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## **ROI CASE STUDY MICROSOFT VISUAL STUDIO TEAM SYSTEM EDS**

### **THE BOTTOM LINE**

**EDS used Microsoft Visual Studio Team System to support a more efficient global development strategy, realigning its internal software development assets and improving the productivity of its developers and testers.**

**ROI: 286%**

**Payback: 4 months**

### **THE COMPANY**

Electronic Data Systems Corporation (EDS) is a global provider of information technology and business process outsourcing services. EDS's infrastructure services business delivers hosting, desktop, storage, security, privacy, and communications services. The company's applications services business helps organizations plan, develop, integrate, and manage custom applications, packaged software, and industry-specific solutions. EDS also provides business process outsourcing services. Publicly held, EDS has 117,000 employees and is headquartered in Plano, Texas.

### **THE CHALLENGE**

EDS had originally trained and developed its staff so that operations in each city and geography had staff with generalized expertise in all development areas, but in 2005 it reviewed its operations and found its strategy created inefficiencies:

- In order to be generalists, developers were spending too much time both learning development languages, including Java, .NET, and C++, and keeping up to date with new enhancements in these languages.
- Developers also lost productivity as they switched between development languages when transitioning from one assignment to the next.

### **THE STRATEGY**

EDS decided to develop several dozen centers of excellence for developers, with each center focused on a particular development skill set or programming language. Multiple geographically-distributed centers were devoted to each key language such as Java or .NET, so development could take place on a 24 by 7 global basis, and so EDS could use the most cost-effective development talent available for a project. Within the new model, EDS planned eight centers of excellence for .NET development.

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EDS wanted to include in the new model a tool that would support the realignment of .NET development staff and enable improvements in uniformity, collaboration, and productivity across the centers of excellence. EDS decided to invest in Microsoft Visual Studio Team System because it would be able to support .NET, integrate well with other Microsoft applications in the development sites, and migrate seamlessly with those applications.

EDS spent four months deploying Microsoft Visual Studio Team System. The team set up server facilities that would support the eight centers of excellence by storing the Visual Studio Team System Application and all project-related source code, artifacts, and work items. Major server facilities were set up to support the Americas, Europe, and the Asia Pacific region. In order to minimize hardware costs, the servers were virtualized. When a project is started anywhere in EDS's global footprint, the project manager is assigned virtual server space for all project-related assets.

Using a Microsoft consultant, EDS staff performed a week of training in each of the new centers of excellence. During the training, developers were taught how to use Visual Studio Team System and were also shown how the new strategy would improve their productivity and ability to do their jobs.

Microsoft Visual Studio Team System has been fully operational at EDS since August 2006. Although virtually all new projects are developed in the application, existing projects are not necessarily transitioned. Because some developers continue to work on old projects, the adoption is rolling and approximately 300 of the 600 developers in the .NET centers of excellence are now using Visual Studio Team System. EDS expects adoption to be complete in late 2008.

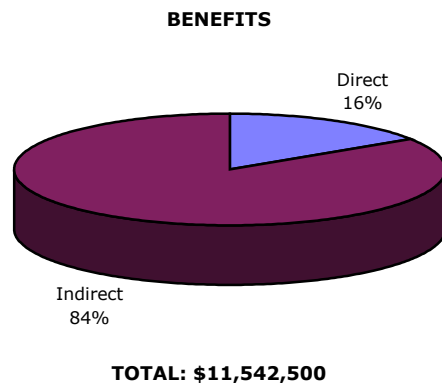
**KEY BENEFIT AREAS**

Deploying Microsoft Visual Studio Team System in EDS's .NET centers of excellence has enabled the company to improve the productivity of its developers and project managers. Key benefits from the solution include:

- Improved developer productivity. The 300 developers who have adopted Microsoft Visual Studio Team System are 10 percent more productive because they now spend less time switching between development languages, fixing defective code, and being trained on various languages. Microsoft Visual Studio Team System has made developers more productive in several areas:
  - > Code repair. Developers at EDS use Microsoft Visual Studio Team System's unit testing feature — which tests the functionality of a component within a program — to improve the quality of their code before integrating it with other project-related code. As a result, they spend less time rewriting defective source code.
  - > Training. Because Microsoft Visual Studio Team System enables EDS developers to specialize in .NET, they no longer spend time in training so that they can learn other languages or new enhancements in other languages. Now their training is limited to new developments and techniques in .NET.
  - > Collaboration. Before the deployment, developers tracked and received their new development assignments by attending meetings, reading e-mails, or having face-to-face discussions with project managers. Now



Visual Studio Team System's work-item tracking feature enables developers to view a real-time list of their assignments without leaving the application. Additionally, because the application is used by project managers across EDS's global footprint, developers can work on more projects at a given time, and are always able to take on a new task if there is downtime on another project.

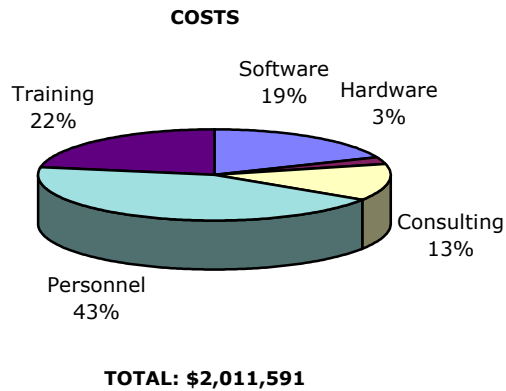


- Improved project manager productivity. Microsoft Visual Studio Team System has been adopted by 50 managers of .NET projects and, as a result, they are 10 percent more productive. Productivity improvements for both developers and project managers have shortened project cycle times, enabling them to manage more projects at a given time. The company has been able to increase the number of projects managed without hiring any new project managers. Specifically, Microsoft Visual Studio Team System enabled project managers to complete the following tasks more efficiently:
  - > Project start up. Before the deployment, starting a project was labor-intensive for project managers, who had to spend time building a team, acquiring server space, and locating available developers and testers. Now Visual Studio Team System tracks the availability of all of these assets and rapidly allocates resources when a new development project starts.
  - > Work-item tracking. Like developers, project managers use work-item tracking in Visual Studio Team System to allocate assignments within the application and spend less time exchanging e-mails, running meetings, or walking around a site to get updates.
  - > Troubleshooting. Problem management, debugging, and quality control are also easier because every piece of work is associated with an individual developer and work item, so managers can troubleshoot more rapidly.

### **KEY COST AREAS**

Key cost areas for the deployment included personnel, training, software, consulting, and hardware. Personnel costs included internal and external personnel for the deployment as well as ongoing support by several employees. Training consisted of the costs of performing onsite training of 600 employees at the eight .NET centers of excellence. Software costs included Microsoft Visual Studio Team

System seats for all users. Consulting consisted of external consultants, one of which was from Microsoft, who assisted with the deployment. Hardware consisted of costs paid to an internal business unit at EDS for hosting Visual Studio Team System.



### **LESSONS LEARNED**

Careful attention to standards and training was important to the success of the Visual Studio Team System deployment. The deployment team examined projects and project management practices at different EDS locations to establish detailed standards so reporting and resources allocation was uniform and consistent. Because EDS's change had a significant cultural impact, EDS focused on both initial and ongoing training to ensure user adoption: onsite training introduced the new system and Web-based online training, access to Microsoft's database of hints and tips, and other resources reinforced the use of standard practices on an ongoing basis.

### **CALCULATING THE ROI**

Nucleus calculated the costs of software, hardware, consulting, personnel, training, and other investments over a 3-year period to quantify EDS's total investment in Microsoft Visual Studio Team System. Direct benefits consisted of avoided new hires of project managers that would have been necessary if the company had not deployed Microsoft Visual Studio Team System. Indirect benefits consisted of the improved productivity of developers and were calculated based on the average fully loaded cost of developers.

Not quantified was the benefit of extending the deployment to the rest of the company's development environment — which is expected in 2008, when all existing projects will be completed and all new projects will be launched using the system. Extending the benefits of the solution to all 1,700 employees in the development environment would significantly increase the ROI.

*Nucleus Research is a global provider of investigative technology research and advisory services. Building on its unique ROI case study approach, Nucleus Research delivers insight and analysis on the true value of technology and strategies for maximizing current investments and exploiting new technology opportunities. For more information or a list of services, visit [NucleusResearch.com](http://NucleusResearch.com), call +1-781-416-2900, or e-mail [info@NucleusResearch.com](mailto:info@NucleusResearch.com).*

# DETAILED FINANCIAL ANALYSIS

## EDS

### SUMMARY

Project:	<b>Microsoft Visual Studio Team System</b>
Annual return on investment (ROI)	<b>286%</b>
Payback period (years)	<b>0.35</b>
Net present value (NPV)	<b>3,442,726</b>
Average yearly cost of ownership	<b>670,530</b>

<b>ANNUAL BENEFITS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Direct	0	607,500	607,500	607,500
Indirect	0	3,240,000	3,240,000	3,240,000
<b>Total Benefits Per Period</b>	0	3,847,500	3,847,500	3,847,500

<b>DEPRECIATED ASSETS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	233,450	0	0	0
Hardware	0	0	0	0
<b>Total Per Period</b>	233,450	0	0	0

<b>DEPRECIATION SCHEDULE</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	0	46,690	46,690	46,690
Hardware	0	0	0	0
<b>Total Per Period</b>	0	46,690	46,690	46,690

<b>EXPENSED COSTS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	0	46,690	46,690	46,690
Hardware	0	17,000	17,000	17,000
Consulting	260,000	0	0	0
Personnel	72,000	270,000	270,000	270,000
Training	445,068	0	0	0
Other	0	3	0	0
<b>Total Per Period</b>	777,068	333,693	333,690	333,690

<b>FINANCIAL ANALYSIS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Net cash flow before taxes	3,513,808	3,513,810	3,513,810
Net cash flow after taxes	1,780,249	1,780,250	1,780,250
<b>Annual ROI - direct and indirect benefits</b>			<b>286%</b>
Net cash flow after taxes (direct only)	160,249	160,250	160,250
Annual ROI - direct benefits only			26%
<b>Net present value (NPV)</b>			<b>3,442,726</b>
<b>Payback (years)</b>			<b>0.35</b>
Average annual cost of ownership			670,530
3-year IRR			281%

### FINANCIAL ASSUMPTIONS

All government taxes	50%
Discount rate	15%