

Advanced Microsoft® Office Documents 2007 Edition Inside Out

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Content Controls: Creating Forms and Then Some

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Microsoft Word form controls have changed. In fact, they're not just for forms anymore. Although the legacy form controls still exist for anyone adverse to saving time and getting better results, the new Content Controls functionality in Microsoft Office Word 2007 offers very good news for the rest of us.

As you might have gathered from that introduction, this isn't the place to learn about the legacy form controls that you know from the past several versions. They're still there because the new Content Controls aren't available to legacy documents. But this book is about the 2007 Microsoft Office release, and so this chapter focuses on understanding and working with the new, and outrageously improved, Content Controls capability.

That said, keep in mind that Content Controls are a new type of functionality—not intended to be a direct replacement of the legacy controls. You'll notice, for example that there are no check boxes. However, if you look at Content Controls and think they don't have what you need for a particular project, consider automating the document input using a dialog box instead of resigning yourself to legacy form controls.

With all the Microsoft Office template automation I do, I've never once used the legacy form controls in a document unless a client absolutely insisted, because they're cumbersome to create and to use and, frankly, they're ugly. When I've needed to automate templates for user input in the past, I've always created dialog boxes using Microsoft Visual Basic for Applications (VBA).

Creating and automating dialog boxes is pretty quick and easy to do, and you can learn the basics of how to do this in Chapter 21, "VBA Primer." But, the new XML-based Content Controls further simplify quite a bit of that work. So, there will be times when a dialog box is no longer needed. Content Controls are so user-friendly that they've been integrated with several built-in features of Office Word 2007. And, you can create your own for forms and many document uses. If you create just about any type of Word documents and templates for others to use, or that you frequently reuse, you need to know about Content Controls.

Chapter Assumptions

This chapter assumes that you have some familiarity with form control terminology (such as *drop-down list* and *date picker*), as well as at least a basic understanding of document properties and document protection.

Additionally, this chapter makes several references to Document Building Blocks and other types of Quick Parts functionality that are integrated with Content Control functionality. If you're not familiar with these new capabilities, you'll get more out of this chapter if you review Chapter 9, "Quick Parts," before continuing here.

Although Content Controls are new functionality, you're not new users of Microsoft Word. So, I'm approaching this feature, like all topics throughout this book, from an advanced perspective. This chapter covers the use of Content Controls from the user interface, and it explains the types of automation available with Content Controls. However, coverage of how to work with Content Controls using XML is addressed primarily in Chapter 22, "Office Open XML Essentials." If you're new to Content Controls, consider this chapter a prerequisite for working with this feature in Chapter 22.

In the introduction to this book, you can find a list of resources for those who want more basic-level information, in the section titled "Who Will Benefit Most from This Book."

Working with Content Controls

A Content Control is, essentially, a container that enables you to store and act on different types of document content. Some of these controls are simply placeholders for text or other content, some enable your users to select from choices of content that you specify, and some provide additional types of functionality to help you do more with the content they contain. All Content Controls are XML-based, so they enable you to take advantage of XML data storage and sharing capabilities to get more done in your documents with less work.

As shown in Chapter 9, you can recognize a Content Control in a couple of ways. When you hover over any Content Control, it appears shaded (blue in most color schemes), as shown here on the left. When you click in or otherwise activate a control, you either see a tag at the top that contains a title, such as Name in the example shown here on the right, or a similar tag on the left of the control that contains no text. The tag that appears at the top may have additional icons that provide other functionality for the content within the control. (When working in Draft view, however, only the content within the control is visible and not the control itself.)



Most controls contain placeholder text or other placeholder content until user content is added. If a control contains placeholder content, that content will be selected when you click in the control. If the control has already been edited by a user, you see the border of the control when you click in it, but text won't automatically be selected.

Types of Content Controls

Seven types of Content Controls are available, as follows.

Control	Description
Rich Text	A Rich Text control can contain text, tables, graphics, and most formatting that you can apply in the body of the document. A single Rich Text control can also contain multiple paragraphs.
Plain Text	<p>A Plain Text control can contain text as well as common font and paragraph formatting. These controls can't take tables or graphics and can only contain a single paragraph. (Note that Plain Text Properties in the Content Control Properties dialog box include an option to allow multiple paragraphs. The label on that option is incorrect, as explained later in this chapter.)</p> <p>Text Wrapping breaks can be inserted into Plain Text controls from the Breaks options on the Page Layout tab. Depending on the settings for the individual controls, however, manual line breaks (SHIFT+ENTER) may not be available in Plain Text controls.</p> <p>If you press the TAB key from a Plain Text control, your insertion point moves to the next Content Control. To add a tab character inside a Plain Text control, press CTRL+TAB.</p>
Picture	A Picture control lets you click the placeholder to add a picture from your saved picture files. Once a Picture control contains a picture, click the picture icon on the tab containing the control name to change the picture, or right-click the image and select Change Picture. See Chapter 7, "Managing Graphics," to learn more about the Change Picture command, which is available to all pictures in your Word 2007 documents. (Note that when a Picture control in a header or footer contains a placeholder, you can click the placeholder to add your image when working in Print Layout view without having to open the header or footer.)
Drop-Down List	A Drop-Down List control gives you the ability to add multiple content choices from which users can select. With this control type, users can only select from the options provided and can't type text directly into the control. Click the arrow on the right side of the control to access the list of options.
Combo Box	<p>Like a Drop-Down list, a Combo Box control gives you the ability to add multiple content choices from which users can select. However, with a Combo Box, users can type text directly in the control or select from the options provided. Click the arrow on the right side of the control to select from the list of options.</p> <p>Similar to a Plain Text control, a Combo Box control can't accept tables or graphics. Combo Box controls are designed to only allow a single line of text, but you can insert a Text Wrapping Break from the Breaks options on the Page Layout tab.</p>
Date Picker	Similar to a Combo Box control, a Date Picker enables you to add text to a control or select from options. In this case, click the arrow on the right side of the control for a calendar from which you can select a date.
Building Block Gallery	<p>The Building Block Gallery Content Control enables you to select a Building Block gallery to be accessible from the Content Control. This control type has the same behavior as Rich Text controls in addition to the ability to select a gallery option. Once you assign a gallery to a control, that gallery is accessible at a click from an icon on the tab at the top of the control.</p> <p>Note that not all built-in galleries are available to Building Block Gallery controls, but all custom galleries are.</p>

Built-In Features That Use Content Controls

The new Quick Parts functionality is heavily integrated with Content Controls. Many built-in Building Block entries include Content Controls, such as cover pages, headers, and footers. Some other types of built-in Building Block entries (such as tables of contents, bibliographies, and equations) are wholly contained in Content Controls. Additionally, Document Property Quick Parts are all created using Content Controls.

Notice that, in instances where an entire Building Block entry is stored within a control, the control provides additional functionality, such as the ability to update a table of contents or bibliography, or formatting and layout options for equations.

See Chapter 9 to learn about how Quick Parts work with Content Controls.

Note

In addition to Quick Parts, Content Controls are used in most of the built-in Word templates.

INSIDE OUT

DATE fields vs. Date Pickers

If you insert a DATE field by any method (using the Date And Time dialog box, using the Field dialog box, or creating the field on screen), it appears to be inside a Content Control. In fact, this will happen whether you're working in a Word 2007 document or a legacy document, the latter of which is not even compatible with Content Controls.

This is simply an anomaly. Call it an undocumented feature, if you will. The DATE field does no harm in its slightly odd condition, and it has a nice little bonus of an Update icon on the tag at the top of the control, which does the same thing as pressing F9 to update a selected field.

However, if you're working in a Word 2007 document, take advantage of the added functionality available to some types of controls and consider if a Date Picker control can possibly do the job more effectively.

Using Content Controls

When you use Content Controls that already exist in a document, such as in the built-in Word templates, you might notice that some disappear when you type in them while others can't be deleted at all.

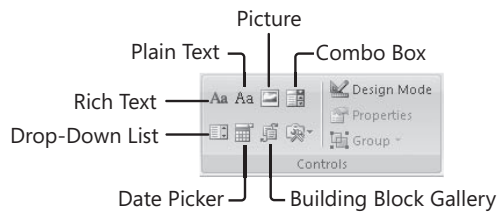
Some controls can be set to be removed when their content is edited. All controls can be set to not allow deletion or even to not allow editing. Note also that several types of Content Controls can be used with the Document Protection feature, discussed later, for documents in which you want to completely manage document layout and allow users to only edit within designated controls.

You can apply styles and formatting to content inside controls just as you can in the body of the document. However, controls can also be formatted to automatically use a particular style or formatting when you add content.

Note that placeholder content does print, but the Content Control itself does not.

Creating Controls

To create a new Content Control, on the Developer tab, in the Controls group (shown here), just click the type of control you want.



When you do, the control will be added at your insertion point and will take on default settings for that control. These settings, all of which you can edit for the individual controls you create, are as follows.

- Content controls take on the same formatting as the paragraph into which they're inserted.
- Plain Text controls do not allow line breaks (other than the Text Wrapping Break mentioned earlier).
- Every type of control you can create contains placeholder content. For picture controls, this is a graphic that you can click to open the Insert Picture dialog box. For all other control types, this is text, such as "Click here to enter text" for Rich Text and Plain Text controls. This text is formatted with a character style named Placeholder Text that applies gray font color by default. Placeholder text formatting is separate from the formatting for content you add to controls, so that you can easily tell the difference between placeholder text and user-edited text.
- Controls are not deleted when their placeholder content is edited.
- Users can edit and delete controls.
- Building Blocks Gallery controls default to showing the Quick Parts gallery.

- Date Picker controls default to displaying selected dates using the Windows System Short Date setting.

Note

The System Short Date setting for Windows is available through the Windows Control Panel, under Regional And Language options.

- Combo Box controls have no functionality beyond that of Plain Text controls until you add a list of options to them.
- Drop-Down List controls have no functionality until you add a list of options to them.

Formatting Controls and Editing Properties

Once you've added a control to your document, you can name the control, customize the options provided in the preceding list, and format both the placeholder content and the user-edited content within the control.

To edit controls, start by turning on Design Mode. Note that you can access control properties without being in Design Mode, but because of additional options that are limited to Design Mode, your best bet is to go there whenever you need to edit Content Control settings. To turn on Design Mode, on the Developer tab, in the Controls group, click Design Mode.

Note

If you don't see the Developer tab, click the Microsoft Office Button and then click Word Options. On the Popular tab, click Show Developer Tab In The Ribbon. Note that this setting is available from the <Program Name> Options dialog box in any program where you see the Ribbon. As with many settings on the Popular tab, enabling this setting in any of these programs will show the Developer tab in all of them.

When you turn on Design Mode, the tags inside Content Controls become visible, as in this example. The tags are the shapes that wrap around the text and sit inside the control.



These are XML tags, used to identify the particular control when you want to act on it programmatically. XML tags are always paired, as you see here, wrapping around the content to which they refer.

Note

By default, tags on Content Controls have the same name as the title of the control, but you can customize this when creating your own controls.

As mentioned in Chapter 9, XML tags are also visible for many types of Quick Parts when Design Mode is enabled. These can be very handy for identifying the start and end points of various content types when you need to do advanced editing. XML tags surrounding Quick Part use the type of Quick Part as the name of the XML tag, such as Cover Pages, to make them easy to recognize. This is particularly good to keep in mind when working in Design Mode because not all XML tags you see indicate the presence of Content Controls.

Editing Control Properties

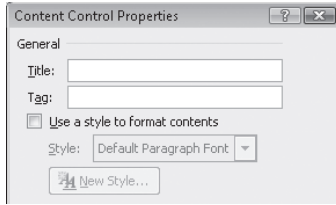
To edit the settings for a control, click in that control and then, on the Developer tab, in the Controls group, click Properties to open the Content Control Properties dialog box. When Design Mode is active, Properties is also available from the shortcut menu you get when you right-click in a Content Control.

The Content Control Properties dialog box has the same name regardless of the control type you're editing, but the options available in the dialog box change depending on the type of control, as detailed in the list that follows.

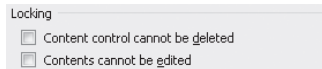
Note

If you click Properties and a Properties pane opens that shows "**ThisDocument** Document" at the top of the pane, your insertion point is either not inside a Content Control, or not inside a control for which you can edit properties (such as the DATE field control mentioned earlier or the control surrounding a built-in Table Of Contents Building Block entry). Just click the X at the top of that pane to close it, make sure your insertion point is inside the control for which you want to edit properties, and then click Properties again.

- General options, shown in the image that follows, are the same for all controls except Picture controls, which don't offer the Style option. See the Inside Out tip in this section for how to apply font and paragraph formatting to user-edited content in Picture controls.



- Locking options, shown here, are the same for all controls. Note that, if you set a control to not allow editing, that control can't be formatted outside of Design Mode. Also note that, because the placeholder content (that is, content added or edited while in Design Mode) has its own formatting and doesn't take on formatting you set for user-edited content in the control, formatting needs to be applied directly to placeholder content while in Design Mode for that formatting to be reflected in the document.



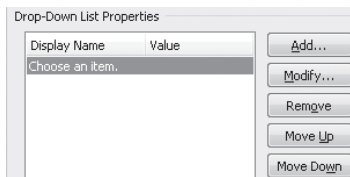
Note

When setting controls to not be edited or deleted, remember that any user of the document has the ability to edit those settings. To keep users from removing or altering controls where you need to control layout or content, use Document Protection along with your Content Controls, as discussed later in this chapter.

- With the exception of Picture controls, each control also has control-specific properties available in this dialog box. As mentioned earlier, these include the option to have the control automatically removed when its content is edited. And, for Plain Text controls, this also includes the option to allow line breaks. Find more information about line breaks in Plain Text controls in a Troubleshooting tip within this section.

The control-specific properties within this dialog box are where you'll find the option to select a gallery and related category for a Building Block Gallery control, or add list items for a Drop-Down List control.

Notice, in the Drop-Down List Properties shown here, that you can add, edit, delete, or reorder list entries.



Note

Drop-Down List Properties looks identical in the Content Control Properties dialog box for both Drop-Down List and Combo Box controls.

TROUBLESHOOTING**I can't create multiple paragraphs in a Plain Text control**

The Content Control Properties dialog box for Plain Text controls explicitly states that the option to allow carriage returns means to allow multiple paragraphs. If you've enabled that option but still can't get multiple paragraphs in that control, you're not wrong. The information in that dialog box is wrong.

Allowing "carriage returns" in Plain Text Content Controls doesn't enable multiple paragraphs. It enables line breaks (SHIFT+ENTER) only. In fact, if you copy multiple paragraphs and paste them into a Plain Text control, the paragraph marks will be converted automatically to line breaks.

To get multiple paragraphs in a single Content Control, use the Rich Text control.

INSIDE OUT**Use the XML tags to format user-edited content**

The left side of the XML tag inside any Content Control stores the formatting for the user-edited content in that control. So, to apply a style or formatting, just select the left side of the control and apply the formatting you need as if you had selected text. The formatting will not appear on placeholder text, but it will automatically be used when the content of the control is edited.

Formatting the left tag is interchangeable with the option Use A Style To Format Contents, which appears in the Content Control Properties dialog box. However, it's a bit more flexible because, in addition to being able to apply linked or character styles, you can also apply direct formatting.

Thanks for this very cool tip go to Tristan Davis, a Program Manager at Microsoft in charge of Content Controls and other programmability issues for the 2007 release, who also provided other insights used in this chapter and in Part 5 of this book, "Templates, Automation, and Customization."

Note that this tip is particularly handy for Picture controls that don't offer the style option in the Content Control Properties dialog box. For example, you might want to apply a style to the Content Control that provides space before or after the paragraph, paragraph alignment, or even character spacing and positioning, depending on the placement of the Picture control. Keep in mind that paragraph and font formatting only applies to graphics formatted with the In Line With Text graphic layout, which is the default for Picture Content Controls. See Chapter 7 for more on using font and paragraph formatting to format graphics.

TROUBLESHOOTING

I can't get out of Design Mode

If you turn on Design Mode in a document that contains Content Controls and are then unable to turn it off, you should see a message box explaining that Design Mode can't be turned off because placeholder text in a control contains invalid items. Additionally, when you click OK in that message box, the offending control should be selected.

When this happens, the most likely culprit is usually a floating graphic object included in the placeholder text, though this can also happen when all placeholder content is removed or when one control is placed inside another while in Design Mode.

See Chapter 7 for alternatives to using floating objects in your documents and reasons you might want to consider them. However, if you must include floating objects or other invalid items in the placeholder text, save and close the document and then reopen it. Design Mode will no longer be active.

Note that floating graphics in Content Controls can also make the control look quite odd, because controls wrap around their content.

It's also worth noting that the issues mentioned here occur in some of the built-in templates available from the New Document dialog box, in case you're using those as jumping-off points for creating your own.

Formatting Placeholder and User-Edited Control Content

You must be in Design Mode to add, edit, or format most placeholder content. Any content you add to the control while in Design Mode automatically becomes placeholder content.

To edit the formatting of placeholder text inside a control, the easiest option is to edit the Placeholder Text character style. When you do that, new controls you create will take on the formatting of your edited style. For help editing styles, see Chapter 5, "Styles." Of course, when your Rich Text controls need to contain more complex formatting in placeholder text, such as different styles on different paragraphs, you can use any styles or formatting that you need and apply them directly to the placeholder content.

As discussed earlier in this chapter, using the Style option in the Content Control Properties dialog box, or formatting the left tag inside a control, applies font and paragraph formatting to user-edited content in the control. Keep in mind, however, that when you make changes to the formatting in a control after the control contains user-edited content, your changes won't be reflected automatically on existing content. If a user adds new content at the beginning of the control, it will take on your new formatting. However, from within existing content, formatting will follow Word formatting rules. That is, new content takes on the formatting at the insertion point.

For best results when changing the formatting of controls that already contain some user-edited content, apply the style or formatting you need directly to the existing con-

tent and update the formatting for the control either by selecting the left tag or through the Content Control Properties dialog box. That way, you update the formatting on existing content and you're ensured that future editing will result in the formatting you want.

For Picture controls, in addition to using the left tag to apply font and paragraph formatting for user-edited content, you can format the picture placeholder to take on the formatting you need for the user-added picture. When you select the picture placeholder within the Picture control, you get the Picture Tools Format contextual tab. So, you can format attributes—such as changing picture size or applying a grayscale effect—and that formatting will be retained when the placeholder is replaced with a picture. Note that, because picture sizing is proportional by default, if the user-added picture has different proportions from the placeholder, the smaller of the dimensions set in the placeholder is kept and the user-added picture is resized proportionally.

INSIDE OUT

Reset placeholder text or convert user-edited content to placeholder text

If you add text as placeholder text and later want to reset that placeholder text to the default text for that control type, simply delete all placeholder content while in Design Mode. When you click outside the control, the default placeholder text will appear. Do not, however, cut the entire contents of the user-edited text while in Design Mode because this will delete the control as well.

Note that applying the Placeholder Text character style only changes the formatting of placeholder content and not its properties. That is, you can't convert user-edited text to placeholder text while in Design Mode just by applying the Placeholder Text style.

To convert user-edited text to placeholder text, do the following.

1. With Design Mode turned off, select the text you want to convert to placeholder text and cut it (CTRL+X).
Do not select the entire contents of the control because this will delete the control as well. If you want to use the entire contents as placeholder text, leave out the last paragraph mark when selecting the content to cut.
2. Turn on Design Mode. Delete (do not cut) the remaining user-edited text and then click outside the control. This will reset placeholder text to the default. Note that you can take this step before turning on Design Mode, if you prefer, but the step that follows must be done in Design Mode.
3. Paste the content you cut earlier inside the control (CTRL+V). From the Paste SmartTag that appears, select the option to match destination formatting.
4. Turn off Design Mode. The text you pasted in Design Mode should now be placeholder text.

Nesting Controls

You can nest controls in the user-edited content of a control, but not in placeholder content.

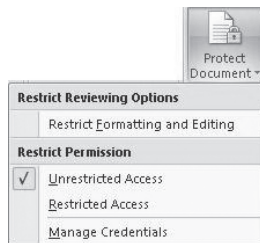
The only situation where you're likely to find this useful is when you want to contain a large part of a formatted document inside a control. In that case, add the placeholder content for the host control as regular user-edited content (that is, not as placeholder content at all). Remember that placeholder content can't be edited outside of Design Mode, so when a user clicks in a control that has placeholder content, they either replace all of it or none of it. In a case where you want to include a large part of document content as placeholder text, it's likely that you'll want the user to be able to retain some of it, so it should be saved as user-edited text in any case.

If you need to nest controls inside a host control, start with a Rich Text control and add the text content you need outside of Design Mode so that the user can edit it. Then, while still outside of Design Mode, insert each of the nested controls you need. You can later edit any of the controls in Design Mode as needed.

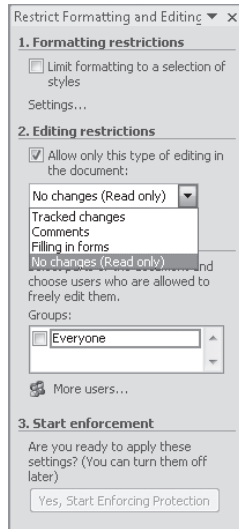
When you click into placeholder text in a control while Design Mode is active, you'll notice that you don't have the ability to nest new controls within placeholder text. You can use a workaround by inserting them separately and then pasting them into your placeholder text, but Word will let you know it doesn't want you to do that, because you'll be unable to exit Design Mode. As with other causes of Design Mode being forced to remain on, you can save, close, and reopen the document to turn it off. But, for best results, heed Word's warning here. You can experience usability problems if you try to add nested controls as placeholder text within a control. Remember that placeholder text is not designed to be edited by the user.

Understanding Document Protection Options

The same document protection options are available from both the Review tab and the Developer tab. When you click Protect Document, as shown here, Restrict Reviewing Options refers to what you most likely think of as document protection. The Restrict Permission options refer to Information Rights Management (IRM), discussed in Chapter 2, "Understanding Electronic Documents." As mentioned in Chapter 2, depending on your edition of the 2007 release, you may or may not see the Restrict Permission options.



When you click Restrict Formatting And Editing from the Protect Document options, the Restrict Formatting And Editing pane opens. The first option in that pane, shown here, addresses formatting restrictions, which can also be accomplished from the Manage Styles dialog box introduced in Chapter 5.



The options you need for protecting documents so that users can only edit content inside controls are under Editing Restrictions.

Four options are available under the Editing Restrictions heading, described as follows.

- The Tracked Changes restriction forces Tracked Changes to remain on, but allows any type of editing. This option can only be enabled for the entire document.
- The Comments restriction allows no content editing, but it does allow users to add or edit comments. This option has an Exceptions setting that allows you to select portions of the document to keep freely editable, and to assign editing rights for those exceptions to everyone or just to specified users.
- The Filling In Forms option is one of the options to consider for use with Content Controls. This option can be enabled for the entire document or by section. (Note that you will only see the option to select sections when multiple sections exist in the document.) When you enable forms protection, users can only access or edit content inside controls. More specifically, users can only add or edit text within controls, because formatting and the ability to insert or paste objects is prohibited. The exception to this is Picture controls, to which users can add a picture while forms protection is active. However, once a picture is added in a Picture control, it can't be replaced while Filling In Forms protection is active.

CAUTION!

Do not enable Filling In Forms protection mode when using Building Block Gallery controls. These controls are not available to users when the document is protected for forms. In these cases, or when you want users to be able to format and edit any type of content inside controls, consider protecting part of the document in No Changes (Read Only) protection mode instead.

- The No Changes (Read Only) option does not allow any editing of the document. However, as with the Comments option, you can select portions of the document to make them freely available to all or just specified users.

When you need users to access Building Block Gallery controls, or to format and work with objects inside Content Controls, consider using the No Changes (Read Only) option with each of the Content Controls selected as exception areas that users can edit. To allow editing of Content Controls while in No Changes (Read Only) mode, select controls one at a time and click Everyone or select users to permit under the Exceptions section in the Restrict Formatting And Editing Pane. If you use this option, however, keep two things in mind.

- If the entire control is selected as an exception to the protection setting, users can still enable Design Mode and can still delete or edit the control (unless the options to restrict editing or deletion are enabled in the Content Control Properties dialog box).
- When a control is selected as an exception in this protection mode, placeholder text does not behave like placeholder text. It behaves like user-edited text, which means that users can click in and edit placeholder text without being in Design Mode.

Once you've set the options you need, click Yes, Start Enforcing Protection. The dialog box that opens gives you the option to include a password. You're not required to add a password. However, if you don't add a password, or if users have access to the password, any user can unprotect the document.

Content Controls and Automation

As discussed briefly in Chapter 9, the primary method of automation designed for use with Content Controls is the new Word data binding capability. This is XML functionality that enables you to automatically populate controls with content from other sources. Document Property Quick Parts, discussed in Chapter 9, are examples of controls that are dynamically bound to data.

When a control is bound to data, the content in the control automatically updates when the bound data changes. Bound controls are bound in both directions, meaning that you can change data inside the control or inside the source data, and it updates in both

locations. Controls can be bound to data in document properties or other custom XML that you add to the document, or to data in other locations, such as on a Microsoft Windows SharePoint Services site.

Note, however, that only data suitable for controls with plain text properties (such as Plain Text controls, Date Pickers, and Drop-Down Lists) can be bound to Content Controls. Rich text content (such as tables or graphics) is not supported for data binding in the 2007 release.

Learn how to bind controls to custom XML data in Chapter 22.

As with most new Word features, Content Controls are also available as an object in the Word VBA object model, so that you can use macros when appropriate to act on them.

Note

For SharePoint developers and those who use Visual Studio Tools for Office to create managed code for the programs of the 2007 release, note that these platforms are not addressed in the automation components of this book. The automation-related content in this book provides a thorough introduction to the programming platforms for the 2007 Office release that don't require the use of professional development platforms. Office Open XML and VBA are covered because advanced users can use them to take documents and templates further without having to be professional developers and without having to purchase additional software beyond the Microsoft Office programs.

However, for those who want to take their Microsoft Office programming to the next level, find additional resources and recommended references at the end of Chapters 21, 22, and 23, "Using VBA and XML Together to Create Add-Ins."