

## Microsoft Office Developer's Kit

*Learn about a new way to create applications  
that use the full functionality of Office components.*

By Michael Mullin and Christine Capazzi

Microsoft recently released the Microsoft Office Developer's Kit (ODK), and is promoting it quite heavily. Why? Because it gives you something quite valuable. ODK allows you to call upon the Microsoft programmers who created Microsoft Office to help you construct your next project. No, they won't be coming by your office. ODK gives you the tools and reference materials to construct custom applications that incorporate components of Microsoft Office 4.3, Professional Edition.

In Microsoft Office 4.3, you have three capabilities you've never had in one place:

- Reasonably common programming languages: Visual Basic for Applications (VBA), Access Basic, and WordBasic.
- An object model (OLE 2.0) that facilitates data sharing and application automation.
- More than 400 reusable objects or software components.

The reusable objects can be used in OLE linking and embedding schemes, and are the building blocks you use to create your own custom applications. The hundreds of OLE Automation objects in ODK let you stand on the shoulders of those who have already done a lot of the basic work for you.

### Microsoft Office as a development platform

But if you already have Office (which has Visual Basic for Applications built into Microsoft Excel 5.0) why do you need the Office Developer's Kit? After all, it appears you can get all the information you could possibly need by using the documentation for VBA in Excel 5.0. The real advantage of ODK is its scope. It looks at Microsoft Office as an application development platform and shows you how the functionality of a variety of applications fits together.

Inside ODK you'll find documentation for putting several different Microsoft applications together in a single project. Two unique books in the ODK are *Designing Integrated*

*Solutions with Microsoft Office* and *Programming Integrated Solutions with Microsoft Office*. The first book outlines development strategies, while the second shows specific tactics you can use to implement those strategies.

ODK also includes a stand-alone OLE 2.0 Object Browser that offers—without a host application—a complete view of all the objects, methods, and properties in each application in Office and all other Windows-based applications that support OLE Automation. This information increases the speed with which you can use OLE Automation to assemble your applications in any construction site you choose.

Office Developer's Kit also includes a chart with a graphical representation of the object hierarchy for Microsoft Office applications. You can find objects at a glance and see which methods relate to each of them.

### Sample applications in the ODK

ODK includes a number of sample applications (in addition to the application-specific examples) that show how to build Office applications into an integrated solution. Some of the examples include a general ledger, mailing list, help desk, and executive information system called Northwind Management System.

The Northwind Management System provides a top-down view of the Northwind Traders business data so that employees can track the important information they need for making decisions. The data resides in a Microsoft Access 2.0 database and is shared with an Excel 5.0 workbook. News articles are displayed as OLE 2.0 objects from Word 6.0. The Northwind Traders sample application displays and manipulates this data using OLE 2.0 objects and code that reside in a Visual Basic application.

Creating the Northwind Management System on the Office development platform and reusing existing functionality is much more efficient than attempting to re-create the functionality already provided by the Office applications.



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## Documentation in the ODK

Complete user documentation for all the Microsoft Office applications—Excel 5.0, Word 6.0, Mail 3.2, Access 2.0, and PowerPoint 4.0—are included in on-line format in ODK.

The application-specific developer guides, which are normally sold separately for these products, are also enclosed. The developer guides offer reference information on programming concepts, debugging, and special features of each application.

The language reference guide for each application is an alphabetical listing that clarifies syntax and purpose, and provides example code for each command. The guides also offer information on extending each macro language through ODBC, MAPI, and other technologies. ODK is a wealth of information delivered on a single CD with text search capabilities.

The goal of Office Developer's Kit is to provide you with the information needed to effectively harness the power of Microsoft Office as a development platform. The key benefit of component-based development is the ability to be a software integrator, instead of a developer. In this context, an integrator strings together existing components to build an entirely new application. A developer must build the entire application from the ground up. By reusing code that is already developed, you can bring solutions to your organization in a cost-effective and timely manner.

## Why use Microsoft Office to create custom solutions?

Developers and users gain from the Microsoft Office approach in several ways:

- Leveraging technology. You don't need to reinvent the extensive technology already present on most user desktops.

### Office Developers Kit Contents

ITEM	DESCRIPTION
Designing Integrated Solutions with Microsoft Office	A roadmap to design issues when using Microsoft Office to build solutions. On-line or hard-copy versions.
Programming Integrated Solutions with Microsoft Office	A complete guide to the nuts and bolts of programming with Office and a reference guide to the rich collection of Office objects. On-line or hard-copy versions.
Object Reference Guide	Fold-out wall chart—Excel objects, data access objects, Project objects.
Object Browser	New utility that lists all the procedures, objects, methods, and properties that are available for use in a specified type library.
Microsoft Electronics Forms Designer	Tools and templates to create powerful, flexible electronic forms (eforms). Applications files. Developer's Guide.
Sample Applications	Northwind Management System: Top-down view of Northwind business operations. General Ledger: Interfaces a general ledger with Microsoft Excel. Mailing List: Performs mail-merge operations on mailing lists. Performance Management: Monitors crucial business activities. Help Desk: Tracks, records, and resolves customer service calls. Bonus Tracker: Manages an employee bonus program. Employee Newsletter: Generates employee-of-the-month reports.
Microsoft JET 2.0/Visual Basic 3.0 Compatibility Layer (ODK edition)	A set of Visual Basic 3.0-based files that developers can use to take advantage of the new features in the Microsoft 2.0 database engine (if using Microsoft Access 2.0).
Microsoft Excel Documentation	User's Guide Language Reference Visual Basic User's Guide Microsoft Query User's Guide Microsoft Excel Developer's Kit
Microsoft Word Documentation	User's Guide Disk of sample code and .DLLs Microsoft Word 6.0 Developer's Kit
Microsoft Mail Documentation	Administrator's Guide User's Guide User's Guide: Workstation Software Technical Reference File format API for Gateways and Applications Microsoft Schedule+ for Windows Administrators Guide Microsoft Workgroup Templates Developers Handbook
Microsoft Access Documentation	User's Guide Building Applications Language Reference Advanced Topics
Microsoft PowerPoint Documentation	User documentation
Microsoft Visual Basic Documentation	Professional Features Book 1 Professional Features Book 2 Visual Basic Programmer's Guide Visual Basic Language Reference

- Reducing training and support costs. By delivering applications that use familiar components, you can build custom solutions that are instantly familiar to the user.
- Providing integrated solutions. You can offer highly integrated packages of several applications that combine linked data files, word processing templates, and communications functions meeting the user's need for a highly integrated workstation.
- Expanding choice. By providing access to the applications components through OLE 2.0 Automation, you can control them with any tool that is an OLE 2.0 controller. Custom software built using Microsoft Office applications can be extended with third-party application objects as well.
- Supporting multiplatform environments. With cross-platform support for Windows, Windows NT, and Macintosh, you can port applications.
- Facilitating international use. Code written in the English-language version of Visual Basic for Applications runs identically in other localized versions of Office products, making it easy to adapt custom applications for use worldwide.
- Preserving past and future investment. Existing Office application macros can coexist and run in Office 4.3, so you preserve code and don't need to start over.

## OLE 2 benefits

OLE 1 made it possible to produce compound documents organized around user tasks and needs rather than around the limits of programs. Users could combine functionality and objects from several applications into a single file.

OLE 2.0 is a major enhancement that gives developers these advantages:

- Lets users combine the features of various applications in more intuitive and flexible ways.
- Cross-platform solution, available in Microsoft applications for Windows, Windows NT, and Macintosh.
- Open standard that can be supported by any third-party software developer. Developers can even create their own objects.
- Forward-compatible with the object model that Microsoft is providing across the next generation of its software products.

## OLE Automation

OLE Automation is the key feature of OLE 2.0. It lets custom applications use functionality from other applications by sending them commands. Rather than needing all your desired application functionality in a single application, you can call on functionality throughout the Office suite.

OLE Automation provides a standard way for components to expose functionality through object methods and properties, as well as a standard way to access and control that functionality through OLE Automation controllers. For example, you can use an Excel macro to send commands via OLE Automation to a Word document to automatically create a report.

## Visual Basic for Applications

VBA is the latest in Microsoft's 18 years of Basic programming language implementations. It's a central element of Microsoft Office that now exists in Microsoft Excel 5.0 and Microsoft Project 4.0. Over time, Microsoft will be adding it to all its business productivity applications.

Visual Basic for Applications is an edition of Microsoft's Visual Basic development tool for Windows. VBA has been specifically designed to work with the Microsoft Office applications. It leverages Visual Basic technology, providing a complete set of development tools, including:

- Development engine
- Editor with support for color-cued code (for syntax errors, identifiers, and break points)
- Debugger
- Compiler
- Object browser
- Extensive documentation
- Code samples
- Context-sensitive help

With the new object browser, you can quickly search through component object libraries, including all available system and application OLE 2.0 objects, as well as through the methods and properties available for those objects. You can copy and paste code between objects.

The VBA debugging tools support stepping (Step Into, Step Over, Set Next Statement) and break points. You can easily track variable and expression values, execute expressions, browse the call stack, and highlight a variable/expression and see its value.

Visual Basic for Applications includes support for many new features, including procedures, control flow, error handling, strings, and arrays. Here are two new language constructs:

**For Each** lets you perform a specified action on all members of a named collection of objects, such as all the cells in a given selection, without having to name each of the members individually.

**With** lets you perform a series of actions on a given object or collection without having to rename the object or collection for each of the specified actions.

When you need more functionality, VBA provides built-in extensibility and low-level access to application programming interfaces. It can access dynamic link libraries in Windows, and AppleScript scripts and code resources on Macintosh. VBA also supports the file systems of both platforms.

## Conclusion

Applications programmability is a fast way to create powerful custom solutions. To fully realize its benefits, you need a common programming language that crosses application boundaries, a set of development tools, a range of reusable objects from which to choose, and a technology for accessing and controlling the objects. Microsoft Office with Visual Basic for Applications delivers all of this. Office Developer's Kit rounds it out, making Microsoft Office a compelling development environment. ■