



## Software Consultancy Improves Development Lifecycle and Predictability

### Overview

**Country or Region:** Western Europe  
**Industry:** IT Consulting

### Customer Profile

Info Support provides IT training and consulting for Western European enterprises in the finance, insurance, banking, and retail sectors.

### Business Situation

Info Support wanted to improve customer experience with its software factory Endeavour.

### Solution

Info Support customized and extended Microsoft® Visual Studio® Team System, making it the new “engine” behind the Endeavour software factory.

### Benefits

- Reduced complexity and improved predictability
- Better communication and collaboration
- Customizability and extensibility
- Ability to focus on the customer and innovation

“[Visual Studio] Team System ... allows us and our customers to have a better measurement of how time is spent and to make better predictions for future projects—even do fixed-price projects.”

Marcel De Vries, IT Architect, Info Support

Info Support provides tools and expertise to improve software development. The Info Support software factory, called Endeavour, helps enterprise development teams accelerate software development and better manage the software development life cycle. Although Endeavour is widely deployed, Info Support nevertheless wanted to improve customer experience and enable IT departments to provide fixed-price projects. Working with Microsoft® Visual Studio® Team System, Info Support is integrating Endeavour with Visual Studio Team System by making it the new “engine” for Endeavour. To make the integration seamless and provide all existing functionality in a single suite, Info Support is extending and customizing Visual Studio Team System capabilities. Software teams see a far superior, end-to-end development lifecycle and increased productivity. With an integrated, collaborative software factory environment, Info Support and its customers enjoy the quality assurance and cost predictability they need.

## Fast Facts

<b>Endeavour original code base</b>	505,869 lines of Microsoft Visual C#® code, 1,853 files
<b>Replaced code by Team System counterpart</b>	113,827 lines of Visual C# code, 487 files
<b>Development environment</b>	<ul style="list-style-type: none"><li>■ Microsoft Visual Studio Team System<ul style="list-style-type: none"><li>– Integrated Development Environment</li><li>– Visual C#</li><li>– Visual Basic® .NET</li><li>– Unit Test</li><li>– Web Test</li><li>– Code Analysis</li><li>– Class Designer</li></ul></li><li>■ Microsoft Visual Studio 2005 Team Foundation Server<ul style="list-style-type: none"><li>– Source Control</li><li>– Build</li><li>– Data Warehouse</li><li>– Work Item Tracking</li></ul></li></ul>
<b>Development language</b>	Microsoft Visual C#
<b>Project team</b>	<ul style="list-style-type: none"><li>– 2 architects</li><li>– 4 developers</li><li>– 1 product manager</li><li>– 1 project manager</li></ul>
<b>Time to develop</b>	Ongoing

## Situation

Info Support is an IT consultancy and training institute that serves top-500 and multinational companies primarily in the finance, insurance, banking, and retail sectors within Western Europe. Info Support has been in business nearly 20 years and employs 250 people. Its annual turnover for 2004 was more than €20 million. Info Support is a Microsoft® Gold Certified Partner.

Info Support consolidated much of the company's theoretical knowledge and practical experience related to the software product lifecycle in a software factory called Endeavour. Endeavour is currently targeted at developing service-oriented, administrative enterprise applications for organizations such as banks, insurance and healthcare companies, and government agencies.

With the goal of reducing development costs and increasing developer productivity, Endeavour provides models, prescriptive guidance, best practices, standard software building blocks, and specialized tools to help programming teams accelerate software development and better manage the software development lifecycle.

Endeavour was built using the Microsoft Visual Studio® .NET 2003 development system and was based on open source solutions, including NAnt and NUnit, and on "homegrown" tools.

Endeavour was deployed at several large insurance companies and in several government departments in the Netherlands, including the ministry of defense. Although Endeavour is highly popular and widely deployed, Info Support wanted to enhance customer experience by replacing many individual and one-off tools and databases with a single, integrated environment. Info Support also wanted to enable customers to deliver fixed-price projects.

## Solution

When Microsoft announced the release of Microsoft Visual Studio Team System, Info Support realized the synergy between Visual Studio Team System and the company's own product and approach to software development.

Visual Studio Team System expands the Visual Studio product line to include new software lifecycle tools for operations managers, architects, testers, project managers, and developers. Visual Studio Team System reduces the complexity of delivering service-oriented applications and facilitates communication among members of a software team.

According to Raimond Brookman, IT Architect at Info Support, "In Visual Studio Team System, new types of relationships are supported, such as linking specific work items to specific source changes. These things were hard to do in previous environments."

Info Support developers are using a beta release of Visual Studio Team System to:

- Migrate Endeavour to the Microsoft .NET Framework 2.0, an integral component of the Microsoft Windows® operating system that provides a programming model and runtime for Web services, Web applications, and smart client applications.
- Customize and extend Visual Studio Team System and apply it to the development of the upcoming releases of Endeavour. In so doing, Visual Studio Team System becomes the new "engine" behind the Endeavour software factory.

A team of eight at Info Support is working on the project. The team consists of two architects, four developers, one product manager, and one project manager.

“...[W]e think enterprise customers need a software factory like Endeavour integrated with a development system like Visual Studio Team System.”

Raimond Brookman, IT Architect, Info Support

“We want our customers’ experience to be as seamless and productive as possible,” remarks Marcel De Vries, IT Architect at Info Support. “When we heard that Visual Studio Team System provided an integrated daily build, bug tracking, and a data warehouse, we knew we wanted to incorporate those tools into our own toolset as much as possible. That way, our customers could keep working with both Visual Studio and Endeavour, gain a richer development experience, and keep working the way they are used to working.”

Info Support has done a lot of proof-of-concept work and is currently developing a version of Endeavour with capabilities built around Visual Studio Team System. It is slated to release in November 2005.

In concert with the release of Microsoft Visual Studio 2005 Team Foundation Server, Info Support will release a second version of Endeavour that also includes powerful functionality supported by the Visual Studio Team Foundation Server bits.

#### **Support for New Functionality**

Info Support is using tools provided by Visual Studio Team System to replace or extend existing tools in Endeavour, including:

- **The build system.** Info Support had a build system based on NAnt. Info Support embraced and extended MSBuild and Team Build, part of Team Foundation Server. “Now with the new product, we will create a build engine using Team Build from [Visual Studio] Team System, but extended with all kinds of extra features,” remarks Brookman. “The main reason we use MSBuild in favor of NAnt is integration. With NAnt, compilation and so on had to be done by using an Add-in, instead of the standard Visual Studio build button. With MSBuild, seamless integration of the new functionality is possible.” Figure 1 shows

various Build Reports in the Endeavour software factory.

- **Work item tracking.** Visual Studio Team System work item tracking will replace the Endeavour bug tracking system. Previously, developers had to leave Visual Studio and access a Web site. Developers benefit from integrated work item tracking, and Info Support no longer has to support and maintain a separate, custom system.
- **The data warehouse.** Endeavour will use the data warehouse in Visual Studio Team System. The Visual Studio Team System data warehouse can be automatically adapted to other parts of the development system. Says Brookman, “When you change a work item definition, the change is automatically reflected in the data warehouse. In our previous version, these adaptations required a manual step. Furthermore, a lot of the data and reports we need are available out-of-the-box.”

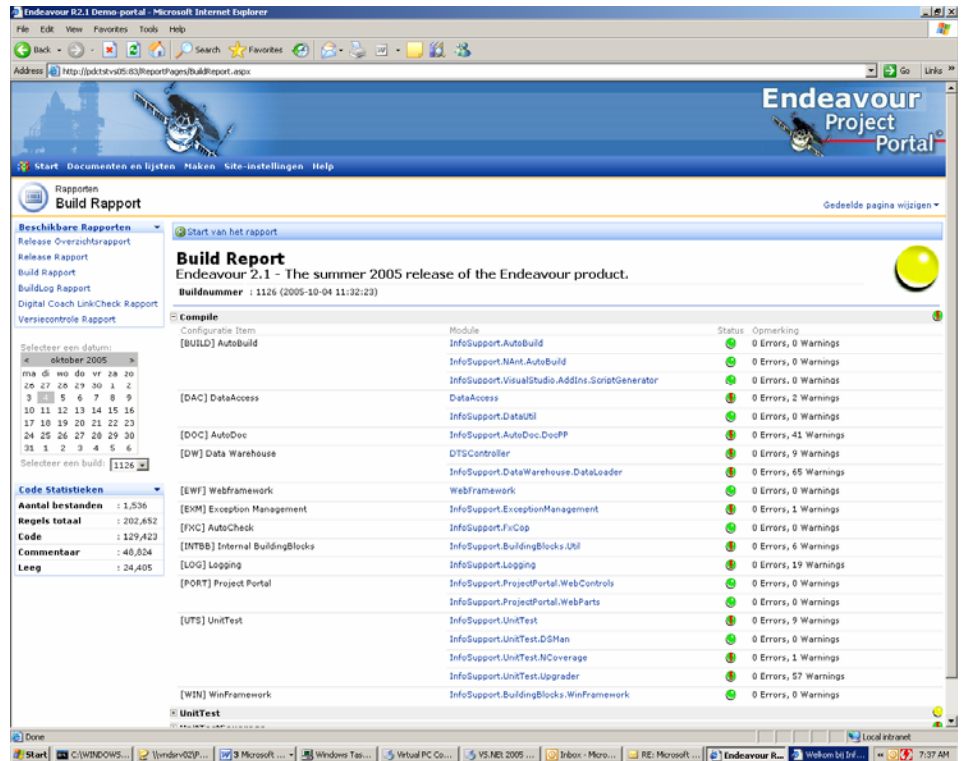
#### **Integration of Development Processes and Methodologies**

Info Support’s customers use a variety of software development methodologies including the Microsoft Solutions Framework (MSF), Rational Unified Process (RUP), and Extreme Programming (XP). Most customers use RUP, which is widely accepted among companies in the Netherlands, especially among large financial institutions. The Endeavour migration team is integrating Info Support’s own processes into Visual Studio Team System. “We are creating a custom methodology template for [Visual Studio] Team System. This template combines best practices from various methodologies,” remarks De Vries.

In addition, by using and extending the capabilities of Visual Studio Team System into Endeavour, Info Support is customizing or creating:

- Process guidance to incorporate Info Support best practices, which are a best-of-

Figure 1. View of a build report showing the details of each configuration item.



- breed approach. Info Support Guidance takes advantage of RUP, MSF, and XP.
- Process as described in the process guidance. The work items typically contain more states and a more elaborate flow.
- Document templates to enable Info Support to incorporate the templates that already have been in use for some years.
- Initial project areas and iterations to incorporate standard iterations from Info Support process guidance and also to define project areas that have a base structure as defined in Info Support's reference architecture.
- Project portal template to incorporate the look and feel from the current Endeavour version.
- Permissions and user groups based on roles that incorporate the roles defined in the process guidance.
- Additional data warehouse adapters for metrics to add data that, for example,

makes a distinction in code churn between comment lines and "real" code lines. Additional reports to show the data added to the data warehouse using custom adapters.

## Benefits

By migrating to and extending Visual Studio Team System, Info Support and its customers stand to reap huge rewards. By making Visual Studio Team System the engine for its software factory, Info Support avoids having to maintain some of the tools in Endeavour. "By migrating our custom-made tooling and open-source tooling to [Visual Studio] Team System we are able to save about 20 percent in development and maintenance efforts," says Richard Sweer, Professional Development Center Manager at Info Support. Customers gain from a familiar software factory that is tightly integrated with the Visual Studio integrated development environment, and from tools that help enable

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Marcel De Vries, IT Architect, Info Support

a complete and holistic software development experience.

### **Reduced Complexity and Improved Predictability**

Info Support developers benefit from tightly integrated tools, such as work item tracking and information source control. “We’re able to identify a bug, which source files were changed because of that bug, and link them together so that we know which of the source changes correlate to which work items,” says Brookman. “These integration aspects are a big plus for us.”

The tightly integrated tools in Visual Studio Team System help make software development more predictable and manageable, and lower the administrative burden for developers at Info Support and its customers.

“For instance, Visual Studio tracks things like the amount of time it takes to do a certain task. Developers don’t have to switch to another tool to report time-tracking. [Visual Studio] Team System and the fact that it has an integrated tool set allows us and our customers to have a better measurement of how time is spent and to make better predictions for future projects—even do fixed-price projects,” says De Vries.

Visual Studio Team System shares data and authentication mechanisms, delivering an unprecedented level of integration and security for lifecycle tools. A product foundation that integrates with Visual Studio Team System means less of an administration burden for users of Endeavour.

“When a customer is using the Endeavour software factory to create an application, there is less administrative maintenance for them,” remarks Brookman. “For instance, the customer has integrated security. In our

previous software factory, the user had to create a user account at the network level, on the source control database, and on the bug-tracking database. Now, the customer can create a single user account.”

### **Better Communication and Collaboration**

Microsoft Visual Studio Team System is tightly integrated, enabling development teams to enforce quality early and often. Visual Studio Team System uses proven practices and methodologies and facilitates communication among participants in the software development lifecycle.

Among enterprise organizations in the sectors they serve, De Vries and Brookman see two emerging trends:

- Dispersed, global development teams that need to overcome communication and cultural barriers, work closely and collaboratively, and share project files.
- Increasing realization of the need for established processes and process guidance.

“In the past, a lot of enterprise customers got away with not having fully defined processes, if any at all,” says Brookman. “Today’s global economy is forcing them to define processes and establish guidance. With processes and guidance in place, differences of location, culture, and language diminish, and globally dispersed teams work better together to develop winning projects more quickly and at lower cost. That’s why we think enterprise customers need a software factory like Endeavour integrated with a development system like Visual Studio Team System.”

To migrate and extend Endeavour, Info Support used Visual Studio Team Foundation Server. Visual Studio Team Foundation is an extensible team collaboration server that enables all members of the extended Info Support IT team to effortlessly manage and track the progress and health of projects.

“By Microsoft maintaining many of the tools we used to have to maintain ourselves, our maintenance cycle costs go down considerably. That means we can do more with the same number of resources.”

Raimond Brookman, IT Architect, Info Support

“What we really love is that Team Foundation Server integrates source control management, work item tracking, daily build, reporting, and data warehouse. Team Foundation Server exactly meets our needs to get a centralized view on all development projects that are running in our business,” states De Vries.

Team Foundation provides important information, such as project status and cost. Info Support especially appreciates the following Visual Studio Team System and Team System Foundation Server capabilities:

- **Source control.** “The source control environment keeps the sources safe, and it’s enterprise-ready. The source control environment for the .NET developer is a really big plus,” says Brookman.
- **Work item tracking.** “In Visual Studio Team System Team Foundation Server, we now have a work item tracking system that does more than track bugs. It also tracks work that needs to be done, giving individuals and teams greater insight into a given project,” remarks De Vries.
- **Tools and guidance to reinforce best practices.** “Integrated tools and guidance help reinforce best practices while easing the administrative burden on developers. The result is quality software,” comments Brookman.

Without any additional modifications, tools supplied by Visual Studio Team System help reinforce good software development practices—a benefit to Info Support and its customers.

“Our vision is to have a real guiding hand to help execute the development process in a way that it was intended to be done,” says De Vries, speaking from the perspective of a system integrator. “We believe that if we equip developers with easy-to-use tools, developers will rise to the task and be more

successful. [Visual Studio] Team System is instrumental in helping us do that.”

Based on experience so far, De Vries and Brookman foresee an adoption curve—but a short one—as developers grow accustomed to having Visual Studio Team System track their bugs and register the time spent resolving them, for example.

“But in no time at all, those developers will become [Visual Studio] Team System evangelists,” remarks De Vries. “The tools, such as integrated checklists, are there to help the developer, and the tools do what they are meant to do: make the developer’s job easier, improve the software design and development lifecycle, and deliver a superior product.”

#### **Customizability and Extensibility**

Info Support has its own customized processes and, because Visual Studio Team System can be customized and extended, it fit Info Support’s needs perfectly.

The process guidance templates, for example, can be edited manually with an XML editor. Info Support replaced the process guidance that Microsoft provides with its own process guidance. “It’s very useful that it’s so open, that you can edit some XML and incorporate your own processes within your process guidance,” remarks De Vries.

To integrate and extend Endeavour with Visual Studio Team System, Info Support coded new data warehouse adaptors, integrated work item tracking, and created a custom event listener that starts a new build within the Team Build environment when a check-in occurs.

“Thanks to the extensibility and customization of [Visual Studio] Team System, we can provide an even more integrated and productive software development experience,” says Sweer. “We

find that [Visual Studio] Team System is very flexible and easy to customize, helping to ensure more widespread adoption of [Visual Studio] Team System.”

### **Ability to Focus on Customer and Innovation**

Because Endeavour extends Visual Studio Team System and provides an integrated development experience, Info Support expects that customer satisfaction will soar.

“Our customers won’t have to switch around among multiple applications and tools. Everything will be in one place, easily accessible,” remarks De Vries. “Our customers benefit from an integrated development experience and, as a result, achieve greater productivity. Because we can now spend more time innovating, instead of maintaining tools, we can also create more business value for our customers.”

Brookman adds, “By Microsoft maintaining many of the tools we used to have to maintain ourselves, our maintenance cycle costs go down considerably. That means we can do more with the same number of resources. Plus, our development efforts can go toward adding cool new features. In the past, we had to code the ‘plumbing.’ With Microsoft providing all the plumbing, we can focus on innovating our Endeavour software factory, adding productivity features people need.”

Info Support and its customers will continue to benefit from Visual Studio Team System for years to come. “We plan to fully adopt [Visual Studio] Team System,” concludes De Vries. “All future development for the .NET Framework 2.0 will be done using [Visual Studio] Team System and the Endeavour software factory.”

## For More Information

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## Microsoft Windows Server System

Microsoft Windows Server System is a line of integrated and manageable server software designed to reduce the complexity and cost of IT. Windows Server System enables you to spend less time and budget on managing your systems so that you can focus your resources on other priorities for you and your business.

For more information about Windows Server System, go to:  
[www.microsoft.com/windowsserversystem](http://www.microsoft.com/windowsserversystem)

## Microsoft Visual Studio

Microsoft Visual Studio 2005 is the world's most popular development environment for designing, developing, and testing next-generation Windows®-based solutions and Web applications and services. By improving the development experience for Windows, the Web, mobile devices, and Microsoft Office, Visual Studio 2005 helps organizations deliver a variety of solutions more productively than ever before. Visual Studio Team System expands the product line with new software tools that enable greater communication and collaboration throughout the development life cycle. With Visual Studio 2005, businesses can deliver modern service-oriented solutions more efficiently.

For more information on Visual Studio 2005, go to:  
[msdn.microsoft.com/vstudio](http://msdn.microsoft.com/vstudio)

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### Software and Services

- Microsoft Windows Server System™
  - Microsoft Windows Server 2003
- Microsoft Visual Studio 2005
- Microsoft Visual Studio Team System
- Microsoft Visual Studio 2005 Team Foundation Server

### ■ Technologies

- Microsoft .NET Framework 2.0
- Microsoft Visual C#

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