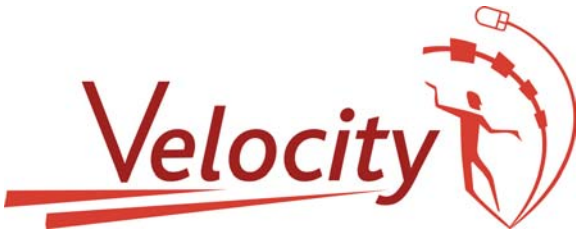

Rapid Microsoft Operating System Deployment

A Benefits Guide for IT Decision Makers

Abstract

Eurodata Systems has released ***Velocity*** – a lifecycle management strategy for designing, delivering and managing a Microsoft desktop environment. ***Velocity*** comprises a comprehensive set of tools, processes and guidance to assist in the process of planning, building, and deploying Microsoft desktop operating systems such as Microsoft Windows XP Professional, Windows XP Tablet PC Edition and the forthcoming Windows Vista.

Velocity leverages commercially available technology combined with real world experience to create an end-to-end solution for assisting organisations in migrating to these new operating systems. This document discusses the complexities traditionally associated with desktop deployment projects and explores the benefits that ***Velocity*** offers organisations of all sizes.

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2. Document Management

2.1. Document Control

3. Contact Information

Eurodata Systems is a leading provider of Microsoft solutions and is one of the few companies to obtain the prestigious level of Microsoft Gold Certified Partner.

You benefit directly from our 10-year relationship with Microsoft through in-depth access to exclusive resources and early product information. To keep you up to date with current and new Microsoft technologies, we hold regular customer briefings and we use the sophisticated Eurodata Systems test lab to evaluate Microsoft Beta software.

For further information on our Microsoft Solutions portfolio please go to www.eurodatasystems.com or call 020 7619 1500.

4. Introduction

A migration to new desktop technology is perhaps one of the most demanding projects that an organisation can undertake. Desktop deployments are typically time-consuming and intricate projects that require careful planning and management to ensure that an organisation gains maximum benefit from the new technology, whilst minimising business disruption during the implementation.

A new operating system can offer a myriad of benefits to an organisation, from lower total cost of ownership (TCO) to greater integration and security. Unfortunately, the transition is all too often one that strains resources, hinders productivity and is expensive. For these reasons, deploying a new desktop is an undertaking that most organisations tend to postpone for as long as possible. In addition, when a desktop refresh is carried out, rarely is this achieved in a manner that facilitates the ongoing support effort or indeed the inevitable requirement to replace the desktop operating system again at some point in the future.

Eurodata Systems has developed *Velocity* - a highly effective desktop deployment framework that ensures that desktop transitions can be completed rapidly and can deliver the promised benefits reliably and in an agreed timeframe. Not only does *Velocity* cater for organisations of all sizes, but – crucially – *it establishes mechanisms that enable both the maintenance and refreshing of the desktop on an ongoing basis*.

This document presents an overview of *Velocity* and details the processes that Eurodata Systems employs during these complex migrations, as well as explaining the key deployment options that an organisation would be faced with during a desktop migration project. The following areas will be discussed in this document:

- **Desktop Deployments Past, Present and Future** – A look at traditional problems associated with a desktop rollout
- **Eurodata Systems' *Velocity*** – Eurodata Systems' desktop deployment strategy explained
- **Velocity Phase Overview** – An overview of the *Velocity* project phases
- **Conclusion** – A summary and references to further information

5. Desktop Deployments Past, Present and Future

Microsoft has release six desktop operating systems in the last ten years:

- Windows 95 (1995)
- Windows NT 4.0 Workstation (1996)
- Windows 98 (1998)
- Windows Me (2000)
- Windows 2000 Professional (2000)
- Windows XP Professional (2001)

Excluding Windows Millennium Edition (Me) – which was targeted specifically towards home rather than corporate use – the list above illustrates that organisations that wish to employ the latest Microsoft desktop operating system would be required to carry out a desktop refresh *every two years* over the past decade. Microsoft's successor to Windows XP – *Windows Vista*[1] is scheduled for release to manufacturing (RTM) in the summer of 2006[2]. This can be seen as a somewhat depressing prospect for organisations that have yet to make widespread use of the current offering – Windows XP. However, Windows XP has been available for four years and as such this raises a question: why do organisations postpone the desktop refresh?

The reality, for most organisations, is that even the idea of carrying out a desktop refresh every two years represents an unwanted proposition at best, and a practical impossibility at worst. There are a good number of reasons for this, for example:

- A deployment cycle for some organisations may physically take longer than 2 years
- Return on Investment (ROI) may not have been recouped from previous desktop refresh(es), making another refresh politically unattractive
- The previous refresh may have only recently finished or may indeed still be underway
- A refresh introduces a cost 'spike' that may well draw upon more that 2 years' IT budget

To compound these *organisational* considerations, a number of very real *technical* barriers also exist that have traditionally proven very difficult to address, as discussed next.

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[1] *Windows Vista was previously known as* Longhorn.

[2] *Information correct at date of publication. Eurodata Systems accepts no responsibility for any future changes of release date*

5.1. Why We Dread the Desktop Refresh?

From a technical perspective, a number of challenges exist that must be overcome before any desktop refresh can proceed: desktop PCs will typically host user data locally – in the form of user data files and also application configuration settings – that must be retained during any upgrade. A mechanism must therefore be developed that allows *valuable* local data to be identified and retained during the upgrade procedure. Developing such a mechanism is not a simple proposition.

Organisations must determine whether their current network and desktop infrastructure is capable of supporting the increase in demands that each new operating system invariably presents. For example:

- PCs typically require more RAM, hard disk space and processing power in order to support each new operating system released
- Large amounts of network bandwidth are also required if a new operating system is to be distributed over the network, especially if multiple installations are to occur in parallel

Aside from local data and performance issues, arguably the single largest challenge that organisations face when considering performing a desktop upgrade concerns application compatibility and a number of questions must be considered:

- Will current applications work with the new operating?
- What action should be taken if applications are found to be incompatible?
- Perhaps more fundamentally, is the business actually aware of which applications are currently employed throughout the organisation? If not, how can this information be gathered?

Traditionally, organisations have struggled to address these concerns in an effective manner.

These problems all contribute to a very inefficient desktop refresh that makes the exercise much more expensive and time consuming than is necessary. Worst of all, the very significant expenditure that organisations commit to the upgrade process is most often concentrated wholly on completing the current refresh; little, if any regard is given to the requirement to perform ongoing desktop maintenance operations – such as installing or removing applications – or to perform the next desktop refresh. In other words, there is very little return for the organisation on this outlay over the longer term.

5.2. The Need for a Standard Operating Environment

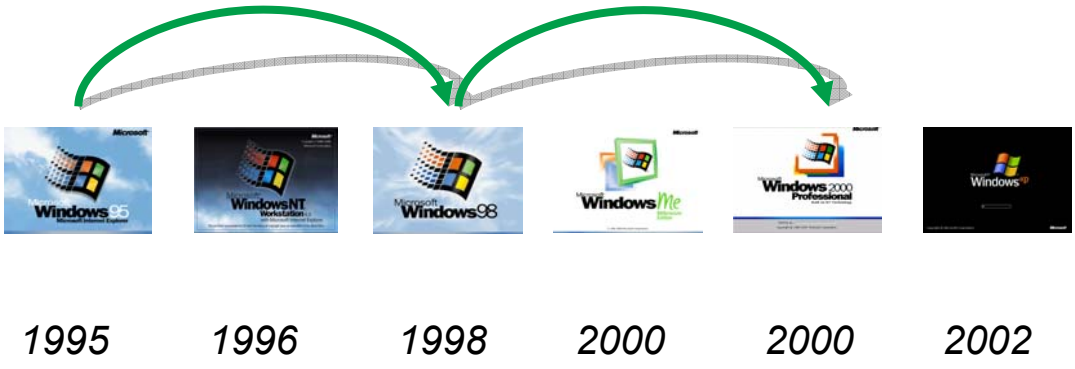
Many organisations run a mix of operating systems, rather than a single, standard operating system. This *diversity* promotes complexity in the desktop environment that increases demand for support skills and therefore increases associated support costs. As desktop diversity increases, the cost to the organisation increases in step. Gartner estimate that each additional operating system version in the desktop environment can

increase an organisation's TCO by £73–£110 per PC per year[3]. Furthermore, limiting Windows operating systems in deployment to the most current version (currently Windows XP) and the immediately prior version (Windows 2000 Professional) can reduce yearly TCO by up to £181 per PC[2].

Diversity in the installed base can arise due to a number of reasons: ad-hoc upgrades may be carried out across the user base on an 'as and when' basis, resulting in desktops that are one or more version out of step with each other. Also, if there is little automation when the initial operating system or applications are introduced, desktops are unlikely to evolve along standard paths. Furthermore, even if a single operating system *is* employed, it is crucial that it is deployed and maintained in an automated manner if uniformity is to be maintained.

5.3. The Reality

The desktop refresh issues introduced previously – coupled with the lack of a standard organisational desktop – have traditionally presented many organisations with problems that are very difficult to overcome. Given this, organisations determine to *postpone* desktop refreshes or to *forgo* certain operating system versions altogether; companies would rather go without certain operating system versions rather than suffer the pains they have come to associate with the rollout process.



Skipping operating systems in this way and also *delaying their introduction means that organisation's are missing out on technology benefits*, which often translates to a loss in competitive advantage. Also, delaying refresh projects does nothing to address the perennial issues that a desktop refresh presents or to mitigate the associated cost 'spike'.

As mentioned previously, Windows Vista is currently scheduled for release to manufacturing in summer 2006. The successor – codenamed Blackcomb – is already in development. Eurodata Systems has developed *Velocity* to enable organisations of all sizes to address the desktop refresh challenges once and for all. *Velocity* enables organisations to adopt an ongoing strategy that enables the current Microsoft desktop operating system to be deployed and maintained centrally and in a highly automated fashion. *Velocity* is introduced and discussed next.

[3] *Source: Recommended Practices: Strategic Management of the PC Installed Base, Michael A Silver, Gartner Group*

6. *Velocity* Overview

Eurodata Systems' *Velocity* is a lifecycle management strategy for designing, delivering and managing a Microsoft desktop environment.

Velocity emerged from a development effort to employ existing Microsoft® *Lite-Touch Installation* (LTI) and *Zero-Touch Installation* (ZTI) technologies[4]. LTI is a desktop deployment solution that requires *some degree of manual interaction* during the operating system deployment; for example, it may be necessary to boot a client PC using a floppy disk before a deployment can commence. Zero Touch Installation is a more advanced strategy that *does not require interaction during deployment;* in order to achieve this high level of automation, ZTI employs sophisticated systems management software. It is estimated that – when properly employed – these tools can help reduce deployment tasks by up to 75%[5].

Eurodata Systems has defined and developed significant enhancements to LTI and ZTI, simplifying the deployment and provisioning of new desktop infrastructures. *Velocity* leverages commercially available technology to establish an infrastructure with the following features:

- Automated desktop discovery and auditing of hardware and software
- Creation and maintenance of a standard, organisational operating system image
- *Lite*- or *Zero*-Touch deployment (LTD/ZTD)
- Application testing and packaging
- Data preservation and migration during the desktop refresh process

Velocity provides organisations with a means to overcome the traditional technical problems associated with creating, deploying and maintaining a Microsoft desktop environment. Not only does *Velocity* allow desktop refreshes to be completed very rapidly, but it also supports the ongoing modification of the desktop in an automated and uniform manner. *Velocity* is not limited to supporting a single Microsoft operating system version, but instead provides a means to deploy and manage future operating systems, thus allowing for a very high return on investment.

[4] *For more information on Lite- and Zero-Touch technology, visit the Microsoft Deployment Centre website: http://www.microsoft.com/technet/desktopdeployment/depprocess/default.mspx*

[5] *Source: RealLive.net August 2004.*

6.1. Velocity Features

6.1.1. Standard Image

A tenet that is central to the *Velocity* strategy is the creation of a designed, standard desktop operating system image for distribution to all PCs. The image is customised to meet the functional and security requirements of the organisation and is kept very 'light' in that only the operating system, service pack, drivers and necessary hotfix files are included. By keeping the image separate from business applications, the image does not age quickly and does not therefore require frequent updating. A light image can also be deployed very rapidly and places less demand on network resources.

In designing an image for the business, the end user experience with the operating system is one that has been anticipated and can be readily catered for in terms of support provision. This also drastically limits diversity in the desktop in order to reduce TCO dramatically.

6.1.2. Packaged Applications

Velocity provides a means by which organisational applications are 'packaged' in such a way that allows them to be dynamically installed and removed from PCs without the requirement for manual intervention. This greatly reduces the burden that would otherwise rest with a helpdesk support function and also maintains uniformity across the desktop by ensuring installations are performed to a common standard.

6.1.3. Dynamic Desktop Configuration

Each end user 'experience' can be thought of as being determined by three components:

- The standard operating system image design
- The applications installed
- The configuration of operating system and application settings

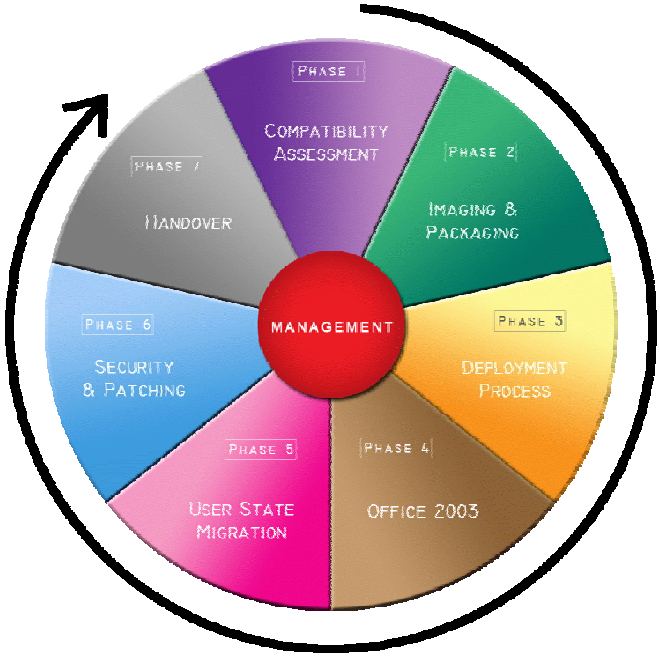
After the standard image has been deployed to users, *Velocity* allows applications to be installed and for configuration settings to be applied automatically according to each user's affiliation with various organisational groups and departments. This configuration is entirely *dynamic* – if a user moves between groups or departments then their desktop can be reconfigured entirely automatically by making a simple administrative change to reflect the move.

6.1.4. User Data Preserved

As mentioned previously, user data is typically stored on desktops in two formats: user files and configuration settings. *Velocity* allows for all user data to be identified, backed up and reapplied seamlessly after the desktop image deployment completes. Each PC's 'personality' is thus retained and carried forward to the new operating system.

7. Velocity Phase Overview

This section presents an overview of the various phases and activities that Eurodata Systems has identified as being necessary in order to successfully complete a rapid desktop deployment. These phases are summarised in the graphic below and are described next.



7.1.1. Phase 1 - Compatibility Assessment

Back Office Inventory and Remediation

Understanding the network environment is critical for any project that introduces change. As part of the planning and preparation phase, the current status of the organisation's environment must be thoroughly understood. Any current infrastructure and server issues must be identified and addressed before the migration commences. For this reason, the server and networking environment is audited and any necessary remediation work that is required to support the desktop deployment is identified.

Front Office Inventory and Remediation

Companies can have hundreds of line-of-business applications installed across distributed networks. To ensure that these applications are compatible with a new operating system, it is essential that these applications are tested against the new platform. Compatibility problems with one or more of these applications can cause costly work stoppages and impact the organisation's operations. The following steps are therefore carried out to address this risk:

- Perform an inventory of software assets in the organisation to build an application Compatibility Testing Plan
- Test the organisation's business critical applications for compatibility with Windows XP SP2 and Microsoft Office Access 2003
- Identify workarounds and updates for incompatible applications
- Deploy application compatible updates
- Inventory of hardware assets and identify any remediation required to support the desktop deployment

7.1.2. Phase 2 – Imaging and Packaging

By developing an operating system 'baseline' for the computing environment, organisations have a known and fixed configuration for deployment, which lowers the cost of ongoing support, troubleshooting, and other operations. An *imaging* process allows a standard operating system build to be developed that includes the operating system and (optionally) core applications and any additional company requirements that should be included in a workstation deployment.

The Imaging phase therefore involves carrying out the following steps:

- Build a client-standard image for deployment
- Test the image in a controlled pilot program
- Use appropriate tools and utilities to deploy the desktop
- Manage the image lifecycle

Packaging involves converting applications into a format that supports an automated, hand-off installation in keeping with the Lite- and Zero-Touch methodologies for operating system deployment. Packaged applications can be incorporated into the core desktop image or distributed at a later date.

7.1.3. Phase 3 - The Deployment Process

Deployment planning and pilot testing should be part of any development process. Deployment processes will differ primarily around the technologies used for the deployment. There are two options available to assist the deployment phase as described in the introduction:

- '*Lite-Touch*'
- '*Zero-Touch*'

In order to ensure that users are engaged throughout the deployment process, Eurodata Systems advises the use of technology 'clinics' and showcases to demonstrate the technology and answer user questions ahead of the migration. Furthermore, users attend just in time' orientation training before they are migrated in order to maximise the relevance and effectiveness of the training.

7.1.4. Phase 4 - Office 2003

Office 2003 is an integral part of the business desktop. As a core application, many organisations will opt to include Office 2003 in a desktop image. Alternatively, it may be deemed desirable to customise Office 2003 and deploy it by using Group Policy or a systems management solution. The following actions are therefore required:

- Identify upgrade issues
- Determine the installation process
- Customise Office 2003
- Deploy and maintain Office 2003

7.1.5. Phase 5 - User State Migration

The combination of users' data files and their operating system and application settings is called the *user state*. Settings include items such as desktop preferences and Web browser favourites. Migrating users' data files and settings means that those users will have minimal interruption after the deployment process. This is achieved by performing the following tasks:

- Capture and store user and application data
- Build the new desktop and install the client-standard image
- Restore user and application data to the desktop
- Deploy company standard group policy objects (GPOs) to the new desktop

7.1.6. Phase 6 - Security and Patching

For most organisations, securing the computing environment is the IT department's highest priority. When deploying new operating systems or computers, making sure that the new deployments are at least as secure as the current environment is critical. By using constantly updated baselines and images, it is possible to keep the environment secure while still allowing rapid deployment of new workstations. It is therefore necessary to:

- Determine the most appropriate security configuration of the desktop
- Devise a strategy for managing security updates and maintaining desktop security on an ongoing basis

7.1.7. Phase 7 - Handover and Review

In order to support the handover phase, formal, tailored training is delivered to the organisations support staff to complement technical skills transfer that takes place *throughout* each of the previous project phases. In addition, a technical documentation library is completed that provides a full record of the technical configuration for future reference.

It is essential that the desktop deployment project meets the technical and business requirements that were identified at the project outset. The project review presents the opportunity to revisit the original objectives and to ensure that they have been met in order to ascertain the degree of success that the project attained.

The client may wish to also take the review session as an opportunity to survey the satisfaction of users and support staff in order to influence ongoing development of the new desktop. Timely liaison with the appropriate people will direct ongoing support and upgrade decisions.

8. Conclusion

Eurodata Systems has leveraged existing technologies and has integrated them with a proven project methodology to create *Velocity*.

Velocity is a ***high-speed; low-risk; high-return*** solution that offers organisations a cohesive strategy that addresses the perennial problems associated with desktop deployment and management. *Velocity* allows a desktop operating system and business applications to be packaged and distributed to PCs using Lite or Zero-Touch technologies. In this way, *Velocity* enables organisations to:

- Create a software and hardware inventory to assist in deployment planning
- Test applications for compatibility with the new operating system and mitigate compatibility issues discovered during the process
- Customise and package core and supplemental applications
- Automate desktop image creation and deployment
- Ensure that the desktop is updated to improve security within the environment
- Manage processes and technologies to produce a comprehensive and integrated deployment

The solution is completely Microsoft-compliant, ensuring the seamless deployment of Windows XP and subsequent releases in an automated fashion. This means that the overall cost is far lower compared with traditional, manual deployment methods. This automated technology approach also enables multiple system deployments to occur in parallel, greatly reducing the overall length of traditional deployments which are often vastly expensive or limited by the availability of personnel.

Eurodata Systems has created *Velocity* using a modular framework that ensures it is relevant to organisations of all sizes, regardless of whether a systems management product is already employed.

Velocity manages change in a way that minimises business disruption. In adopting the technologies and processes that *Velocity* delivers, organisations are able to realise a rapid return on their investment while also setting new standards for reliability, performance, security, and ease of use of the desktop going forward.

9. About Eurodata Systems Plc

Eurodata Systems has become one of the few truly end-to-end service providers. Established in 1990, the company is now a mature business with more than 100 highly-skilled technical professionals offering solutions across the complete IT spectrum from network audit to full network security.

The company's end-to-end capability allows clients to pick and choose from an unrivalled range of skill sets and expertise. A single point of contact saves you time, effort and money, eliminating the problems of dealing with multiple service providers, warranties and agreements.

Eurodata Systems develops and implements comprehensive IT strategies and integrated business solutions to help organisations make a successful transition to new technology.

As one of only a few IT services companies to achieve the prestigious duel competency status of *Microsoft Gold Certified Partner for Advanced Infrastructure; Security Solutions and Networking Infrastructure Solutions.* With years of experience in designing, implementing and supporting complex Microsoft environments Eurodata Systems has a complete end-to-end understanding of these world-leading applications, and advise our clients on how they can gain maximum business benefit through their professional implementation and management.

Eurodata System offers core services for the following solutions:

- Operating System Migration
- Active Directory Design
- Messaging and Collaboration Solutions
- Mobile Solutions
- Security
- Ongoing Support
- Management Solutions

9.1. Project Methodology

Introducing successful change means identifying the processes that will transform organisational performance, gaining the commitment of people and developing the right technology solution. Our "People, Process and Technology" approach ensures an effective environment for change.

Eurodata delivers business benefit to clients through its close working partnership with Microsoft, an in-depth knowledge of the Microsoft infrastructure solutions technology and a refined implementation methodology developed over many years. This tried and tested methodology ensures a smooth and seamless transition that minimises business disruption, from concept through to solution delivery and support. Eurodata Systems manages your solution through four straightforward phases:

- **Analysis**
- **Design**
- **Implementation**
- **Review**

The key to a successful deployment is in the preparation. Eurodata Systems' comprehensive planning process will establish a sound definition of the work to be performed and generate a solid understanding of the commitments to be undertaken before work commences. As always the focus is on the business enablers of the technology, rather than a technical functionality. Deployment projects are always driven by commercial needs.

Eurodata Systems project methodology includes proven risk minimisation techniques incorporated into the management of each of the complex elements that make up a project. Eurodata employs a simplified Prince 2 project management methodology that identifies the following key elements, collectively referred to as *RAID*:

- **Risks**
- **Assumptions**
- **Issues**
- **Dependencies**

Eurodata Systems draws on more than 15 years' experience of delivering IT solutions to ensure each migration project is completed smoothly and successfully. The company's Consultancy and Engineering teams comprise of IT professionals with multi-faceted skills as well as industry and professional accreditations that span numerous disciplines. Knowledge transfer is an essential part of the migration project – by ensuring clients have the appropriate post installation knowledge, skill set and system management capability.

Eurodata Systems complete end-to-end migration expertise includes:

- **Flexible, scalable and manageable solutions**
- **A tried and tested migration methodology**
- **A focus on delivering business benefits, not just technological functionality**
- **Tailored support contracts to meet clients' precise needs**
- **Automated and escalated helpdesk facility**
- **Microsoft Gold Certified Partner for Advanced Infrastructure; Security Solutions and Networking Solutions with access to Microsoft resources and early product information**

Eurodata Systems commitment to its clients does not end when implementation is complete. The importance of continuous support is underlined with a comprehensive portfolio of end-to-end services designed to give you flexible support whenever you need it.

9.2. Partnerships and Accreditations

Eurodata Systems have built strategic relationships with all the leading IT vendors and have achieved some of the industry's toughest accreditations, so you can be confident of receiving qualified, independent technical advice.

Some of Eurodata Systems key partnerships and accreditations include:

- **Microsoft Gold Certified Partner for Advanced Infrastructure; Security Solutions and Networking Infrastructure Solutions**
- **HP Enterprise Partner**
- **Cisco Elect and Premier Partner**
- **Whale Communications Master Partner**
- **Check Point Consulting Partner**
- **CHECK Accredited**
- **ISO 9001 compliant**

10. Further Information

Working with our clients, we have found more and more the need for precise and relevant information that is easy to digest whether you are a non technical business decision maker or an IT Director who doesn't have the time to wade through mountains of technical and business links on new Microsoft technologies.

For these reason we have developed a number of precise information guides, please visit our website for further information. www.eurodatasystems.com