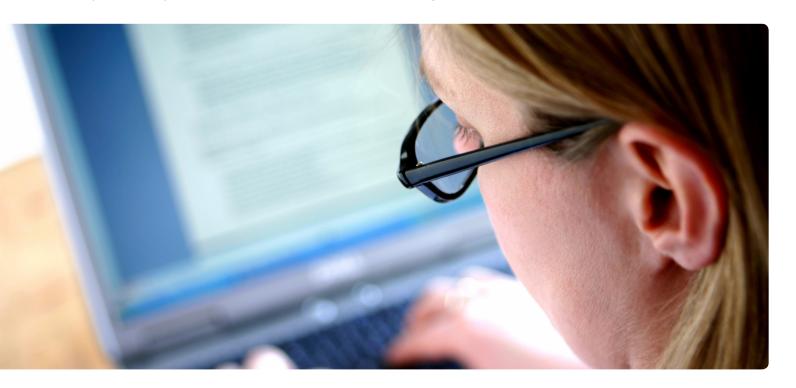# Six Reasons to Empower Your SharePoint Citizen Developers

Written by Chris McNulty, CTO, SharePoint, Dell and Dan Barker, Product Manager, Dell

Abstract

More and more business applications are being created by "citizen developers"—end users who are not IT developers but who create solutions for themselves and their groups. This white paper explores six reasons to embrace citizen development in an intelligent way that minimizes risks and maximizes the return on your SharePoint investment.

Introduction

More and more business applications are being created by "citizen developers"—end users who are not IT developers but who create solutions for themselves and their groups. This is particularly true in SharePoint, where users can quickly create sites and customize them to meet their needs.

Organizations are rightly concerned about the risks of citizen development. It can cause serious headaches for IT, including performance problems, or even outages in production, as users deploy changes that have not been properly tested, as well as compatibility issues when it's time to upgrade. It can be a tremendous time-sink, as each citizen developer struggles to reinvent tools and processes that are already tested and available. And it can lead to reduced SharePoint usability and adoption, since each site may be customized to work differently.

However, shutting down citizen development is simply impractical: users will find ways to make SharePoint work better for them or they will abandon it. More important, curtailing citizen development means missing out on tremendous opportunities—how much better could your SharePoint environment be if you harnessed the knowledge and excitement of all those potential citizen developers in an effective way?

This white paper explores six reasons to embrace citizen development in an intelligent way that minimizes risks and maximizes the return on your SharePoint investment.

SharePoint and "citizen developers"

What is a "citizen developer"?

Citizen developers can be defined as end users who are not IT developers, but who create business solutions for themselves and their groups. By 2014, Gartner predicts that citizen developers will build at least 25% of new business applications.[1]

Citizen developers do not typically write managed or compiled code using tools like Microsoft Visual Studio. Instead, they create solutions with user-facing tools like Excel, SharePoint Designer or their web browser. This is sometimes described as "configuration" rather than "development."

SharePoint is a great platform for citizen development, but it has its limits

SharePoint is a great platform for hosting this type of activity. Cultivating citizen development will help drive SharePoint adoption within an organization. As end users become familiar with SharePoint, they can quickly learn to create apps and solutions to streamline business processes and perform their jobs more efficiently—they become citizen developers. But as they realize the potential of SharePoint, they increasingly clamor for enhancements and customizations that exceed out-of-the-box capabilities. They would love the freedom to make these enhancements and customizations themselves, but they often lack the necessary tools, training and custom development experience. In some cases, citizen developers don't even have the rights to customize, because organizations lock down usage or lack enterprise licensing required to distribute the tools to all users.

When citizen developers are not able to make their desired changes themselves, they turn to IT for help. But often IT can't satisfy their requests quickly enough.

Additionally, IT is not involved in day-to-day business operations, and thus may not understand the business needs well enough to translate them into project requirements, further delaying time-to-delivery.

Organizations face a choice: shut down citizen development or embrace it—intelligently

This scenario puts IT managers at a crossroads: either shut citizen development down completely or embrace it.

Fighting citizen development is a losing battle. Ambitious users will always search for ways to get what they need from SharePoint, when they need it, without relying on IT. Some citizen developers will begin building things that could turn "operational" over time and become very difficult to change and manage. Moreover, by attempting to block citizen development, you'll be shutting down a promising route to increased user adoption, better business productivity, and reduced IT burden.

Therefore, the logical choice is to embrace citizen development. But IT can't just let the citizen developers run wild. If end users are given free rein to customize SharePoint without proper governance and control, something could go wrong that hurts SharePoint performance, disrupts productivity, or results in lost content or functionality. This risk is acute with SharePoint. Throughout the platform, Microsoft offers multiple ways to deliver similar results. When potential citizen developers are faced with a range of choices that include browser customizations, SharePoint designer, third-party components, custom solutions, page scripting, Excel, etc., they often choose "none of the above." They can't decide where to start! Or else they

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[1] "Citizen Development: Reinventing the Shadows of IT," 2012. Published: 2 February 2012. Analysts: Mike Rollings.

> By 2014, Gartner predicts that citizen developers will build at least 25% of new business applications.[1]

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choose "all of the above"—which can quickly lead to IT support headaches. It's hard to support custom apps when users are allowed to change almost anything in SharePoint! Again, where do you start?

You must empower your citizen developers in a careful, intelligent way: through proper governance.

The key reasons to (intelligently) empower your citizen developers

Given the risks outlined above, organizations should intelligently and willingly empower their citizen developers for these reasons:

1. **Put business solutions in the hands of the business**—The more business users are empowered to build their own solution (or to at least frame it out to a point where someone else can finish it), the stronger the result will be.
2. **Cultivate and empower good citizens**—Steering citizen developers to the most supportable and upgradeable techniques—through governance—enhances the long-term value of their solutions.
3. **Reduce IT burden**—By empowering citizen developers to make their own customizations confidently without posing risk to the environment, you are freeing IT to focus on more value-added projects. And when empowered users do request help, their requests tend to be more complete and realistic for the SharePoint platform.
4. **Enhance the IT/business relationship**—In many organizations, IT is increasingly viewed as overhead or a roadblock, not an enabler. Through a citizen developer program, IT can better understand business needs, while also empowering users to build their own solutions on their own timelines, which improves organizational agility.
5. **Improve SharePoint adoption**—SharePoint succeeds best when users can build their own solutions that streamline business processes and enable them to be more productive in their day-to-day jobs.
6. **Harness the new SharePoint 2013 app model**—The new app model in SharePoint 2013 enables site owners to find and install business applications from a public SharePoint app store—potentially without ever calling someone from IT. Organizations need to be proactive about controlling this new model.

Let's examine each of these reasons in more detail, and then look at a tool that can help your citizen developers make the most of SharePoint.

Reason #1. Put business solutions in the hands of the business

Empowering citizen development eliminates the back and forth between IT and the business to define project requirements, so the final solution will be completed faster and it will be more accurate. Plus, the turnaround time for ongoing maintenance and change control will also be shorter, keeping end users happy.

Citizen development takes advantage of the fact that the people who intend to use the process are usually the best experts on what the process needs to be. No amount of project scoping by IT will identify all nuances.

For example, a given set of workflow approvals may need to run four days a week and not five; for some reason, that group just doesn't do them on Mondays. A developer who sits down to create the workflow may not think to ask what days of the week to include, but the people who own that process understand implicitly all the rules of engagement. The more business users are empowered to build their own solution (or to at least frame it out to a point where someone else can finish it), the stronger the result will be.

Reason #2. Cultivate and empower good citizens

Steer citizen developers to the most supportable and upgradeable techniques
Empowering your citizen developers is a good practice—and so is educating them about the best and most supportable and upgradeable ways to enhance SharePoint. Remember,

> Citizen development takes advantage of the fact that the people who intend to use the process are usually the best experts on what the process needs to be.

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citizen development is going to happen anyway, so it's better to be proactive and take control before something goes wrong. Steering citizen developers to the most supportable and upgradeable techniques—through governance— enhances the long-term value of their solutions.

Citizen developers offer tremendous value in that they understand their business. But because they're not professional developers, they often don't understand things such as how important it is to perform thorough testing, how to reuse solutions that are already tested and available, and why to bother with documentation. It's not their fault that they don't know these things; they've never been asked to learn them. But they do need to become aware of these issues, and the organization needs to steer citizen developers toward preferred components and methods that are easy to learn and use.

IT plays a key role

The power of citizen development doesn't suggest that "professional" development is bad. On the contrary, IT has a powerful role to play in advocating for the best techniques of professional development that may not be immediately understood by users coming from outside the traditional development "family." These techniques include:

- **Testing methodology**—Make and test proposed changes in a non-production system.
- **Change management**—Document, communicate and approve proposed changes in advance, and move them into production on a supportable schedule.
- **Incident support**—Understand in advance how to receive questions and inquiries about disruptions and who should address ad hoc needs.
- **Architecture**—Select preferred tools, and reuse existing solutions rather than reinventing them.

Giving guidance to citizen developers helps avoid preventable mistakes

Why is it so important to teach citizen developers techniques like these? Simply put, if users don't learn best practices, they often rediscover worst practices. For example, assume that users are told that IT supports a "non-production" system for building and testing changes. But if they aren't given the tools and instruction to use the non-production system properly and guidance on the process of deploying from non-production to production, they might think that they have to build their apps in non-production and then again in production. This burden of double work becomes a strong incentive to make changes directly in production. As a result, they introduce risk, increase project timelines, and struggle to do things well. Basically it makes life miserable for those trying to embrace SharePoint as a solution.

In short, you can't just assume that all your users are going to be good citizens on their own; even though most of them have the best of intentions, they need to be provided with a little bit of direction. Usually, it doesn't take a whole lot; you just need to get them started and give them the tools they need. When you do that, a lot of really good things start to happen. On the other hand, if you fail to provide proper governance and the right tools, one of two things happens: either they simply give up and stop being involved with SharePoint, or they make do with what they find and the few best practices they might know about, which can lead to solutions that don't get tested properly and that are hard to support and maintain. In either case, you've missed an opportunity.

> Steering citizen developers to the most supportable and upgradeable techniques— through governance— enhances the long-term value of their solutions.

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Reason #3. Reduce IT burden

IT simply can't address all the needs across all of the business

By empowering citizen developers to make their own customizations confidently without posing risk to the environment, you are freeing IT to focus on more value-added projects. And when empowered users do request help, their requests tend to be better thought out and more realistic for the SharePoint platform.

Let's face it, regardless of the size of your organization, your limited IT staff can't really address all needs across the entire enterprise; it's almost impossible. All too often, the result is part of your user community gets ignored and they may become stagnant.

By enabling end users to create their own SharePoint solutions, you free IT staff for other tasks

Fortunately, many of those users have the desire to step up and help themselves and their groups. If you enable them—by giving them governance and the right tools—to become responsible citizen developers, they don't have to ask IT for solutions; they can do some, most or even all of the work themselves. This helps the business, as discussed above, by enabling faster deployment of more accurate solutions. But it also helps the business by freeing IT resources— especially developers—to work on things that have the highest value for the business and that only they are capable of doing.

Reason #4. Enhance the IT/business relationship

A citizen development program can help IT better understand business needs

In many organizations, there is a wedge between IT and the business: IT is increasingly viewed as overhead or a road block, not an enabler. The business needs things from IT—answers, products, tools—and sometimes getting those things takes far longer, or costs far more,

than the business would like, and the business doesn't understand why. IT, for its part, may not understand the true business need or urgency. Relationships are strained.

Through a citizen developer program, IT can help build closer links with their business peers. IT can better understand what the business needs and wants, while also empowering users to build their own solutions on their own timelines.

SharePoint is a bridge that connects groups, and IT can facilitate those connections

Building this closer link between IT and the business also improves organizational agility. SharePoint is the bridge, or "the operational conveyer," that can connect groups and processes. By enabling citizen developers, you are boosting their ability to accomplish their portion of a process. In many cases, they need to connect with other business and IT groups to do so. IT's role is to help facilitate the process when it crosses business groups or even the IT/business boundary.

Figure 1 illustrates an example. The business group B1 needs something done, so they interact with IT group G1 to start the process. IT does its thing, interacting with other IT groups to accomplish the task, and perhaps also interacting with another business group, B2. Without SharePoint you have silos of process, but with SharePoint you have a common medium. When you enable citizen development, you can supercharge IT's ability to better manage just about any operational process or connection point.

Transparency helps manage expectations

A good citizen development process can help make the most of this SharePoint conveyer belt. One way is by introducing transparency—giving everyone timely information about what's happening. The business person can see the status of IT work. Knowing things are coming

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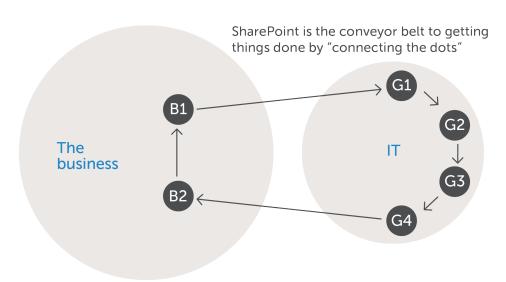
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SharePoint is the conveyor belt to getting things done by "connecting the dots"

The business

IT

B1

G1

G2

G3

G4

B2

Figure 1. Connecting the dots between business groups B1-B2 and IT groups G1-G4

along and how much longer it is going to take enables the business to plan more effectively.

In addition, IT can capture information about development processes, and IT and the business can jointly mine it to glean valuable business intelligence. They can ask questions like, "We've done this a certain way; how is it working out? Could we do things better?"

IT can help citizen developers learn SharePoint techniques—and vice-versa
Moreover, as some business users become citizen developers themselves, they will gain new insight into the development process. When both business users and IT use a common tool, they can also ask questions such as, "How do we use this tool to make our lives easier? How can we use it to make things faster, more efficient, and more cost effective?"

And with SharePoint—unlike many other technologies—this communication is not one-way, with IT always being in the role of instructing the business users or having technical knowledge that's difficult to share. Rather, with SharePoint, both groups are using a common, everyday platform. Therefore, citizen developers on the business side can become really proficient with using

SharePoint in different ways, and they can cross-pollinate their knowledge and experience over to people in IT. And that becomes a circle of positive working relationships that can grow and be cultivated over time.

It's about getting things done as efficiently as possible
Moreover, this circle of people working together will broaden over time, enabling your organization to make the most of all IT staff. Most organizations simply don't have the luxury of keeping a vast arsenal of senior developers around in case there's an application development need. Instead, the IT group encompasses a range of skills, including staff that have an engineering or usability background and know how to install and use a platform like SharePoint, but that might not have the skills to develop and compile a full solution. If citizen developers are empowered to create quality solutions—solutions that are not only effective but also supportable and upgradeable—more people within IT can provide value to the business than before. Often, no senior developer will be required.

Reason #5. Improve SharePoint adoption

Citizen developers create solutions that make SharePoint more useful and engaging

Chances are, there are a lot of citizen developers within your organization, and you might not even know it. But it's not uncommon for these users to get so frustrated with SharePoint's native limitations that they just give up and stop using it. Don't let this happen; empowering them with a supported and governed toolset to build their own quality solutions will increase usability and adoption. If you add in appropriate training that's relevant and convenient, SharePoint adoption will really take off. SharePoint implementations succeed best when users can build their own solutions that streamline business processes and enable them to be more productive in their day-to-day jobs.

That is, empowering citizen developers has a trickle-down effect: those citizen developers create solutions that make their sites better—more interactive and collaborative, more attractive, more useful. And making SharePoint more useful and engaging is the most important factor in driving SharePoint adoption.

Successful citizen development leads more users to become citizen developers

Closely related is the concept of "developer adoption." Citizen developers, as power users, tend to be the most visible and influential stakeholders in your SharePoint community. They lead by example. Teaching them how SharePoint supports their efforts helps foster their own development and usage, and others will follow. Some of them in turn, become the next generation of citizen developers, as illustrated in Figure 2.

> Citizen developers create solutions that make SharePoint more useful and engaging—which is the most important factor in driving SharePoint adoption.
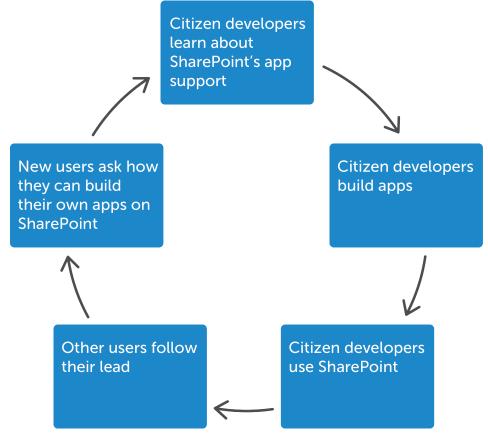

Citizen developers learn about SharePoint's app support

Citizen developers build apps

Citizen developers use SharePoint

Other users follow their lead

New users ask how they can build their own apps on SharePoint

Figure 2. Give citizen developers the tools and training they need to be successful, and more users will want to join in.

> The new SharePoint 2013 app model enables site owners to find and install business applications from a public SharePoint app store—potentially without ever calling someone from IT. Therefore, it's critical to be proactive and take control.

Reason #6. Harness the new SharePoint 2013 app model

The new SharePoint 2013 app model enables users to install business apps from a public store

If the first five reasons aren't convincing enough, organizations need to understand that Microsoft is creating new opportunities for citizen development anyway. The new SharePoint 2013 app model enables site owners to find and install business applications from a public SharePoint app store—potentially without ever calling someone from IT. Therefore, it's critical to be proactive and take control.

With previous versions of SharePoint, organizations faced a critical risk: a user could have enough access rights to introduce something that could completely jeopardize the entire environment. Because of that risk, organizations limited the extension of SharePoint with third-party tools. But preventing maximum enablement of the SharePoint community kept them from maximizing the value of their SharePoint investment.

The SharePoint 2013 app model reduces the risks of citizen development

The new SharePoint 2013 app model reduces or eliminates this risk, enabling organizations to allow citizen development to happen in a way that's far less risky, if not completely risk free. Specifically, with the new app model, IT can determine how to manage and monitor the apps, and set policy that controls how users can access and use them. For example, you can prevent users from purchasing or downloading apps from the public store, and instead create your own internal catalog of approved applications. In addition, you don't have to install the new apps directly on the SharePoint server. Instead, they can be hosted elsewhere in the data center or in the cloud, which makes it easier and safer for citizen developers to self-serve.

Citizen developers will love the apps, and use them to create better solutions

The new app model can be an important part of your citizen development strategy. The app model embodies the virtues of simplicity and reuse—characteristics you want your citizen developers to seek in their solutions. Reusing elements that provide data interface, visualization or social interaction is part and parcel to making applications more usable and more supportable. Whereas traditional application developers are used to creating one-off, compiled solutions that need to be separately tested and supported, the Microsoft app model says you should keep SharePoint clean by minimizing the use of compiled custom solutions, whether it's through component reuse or in-the-box capabilities. Citizen development is far more likely to do that, to achieve those lean footprints that Microsoft is preaching by seizing the app model and running with it.

SharePoint 2013 apps are cloud-ready

In most cases, it is difficult (if not impossible) to run classic, farm-based custom solutions in SharePoint Online/Office 365 environments. One of the few exceptions is with Microsoft SharePoint Online Dedicated, but Microsoft enforces a cumbersome testing and certification process (called a high-level design, or HLD) for any custom solutions installed in the environment. No matter what, putting custom solutions in Office 365 is difficult.

So if you are considering the cloud, or are unsure about your cloud roadmap, empowering users with cloud-ready SharePoint 2013 apps is a future-proof strategy.

For more information

You can learn more about the new app model by reading the Microsoft Tech Net article, "Plan for apps for SharePoint 2013."

Choosing the right tools to empower your citizen developers

What to look for in a set of tools

Once you've made the decision to intelligently embrace citizen development, you need the right tools. The ideal tools will enables citizen developers to:

- **Be independent**—Citizen developers need to be able make their own customizations without relying on IT, so they get what they need from SharePoint, when they need it. This frees IT resources to focus on more value-added projects.
- **Fulfill multiple requirements**—Something to combat the one-off tool purchases or a purchase that only addresses one project. The solution should enable all citizen developer projects across the enterprise – not just one particular project. In order to do that the tool needs to have a wide functional moat.
- **Make the enhancements they need**— Citizen developers should be able to enhance the native SharePoint experience by displaying data in compelling and meaningful ways. For example, they need to be able to customize the UI, create visually appealing charts and dashboards, build rich forms and improve navigation.
- **Get started quickly**—Video training and step-by-step tutorials will all help your citizen developers get up and running fast.
- **Build quality solutions**—As we have seen, it's critical that the solutions created by citizen developers be easy for IT to support, maintain and upgrade. This will ensure long-term satisfaction and avoid downtime during an upgrade or migration.
- **Easily and safely deploy changes**—Citizen developers need to get their solutions and changes into production quickly and safely. Therefore, IT needs a supported and governed solution for change management.

Quick Apps for SharePoint: Empower citizen developers to get what they need from SharePoint, when they need it

Many—probably at least 60%—of the customizations and enhancements SharePoint users want require functionality that SharePoint doesn't provide out of the box. With Quick Apps for SharePoint (formerly Web Parts for SharePoint) from Dell, you can empower your citizen developers to quickly begin making the enhancements they want, in a way that IT can support and maintain. Quick Apps for SharePoint delivers just about any customization capability you'll need, including viewing information, adding and updating information, charting information, filtering information, creating dashboard views, and even grabbing business data that resides outside of SharePoint.

Here are the key features of Quick Apps for SharePoint that will help your citizen developers:

- **My First App**—Using the My First App wizard, users of any technical level can click through an intuitive, step-by-step process to rapidly create a simple yet powerful solution that incorporates a SharePoint list, a view and a chart—in just three easy steps. When they complete the wizard, they've got a working solution they can launch and interact with—and this quick success builds confidence and excitement about the SharePoint platform. The beauty of My First App is that users can get started without the need for training or documentation. Plus, My First App eliminates the unnecessary dependencies on the SharePoint development teams to build, support and maintain these simple but critical applications.
- **Code-free configuration**—Customize SharePoint sites quickly using a point-and-click configuration interface instead of custom code. This configuration approach enables citizen developers to create their own solutions without IT involvement, so they get what they need from SharePoint, when they need it.
- **Easy external data integration**—Eliminate the frustration caused by islands of business-critical data. With Quick Apps for SharePoint, citizen developers can access information from external SharePoint sites as well as external systems such as SQL Server, SAP, Oracle and Lotus Domino within their SharePoint interface.
- **Short learning curve**—Citizen developers can get started quickly building better SharePoint solutions with easy-to-use web parts that include built-in video tutorials.

> Using the My First App wizard, users of any technical level can create a simple yet powerful solution that incorporates a SharePoint list, a view and a chart—in just three easy steps.

> By intelligently embracing citizen development, you can get the most from your investment in SharePoint.

Plus, at the Quick Apps community, they can discover tips and tricks and best practices from SharePoint peers and Dell experts.

- Easy upgrades—Build sites and apps that are easily supported, maintained and upgraded by IT to ensure long-term satisfaction and avoid downtime during an upgrade or migration.

Deployment Manager for SharePoint: Ensure that citizen developer changes are moved easily and safely into production

Deployment Manager for SharePoint is a client-side application that installs on a laptop or workstation and augments the standard SharePoint change management tools, making it simple and easy for IT to move applications and customizations safely into production. Here are some of the key features of Deployment Manager that will help IT implement a safe and reliable change management process:

- **Easy deployment**—You can move components and related content from one site to another simply by simply clicking and dragging.
- **One-to-many changes**—With Deployment Manager, you can easily deploy changes to many sites across multiple SharePoint farms. For example, you can deploy metadata changes (e.g., a new site column to be pushed to every site collection), branding changes (e.g., new master pages or standard images), and templates for sites, lists and libraries. This makes it easy to ensure consistency across citizen developer solutions.
- **Scheduling**—If you have large volumes of citizen developer changes to push into production, those change processes may need to occur during outage windows, typically after normal business hours. SharePoint doesn't provide the ability to schedule most activities without the use of batch files or scripting PowerShell commandlets, which adds time and complexity to the process. But Deployment Manager provides full scheduling capabilities, so it's easy to deploy these changes during the appropriate windows.

- **Auditing**—If something does go wrong in your production environment, Deployment Manager is there to help, with automated auditing, detailed error messages, alerts and easy-to-read reports—no more digging through cryptic log files. Effective auditing reduces the risks associated with citizen development.

Conclusion

Embracing citizen development in SharePoint can yield significant benefits. Because business users and site owners know their own requirements, users will get exactly the enhancements they need, and faster, than if the changes require IT involvement, which will drive SharePoint adoption. IT staff will be freed up to work on the important projects only they are qualified to take on, and IT and business users will be drawn into positive collaborations and relationships. And, provided you supply good governance and the right tools, your SharePoint sites and applications will be easy to support, maintain and upgrade. By (properly) embracing citizen development, you can get the most from your investment in SharePoint.

About the authors

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Chris McNulty oversees the SharePoint business unit at Dell, where his responsibilities include the strategic product direction for Dell's SharePoint solutions. Chris is a Microsoft Certified Technology Specialist (MCTS), a Microsoft Certified Systems Engineer (MCSE), and a member of the Microsoft Solutions Advocate and MVTSP programs. A frequent speaker at events around the world, Chris is the author of SharePoint 2010 Consultant's Handbook and other books, and he blogs at www.chrismcnulty.net/blog and www.sharepointforall.com.

Prior to joining Dell, Chris led the SharePoint consulting practice at KMA, a New England-based Microsoft Gold Partner. He holds an MBA in investment management from the Carroll School of Management at Boston College and has

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