Avoiding the top three challenges of custom-coded SharePoint applications

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Abstract

Although SharePoint is an excellent, easy-to-use collaboration platform right out of the box, most organizations quickly find themselves wanting more sophisticated sites and applications than they can build with native SharePoint features. The need for functionality like tabbed forms, interactive 3-D charts, and integration with external data sources such as SAP and Lotus Domino drives many organizations to develop custom code.

But custom code brings its own challenges. This paper details the most important of those challenges, and then explains how Quick Apps for SharePoint offers a better alternative, enabling you to get the SharePoint sites you want without the challenges of custom code.

Introduction: Why customize SharePoint?

Out-of-the-box functionality

SharePoint is an excellent collaboration platform out of the box. Creating sites is quick and easy, so users around the organization quickly begin building sites and deriving value from the platform. SharePoint is very good at serving the collaboration needs shared by most organizations. For example, the need for multiple people to be able to share a document and review it concurrently is common across most organizations, and SharePoint provides that functional-ity out of the box. Moreover, SharePoint makes it easy for site owners and other end users to have the changes they want quickly, because they can do it themselves.

In addition, SharePoint's innate document management and storage capabilities provide a solid return on investment (ROI). That ROI is magnified when SharePoint usage expands to additional workloads, such as search, business intelligence or data-enhanced workflow – and native tools like SharePoint Designer make it easy for power users to develop those custom data gathering and workflow capabilities.

Where customization is needed

But soon, sensing the power of the SharePoint platform and seeing the applications that power users have created, end users begin to want much more than a basic SharePoint site; they want customized sites and sophisticated applications that better suit their needs—and the particular needs of the business.

Things that are distinctive for your business are probably the places where you want to maintain that edge by tuning a process or an interface or data delivery to match your business needs perfectly.

In fact, it is likely that the things that you need to customize most extensively in your SharePoint environment are the things that relate specifically to your core business. Things that are distinctive for your business are probably the places where you want to maintain that edge by tuning a process or an interface or data delivery to match your business needs perfectly.

For example, if your business is manufacturing, the basic capabilities of SharePoint will probably suffice for delivering HR benefits and policy information to your SharePoint users. But if you are in the HR benefit management industry, odds are that one of the ways that you distinguish yourself is how you deliver benefit information to your clients, and therefore you'll want to customize your publishing processes to reflect exactly your way of doing your business.

Specifically, organizations often want functionality such as:

- Advanced forms with tabs
- Richer dashboards and menus
- Hierarchical list views
- Interactive 2-D and 3-D charts
- Integration with external data sources, such as SAP, Oracle and Lotus Domino, including the ability to create and edit – not just view – the information in the external data sources

The resulting challenge

These requests exceed the capabilities of out-of-the-box SharePoint features, and therefore site owners are no longer able to make the changes they want themselves. Accordingly, they turn to their IT staff, who find themselves deluged with SharePoint customization requests from users across the organization. And those users are accustomed to quick turn-around time for SharePoint ¬changes, putting additional pressure on limited IT resources.

Moreover, to satisfy some requests, the IT staff needs functionality that is not included in Microsoft's Standard CAL (Client Access License) for SharePoint. For example, browser-based form access is available only in the much more expensive Enterprise CAL. For medium to large organizations, the resulting license upgrade costs may be prohibitive.

Core challenges of custom code

To satisfy users' requests for site enhancements and customizations, many organizations begin developing custom code. But custom coding brings with it three key challenges:

- Slow application delivery
- High cost of ownership
- Torturous upgrade path

Slow application delivery

Custom coding is a slow process, far slower than users require to satisfy the time-to-market demands of your business. The key constraint is staffing: you never have enough people available with the necessary skills to do the work as requested. Large organizations may have several people who can custom code a web part, but if every SharePoint enhancement requires their time, the queue of requests will grow quickly and users will be waiting a long time for the enhancements they need. At smaller organizations, the situation may be worse – the SharePoint administrator may be the one and only person who is able create custom

code. Since that admin has a wide variety of responsibilities, delivery of customizations will be slower than users want and need, just as in a large organization.

Moreover, even the most qualified staff may not be as qualified as they'd like to be, given the sheer depth and breadth of the solution space covered by a product as comprehensive as SharePoint. The variety and richness of the out-of-the-box capabilities of SharePoint are staggering: from InfoPath to workflow; from search to business data connectivity; from Web Content Management to Enterprise Content Management. Add to that the capabilities beyond SharePoint Foundation 2010 added by the Standard and Enterprise Client Access Licenses (CALs), and a Share-Point developer must be well versed in hundreds of out-of-the-box features, dozens of APIs, and numerous tools such as web parts and configuration options. Plus, SharePoint 2010 now adds additional capabilities for sandbox solutions and three new client coding models. No one can possibly know everything there is to know about every aspect of SharePoint development.

With their time at a premium, and training budgets limited, most developers tend to specialize, and to rely on the skills they have and the technologies they know, which may not be the best approach for a given customization request. For example, the best approach for extracting data from an external SQL Server database might be to use something native like Business Connectivity Services. But a developer unfamiliar with BCS might choose to fall back on a more familiar approach of building a custom web service for extracting data, resulting in slower application delivery time and a solution that might prove to be harder to maintain in the long term. This issue is even more pronounced for developers who are new to SharePoint but who have experience with creating custom-coded solutions in .NET.

High cost of ownership

The cost of ownership of a SharePoint solution includes both the cost of creation and the cost of support and maintenance. Creating custom code means either having staff on hand with the appropriate skills, such as experi-ence with Visual Studio and InfoPath, or farming out the coding to a third-party consulting company. Either way, custom coding is expensive because IT professionals with those skills are in high demand.

Moreover, once developed, custom code is hard to support and maintain. If the code was developed by a third-party consultant, no one in-house is likely to be familiar with the details, and therefore making the changes you need over time will prove difficult or even impossible. In-house coding is no panacea, either – if the developer who created a piece of code leaves your company, will someone else be able to troubleshoot or enhance that code? This is an inherent challenge for any custom code, no matter who develops it: if even your most experienced developers can't figure out what's going on behind the scenes in the code, then enhancing the code may not be just difficult; it may be impossible, no matter how much you're willing to pay.

Finally, SharePoint's broad platform support and multiple programming interfaces can present a challenge to loosely governed technical teams. In particular, multiple coding patterns may be used to solve similar needs. For example, development teams may solve similar challenges with server-side object model code, client-based jQuery, and InfoPath with SharePoint Designer workflows. That is not only an inefficient use of development resources, but support teams also need to be versed in three sets of diagnostic areas to provide first- and second-tier user support.

Torturous upgrade process

The final challenge to custom code is that the platform itself changes, and you have to ensure that your

> When SharePoint application development is dependent on custom coding, SharePoint cannot be the low-cost platform for rapid application creation that organizations envisioned when they invested in it.

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> Quick Apps for SharePoint eliminates the need for custom code, enabling you to avoid all of the challenges that come with it.

custom applications work on the new platform. Upgrading from SharePoint 2007 to SharePoint 2010, for instance, is fraught with gotcha's because of platform differences. But if you have custom applications that were built for SharePoint 2007, you are responsible for getting them to run on 2010.

The first challenge is simply getting the application to run on the new platform. A lot of independent software development at the grassroots level can be quick and dirty. For instance, the code may include hard-coded references to databases, server names or URLs – which worked just fine until you try to run the code on a new platform. So, simply getting custom code to run on the new platform can be difficult, or even impossible, especially for a lean IT shop.

Equally challenging is making sure the application works correctly on the platform. The code was developed to serve a business use, and there is the very real risk that what was done before isn't perfectly repeatable. If it's not repeat-able, then you lose the ability to do whatever the code was built to do in the first place. But there's an even more insidious risk than losing your custom solution altogether: the risk that the solution comes back different. If the custom solution works but is somehow wrong, you introduce error into a process that was error-free before.

Avoiding the challenges by eliminating custom code

Quick Apps for SharePoint eliminates the need for custom code, enabling you to avoid all of the challenges that come with it.

Fast application delivery

Quick Apps for SharePoint enables users to simply configure web parts rather than develop custom code, slashing development time by up to 80%. Quick Apps expands the ability of site owners and others to modify their own sites, enabling them to control turn-around time. Fewer customization requests

require the services of the IT team, and with Quick Apps, those remaining requests can be addressed faster, and by staff with less specialized skills.

For example, a user might want to format and modify external data, set up rich discussion areas, or display rich media in a nicer way than native SharePoint allows. Without a tool like Quick Apps, those enhancement requests require the time of a skilled and expensive IT developer. But with Quick Apps, requests like these can be fulfilled by the end user themselves, or by regular data center engineers, from a catalog of web part enhancements – it's as simple as opening the page in edit mode and dropping the web part onto the page. They don't need to know Visual Studio or InfoPath. They get the customizations they need faster, and your most skilled internal developers are freed up to focus

With Quick Apps, you can easily do all of the following – with no custom coding:

Combine, filter and display data in relevant and consistent ways

Build 3-D charts and dashboards that roll up data from multiple sites, site collections and web applica-tions – something you can't do natively

Create sophisticated forms with multiple tabs to save valuable screen space

Use parent-child relationships and built-in field validation to ensure consistent and reliable data entry

Govern what data users can see with field-level permissions and hide/show-when logic

Enable users to view, create and edit data in SharePoint from other application systems in the organization – including SAP, Oracle, K2 and Lotus Domino – without the hassle of manually copying the data into SharePoint

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on the complex projects that they and only they can work on.

Exactly how can a third-party tool save you so much time? First, the solution includes a variety of out-of-the-box templates that enable you to quickly imple-ment solutions like a project management system, a customer relationship management system or a help desk system. And you can easily extend and customize these templates to fit your needs.

Plus, with Quick Apps, you use an intuitive configuration interface to build your applications quickly—with no coding required. (The code can be exposed, of course, for developers who want or need to see it.) For example, suppose you want to combine data from multiple lists into one list. You simply select the fields that you want to display, and you can even specify the title you want to appear on your site for each field. The XML is automatically generated, and you can edit it directly if you want.

Reduced cost of ownership
Quick Apps for SharePoint unlocks the full potential of SharePoint without the cost and burden of custom code. Custom-izing your SharePoint environment is far less expensive, since you won't need highly paid developers to create custom code. Moreover, maintaining those customizations as the needs of your business change will be less expensive as well—the site owners and others can continue to modify and enhance the SharePoint experience without help from developers.

Easy upgrade process
Finally, when each new version of SharePoint is released, you won't have to struggle with upgrading custom applications or assume the risk of losing important business functionality. Instead, takes on the responsibility of ensuring that everything built using Quick Apps will run in the new SharePoint environment.

Performs extensive testing, so we are familiar with the issues that you might not realize until later on if you had to upgrade custom code yourself. With Quick Apps, your SharePoint upgrade will be faster and smoother, and your valuable IT resources won't be spending their valuable time struggling to decipher, modify and test custom code on the new platform.

Who benefits from eliminating custom code?
Whether you are an IT manager, a developer or a site owner, you will quickly reap significant benefits from eliminat-ing custom code for SharePoint. IT Managers

As SharePoint matures in your organization, users increasingly clamor for enhanced functionality that often exceeds out-of-the-box capabilities. But organizations can't afford to rely on custom coding to meet these business demands, because it slows application delivery, delays the time-to-value of IT's investment in SharePoint, and requires expensive development resources for support and ongoing enhancements. Plus, upgrading custom-coded applica-tions to new versions of SharePoint can be risky, costly and time-consuming, and can result in downtime or data loss.

As an IT manager, you need to simplify and accelerate Share-Point development so you can meet business demands

Benefits for IT managers
Get more from SharePoint with fewer expensive development resources
Build 3-D charts and dashboards Free developers to focus on true, value-added coding
Meet SLAs and keep user community satisfied
Deliver code-free apps that are easy to support, maintain and upgrade

With Quick Apps, you'll be able to use your applications in SharePoint 2007, 2010, and future versions – without having to tackle the upgrade issues yourself.

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> Quick Apps helps you slash your development costs and unlock the full potential of your SharePoint investment by rapidly building applications that are easily supported, maintained, enhanced and upgraded.

within acceptable SLAs. You need to deliver applications that have a low cost of ownership and that are easily maintained, enhanced and upgraded. You need an alternative to custom code.

Quick Apps for SharePoint delivers that alternative. With Quick Apps, you can slash your development costs and unlock the full potential of your SharePoint investment by rapidly building applications that are easily supported, maintained, enhanced and upgraded. Site owners will be able to take on many more customization tasks themselves, freeing your development staff to focus on other tasks. You'll be able to satisfy the most complex user requirements while speeding time to delivery.

Plus, you can be confident that your applications will continue working even as the SharePoint platform changes, since the solution is backed by an experienced vendor committed to upgrading its solution when new versions of SharePoint are released.

Developers

As a developer, you want to deliver the best applications you can quickly, so you can satisfy your users and meet your project deadlines. But as SharePoint maturity increases within your organization, so does the volume, complexity – and sometimes the tedium – of the customization requests you face. You likely struggle to manage your backlog of requests and complete projects

Benefits for IT developers
Meet deadlines faster and eliminate the backlog of enhancement requests
Satisfy user requirements without the hassle of manual coding
Go beyond native capabilities to exceed user expectations
Build apps that are easy to support, maintain and upgrade

within acceptable timelines because the requirements often exceed the capabilities of out-of-the-box SharePoint.

Custom code is an option, but it takes time to develop and is difficult to support, maintain and enhance. Plus, upgrading custom-coded applications to new versions of SharePoint can be a complicated, manual process.

A better alternative is to find tools that accelerate SharePoint customization so you can complete projects sooner, satisfy user requirements, and deliver supportable applications that are easy to upgrade. Industry wisdom states, "Buy the best and build the rest." And with your time at a premium and training budgets strained, you need those tools to be easy to learn and easy to use.

Quick Apps for SharePoint delivers the fast SharePoint development you need. In fact, by eliminating custom coding, Quick Apps can enable you to create SharePoint applications that are easily supported, maintained, enhanced and upgraded – up to 80% faster. And by empowering site owners to do more of their own customizations, Quick Apps will cut your SharePoint customization workload, freeing you up to focus on more complex and value-added projects.

Site owners

As a SharePoint site owner, you are constantly looking for ways to make your site more valuable and easier to use. You have probably made dozens of enhancements to the site since its creation, and you love being able to envision a change and see it live minutes later because SharePoint empowers you to control the site yourself.

However, you have other ideas that seem like they should be easy to implement – but they're not. You've probably experi-enced at least a few of these frustrations:

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The data I need is available in another site or in an external system like SAP, Oracle or Lotus Domino – if only I could combine it into the list on my site.

- My data would be so much more compelling if only I could present it in a 3-D chart.
- Collaboration on my site would be so much better if only we could view the topic and responses of multiple discussion lists in one tree view.
- Organizing information would be so much easier and clearer if only I could create tabs for my list form.
- Navigation would be so much better if only I had a richer and more intuitive menu system.

You know your IT staff is doing its best, but you also know that SharePoint enhancement requests take more time than you – and your site's users – would like. Why do seemingly simple things have to be so hard?

The fact is, they don't have to be. Quick Apps for SharePoint expands your power to customize your own site – without your having to learn to write custom code or ask for help from IT. With Quick Apps, you use an intuitive interface to configure instead of code, so you can quickly have the enhancements you need for your site's users. Ready-made templates enable you to rapidly implement project management, customer relationship management and help desk applications that can easily be extended to meet business objectives. Dell even provides video-based training and tutorials to help you get started quickly. Moreover, the sites and applications you create can be easily supported, maintained and upgraded by IT to ensure long-term satisfaction and avoid downtime during an upgrade or migration.

Conclusion

Many organizations turn to custom coding to deliver the SharePoint enhancements their users need, but custom coding actually keeps them from getting the most from their SharePoint investment. Custom applications are simply too slow and expensive to build and maintain, and difficult or impossible to support through platform upgrades.

Quick Apps for SharePoint enables you to avoid all those challenges by enabling you to configure instead of code. Quick Apps expands the power of site owners and others to customize their sites in ways that are easy to support and maintain. End users get the sites they want faster, and your expensive IT resources spend far less time on SharePoint enhancements and far more time on other value-added projects that require their specialized skills. Dell takes on the responsibility for ensuring your applications continue to run correctly even as the SharePoint platform is upgraded underneath, reducing business risk and further cutting development costs. For more information about Quick Apps, visit http://www.quest.com/quick-apps-for-sharepoint/.

About the authors

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> **Benefits for IT site owners**
>
> Ease of use – You don't have to write code or ask for help from IT.
>
> Fast turn-around – You can get what you need from SharePoint, when you need it.
>
> The right results – You'll have the freedom to customize your site exactly the way you want it.

Quick Apps for SharePoint expands your power to customize your own site – without your having to learn to write custom code or ask for help from IT.

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Curtis Kelly is a Senior Project Manager for Dell Professional Services. He has more than 20 years of experience in the IT industry and has held various executive, management and programming positions in application development and IT consulting. Curtis is skilled in SharePoint integrations and configurations and the Dell Share-Point product line. His expertise includes architecting operational support systems, workflow and automation using Java and/or .NET technologies.

Prior to joining Dell, Curtis worked as an executive director and vice president of IT at Cox Communications (the third largest cable operator in the U.S.), as a consultant for IBM and American Management Systems (AMS) and as a programmer/analyst at Sun Microsystems. Curtis earned an MBA from the Wharton School of Business at the University of Pennsylvania and a BSBA in Management Information Systems from the University of Nebraska.

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