metropolitan areas such as London, Birmingham, Manchester and so on that all need to form part of a cohesive digital strategy for the UK.

### European Union and beyond

There are also wider EU and international initiatives (such as those of the Lisbon Agenda, ICAO/ePassports as obvious examples) that need to be an integral part of the way UK-specific initiatives are developed. Austria has taken over the EU Presidency from the UK and has e-identity for example as a key focus area. We should ensure that work on the UK's identity strategy is designed to interoperate with wider European and international obligations and show active leadership by participating in any opportunities for early pilot interoperability and cross-border identity modelling.

## Annex 1 – Vision



The transformational government vision has the potential to bring enormous benefits to the operations and delivery of public services. We see opportunities for some “quick win” developments that will help make rapid progress with this agenda and demonstrate practical value early on to help build traction and credibility in the programme. This section has some explanatory narrative to position some of the points summarised in the preceding section.

### Citizen/Business Centric Services

We identify very closely with this aspiration. Microsoft’s own success has been built on placing the individual user at the centre of everything we do. To achieve this level of success, we engage heavily in audience research and participation. New versions of our user interface, for examples, are extensively tested and evaluated by a very wide spectrum of potential users to inform our planning and decision-making processes. And once a product is launched we continue to take and act on feedback in a constant and iterative cycle of improvements. Versioned approaches are now well recognised and adopted throughout the technology industry. They provide a good model for making clear progress with delivery, and avoid ‘big bang’ style developments that so often plague IT and related business change projects.

To develop truly citizen centric services will require research and interaction with citizens. Those who deal day-in, day-out with using or providing public services can most rapidly articulate which changes would bring most rapid benefit. Organisations that represent some of the most vulnerable users – such as Citizens Advice Bureaux and charitable organisations – can provide valuable insight into the most pressing requirements. Be inclusive.

This of course raises many questions. Who will own taking on the necessary audience research in order to ensure that citizen and business services are relevant to their needs? How will the delivery of these process and systems changes be commissioned? Who commissions delivery, of IT infrastructure as well as new service propositions? And taking the example of complex inter-agency issues, which span private, voluntary and public sectors, how will care for vulnerable children systems and processes look, and how will they be commissioned? And who will they be delivered through: central government, local government, third parties such as the CAB? Will the proposed audience segmentation directors be internal or external appointments – or secondees? There are many in the private and voluntary sectors who could bring great insight into the specific needs of different citizen audience groups and help shape truly innovative services that deliver against those needs.

For the citizen, interacting with government clearly needs to be as simple, intuitive, timely and painless as possible. Their experience needs to be of high quality services delivered to them efficiently – and through channels of their time and choosing. Associated work is required on improving the business processes and interactions available to citizens and businesses – not just the IT.

On the business front, ‘red tape’ is often the most frequent complaint, particularly for sole traders and smaller businesses. Technology combined with simplification of public sector interfaces provides a potential benefit for both business and government – automating and simplifying the workload on businesses and improving data quality and timeliness of information for government. The development of a marketplace of small and enterprise business applications, automated to interact with government systems, would provide a means of taking a large amount of the existing manual and paper-based bureaucracy completely out of the system.

The UK government is already well placed to make rapid progress in these areas. It has the underlying technical shared services infrastructure – such as Direct.gov, the Government

Secure Intranet (GSI) and Government Gateway – to make available the technical interfaces that can deliver integrated government services. This could rapidly be built upon to enable the transformational government agenda to make rapid progress.

To provide the reach across channels and access points there will also be a need to extend partnerships with online Internet service providers as well as digital and interactive TV providers, mobile phone operators, Internet cafes and public libraries, and through third party intermediaries. A lot of the agility, accessibility, relevance and timeliness of access to government services will depend on close integration of the roles and services of the voluntary, private and public sectors.

## Shared Services

The shared services agenda is about much more than just a move to rationalised and consolidated systems such as Human Resources and Finance. There are huge opportunities in service and operational efficiencies through more consistent and more productive government PC desktops – capable of accessing and interacting with information held in the many different back office systems. We see opportunities for rationalisation in areas such as email servers and improved communication, collaboration and sharing of information. And we see new flexible ways of working – and truly mobile public sector workers – transforming the way we think about how we work, and how and when we can access information and provide frontline services.

A successful move to shared services will help produce operational and service efficiencies. But this will need to include rationalisation of the wider “terms and conditions” in use across the many parts of the public sector. As with other organisations, such as the BBC, these will need to be rationalised first if common IT infrastructure and BPO is to become a successful reality. One of the most obvious challenges will be in bringing the various customs and practices across the public sector into sufficient alignment that shared services infrastructure such as HR and Finance can be deployed successfully.

Shared services in themselves do not necessarily solve anything – least of all if they merely become larger monolithic versions (containing the same variability of data accuracy) of the plethora of diverse systems currently in place. The transition to successful, worthwhile shared services requires as much, if not more, focus on people and processes as it does on the technology itself. Data quality and integrity in large shared services infrastructure will rely upon more rigorous mechanisms to validate and update it on a frequent basis – ideally focused on the citizen or business to whom the data relates.

Microsoft has developed a largely unique partnership model – which places us in the position of working with almost all of the IT services and system integrators across the public sector. To help this strategy get traction and start delivering early on – important both for its own credibility and to be shown to be making real progress in delivering against public sector, citizen and business expectations – we suggest developing a series of best practice programmatic approaches to tackling some of the shared services and common infrastructure objectives.

This could be as simple as improving operational efficiency and reducing overall cost by migrating from multiple 32-bit email servers to consolidated 64-bit based equivalents. Or it could embrace more transformational developments that exploit a shared service communications infrastructure to enable the public sector to take advantage of modern collaboration and communications tools such as voice over IP and audio and video conferencing from the desktop (rather than needing dedicated and under-utilised specialist conferencing hardware). Advances in integrated e-mail security and encryption technologies coupled with 64-bit capabilities will enable a reduced number of regionally hosted mail hubs to provide fully secure mail and collaboration services to other agencies, including local

authorities. This will enable trustworthy regional collaboration connected over the Internet without the need for expensive separate private networks

More ambitiously, we could look at how we take the lessons learned inside commercial organisations to transform the way in which public sector workers think about the world of work: freeing them from their desks and paperwork and enabling them to spend more time on their specific specialism and vocation.

### Customer Service Centres

Integrated customer service centres – capable of handling multi-channel interactions – will significantly improve the quality and perception of the support available for public services. Ideally these will see today's silo'd call centres (which deal only with specific services or sub-services from a single department or agency) replaced with common service centre facilities capable of delivering integrated service support to citizens and businesses.

There are important questions here about which services the government itself needs to provide, and which might be better facilitated by trusted intermediaries (such as Citizen Advice Bureaux). And will call centres in the future be aligned to audience segments rather than on the basis of the owning department/agency structures? Audience research amongst the users of such services would be a good way of ensuring their design meets their needs. But a move to truly citizen-centric services will significantly impact the way in which departments and agencies think about and organise their respective services.

The strategy highlights the need for audience segmentation and citizen group Directors as a clear necessity in the move away from the existing way public sector services are structured, but will face complex problems around the reality they are not mutually exclusive. For example, farmers, older people and offender management "groups" could actually end up addressing the same individual (an older farmer who is an ex-offender).

The move to a new design needs to take into account the problems of delivering the 'franchises' encountered by the former Office of the e-Envoy, which took a similar market segmentation approach and soon encountered complex problems of how to bring together information consistently that had many separate stakeholders in many different departments across government. It is important that the outcome from these changes enables citizens and businesses to access and interact with services in a composite fashion and that we do not end up with a new set of silos based on segmentations that are not sufficiently flexible to reflect the often complex – and changing – needs of the real world.

It has been hard enough to make such franchises or segmentation successful for the joined-up information now available via Direct.gov: achieving the same type of change for joined-up services will raise much more fundamental issues – which are likely to involve transforming the way the Civil Service works and the way onwardly that it works with the wider public sector (at local and regional level) and the voluntary and private sectors (given the fact that more and more public services are in effect now delivered through private sector channels). These changes to the risk/reward model, the governance regime, the procurement policies, business processes and the technical architecture all need to be carefully managed to work in conjunction to deliver true transformation.

As an illustration of the scale of the problem the strategy comments:

*"There are currently over 2500 government websites. To ensure that overall the government uses the web most effectively to support its service delivery and communications strategies, the web presence of government will be rationalised. For each government organisation the number of different web sites it uses will be reduced and consistency introduced in line with its overall communications strategy."* (p10, paragraph 33, 3)

This seems to be a good example of a problem caused by business practice – not technology. Many departments operate many different ‘brands’ based on the same type of audience segmentation being recommended. But it is this segmentation and the sub-brands associated with it that has led in many cases to the associated proliferation of web sites. This is not a problem caused by technology: the number of web sites is merely a symptom of the underlying business structures and segmentation. It thus ideally requires a solution on the business side first before the technology can properly provide a solution – since a misalignment between the business and technology can in turn cause problems of its own.

When on Page 6 the strategy states:

*“... over 96% of government services will be e-enabled by the end of 2005.”*

this really refers to this first generation definition of “online” services. That is, online replicas of existing paper forms. We all recognise that in this first wave little true fundamental service change has yet happened: it has been just the beginning of the journey.

As we move into this next phase, more efficient models exist which consist of designing adaptive interactive forms capable of capturing the data required in more effective and more comprehensible ways – improving the quality of the user experience (and hence potentially reducing the need for support from the likes of customer service centres). Truly transformational services will only start to happen when we make sure that technology enables services to be provided in new ways – not simply taking existing services and their structures and placing them on the Internet. This we see as an area of major and exciting change, which will truly unleash the full potential of technology to transform the way in which services are provided.

Current technology trends will also have a major impact, such as the increasing convergence between the world of telephony and the Internet. It is highly likely that the current traditional telephone system will be rapidly replaced by Internet-based voice communications, Voice Over IP [VOIP], over the coming years. At present users who experience problems with a PC-based or browser-based service need to pick up a telephone and make a separate call entirely outside the context of their problem. In the future, they will be able to enter into voice and potentially video communications with customer service centres in the midst of their problem, making support more immediate and more relevant – and assistance much more efficient than today.

Call centres of course enjoy a very mixed reputation. There is an opportunity here for the public sector to take the very best of what is currently possible and adopt that as its benchmark standard. By doing so, not only will a high quality citizen experience become available, but the public sector can act as a catalyst to help raise the level of expectations of call centres operated in all sectors. Some of the best call centres do not put callers through “menu button hell” and keep them hanging on for indeterminate lengths of time – they use facilities like CallerID to identify who has called and offer to call them back.

Equally important are the tools for the centre staff themselves – which need to provide integrated, high quality information at their fingertips. Models are available that do not require organisations to rip out the existing applications in use in their call centres, but which provide an interface for aggregating and accessing those applications. Rapid progress is possible if the right intercept strategy is adopted. But in this move to ensure personalised and integrated citizen services is it clearly important to observe appropriate privacy, security and data protection measures form part of the design and operations – social engineering attacks and other vulnerabilities (phishing etc) remain a key problem for online services, whichever channel they are delivered through.

## Human Resources, Finance and other corporate services

In the move to shared services it is important to ensure that the benefits of existing productive ways of working are not discarded as well. For example, in many public sector environments, automated account provisioning is already a reality. As users are set up on HR systems, their account information is propagated across all relevant systems – so that they are able swiftly to log in to a PC desktop and start using desktop and organisational line of business applications in a seamless way.

As services are rationalised and shared, it is important that aspects such as simple account provisioning and the benefits of single sign-on are not lost. Shared HR and other environments could become complex and burdensome if they are not designed to ensure integration with the systems and applications that users require within their respective organisations and functions. Careful design is required during the transition to shared services to ensure that some of the best practice design operational processes that exist in the best government agencies and departments are not replaced with a lowest common denominator model.

Inside Microsoft we have developed fully integrated internal shared services HR and Finance systems that support full user account provisioning across not only these services but all internal services, be they server or desktop applications. On purchase orders alone we estimate to have driven costs down from something like \$60 per purchase order to just \$5 through the smart use of technology. All of our standard processes, such as purchasing, billing, expenses, employee reviews etc, are fully online and automated, bringing huge benefits to both the company and employees alike – and removing a huge and unnecessary layer of paperwork from our organisation.

Close partnerships with all the main providers of corporate HR and Finance systems make it possible for existing desktop applications and critical line of business applications to be closely integrated – to the extent that users do not need to learn how to use the backend systems themselves, but can use their familiar PC desktop office tools as the interface to those systems. This is also a huge productivity gain in terms of minimising deployment and training issues.

## Common Infrastructure

The UK Government has led the world in developing common infrastructure, including the likes of the Government Secure Intranet (GSI). It also has a strong track record in the provision of proven common infrastructure shared services, such as the Government Gateway and Direct.gov.

Future enhancements need to take into account the nature of technological convergence and the way in which all services – including audio, video and voice communications – are all moving onto Internet-based technologies. There are some quality of service issues that may need close attention here – particularly around areas such as security and emergency response handling.

Traditionally the public sector as a whole has not been an early mover or innovator in its use of technology. On the standard Gartner technology adoption curve, traditionally government sits towards the back as a late adopter. The result is that the public sector rarely takes full benefit of innovation from the technology industry: the recent CBI/Qinetiq report concluded for example that

*“Companies are becoming more sophisticated in their approaches to innovation, but this is not being matched by government. If the full value of business innovation in the UK is to be realised then government must take action at both policy and operational levels.”<sup>1</sup>*

<sup>1</sup> “Innovation Survey 2005”, CBI 2005.

The *Transformational Government* strategy implies government will need to reposition itself on the Gartner curve: to do so will require a high level of expert governance. We have considerable experience in the successful operation of an environment that provides for this continual refresh and rapid adoption of new innovations and technologies and are committed to working with the public sector and our wider partner base to help de-risk this transition by sharing our expertise more widely.

To make pragmatic progress, we also need to collectively address issues such as how we take existing assets and services and improve them: exposing them across various channels and making them “identity aware”. Collegiate engagement by the private sector with OGC Gateway reviews could help to facilitate rapid best practice success on these high risk, high profile projects and ensure designs are built to change rather than built to meet arbitrary requirements at a snapshot in time.

Many of the building blocks already in place around common infrastructure could enable the shared services agenda to make meaningful headway. Rapid integration between existing departments and agencies is possible, using their existing directory services and federating trust between them as appropriate. A common infrastructure model that builds on existing proven and trusted building blocks in this way will enable much more rapid deployment and take-up of shared services than building new components that are possibly completely unnecessary and which would over-complicate the infrastructure.

Other common infrastructure could include common portals for collaboration and interoperation, potentially directly connected to the GSI. This infrastructure would enable automated provisioning of new document and project work areas and, using federated identity, enable users to access them using their existing government credentials rather than requiring the complexity of a duplicative identity framework. Such document generation and lifecycle management facilities should also be enhanced by a government-wide search facility that would enable more rapid and timely location of relevant information. This search facility would respect security, access and role-based controls to ensure that search results return only information to which the searcher is entitled to have access. These cross-government infrastructure repositories could also be automated to meet national archive requirements.

UK Government has long ensured that it retains, or at least shares, the intellectual property (IP) for its projects, using Crown Copyright to protect its interests. Traditionally, however, good projects and innovative IP have not been re-used and replicated efficiently across the public sector. Mechanisms are increasingly being put into place to make this happen – including the Shared Solutions Network (SSN). Such approaches will help ensure technology best practice in one part of the public sector can be exploited elsewhere. This also has implications for contractual models and supplier responsibilities – since traditionally each public sector project has operated as a silo project from every other. The re-use of existing components and common infrastructure has implications for responsibilities, risks and rewards that need to be properly thought through and addressed.

Consistent management of technology across government is also required. The OGC’s ITIL (IT Infrastructure Library) provides world-class guidance in this area and its recommendations have been embedded in Microsoft’s own IT operations and management processes. Governance processes should require that all technology systems and providers adhere to these same high standards.

There are benefits in rationalisation and consolidation beyond common corporate functions such as HR and Finance. Take the simple example of email and communications infrastructure for example. Recent developments, such as the move to 64 bit computing, mean that existing 32-bit servers can be consolidated and replaced by a ratio of something like 4:1 by their 64-bit equivalent. And on top of this basic messaging infrastructure, other communications tools – such as audio and video conferencing, voice over IP and instant messaging – open up a whole

new range of productivity options for the way in which civil servants can collaborate and communicate with each other and with others outside of their organisations.

## Data Sharing

The infrastructure for improvements in data-sharing is already largely in place: a “big bang” approach is not required. For externally provided services, the UK Government has already developed a sophisticated model of enabling the various identifiers in use across government systems to be joined-up under citizen control (and which supports the use of third party credentials, such as those issued by banks and local authorities) – and for information to move securely across government with smart routing between citizens, businesses and public sector organisations.

Internally as well, there is clearly significant potential for the immediate deployment and take-up of collaboration products and solutions. Cross departmental and inter-agency collaboration and communication could be deployed rapidly to support activities such as criminal investigations, disaster relief, child care, crisis situations or just the regular rhythm of government business: solutions already exist that can make this happen quickly. Their exploitation will enable government departments to become measurably more efficient, minimise the loss of life and reduce the administrative burden on public employees. Utilising such standards-based technologies and off-the-shelf collaboration facilities, regional hubs could be established to provide secure and rich inter-agency collaboration services: and, if required, those same capabilities could be onwardly networked with non-governmental agencies (and similar secure interfaces provided to other governments where international co-ordination is required).

We believe this is one of the most significant areas where major productivity gains can be achieved quickly. The amount of collaborative work that people have to do is significant and at the moment they do it mostly by meeting face-face. Such solutions should cover all of the professional planning, policy and business development work.

Greater clarity is needed around the rules and processes that govern who has access to data and with whom it can be shared to balance the needs of improved, timely access to appropriate information and the provision of joined-up services with respect for security and privacy.

In Section 14 (page 5) there is the comment that:

*“Many systems were designed as islands, with their own data, infrastructure and security and identity procedures. This means that it is difficult to work with other parts of government or the voluntary and community sector to leverage each other’s capabilities and delivery channels. It also leads to customer frustration, duplication of effort (for instance on customer change of address) and failure to make timely interventions, as the Bichard Inquiry showed. Choice requires services to be able to talk to each other.”*

This is one of the major challenges that we collectively need to overcome. More efficient ways of sharing appropriate information and of removing unnecessary duplication should be used. This was the reason PA Consulting – who developed the report that recommended the UK Government Gateway project to the old Central IT Unit (CITU) – helped to evolve an architecture that has made possible:

- the use of a single trusted credential for all online government services
- the ability to send a single notification of items such as change of address or other change of personal details across all relevant government agencies

But which has done so without removing all the security and privacy domains that currently exist. Note that Canada has been re-engineering its government systems so that they are not

indexed using a common universal identifier (because of the security and privacy issues this has raised). Likewise, the USA has encountered serious identity fraud issues with its universal use of the Social Security Number (SSN). These are lessons we need to ensure are reflected in the design of UK identity systems and their related-data sharing solutions.

## Information Management

Public sector workers are long accustomed to working with PCs and familiar desktop applications, such as word processing. But the PC desktop is far more than a modern equivalent of the typewriter: it also provides the platform for comprehensive business collaboration, interaction and communications. It provides a familiar set of tools that are capable of interacting with backend information systems, enabling users to have access to appropriate information within an environment with which they are already familiar and without requiring new skill sets and applications to learn.

Business intelligence systems are improving the ability to track and manage complex information. Government, by its large and all-encompassing nature, is a highly complex information environment. Well-designed business intelligence systems will enable better management of public services and better feedback to help inform and refine policy-making. These same PC desktop tools and familiar interfaces can act as smart business intelligence clients, enabling managers and policy-makers to have real-time information available on their desktops.

One of the main problems facing Governments at present is that they are often running blind: many of today's IT systems are discrete islands of information that exist in isolation from each other and do not communicate with each other. What has been built is analogous to an electronic version of the old world of metal filing cabinets: there is no easy way to exchange data between systems or to implement higher-level intelligence that can make sense of the complex of data that exists. There is also no easy way to enhance and upgrade these systems to include new functionality.

Truly informed business decisions and policy-making only become possible when better and more reliable information is made available across the range of Government systems that contain relevant information.

Rationalisation, consolidation and shared services are not the only tool in the box: interoperability is also a key means of helping resolve such problems. An interoperability framework helps achieve these Government objectives by providing the ability to exchange information more effectively between systems and to make better use of information — by, in essence, creating a world in which the result is greater than the sum of the parts. Specifically, successful interoperability programs:

- support important social and policy solutions, such as accessibility, user identification, privacy and security
- promote choice, competition and innovation
- reduce costs, and single vendor lock-in
- promote open access to information and address backward compatibility issues
- increase efficiency, flexibility and the value of existing investments in systems
- increase transparency to users and provide them with value-added information by bringing together data that currently exists across multiple silos

It is important to recognise that there is no simple recipe book or one-size-fits-all approach to interoperability. Where security is an issue, for example, Government may want less interoperability to ensure the integrity of systems and to minimise vulnerabilities.

## Information Assurance

Industry experience is that, far from being wrestling opponents, security and privacy help reinforce each other in well-designed systems. Microsoft has enjoyed the dubious privilege of being the most attacked platform in the world, on all attack vectors and surfaces. We have learnt a great deal from finding ourselves in this position, providing lessons that we are happy to continue to share to ensure key systems are not compromised at any point.

Microsoft has a strong practical commitment to high quality security and information assurance models, reflected in the widespread accreditation of its products under Common Criteria, issued under the National Information Assurance Partnership (NIAP). But information assurance is about more than just final product: it is about a whole life-cycle approach from design to implementation that ensures security and privacy design is factored in throughout.

## Identity Management

The Strategy states (p13, para 39, 7):

*“... government will create an holistic approach to identity management, based on a suite of identity management solutions that enable the public and private sectors to manage risk and provide cost-effective services trusted by customers and stakeholders. These will rationalise electronic gateways and citizen and business record numbers. They will converge towards biometric identity cards and the National Identity Register. This approach will also consider the practical and legal issues of making wider use of the national insurance number to index citizen records as a transition path towards an identity card.”*

The existing infrastructure already supports this diversity of identity management solutions, from the way in which shared services components such as the Government Gateway support third-party issued credentials (such as certificates and smartcards – including, potentially, any UK issued National Identity Card, and local authority cards), through to the way in which government departments and agencies can use federated models to trust the use of existing identity credentials between their services and applications.

Microsoft has been open and honest about its own learnings around good and bad identity practice – and those of the wider technology industry. We think these technological issues are important enough to be discussed in an open, constructive way in order to ensure that the best possible decisions are made on this important topic.

On security and privacy grounds, preserving multiple identity contexts where they are relevant is good security practice. We have also seen some of the complexity and failure that arises from technologically driven projects – examples of which might include the imposition of central directories in areas such as health and the GSI. These have often proved a poor business fit and have introduced layers of technical complexity that are entirely unnecessary.

A better, lower risk and more rapid delivery model enables the interception and use of existing digital identities rather than the construction of entirely new parallel systems. The use of existing identities, federated between organisations and individuals that trust each other, is a well proven model with widespread industry support. It is also flexible enough to accommodate the complex of inter-agency and inter-private/public sector working that is required without imposing additional – and unnecessary – business and technology overheads.

One point worth discussion is that joined-up government does not necessarily require a single, widely known indexation key – which seems to be implied here. The existing UK Government infrastructure is based on the recommendations of PA Consulting, who are also advising the Home Office on the National Identity Card. For example, the UK Government Gateway enables

a single online credential to be used across all government services – but without requiring a single public domain identifier. It preserves the existing identity domains that exist in government and also already supports and has been proven to work with third party credentials (such as those issued by banks and the British Chambers of Commerce).

This holistic approach has proved itself adaptable and versatile – supporting a plurality of third party credentials, whilst providing a single sign-on experience across the many silos of the public sector. If the desire is to move away from this model, there is potential for an approach to identity management that could cause the opposite of what is aimed for. In particular, the idea of indexing all citizen records across all government domains on the same identity number (such as National Insurance Number) runs counter to best industry practice. It runs the danger of producing major security and privacy compromises.

There is clearly a sound business and citizen benefit case to be made for associating tax and benefits information more closely. This enables the State to ensure people are receiving what they are entitled to, paying appropriate taxes and also helps in reducing fraud. For the citizen, it enables a far more simplified ‘citizen account’ approach to be taken to their interactions with the various departments that handle tax and benefits (including local government). However, to extend that identity domain into other areas that are not related – such as education and the NHS – seems to serve no clear benefit. Worse, it would mean that the carefully designed segmentation of identity could be breached by one single security lapse.

## Technology standards and architecture

Appropriate supportability and infrastructure reviews – combined with the rationalisation of systems and the move to new technologies such as 64-bit computing – will help to take cost out around expensive items such as systems integration and enable software, hardware, operations and maintenance costs to be optimised.

The UK Government has developed core foundation stones for its technology standards and architecture, broadly adopting existing industry and open standards to ensure a high degree of interoperability. This is further reinforced by the adoption of related standards, such as those of Dublin Core. Microsoft has been an active participant in e-GIF (the e-Government Interoperability Framework) since its inception. However, the existing e-GIF has tended towards cherry-picking certain standards and technologies and not others and providing a ‘plumbers toolkit’ rather than practical guidance on how to ensure various systems can talk to each other and exchange meaningful data. It has to a degree been committee driven rather than based on the pragmatics of adopting standards and models that ensure the best degree of practical interoperability on the ground.

We refer those charged with taking forwards the *Transformational Government* agenda to our detailed Whitepaper on this topic, *Government Interoperability* (available online at <http://www.microsoft.com/windowsserversystem/interop/govt/govteservices.mspx>).

We suggest practical inter-vendor interoperability labs are used to fast-track the development of proven data interoperability models that will help underpin the transformational government agenda.

## Professionalism

The strategy aims to help raise the professionalism of the IT profession across the public sector, something we actively support. We also believe there are benefits to be gained here by looking at the wider IT ecosystem – given the mixed private/public model that actually delivers most UK public services.

On page 16, in paragraph 46, the Strategy comments:

*“The IT Profession in government needs to build capacity, culture, skills and identity. A new approach to the Government IT Profession within Central Government and the wider public sector is to be launched by the recently appointed Director for IT Professionalism.”*

Public sector services are increasingly focused on quality and value for money at the point of delivery – not on who currently employs those delivering that service. It would therefore be constructive to develop the IT Professionalism programme with recognition of that in mind – and remove the potentially arbitrary distinction based solely on who currently employs those IT professionals working in the public sector.

The work already being developed with the British Computer Society (BCS) and others to develop a professional programme should ensure it covers this public/private partnership and focuses on all IT professionals engaged in delivering public services.

There is a much more fundamental question here about how we raise the standards not just in IT but in managing complex business change programmes. How do we bring together the right mix of commissioning agents from various areas of expertise, and from areas ranging from procurement through to contracts and technology? This whole strategy is about fundamental business change – with technology just one of the tools that will help to make that happen.

True partnership means we are all in this together – and the success of IT in the public sector requires all of us to be working to similar levels of quality, professionalism and attainment. It would be a progressive and positive step to see this openly recognised in the way, jointly, we work on the professionalism agenda together.

## Annex 2 – Additional Observations



This section outlines some additional observations and responses to issues raised in the *Transformational Government* paper.

- it would help make the strategy concrete – and give it some clear outcomes to aim for – if it set out some scenarios (or “a day in the life of”) to illustrate the way public services will be working at various points in the future. This is not only useful to help ensure that the necessary step changes can then be mapped and worked on to deliver those outcomes, but also to help engage a wider audience than the “techie” one in understanding the significance of this strategy and the impact it will have on their lives. This is not just about IT and that message needs to be clearly communicated. Whilst some scenarios have been posted on the CIO Website, these have all been generated from the ‘provider’ side (ie government). It is important to engage citizens and businesses in this strategy – given its aspirations to deliver truly citizen- and business-centric services.

➔ **Microsoft is willing to contribute to the development of these scenarios**

- we also suggest asking the industry as a whole to support the Government in running a few open showcase days where we highlight the best examples of IT-enabled transformation projects that have already happened. This would help open many eyes to the art of the possible and also help the debate include a far wider audience.

➔ **Microsoft is willing to help organise and participate in this event**

- it would be instructive for the strategy to reference examples of projects that have succeeded (or failed) in delivering the type of transformation envisaged, the lessons that can be learned from these projects and any plans for how such models can be used to catalyse change. “IT project failures” are only failures if lessons are not learned and if we continue only to consider their IT dimension.

➔ **Microsoft can contribute examples of where public services projects have achieved fundamental transformation and also assist with identifying success criteria and blockers to such initiatives**

- the document correctly places citizens and businesses at the centre of its objectives. It would be strengthened by gathering comments and inputs from those target audiences and their feedback on what has worked – and not worked – to date. For example, it would be useful to have inputs from the likes of CAB, the CBI and others on their impressions of dealing with government to help drive through change programmes.

➔ **Microsoft is willing to work with our partners and wider industry and consumer contacts to help provide feedback and inputs to achieve meaningful citizen and business centric thinking and services**

- to help drive through significant cultural change of the type implied by the strategy, the Civil Service risk/reward model will need to change (based on the recognition that all too often rewards drives behaviours) to help encourage and support the

transformation required. So-called “IT projects” are fundamentally major business change projects: and often it is the change programme itself at the root of the problems that can arise.

➔ **Microsoft would be willing to participate in innovation workshops that look at how risk/reward models can be best developed to drive a new culture better able to develop and drive through change programmes in the Civil Service and across the boundaries of public/private partnerships**

## Annex 3 – Some Key Industry Trends



We highlight in this Annex a few of the major trends currently happening in the IT industry as background information to help shape some of the thinking around the *Transformational Government* programme. This list is far from comprehensive – to state the obvious, we are in an era of major technological transition and disruption.

### 64-bit

The IT industry is beginning a migration to 64-bit computing. This is an important technology shift for the shared services agenda. Many new server products will only be available in 64-bit implementations.

Let's use email as a mainstream example. Email has become a "mission critical" application in most organisations today and the demand being placed on email continues to grow. But 32-bit email server systems have memory limitations (4GB) which restrict their ability to cost effectively support these needs. **Consolidating email servers to manage cost and complexity should form a key part of the shared services agenda.** 64-bit servers provide the system architecture required to meet both of these needs (accommodating new demands and consolidating servers).

Today, as memory runs out on 32-bit servers, the only relief is to increase the number of servers to handle the same user base or to limit functionality available to users. With a 64-bit version, the public sector will have a far more cost effective solution through the ability to add memory, not servers, to accommodate new users and increased connectivity.

Increases in mailbox size means that fewer inboxes can be supported on each 32-bit server – which ultimately means more servers must be purchased. 64-bit servers provide more memory so users can increase mailbox sizes without the need for additional servers.

Storage is approximately 80% of the capital costs for an email server deployment and it is not fully utilised today. Memory restrictions on 32-bit hardware limit users from fully utilising the space on their storage hard drives. The move to 64-bit systems will help to alleviate this, enabling the public sector to not only get more usage out of their storage systems today, but reduce the amount of hard drives they may need to purchase as inboxes grow.

To appreciate the scale of shared services benefits that could accrue from the implementation of 64-bit based messaging systems, look at this quote from HP:

*"In production environments, we think that we can consolidate 32-bit servers by a ratio of 4:1 and achieve the necessary degree of resilience."*

**Tony Redmond, Vice President and Chief Technology Officer, HP Services**

### High Performance Computing / Grid Computing

Alongside the move to 64-bit computing, another major industry trend that is highly relevant to the *Transformational Government* agenda is the move of high performance computing from academia and research into the mainstream. This is happening at several levels: at the operating system level and at the processor level. It is also highly integrated with the concept of Service Oriented Architecture (SOA), highlighted as an important industry trend elsewhere in this section.

High Performance Computing (HPC) is moving out of R&D and academia and into the mainstream. There are potentially important implications in how public sector organisations think about how they will architect services in the future and how common infrastructure will

be shared across the sector, potential crossing inter-agency and inter-departmental boundaries. For example, HPC could play a key role in rationalising datacentres and the architectural models used for government systems.

## Just-in-time

Just-in-time (JIT) development is now well-established in manufacturing. There are many areas of government where the same thinking could yield significant benefits. Take the simple examples of taxation and welfare. Taxation continues to run on annual tax cycles. Why? It is perfectly feasible to move to a more frequent cycle, with benefits to citizens, businesses and government alike.

In the same way that the banks operate a daily clearing system, there is no reason why the taxation system could not operate on a similar basis. Combined with an integrated taxation/welfare model, this would ensure that citizens' circumstances can be more rapidly updated – enabling them to receive appropriate benefits in a far more timely manner. (And, of course, for any taxes due to be collected more efficiently). This would be of great benefit to the Treasury which would be in a far better position to understand its credits and liabilities than under the current annual model.

## Convergence

Convergence of technologies and industries has been much spoken of. In 2005 it started to happen for real and looks likely to accelerate in 2006 and beyond. Convergence covers the way in which many different technologies and services – digital television, telephone services, the Internet, computer applications, radio, DVDs, music, digital photography etc – are being delivered through integrated services and devices in our living rooms. This will have a profound impact on the way we think about interacting with both broadcast and interactive content.

## Service Oriented Architecture (SOA) and Web services

SOA and Web services are rapidly gaining traction as the way to architect open, flexible IT systems. The UK Government was an early adopter in this field, with shared services components such as the Government Gateway and Payments Engine providing Web service interfaces and acting as part of a broader SOA. This model will provide a flexible, agile and cost-efficient way of underpinning the shared services agenda and enabling interoperability, where required, between various agencies and between the public, private and voluntary sectors. It is also a good fit to the multi-channel strategy since it separates the presentation tier (channel/device) from the underlying application layer.

## Internet-based services

Traditional telephony is being challenged by changes enabled by the Internet and associated technologies. This has a clear impact on the planning cycle as government considers everything from optimal ways of working for public sector workers through to options around call centre design. As new technologies such as Voice Over IP (VOIP), and Instant Messaging (including audio and video conferencing) become more and more commonplace, taking advantage of the growing pervasiveness of broadband, the Internet is likely to supplant traditional switchboards and the packet switched telephone network (PSTN).

Already we see cordless telephones in the home that use broadband internet connections rather than the telephone network to make calls. We see next generation mobile phones that can use both the cellular network and WiFi access points, enabling users to dynamically take advantage of the cheapest option available. In the future, users completing online interactions with government and commercial websites will not need to stop their session, pick up a phone and dial a number to connect to support at a call centre. They will be able to connect to the call centre from the same device – such as a PC – that they are already using and experience truly integrated services.

Likewise for employees, the idea of being in or out of an 'office' will continue to blur. Technology is already enabling us to work from anywhere, anytime, securely. But to be successful in re-thinking the way we work and the way in which public sector services are designed, managed and delivered, we need to work on developing the associated employment policies that will make this a successful transition. Whilst flexible working can bring great personal empowerment, and enable frontline workers to spend more time on direct frontline services, and less on back office bureaucracy, the idea that work is always with you can also be a problem.

Microsoft is an innovator in the world of work and we are currently working on a next generation of workplace reform. We are more than happy to share our experiences – not just in technology, but in the associated processes and human issues – to ensure similar transitions in the public sector can be successful.

## Web 2.0

We mentioned earlier in this paper the relevance of software as a service and the work already happening around <http://live.com> and similar initiatives. These are all part of a wider transition taking place – the move to what is known as “Web 2.0”. Although there is no single clear consensus of what this means, it covers aspects such as:

- the development of Websites as more than just static islands of information and data into active, intelligent agents (the idea of the Web as a true platform)
- greater organisation of content, providing smarter ways of navigating relevant information
- a change in the commercial models of the Web (and in part a way of providing distance between the 'baggage' of the discredited dotcom boom and bust)
- a social transition (typified by blogs, wikis, RSS, and new and dynamic forms of working and collaboration and openness)
- improved user experiences and the emergence of AJAX as a common model

A taste of some of the inventiveness of many of these changes is currently available via the Museum of Modern Betas at <http://momb.socio-kybernetics.net/>.

## Virtualisation

Virtualisation is increasing in importance at both software and hardware levels. This has a major impact on datacentre architectures and is relevant to delivery of the shared services agenda. As an example, virtualisation allows a single physical server to host multiple applications running on multiple operating systems. It also supports more rapid deployment of new applications, which can be implemented on a new virtual server built on existing physical hardware.

When servers reach capacity, relocating virtual servers to different physical servers is a simple task. Mixed datacentre environments are able to support a wide range of operating systems and applications without having to install separate physical hardware for each of them, enabling datacentres to optimise their use of resources.