



Microsoft Office Visio 2003 Customer Solution

Case study

Vodafone Italia Ensures the Integrity of Its IT System Diagrams While Increasing Employee Productivity

“With Visio 2003 and the Integrity Checker add-on, we can create consistent IT system diagrams and easily manage them. Time that was previously spent on manually guaranteeing the consistency of system diagrams is now dedicated to more valuable systems analysis activities.”

Stefania Rosso

IT Architect
Vodafone Italia

Creating accurate, consistent, and easy-to-understand documentation for information technology (IT) systems is a core business goal for successful mobile telecommunications companies. Vodafone Italia is working with IrisCube S.p.A. and implementing Microsoft® Office Visio® 2003 to ensure its IT system documentation meets those criteria. Systems analysts in the Architecture group within the IT department at Vodafone Italia use Visio 2003 and the Integrity Checker add-on—developed by IrisCube—to diagram complex IT systems with custom-made Visio SmartShapes® symbols. The resulting diagrams are uniform and easy for anyone from IT management to technicians to understand at a glance. With the Integrity Checker add-on, analysts can also connect a diagram to a database and check the integrity of the diagram every time it’s modified. The result is accurate, error-free documentation that lowers the cost of operation at Vodafone Italia and increases the productivity of employees, who can in turn spend less time on diagram maintenance and more time on designing viable Vodafone systems.



CUSTOMER PROFILE	BUSINESS SITUATION	SOLUTION	BENEFITS
Vodafone Italia is part of the Vodafone Group, a world leader in the mobile telecommunications sector. The Vodafone Group operates in 26 countries and has more than 119 million customers. Headquartered in Corsico, Vodafone Italia has more than 10,000 employees, and its mobile telecommunications networks cover more than 97 percent of Italy.	The Architecture group within the IT department at Vodafone Italia needed to visualize the department’s support systems. It needed to not only diagram those systems, but also check the integrity of the diagrams when creating or updating them. It also wanted to store the diagram data in a central repository where team members in the group could access, view, and modify it.	With Integrity Checker, an add-on created for Microsoft® Office Visio® 2003, software analysts can use custom-made Visio SmartShapes® symbols to quickly and easily diagram application systems enterprise-wide and store the diagram data in a central repository. In addition, after analysts modify a diagram, they can automatically check the integrity of it to reduce errors.	<ul style="list-style-type: none"> Increases efficiency and employee productivity by automating diagramming tasks Lowest the cost of operation by reducing costly errors in IT documentation



“Developing with state-of-the-art Microsoft .NET technology made it easy for us to fulfill all the needs of Vodafone Italia without a lot of programming code. It was easy for us to write code that connects great-looking Visio shapes to powerful database records, and then checks diagram modifications against Vodafone system rules to ensure the integrity of the system.”

Massimo Vitali

Senior Project Manager
IrisCube S.p.A.

Situation

Vodafone Italia is part of the Vodafone Group, a world leader in the mobile telecommunications sector. With mobile telecommunications networks that cover more than 97 percent of Italy, Vodafone Italia offers its customers comprehensive coverage using the most advanced and innovative technologies available.

Vodafone Italia also strives to provide its employees with innovative products so they can be as productive and efficient as possible. The Architecture group within the Information Technology (IT) department at Vodafone Italia needed such a product. Among the group’s responsibilities are designing and documenting the organization’s high-level IT system architecture. The group used to diagram only a few systems using pen and paper or products that weren’t designed for the task, which made diagramming those systems cumbersome and time-consuming.

Vodafone Italia management recognized the software analysts in this group needed a diagramming tool they could use to accomplish some very specific technical diagramming tasks: document the process and data flow among applications, software modules, databases, and logical components within an enterprise system in a consistent, easy-to-understand manner, and then check the integrity of the system.

The analysts also needed the ability to easily customize and modify diagrams as Vodafone Italia systems evolved while ensuring the integrity of each diagram every step of the way. They wanted not only to diagram the systems, but also to store the data in the diagrams in a central repository that IT team members could access. Finally, they needed a way to easily share the diagrams with other team members throughout the department and employees in other areas of the company.

Solution

To meet these needs, Vodafone Italia turned to IrisCube S.p.A.—a Microsoft® Office Visio® Solution Provider and Microsoft Gold Certified Partner—that provides innovative IT business services and solutions. IrisCube knew Microsoft Office Visio 2003 drawing and diagramming software fulfilled most of the software analysts’ core diagramming needs with its easy-to-use interface, diagram-specific symbols and tools, familiar Microsoft Office work environment, compatibility with other Microsoft Office programs, and ability to publish diagrams in a variety of file formats.

IrisCube also knew it could easily develop a Visio add-on that did the rest—an add-on that created a corresponding database for all of the objects in a system diagram and checked the integrity of the diagram each time a change was made. That add-on is Integrity Checker and its technical specifications are as follows:

- It was programmed with the Microsoft Visual C#® .NET 2003 development tool.
- It was built within the Microsoft .NET Framework, which facilitates the add-on’s integration with Visio 2003 and other Microsoft Office System programs.
- It stores diagram data in a Microsoft SQL Server™ database—a central repository that team members in the department can access.

Massimo Vitali, Senior Project Manager at IrisCube comments on how easy it was to develop Integrity Checker: “Developing with state-of-the-art Microsoft .NET technology made it easy for us to fulfill all the needs of Vodafone Italia without a lot of programming code. It was easy for us to write code that connects great-looking Visio shapes to powerful database records, and then



checks diagram modifications against Vodafone system rules to ensure the integrity of the system.”

Software analysts in the Architecture group within the IT department at Vodafone Italia now use Visio 2003 and Integrity Checker to do the following:

- Create visual, accurate, and easy-to-understand representations of the organization’s IT systems. These diagrams include everything from overviews to extremely detailed views of a particular system.
- Automatically create database records that correspond to each object in a diagram and the custom property data for each of the objects, and then store the information in a central repository.
- Automatically check the integrity of a system any time an analyst modifies a diagram.

Diagram IT Systems and Store the Diagram Data in a Repository

Software analysts begin diagramming Vodafone Italia IT systems with the Integrity Checker template, which includes all of the tools, diagram settings, styles,

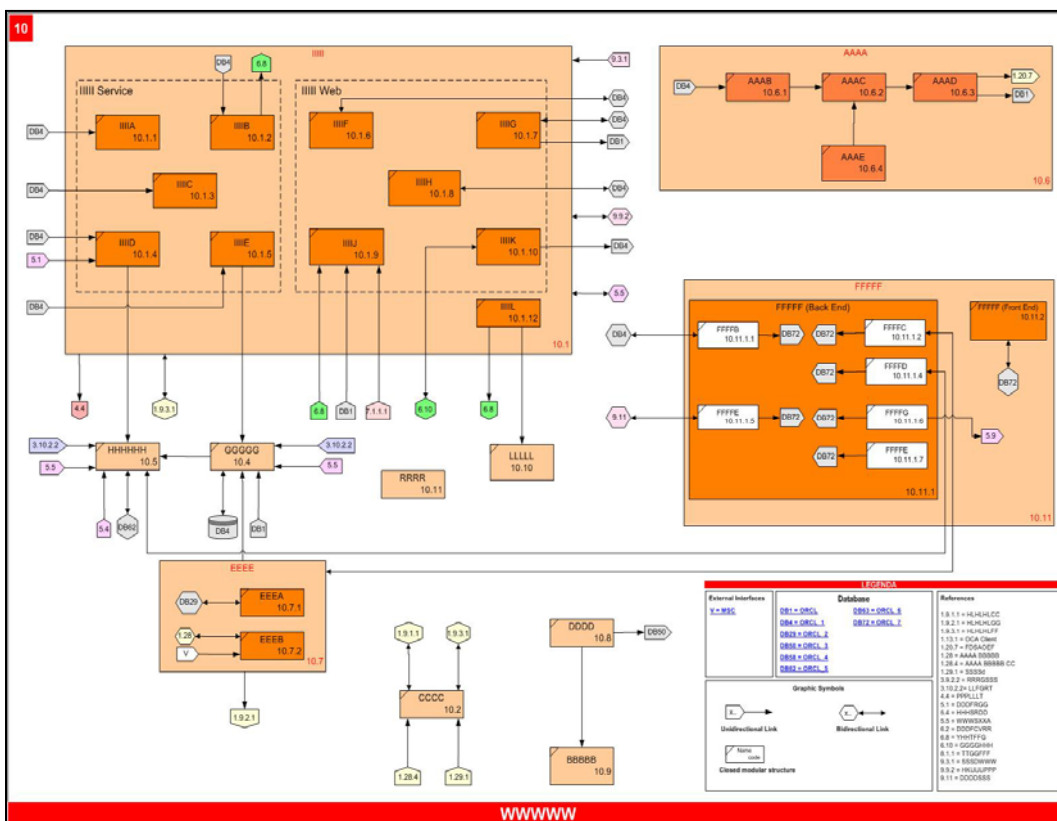
custom menus, and custom-made Visio SmartShapes® symbols they need to create professional, uniform IT system diagrams.

After an analyst opens the Integrity Checker template, the add-on automatically connects the diagram to a new database (central repository) or an existing one. A dialog box then opens, in which the analyst can specify the name and network location of the database.

The Integrity Checker template also opens the custom Maparchi (Map Architecture) toolbar, which analysts can use to perform the following diagramming tasks:

- Create functional areas for objects in a system, name the areas, and assign objects to them.
- Specify color-coding for all of the objects in a specific functional area so that the objects are easy to identify.
- Modify the information for the database connected to a diagram.
- Specify and use a specific version of the database connected to a diagram.
- Check the integrity of a diagram.

The Integrity Checker template includes



Using Visio 2003 and the Integrity Checker add-on, Vodafone Italia can diagram all of its IT systems and ensure the integrity of the diagrams. It can track reviewers’ changes, share system diagrams over the company intranet as Web pages, and enable those employees without Visio to view the actual Visio diagrams and their data using Microsoft Office Visio Viewer.



Visio SmartShapes symbols, such as Closed Application, Multiple Layer Application, External Interface, Internal Datastore, and Input Reference Application that analysts drag onto the drawing page to represent the components in complex IT system diagrams. IrisCube created these distinct, color-coded symbols specifically for Vodafone Italia IT systems so the system diagrams created with the symbols are easier to build and much easier to understand.

When an analyst drags a Visio SmartShapes symbol onto the drawing page, a wizard starts. Each symbol starts a different wizard that enables the analyst to assign the appropriate attributes for that symbol. For example, if an analyst drags a Closed Application symbol onto the drawing page, the analyst can use the wizard to do the following:

- Assign custom property data—such as Name, Code, Description, Product, Supported Application Interfaces, Software Platform, Operating System, and Reference Organizational Unit—to the closed application. Once the data has been assigned, the corresponding record in the database is automatically created.
- Assign the closed application to a functional area in the system.
- Specify the system analyst who is responsible for the closed application.
- Specify whether the closed application is stand-alone.
- Specify the level of the closed application in the system hierarchy.
- Add a reference from the closed application to another symbol in a different system diagram.

Create the Data and Process Flow for Systems

After analysts drag symbols that represent the components in an IT system onto the

drawing page, they create the data and process flow for the system by dragging Unidirectional Flow or Bidirectional Flow symbols onto the drawing page. With the Add Flow wizard that starts when these symbols are added to the drawing page, analysts can easily specify the source and destination objects and the custom properties (Description, Data Flow Type, and Protocol) for the flow symbol. Visio then automatically connects the source and destination objects with either a one-way (unidirectional) or two-way (bidirectional) arrow, depending on which symbol the analyst used.

Check the Integrity of Systems

Every object (including symbols that represent data and process flows) in an IT system diagram built with the Integrity Checker add-on is connected to a corresponding database record. This ensures all of the objects have unique identifiers and the diagrams don't contain any redundant objects.

This symbol-to-database connectivity also enables Integrity Checker to quickly and automatically check the integrity of a system whenever an analyst adds, modifies, or deletes an object in a diagram. The add-on ensures every object in the system conforms to Vodafone Italia system rules and notifies the analyst if referential integrity is at risk. It notifies the analyst of the following information:

- How many and which objects have been deleted.
- How many and which flows have been disconnected.
- Which objects have been incorrectly specified as stand-alone objects.
- How many and which references to the diagram are broken.

Benefits

Vodafone Italia predicts it will increase employee productivity and lower its cost of operation by working with Visio 2003 and the Integrity Checker add-on.

Increases Employee Productivity

An intuitive Visio 2003 user interface and Visio SmartShapes symbols take the work out of diagramming complex systems at Vodafone Italia. In order to learn Visio, software analysts don't need to attend lengthy training sessions. They only need to take one look at the familiar Microsoft Office user interface, and they're ready to begin working.

With the comprehensive set of SmartShapes symbols that IrisCube designed for Vodafone Italia IT systems, software analysts don't have to draw anything either. They just drag custom-made symbols onto the drawing page and specify information for each symbol in the wizard that starts. All of the necessary symbols and tools are in one location, so analysts don't waste valuable time searching for the appropriate shapes or tools for their diagrams. They just open the Integrity Checker template and everything they need is right there.

Everyone from software analysts to IT managers benefit from the resulting uniform, easy-to-understand system diagrams created with Visio 2003 and Integrity Checker. Analysts can use them to visualize and troubleshoot systems. They can more easily collaborate using one set of diagrams and the data stored in a central repository, which eliminates version problems and conflicts that sometimes occur when updating various diagrams and sources of data.

Management can view these diagrams to get the system overviews they need. Employees in the Interfacing department can even use the diagrams to analyze the

impact the systems have organization-wide and determine which inter-departmental processes need to be updated.

Ultimately, Vodafone Italia predicts using Visio 2003 and Integrity Checker will increase productivity by reducing the amount of work employees spend on system diagrams by at least 14 days every quarter.

Lowers the Cost of Operation

As the number of Vodafone Italia systems increase and those systems become more complex, it's essential that the system documentation be 100 percent consistent and accurate. Visio 2003 and Integrity Checker play a big part in accomplishing that goal. Using the same SmartShapes symbols results in uniform diagrams no matter who created them. Connecting each object in a system diagram to a database record results in diagrams without duplicate objects and reduces errors. And, finally, using Integrity Checker to check diagram revisions ensures error-free, accurate, and viable systems that conform to Vodafone Italia system rules.

These factors contribute to a lower cost of operation at Vodafone Italia as well as increased employee productivity. Analysts don't need to spend a lot of time manually checking the integrity of system diagrams, a task that can be extremely time-consuming when diagrams include hundreds of objects. Even something as simple as the button on the Maparchi toolbar that changes the color of all the objects in a functional area saves analysts a considerable amount of manual labor, thereby lowering the cost of operation at Vodafone Italia. That's the beauty of Integrity Checker: It's simple and effective. It makes diagramming complex systems seem almost effortless.

Software and Services

Microsoft Office System:

- Microsoft Office Visio 2003

Other Microsoft software and technologies:

- Microsoft .NET Framework 1.1
- Microsoft SQL Server 2000 Service Pack 3
- Microsoft Visual C# .NET 2003

Hardware

A variety of portable and desktop computers

Partners

IrisCube S.p.A.

Microsoft Office Visio 2003 is an easy-to-use diagramming application that enables business and technical professionals to document, design, communicate, and improve ideas, processes, and systems.

For more information about Microsoft Office Visio 2003, go to: <http://www.microsoft.com/office/visio/>.



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Vodafone Italia is part of the Vodafone Group, a world leader in the mobile telecommunications sector. For more information about Vodafone Italia products and services, visit the Web site at: <http://www.vodafone.it>.

IrisCube S. p. A. provides IT consulting, solutions, and services. For more information about IrisCube products and services, visit the Web site at: <http://www.iriscube.com>.

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