Practical Sitecore 8 Configuration and Strategy

A User Guide for Sitecore's Content and Marketing Capabilities

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Apress®

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I dedicate this book to my wife Sarah and our
five children—Adalyn, Noah, Molly, Henry, and Teddy

Contents at a Glance

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About the Author

Phil Wicklund is the manager of digital technology services at RBA, Inc.—a digital and technology consultancy.

His passion is leadership. It sounds simplistic, or worse, cliché, but his passion runs deep and no other word hits closer to the mark. He loves leadership because he loves casting a vision for a better future; a future of personal growth, betterment of the human condition, ways to create future value for companies, and a future of shared accomplishment with his teammates. Such a future is one worth fighting for, and he has never been afraid to take the path of maximum resistance to make a goal a reality.

He has lead and managed countless large-scale, enterprise projects as a project manager and/or technical lead. He also has experience managing a staff of 36+ consultants. Additionally, he's been blessed with countless opportunities to interface with and advise CXO-level customers on creating value for their companies.

He has also written three technology books; teaching is second passion. He loves the feeling at the end of a day when he has been able to apply his expertise to help someone in need. He sincerely hopes this book helps a lot of people learn a tool that isn't always the easiest to learn.

He is currently in his third year of doctoral studies at the University of St. Thomas. Learning, you could say, is his third passion. He is working to extend his studies in technology and business by deepening his understanding of organizational leadership, working toward a dissertation that combines the three disciplines.

About the Technical Reviewers

Mike Reynolds a Sitecore MVP with over eight years of Sitecore architecture and development experience, is an independent consultant with a proven track record of pushing the envelope of the Sitecore platform to deliver best-of-breed solutions for clients. A well-known thought leader in the Sitecore community, Reynolds was recognized as a Sitecore Technology MVP in 2014 and 2015 for his community contributions.

Nick Wesselman is a four-time Sitecore MVP and manages product development for Active Commerce, "Sitecore e-commerce done right." Nick has been developing content management and e-commerce applications for over 15 years and has contributed to Sitecore modules such as WeBlog and Sitecore PowerShell Extensions.

Acknowledgments

The first thing I want to do is thank Apress for the opportunity to write this book and taking a chance on me. It's truly been a pleasure working with the Apress team, most notably Susan McDermott, Rita Fernando, and Douglas Pundick. Their guidance and editing skills have undoubtedly made this book a very professional and helpful work. Thank you!

Next, I want to thank my technical reviewers, Mike Reynolds and Nick Wesselman. These gentlemen put in many hours of reading and commenting on my chapters. My thankfulness for their real-world experience cannot be overstated; they tirelessly annotated this book with comments, suggestions, and constructive criticism, without which I would have had little confidence in the integrity of the content. Thank you for helping to make this a trustworthy, accurate, and helpful resource for the Sitecore community.

Speaking of which, I need to acknowledge the Sitecore community itself. There is nothing you can't find on the Internet these days. To suggest that all the content came to my mind without any outside influence is a ridiculous notion. I relied partly on my experience, no doubt, but also the experiences of countless folks across the globe through their blog posts, white papers, videos, etc., and this work is just as much theirs as my own. There is no room for pridefulness on my part given my reliance on so many wonderful contributors to such as vastness of Sitecore knowledge as can be found on the Internet. Thank you, all!

Another important group of contributors to this book were Laura Best, Zack Wenthe, and Sasha Vaynberg. These individuals contributed the "Strategy Bits" found in most of the chapters, offering invaluable real-world digital marketing expertise. I wanted the book to encompass not just the technical "how-to," but also some of the "why," and their points of view from a marketing perspective were invaluable. Thank you!

Lastly, I want to thank my wife Sarah for the never-ceasing support, and to my Lord Jesus, who supplied a richness of grace, skills, and endurance needed to complete this work. To HIM be the glory, not me (Romans 11:36).

Introduction

I believe this book represents the most foundational aspects of Sitecore that everyone needs to understand, no matter your role—whether you're a marketer, content administrator, power user, developer, or administrator. This book is where you start when you need to learn Sitecore. What will you learn? For starters, you'll learn Sitecore "out-of-the-box," meaning, you'll learn how to use Sitecore's core features and capabilities, such as content management and personalization configuration, and you'll learn how to configure Sitecore's marketing analytics capabilities.

The book starts with the very basic, answering "what is Sitecore?" in the very first chapter, all the way to an appendix that breaks all stereotypes. This appendix is chock full of fairly advanced concepts for those who are especially ambitious. In between, you'll notice a progression of core concepts, to the more theoretical concepts around security best practices and governance concepts.

Most chapters include "Strategy Bits" as well. The goal is to balance the technical how-to with the more theoretical, strategy of why. This is done through the use of several contributing authors who bring a core marketing background into the discussion. I believe this, paired with the theoretical chapters stated previously and thorough how-to, makes this a robust, broad, and thoroughly helpful and practical book for a broad Sitecore audience.

The core audience this book targets includes the marketers who administer Sitecore on a daily basis, such as those managing content and viewing analytics reports. Developers also will benefit from some foundational understanding, but the book does steer away from the depths of Sitecore's internals; those topics are best covered separately so to not throw a less technical audience off track. However, I don't totally shy away from more advanced topics. Marketing technologists, aka "Sitecore Power Users" as I call them, will wet their whistles throughout the book (and in the appendix especially). As such, this book has a little bit for everyone, while not losing the less technical marketer in the process.

How This Book Is Structured

The book is divided into nine chapters and an appendix with some advanced topics.

- Chapter 1, "Introduction to Sitecore 8," seeks to level the playing field by providing a high-level overview of Sitecore's core features and capabilities.

- Chapter 2, "Managing Content," one of the most foundational chapters of the book, helps readers understand the Content Editor and the Experience Editor; two core tools used throughout the book.

- Chapter 3, "Experience Personalization," walks the reader through personalization strategy and configuration techniques.

- Chapter 4, "Experience Optimization,'" demonstrates how to configure A/B testing and other optimization techniques to ensure your content is best suited to your customer's needs.

- Chapter 5, "Marketing Campaigns," describes how to set up marketing automation and campaigns within Sitecore, no doubt a critical read for marketers seeking to get the most out of their installation.

- Chapter 6, "Web Forms for Marketers," is a fun little tool to help marketers spin up quick and easy forms for lead capture, etc., and this chapter walks them through this process.

- Chapter 7, "Experience Analytics," provides an overview of the out-of-the-box reporting built into Sitecore, as well as how to set up some self-service reporting for more advanced decision support.

- Chapter 8, "Security," is the token security chapter; you'll learn how to set up users, roles, and access rights to secure your installation.

- Chapter 9, "Governance," seeks to enable you to maintain a happy, healthy Sitecore installation for years to come.

- Chapter 10, "Appendix," brings a host of more advanced topics, such as data templates, custom workflows, architecture, and the Federated Experience Manager for those looking to go a bit deeper.

Contacting the Author

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Introduction to Sitecore 8

My goal for this book is to pave a yellow brick road for Sitecore end users, such as marketers and content administrators. There is a ton of information on the Internet about Sitecore, but its vastness often leaves you wondering where to begin. This book begins with an overview of Sitecore. Later chapters will dive into the details. For now, however, it is important to understand Sitecore's potential more broadly so you know where your destination is.

Finding the wizard of oz begins with knowing some WCM history and, specifically, how Sitecore is helping to redefine what a WCM should be doing for you. We begin this discussion by considering Sitecore's solution architecture. Next we will discuss all the great high-level features and capabilities of Sitecore. This exploration will help set the stage for what's possible with Sitecore, or in Dorothy's case, what's "over the rainbow."

Sitecore's content management system is one of those key capabilities, thereby allowing non-technical marketers the ability to change content across all channels without the need for a developer. Sitecore's analytics engine is another key capability. Analytics and data are the powerhouse behind the rich personalization and engagement optimization capabilities within Sitecore that marketers so often salivate over.

In the end, Sitecore is just one tool among a myriad of tools and systems that make up what an enterprise uses to run its business. Systems such as ERP systems, CRM systems, authentication systems, and so forth are all critical adjuncts within the enterprise that Sitecore often needs to integrate with. Some of the most prevalent integration points will be described at a high level later in this chapter so you can understand at the broadest scope what the potential for Sitecore can be.

Finally, this chapter will conclude by offering a brief tutorial of the graphical user interfaces (GUI) that end users, marketers, and administrators work in. For those who may be on a previous version of Sitecore and looking to upgrade (version 7.5 and earlier), the chapter will conclude with a discussion on new features and capabilities specifically with the eighth version of Sitecore so you can know what to look forward to when you upgrade.

Web Content Management—A Brief History

Sitecore, a Danish company, was founded in 2001 at the peak of Web Content Management (WCM) hype. Sitecore, however, is one of the very few in the market who transformed itself as digital marketing waxed and waned, and here, in the "age of the customer," Sitecore is certain to remain a horse worth betting on. Sitecore provides the data, in real time across all channels, needed to maximize experience value. Additionally, Sitecore utilizes deep analytics to drive better decisions and uncover valuable insights. Sitecore also integrates deeply into external business systems to help create a single picture of your customers. These capabilities take WCM well beyond its original definition, paving the way for the modern Customer Experience Platform (CXP), of which Sitecore is a clear leader. Sitecore exceeds expectations for each key priorities for a modern enterprise-class CXP solution. But what is a CXP? For that matter, what is WCM?

It makes sense to dig a bit into the background of Web Content Management (WCM) solutions themselves and their history, and then discuss how CXP has evolved to be the new standard. This backdrop will set the right context before covering each capability of Sitecore, feature by feature. Let's begin in 1995!

Web 2.0

The WCM concept was born out of the late 1990s, not long after Al Gore invented the Internet. Al, like other web site owners, was frustrated that he needed a developer every single time the web site needed to be updated. WCM, born out of this frustration, paved a way for richer, more frequent updating of web site content, which helped facilitate more and more Internet use.

This notion of end-user updatable content became the catalyst for the term "Web 2.0," which became a meme for the concept of user-driven content, rich usability, and stronger web standards. In those early days, Web 2.0 became the high bar that WCM systems aspired to. The core capabilities of a WCM system could be described as the following:

> *Content Management*—The ability to administer content apart from the involvement of a developer is the most basic requirement of a WCM solution. This might involve updating copy on the web site, adding imagery, or rich media such as video content.

> *Collaboration*—Administering content takes the blending of many minds. Some create content, some approve that content, while others may take the action to actually publish that content so it's live for users to consume. This process of collaborating with peers involves locking content so others can't override your changes, versioning content in case you need to revert to a previous version or test an alternate version, and even the initiation of complex publishing workflows to handle the various levels of approval needed before it goes live.

> *Content Visualization*—Some demand that content always be separate from its presentation details. However, as a marketer, it sure is nice to see what the change will look like *before* you press the publish button. A core feature of many WCM solutions is the ability to change content inline, within its presentation to get real-time feedback on what that change will look like when you press Save. This is often referred to as a what-you-see-is-what-you-get (WYSIWYG, whi-zee-whig) editor.

A basic WCM is expected to have these basic capabilities, if not many, many more. However, even though these features were innovative at the time, today they are table stakes. Twenty years after the first WCM solutions started becoming popular, the demands marketers have on their digital experience platforms have all but transformed what a WCM needs to enable.

R.I.P. WCM—Long Live CXP

Unfortunately for the WCM legacy, we are no longer in the digital age. Rather, we have entered the "age of the customer" (a phrase first coined by Forrester: https://solutions.forrester.com/age-of-the-customer/cio-cmo-strategy-3115Q-3763IK.html), where the customer is in control. Most buying decisions are made before the customer ever interacts with your brand. In ages past, the marketer had far more control to dictate the customer's impression of the product, brand, and even the market. Nowadays customers do their own research and engage a web site 70% into their buying journey. As Forrester said in its seminal article, "technology has tipped the balance [of power] in the favor of the customer."

The Internet is really what has turned the tide for marketers. Customers today have infinite knowledge at their fingertips via the Internet. They are doing their homework, and in the age of the customer your job as a marketer is far more challenging. In the age of digital marketing, you were allowed to put your Facebook hat on and create campaigns that pushed bait into individual channels. Now however, customers cross channels constantly, hence the coining of the term 'Omnichannel'. How do you understand user behavior when you only look into individual channels? Take note of this mind-shift, as seen in Figure 1-1.
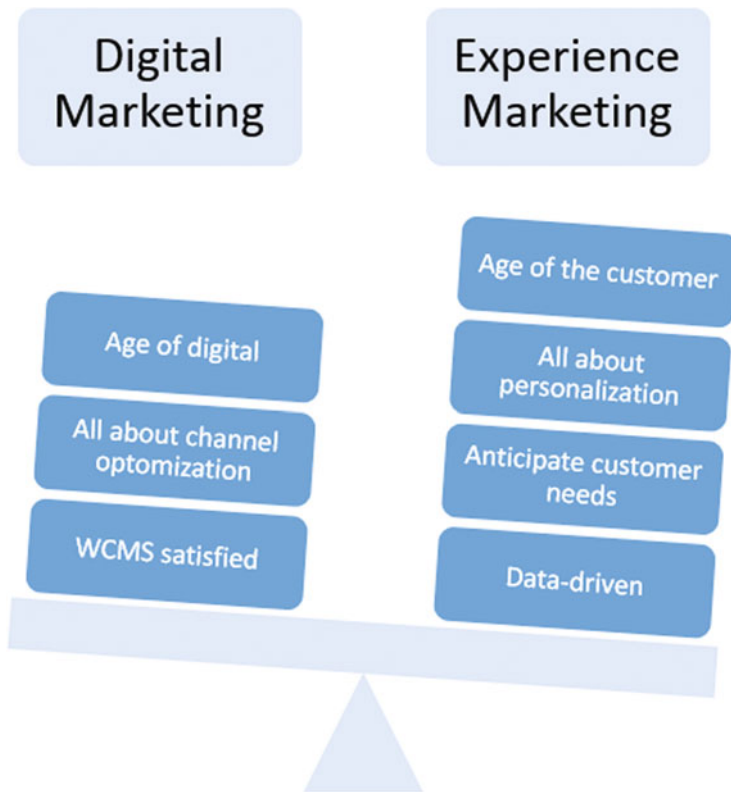
Figure 1-1. Digital marketing is rapidly losing steam to a more wholistic marketing concept, called experience marketing, which focuses on understanding the customer's experience across all channels, versus optomizing each channel individually

Marketers however are not a dying breed. No doubt most are finding themselves on the defensive. However, through updated marketing strategy and the use of a properly configured customer experience management system (CXP), they can get back on the offensive again. The foundation of this offense is to anticipate the needs of the customer. This is done by delivering highly personalized content to each user across every channel. The user is coming to your brand with a very specific purpose in mind, and it's your job to leverage the analytics at your fingertips to present to them, in real time, what it is they are looking for.

Real-time personalization can also be leveraged quite effectively in the context of campaigns. A good CXP uses analytics to compile a single view of the customer's interactions across all channels. A web experience must drive conversions, engagement, and brand loyalty. You must deliver a quality, consistent experience across all touch points. This, no doubt, is functionality well beyond the scope of mere WCM solutions.

Key Priorities for a Customer Experience Platform

Every interaction with your brand is an experience, but do you know your customer across all these interactions? Is every experience one your customer wants/expects? Is every experience creating value for your brand? A CXP should provide the answers to these questions. In this section, you'll find a more exhaustive overview of key capabilities a CXP should be bringing to the table. Later, we'll explore Sitecore more specifically and how it brings these capabilities to your fingertips.

Easy to Use

This one probably goes without saying, but a CXP that is difficult to use simply won't provide the kind of ROI you're looking for. You shouldn't be in a place where you're constantly relying on deep technical skills to perform everyday administration functions, such as checking up on the results of a campaign or adding a new video to the home page. Sitecore provides an intuitive treelist of all content items, such as what is seen in Figure 1-2. This makes it easy to drill into the site and find the content you're looking to update, for example.
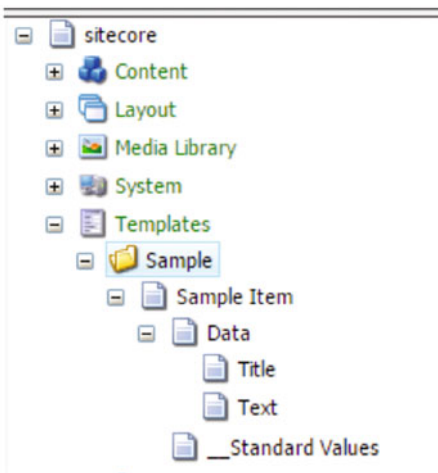
Figure 1-2. Sitecore's intuitive treelist of all content items

Real-Time Personalization

A top-tier CXP should respond to user behavior on the fly and in real time in order to change the presentation of the site to best align to the users' needs and goals, with the intention of getting the most engagement out of the users. Personalization also is critical to driving conversions out of users, such as purchasing a relevant product, getting them to sign up for a webinar, or generating an action a sales representative could follow up on. Sitecore provides this, and much more, such as experience optimization and content testing, so you can know the content on your site will produce the best benefit for the users being targeted. Additionally, you can log user behavior to track users as different personas, which can then feed into who you target within your e-mail campaigns, for example.

■ **Key Statistic** A full 97% of B2C marketers conclude that personalization is key to achieving their long-term goals: https://www.internetretailer.com/2014/08/29/theres-more-work-be-done-personalization

Single View of the Customer

Your CXP should also enable a single view of each customer's data and insights. Instead of having customer data spread across three or four enterprise systems, spreadsheets, or databases, a CXP can be the point of truth for who your customers are, how their behaviors are changing over time, and myriad of other insights your marketing team can tap into. An example of this might be bi-directional synchronization between your CXP and CRM systems, such as what Sitecore accommodates. In any case, the recommendation in the "age of the customer" is to become obsessed with knowing your customer, and you can't accomplish this if you need to go to four places and piece together how your customers are changing.

■ **Must Read** Forbes Insights article called *Customers for Life: Technology Strategies for Attracting and Keeping Customers*: http://sitecore.net/forbes

Search Engine Optimization

Your CXP should not keep you from being found. Far too many developers have made excuses for far too many WCM solutions that come up short in this regard. Your CXP solution should have been designed from the ground up with SEO in mind. This includes key strategies such as URL structure, cleanliness of the HTML, redirection issues, ability to add keywords, and many other tips that a WCM commonly gets wrong.

E-Mail and Automation

While in the store, 61% of consumers would prefer to receive mobile ads with discounts or sales information, but only 49% are actually receiving these ads, (source: http://www.ninthdecimal.com/wp-content/uploads/2014/09/ND_Insights_Q2_2014.pdf), and 81% of shoppers say they want promotional e-mails to highlight items that are on sale. What this means for the marketer is that traditional channels remain alive and well when powered by a reputable CXP such as Sitecore. Your CXP should provide you an easy interface to e-mail your customers by segment, and allow for out-of-the-box customer subscriptions to e-mail preferences. Sitecore takes this a step further by providing multivariate testing capabilities so you can understand which e-mail formats are generating the most engagement. Analytics such as click-throughs and subsequent engagement scores can easily be tracked and optimized.

CHAPTER 1 ■ INTRODUCTION TO SITECORE 8

Multilingual Support

A multilingual experience is table stakes for a CXP solution, as customers expect an experience in their native language. Having a CXP solution that enables language variation is a must-have. Sitecore, as seen in Figure 1-3, enables users to translate each piece of content into multiple languages and thereafter you can use geo-location or other mechanisms to ensure the right content is in the right language for a particular customer. See Chapter 2 for more details on content translation features.

Figure 1-3. *In today's global economy, most marketers will require a CXP solution that accomodates multilingual translation of their content*

Omnichannel Support

Your CXP should enable you to manage content and view analytics across all your channels (e-mail, print, mobile, web, etc.) in the same spot. You should never have to worry about maintaining multiple copies of the same content, or needing to remember two different systems to view different insights on a particular customer's recent engagement activity. Figure 1-4 shows a typical customer journey, from seeing something of interest on social media, to finding reviews of that item with an app, to checking inventory of a local store, to checking out the item in person at the store, to then buying the item for less online at the cheapest rate and, finally, checking shipping status via a mobile phone. The point is that your customers cross these channel boundaries constantly, and you can't think like a WCM user any longer.
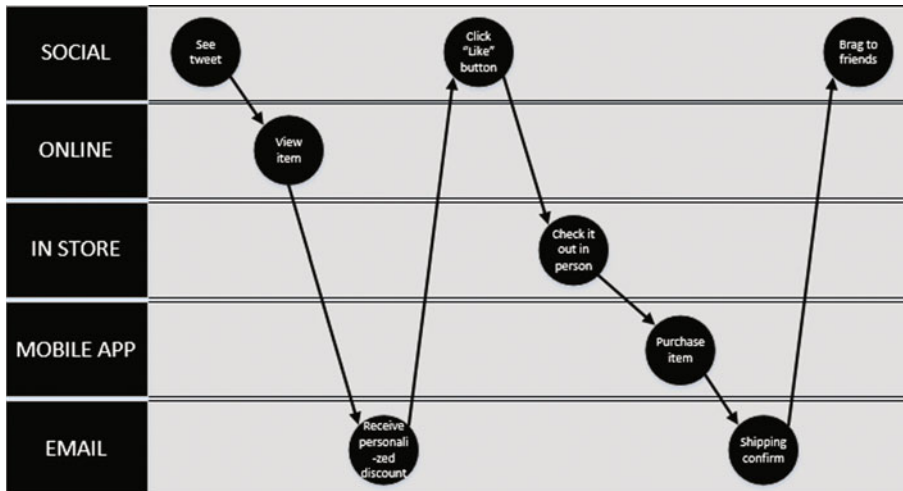
Figure 1-4. *A customer experiences your brand from across many channels. Often a single purchase crosses most of them several times through a single buying journey. It is critical to understand the customer's experience with your brand at every interaction*

■ **Key Statistic**   A full 78% of consumers today shop across multiple channels from online, mobile, and in the store:

http://www.oracle.com/us/products/applications/atg/cross-channel-commerce-survey-333315.pdf

Social Media Support

With customers crossing channels so frequently, it's critical that each channel be deeply integrated with other channels, such as social channels. For example, Sitecore allows you to configure Facebook, Twitter, and other platform users to have the ability to log into your experience and interact with your content. This might be posting a comment on a discussion board, or as they engage in your site they might earn wall postings noting their engagement, such as when they complete a goal. Or more basically, you probably want to add "Like" and Tweet links in your experiences to elicit greater social engagement to draw in new customers.

Mobile Support

Mobile is another given in the world of CXP solutions. This begins with creating rich, compelling front-end user experiences driven off a responsive design to accommodate any browser size. It extends also from a content perspective, where content should be easily managed for apps or other third-party systems, accessible anywhere in the world but managed in one place. Additionally, marketers need real-time access to key insights about their customer's engagement, and the ability to make fast decisions around experience optimization—regardless of access to a large screen. Sitecore was built with a mobile-first mentality to provide such ease of access.

■ **Key Statistic**   81% of consumers research the product on their mobile device before going out shopping:

http://www.ninthdecimal.com/wp-content/uploads/2014/09/ND_Insights_Q2_2014.pdf

Integration Flexibility

Deep integration with business systems is critical for a marketer to truly understand the complete picture of the customer. In fact, a study concluded that 78% of respondents attributed their failed digital experience strategies to lack of integration and the challenges that brought. Technologies that don't work well together can incur significant manual costs and project delays. It's important to pick a CXP that has native integration connectors with your key systems to minimize this risk. Fortunately Sitecore, through connectors or through third parties, integrates seamlessly with CRM solutions, social networks, ERP systems, and e-commerce solutions. See the appendix for deeper architectural and integration considerations.

Developer Friendly

For rich, highly customized experiences in the Web 2.0 world, developers need to get involved and you don't want a CXP solution that is difficult to customize or expensive to maintain. Many WCM solutions fall down at this juncture; they often focused exclusively on a good content management experience at the expense of ease of customization, or vice versa. Indeed, some WCM solutions focus solely on the developer. Some of the most popular WCM solutions are open source, appealing to the developer and the budget constrained, but never meeting the expectations that modern experience marketers place on them. Marketers *and* developers need to engage in a healthy dialogue on what the CXP solution needs to accommodate. Sitecore carefully straddles this tension, offering the separation of church and state that developers desire (separate of content from its presentation details), and yet not sacrificing the marketers desire for control and responsiveness to changing customer circumstances. Figure 1-5 shows how deep developer integration can go, such as within standard development tools like Visual Studio.
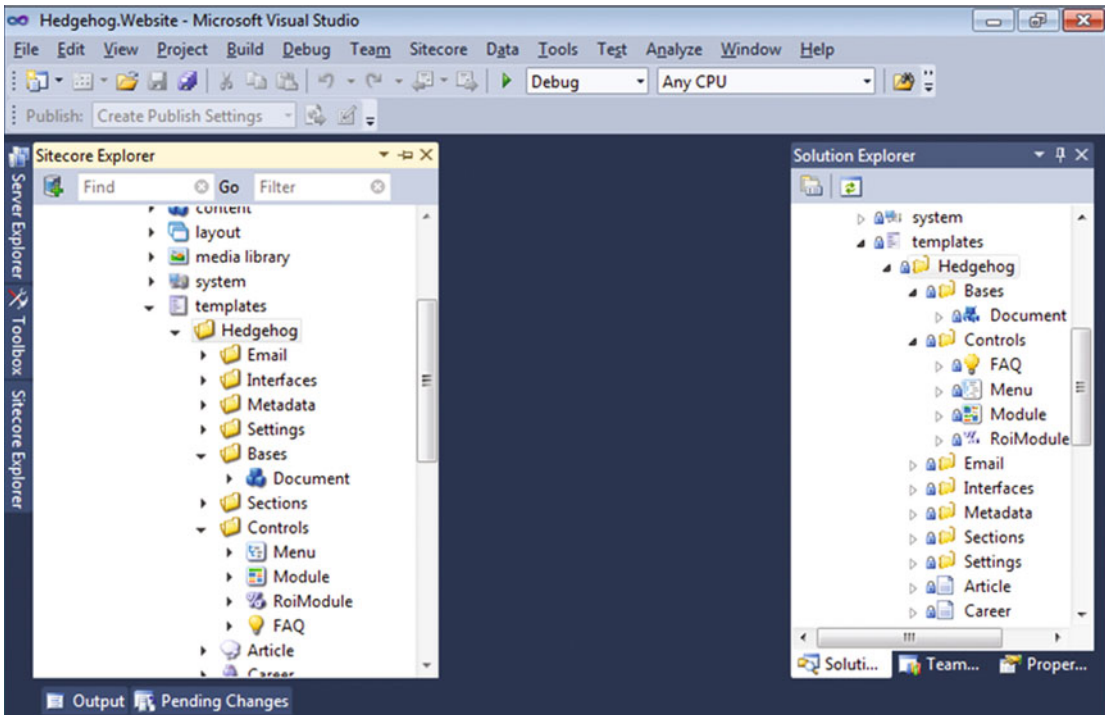
Figure 1-5. *The developer can achieve tight alignment with Sitecore, their peers, and team development software and source control with the help of third-party tools such as Visual Studio and Hedgehog TDS. Sitecore keeps everybody happy*

■ **Tip** Figure 1-5 demonstrates two very helpful add-ins: Sitecore Rocks and TDS from a company called Hedgehog. Rocks seamlessly integrates all Sitecore content and assets into Visual Studio—something devs love. TDS syncs all Sitecore and code changes between all developers on a team; a must-have for team development scenarios.

Enterprise Grade

A busy web solution may be serving content consumed at one million requests a minute. Additionally, the content is mission critical; perhaps it's product information as part of an e-commerce web site. In this case you don't want garage code running your mission-critical site. You need a CXP solution that is dependable and tested under stress and is fault tolerant. Sitecore allows for tons of architecture flexibility, from supporting cloud deployments, web front-end load balancing, and SQL Server availability groups to account for a highly available, scaled out solution. See the appendix for more details.

Key Features and Capabilities of Sitecore

Now that we have some history under our belt, as well as an understanding of what an modern CXP should deliver, we can better understand Sitecore's features and capabilities. Let's begin with a quick discussion of the architecture of Sitecore that enables all these helpful CXP features.

Sitecore Solution Architecture

Sitecore's architecture (Figure 1-6) is broken into five main service tiers: Channels, Management, Sitecore AIDA, Database, and Integration. The specific features and capabilities of Sitecore are spread throughout this architecture in various forms.
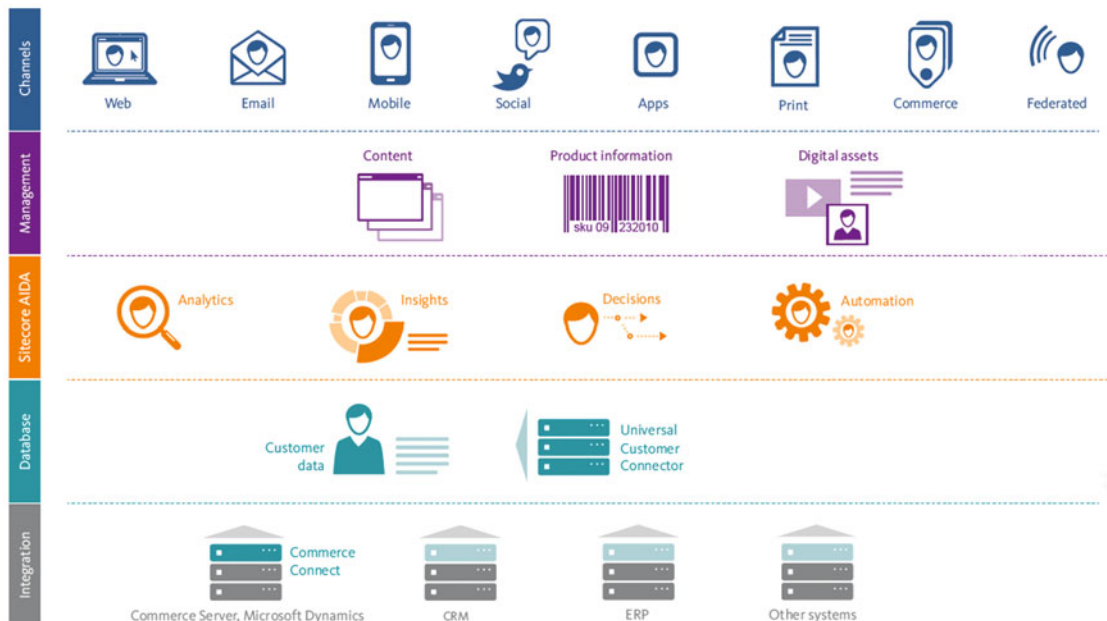
Figure 1-6. *Sitecore's defacto solution five-tiered architecture*

Channel Layer

Channels are the points of engagement a customer will enter when they interact with your brand. Sitecore provides a host of features and capabilities that maximize engagement across the following channels.

Key features and capabilities of the Channel layer include:

- E-mail Experience Manager
- Print Experience Manager
- Federated Experience Manager
- Social connected
- Sitecore Commerce 8

Those channels are described in the following sections.

Web

The web channel is the core channel users will engage in from a browser experience. The browser/web channel also becomes the primary mechanism to administer Sitecore.

Email

Sitecore engages the Email channel primarily through the Email Experience Manager module. This module allows marketers to create e-mail campaigns leveraging customer profile data, preferences, or segments. The Email Experience Manager also allows for easy tracking of customer engagement within the campaign.

■ **Must Watch**   Best practices for e-mail marketing: `https://www.sitecore.net/learn/resources-library/recorded-webinars/5-best-practices-email-marketing.aspx`

Mobile

Sitecore accommodates a separation of content and presentation details. This makes it very easy for developers to create compelling mobile web experiences within Sitecore. Sitecore also accommodates device detection for situations when an adaptive experience is preferred.

Social

Sitecore allows for easy integration with Social channels such as Facebook and Twitter. When you post content in Sitecore you can configure it to automatically post to one or many pages in Facebook. You can also allow users to log in to your site with their federated Facebook credentials. There is a ton of possibility for a marketer in this channel, from finding brand advocates, to capturing customer intelligence, and proactively seeking feedback and advice.

Commerce

Sitecore has rich commerce capabilities to tap into your customer shopping behaviors across all your channels. Sitecore Commerce 8 is a new capability released in early 2015 that enables B2C and B2B e-commerce managed within Sitecore and a Microsoft Dynamics backend. See the appendix for more information on Sitecore Commerce 8 and other e-commernce solutions for Sitecore.

Print

Print is another channel that customers interface with regularly, such as brochures and print ads. Print Experience Manager, a feature of Sitecore, allows marketers to easily capture personalization data to create compelling, targeted print experiences for customers.

Apps

Mobile apps have become a critical way customers interact with your brand, especially when considering e-commerce. One of the benefits of Sitecore is the ease of access to centralized content. Content for the web can be reused for content in an app. Additionally, you can use Sitecore's Federated Experience Manager to tie in App engagement data into Sitecore to, again, create a single view of how your customer is experiencing your brand.

Federated

Federated channels might be channels you don't own but still represent a view into your customer. Perhaps a partner web site captures valuable information about your target customers. Through the use of Federation Experience Manager, you can easily capture those very important, non-Sitecore managed experience's data and combine it with native representations of your customer to create a truer representation of your customer's engagement across all your channels (and even partners).

Management Layer

The Management layer of Sitecore is the core of the experience platform. This is where content administers manage content. It is where they configure personalization rules, view engagement scores, and view reports. It is also what collects, evaluates, manages and analyzes customer intelligence from patters, behaviors, and decisions gathered across your channels. Additionally, from Sitecore you can manage all of your company's digital assets, in one place used across all channels.

Key features and capabilities of the Management layer include:

- Unified content management
- The Sitecore Launchpad
- Viewing analytics and reports
- Digital asset management

Sitecore AIDA Layer

Sitecore AIDA (Analytics, Insights, Decisions, and Automation) encompasses all the sexy features and capabilities that marketers salivate over. Therein is the power to do advanced content testing, such as A/B testing. You can also configure customer engagement goals, triggers, and reports to show progress and campaign outcome attainment. At its core, AIDA provides a rich suite of reporting and analytic capabilities so your marketing team can discover new insights and customer behavior patterns. See Chapters 3, 4, 5, and especially 7 for more information about AIDA.

Key features and capabilities of the Sitecore AIDA layer include:

- Experience profiles

- Analytics

- Personalization

- Experience optimization

- Experience Automation

Sitecore Database Layer

The Database layer is the heart of Sitecore. Data is the lifeblood of your experience marketing solutions. Without it, it's impossible to deliver a highly relevant, personalized, channel optimized customer experience. Sitecore's xDB architecture leverages MongoDB for massive data capture and retention capabilities. This allows high-volume, high-velocity data to be captured and become actionable in real time. See Chapter 7 and the appendix for more details on xDB.

Key features and capabilities of the Database layer include:

- xDB (MongoDB)

- Scalability

- High availability

Integration Layer

The Integration layer provides connectivity into backend systems such as your CRM or ERP systems. Tying these systems together forms the basis for a single view of your customer, as well as provides the data you need for more complex personalization rules (such as past purchases).

Key features and capabilities of the Integration layer include:

- CRM connectors

- ERP connectors

- Sitecore Commerce 8 and Sitecore Commerce Connect for 3rd party commerce solution integration scenarios

- SharePoint connectors

Unified Content Management

Managing content is a core capability of Sitecore. Content might be paragraphs of copy, web page titles, news articles, product information, digital assets such as imagery, or rich content such as video, and infinitely more. By "unified" we mean that the content is centrally managed. It doesn't matter if the content is served on a web page, mobile app, e-mail campaign, or shared across five web sites—you manage it all in Sitecore, in one spot. In this way, Sitecore can become your single source of truth for all customer experience content.

There are three main ways to manage content in Sitecore:

- Through the content tree

- Through the Experience Editor

- Programmatically

Web content is probably the channel most commonly used for content delivery. Therefore, managing web content is the primary focus of this book. The third option best serves your needs if you are trying to automate content changes, or perhaps you're trying to integrate legacy systems with your new Sitecore system. Regardless, that is an advanced topic and won't be discussed much in this book. Rather, end users and marketers will most commonly use the Experience Editor for content editing, and to a lesser extent, the content tree.

The Experience Editor within Sitecore allows users to administer content within a WYSIWIG editor (what-you-see-is-what-you-get). This can be very helpful, because in the content tree you are often left guessing what it will look like when you click Publish (or better yet, Preview), leaving you to click the Publish button dozens of times before getting it right. With the Experience Editor you can see those changes immediately. See Figure 1-7 for an example. In this case the user is updating the hero image header text to "I know exactly where this will go" by simply selecting the text and typing the new message.
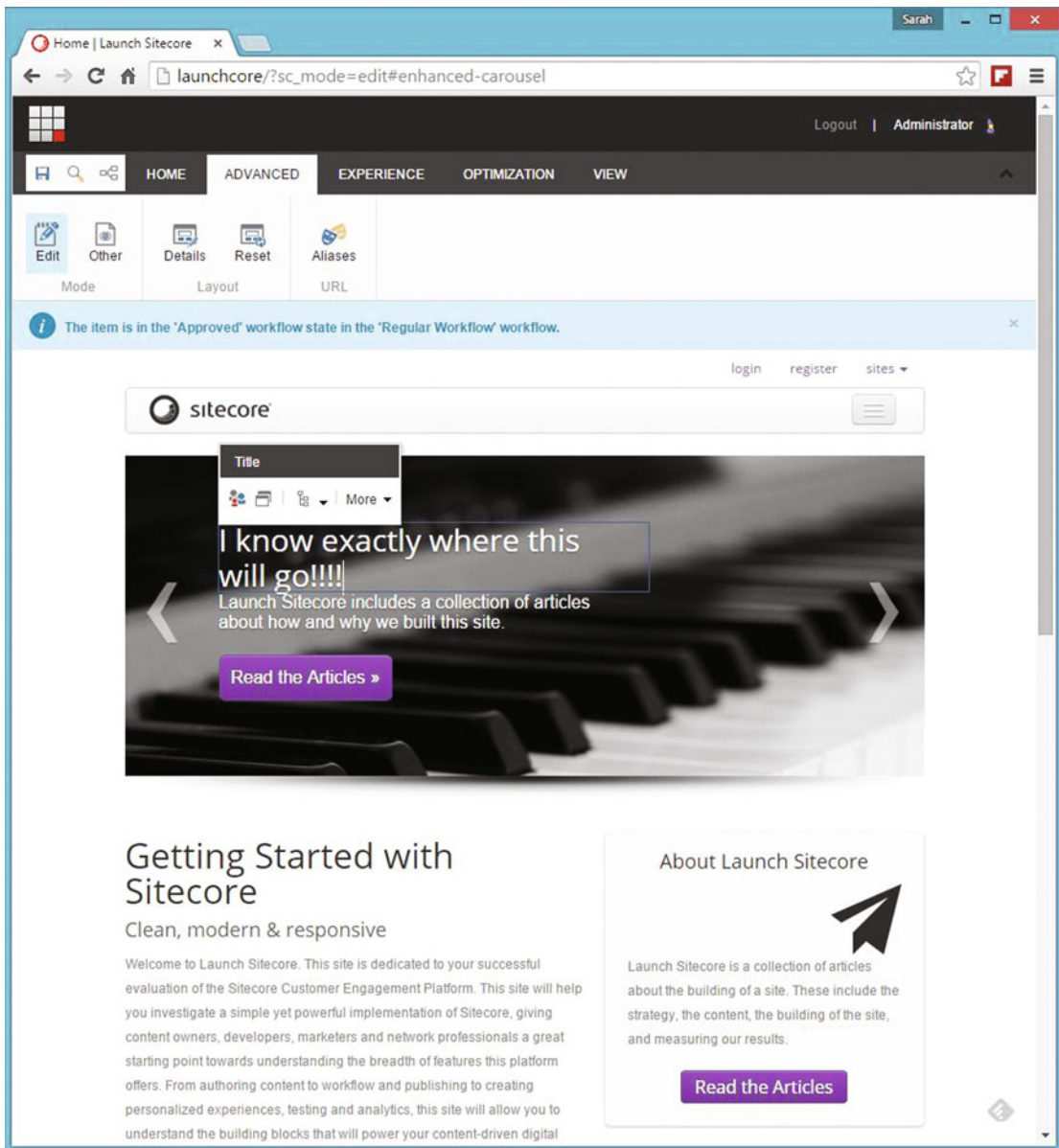
Figure 1-7. *In this figure you can see how users might go about updating the content on a page. They simply select the content placeholder that they want to update and start typing! Very easy*

The content tree works a bit differently. In the content tree you manage content totally independently from its presentation. A content item is just a piece of content in this case; it could be used anywhere. Perhaps the content is a body of text that represents a product description. Perhaps it is content for a drop-down menu. It's up to your information architecture to help you understand what it is you're editing.

■ **Tip**   Thoughtful, custom icons on your content items in the content tree will help take the guess work out of the equation when marketers are trying to figure out where they need to go to edit their content.

As you can see in Figure 1-8, the content tree looks very different. In this case we're making the exact same update as we did in the Experience Editor. This time we dug around in the content tree to find the specific piece of content we wanted to update. In this case we found our hero image header text within the Carousel items item bucket. Therein we see the property we can update to change the content.
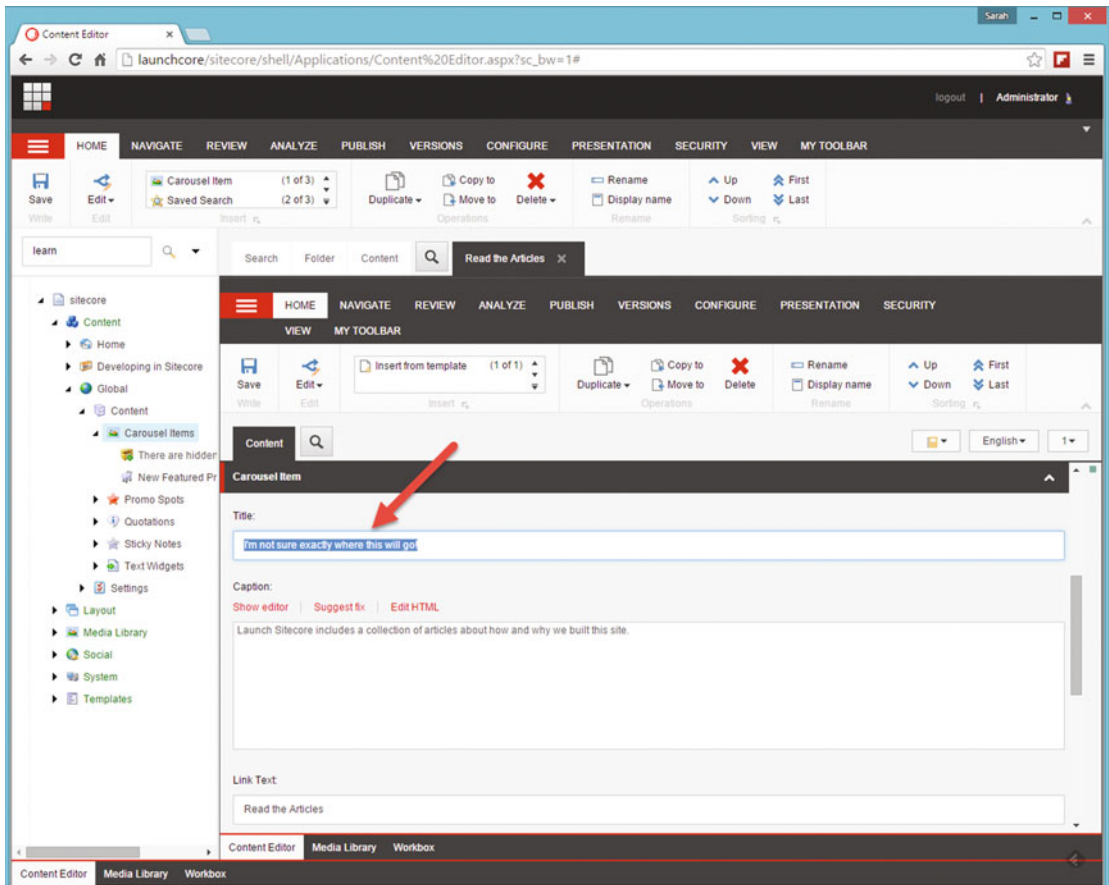
Figure 1-8.   *You can use the content tree to update content. Simply expand nodes until you find the content you're looking for and thereafter edit the fields and click Save!*

PRACTICAL TIPS: USE A GLOBAL DATA FOLDER UNDER CONTENT TO CENTRALIZE SHARED CONTENT

This is great for inline content administration. However, as you read, you can centrally manage content in one place for many channels or many web sites. Notice in Figure 1-9 how we have a Global folder in the content tree under the Content root folder. Within Global (not created out-of-the-box, but it's a best practice to create it), you can store all your content that you know is reusable. Then, in other content folders, you can add your content specific to that channel.

- ▲ 📄 sitecore
  - ▲ 🔩 Content
    - ▶ 🏠 Home
    - ▶ 🏠 Store
    - ▲ 📁 Global Data
      - ▶ 📁 Call To Action Special Actions
      - ▶ 📁 Email Templates
      - 📄 General Information
      - ▶ 📁 Header Ranks
      - ▶ 📁 List Types
      - ▶ 📁 Months
      - ▶ 📁 Radius
      - ▶ 📁 Robot Commands
      - ▶ 📁 Section Background Color Options
      - ▶ 📁 Sitemap Change Frequency
      - ▶ 📁 Sitemap Priority
      - ▶ 📁 States
  - ▶ 🗐 Layout
  - ▶ 🖼 Media Library
  - ▶ 🌐 Social
  - ▶ 🖳 System
  - ▶ 📋 Templates
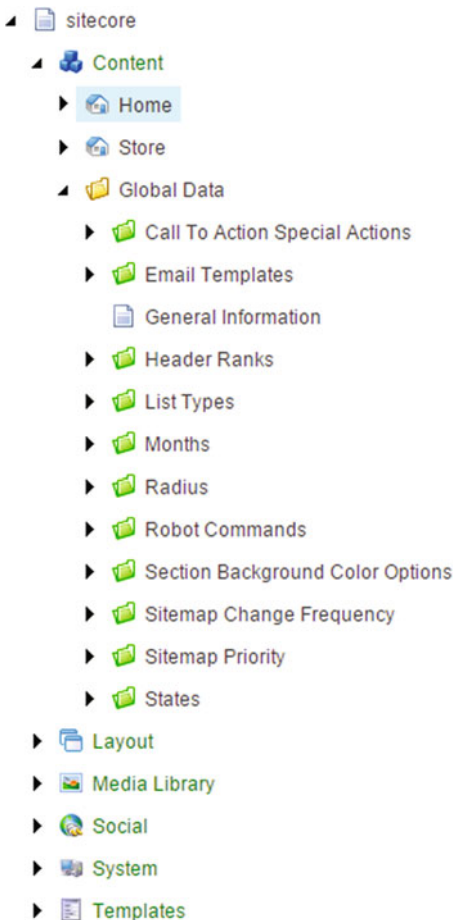
Figure 1-9. *Your first glimpse into the content tree where content gets managed within Sitecore*

While this serves as a basic overview of content management within Sitecore, know that you can go miles deep with other possibilities here. For example, you may want to configure multilingual content variations to support multiple languages. You likely will want to configure publishing, workflows, and security to help instill some governance on content updates. And you will also want to work with page layouts and templates. All of these examples and more are covered in depth in Chapter 2.

Analytics and Experience Optimization

At the heart of Sitecore's analytics engine is xDB. xDB is a data processing engine built on top of a technology called MongoDB, an open source NoSQL solution that allows for massive data collection at scale. This is what makes possible the data collection of every single interaction of every single customer engaging in your cross channel experiences.

The best part of all this data is the power the information puts in your hands to optimize the site. *Experience optimization* is a term used to describe the process whereby you can view experience usage analytics data and tweak your channels to optimize them to work for effectively for your customers, achieve your campaign goals, and so forth.

One of the ways to do this is to leverage Sitecore's A/B testing capabilities. A/B testing allows the marketer to test one or more variations of some content and compare the customer engagement scores between each to ensure that the most effective variation becomes the long-term solution. You can test individual page components, entire sites, or even the entire experience across all channels. Notice in Figure 1-10 how a marketer can test the performance of an individual component between two variations.
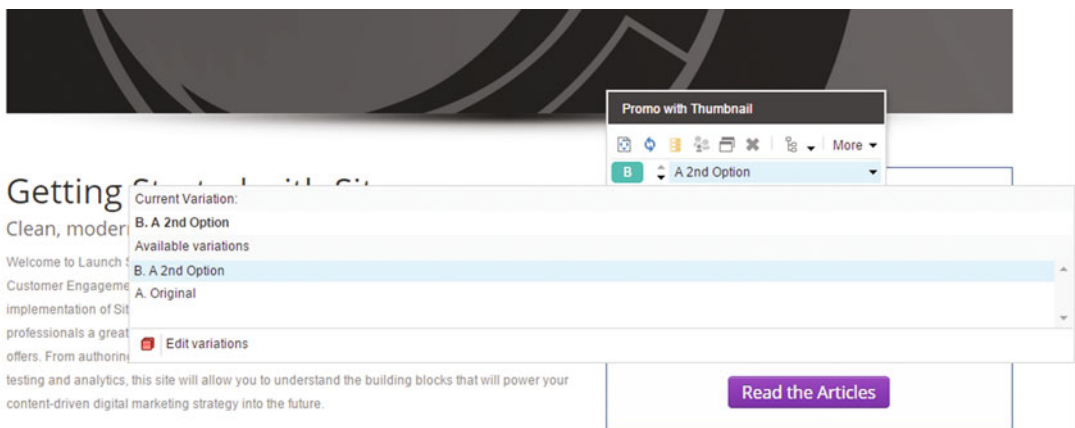
Figure 1-10. *With A/B testing, you can try out different versions of the content to see which generates the highest customer engagement value*

These tests can allow you to easily see what is working well on your site and what is not working so well. This enables you to refine, and hopefully improve, engagement scores across all your channels.

The value in question is known as *engagement value*. Engagement value is a numeric score that you set on actions a customer could take. For example, if someone signs up for your newsletter, perhaps that receives a score of 5. If someone downloads a whitepaper maybe that would be a 3. Each page on your site has likely several possible actions a user can take, from which you can assign these values. Out-of-the-box reporting in Sitecore allows for a quick understanding of how your engagement value is trending, as you can see in Figure 1-11.
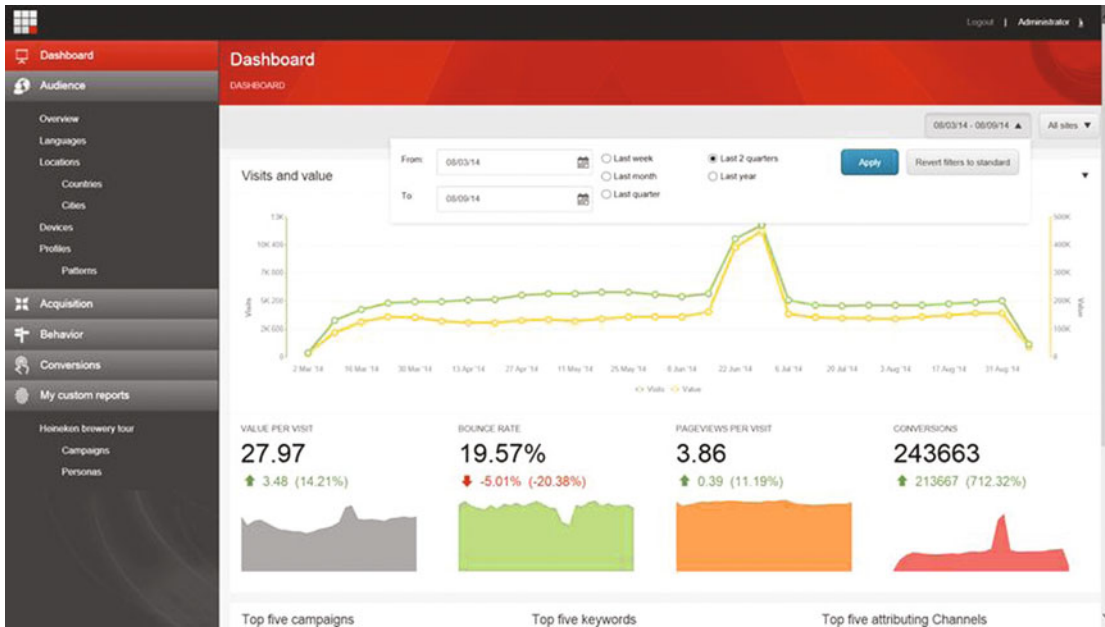
Figure 1-11. *Sitecore offers up many out-of-the-box analytics reports featuring, among other things, engagement value*

Engagement values can roll up into goals, such as goals you may have for a marketing campaign. There are many great campaign reports to show how well these goals are being realized. Outcomes are another possibility a marketer can manage within Sitecore. Outcomes are channel agnostic goals, such as a lead converting into a customer. Goals and outcomes are great examples of topics you'll find in Chapter 5.

Experience Automation

Experience automation takes experience optimization a step further. In addition to collecting engagement value, you can also set triggers on actions to automate marketing activity. For example, if a customer downloads a whitepaper and also has an engagement value above a certain threshold, you may want to trigger a qualified lead creation within your CRM. Or, if a customer browses a few products but never purchases them, you may want to send a personalized e-mail with a discount code they could apply to assist the conversion. This is a great way to keep you sales pipeline full of quality leads without needing to troll through contact lists or send blind e-mail blasts out that rarely drive click-throughs. See Chapter 5 for more details on how to leverage automation in your marketing campaigns.

STRATEGY BITS: MORE MARKETERS ARE TURNING TO MARKETING AUTOMATION

As a marketing strategist I'm always looking at reports and surveys to help me understand what marketing departments are up to, but recently one survey's results surprised me a little. Software Advice released their Marketing Automation BuyerView (http://www.softwareadvice.com/crm/buyerview/marketing-automation-2014/) and one stat that really jumped out is that out of the prospective of Marketing Automation buyers, 21% currently had no dedicated solution to manage marketing campaigns, instead relying on spreadsheets, paper/pens, and one-off e-mails.

I understand that a lot of people have shied away from marketing automation out of fear that the solution is hard to use or implement, but relying on just a CRM solution or standalone e-mail solution is leaving a lot of opportunity on the table.

But I was encouraged as I kept reading, because it turns out that marketers are starting to prioritize lead nurturing and conversion-based marketing. 81% of respondents reported that lead nurturing was a key priority in buying a marketing automation solution, with reporting and analytics coming right behind at 70%.

Marketing departments have been looking for years at ways to better measure and report on their efforts and deliver better lead-management processes targeted to the prospects. Now they are turning to marketing automation solutions to help fill some of those gaps. 91% of the respondents were looking at a marketing automation solution for the first time, giving an indication that marketers are getting confident in their ability to put a marketing automation solution in place and take advantage of it.

When Software Advice was asked what they thought the struggles for first time buyers would be they said, "Probably the biggest struggle is understanding how to use the system to its fullest. Various reports have come out showing that while many companies know they need lead nurturing and lead scoring capabilities, they have difficulty making full use of the functionality because it is more complicated than it seems on the surface. For instance, e-mail branching logic, as a concept, is not that difficult to grasp. But deciding what to do after a buyer opens a lead nurturing e-mail (or doesn't) and understanding what content to deliver to keep that buyer moving through the sales cycle is much more complicated. As a result, first-time marketing automation buyers can sometimes become overwhelmed once they get into their new system. To counteract this, I'd recommend thoroughly researching exactly what you need from a marketing automation system before you buy. Once you understand your needs, start preparing for how you'll use the system well in advance of making a purchase."

I have to say that I completely agree with this conclusion, but I would also add that bringing in a strong partner who has experience in marketing automation and also understands the bigger marketing department picture and operation will determine how successful you can be. Sure, from a technical standpoint many partners can install and implement a marketing automation solution for you, but that doesn't mean they understand how a marketing department operates, or how to build campaigns that work. They won't be able to help you identify your processes, creating campaigns that match your business objectives and take advantage of the marketing automation system at the same time.

So if you're looking at marketing automation solutions, or just trying to figure out what the best route might be, start small and work fast. Get your plan and objectives on paper, hold a strategy session to brainstorm all the things you would like to happen, and engage a partner early so they can help provide support throughout the process.

Zack Wenthe
Marketing Strategist, RBA
Twitter: @zwenthe

Experience Profiles

Experience profiles (Figure 1-12) are one of the most exciting features of Sitecore. A marketer can see a complete picture of that customer's experience with their brand, across all channels, from within that customer's experience platform. The massive data collection via xDB is what makes this possible.
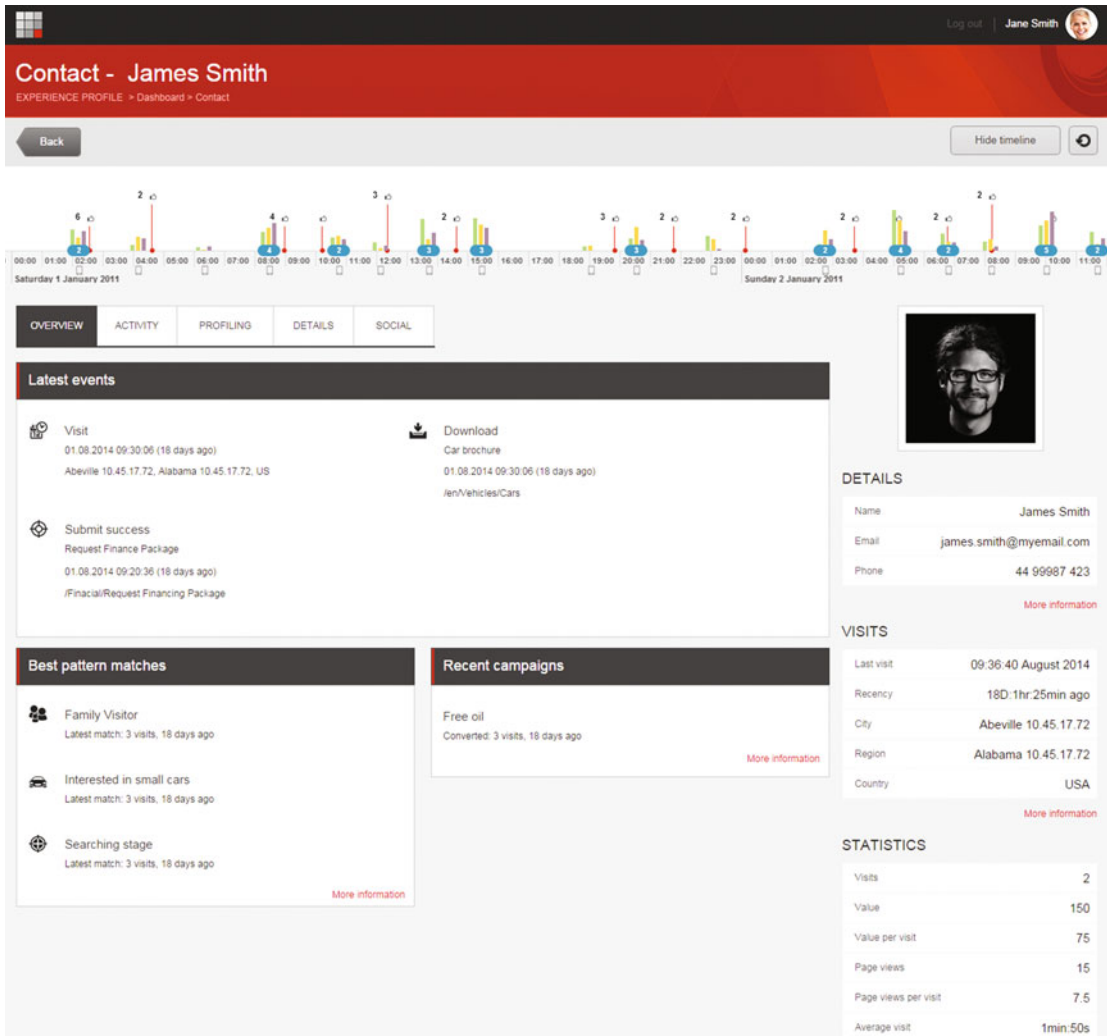
Figure 1-12. *An experience profile becomes the single view of how the customer has been engaging with your digital experiences*

This information allows for many compelling possibilities, from simply a greater understanding of your customers, to enabling personalized experiences (as described in the next section), and to help drive higher conversions. Additionally, with Sitecore's ability to integrate with your Customer Relationship Management (CRM) system, experience data within a customer's profile can easily be synchronized to CRM, making it easy for sales associates to take action on leads being generated out of Sitecore.

One of the most compelling aspects of Sitecore's experience profile capabilities is the automated customer segmentation that can take place. The profiling tab on a customer's profile highlights what type of customer Sitecore thinks the customer is based on trending experience behaviors or rules. This profile data can feed into CRM, as well as drive personalized experiences within Sitecore.

Experience Personalization

As mentioned earlier, a customer's experience profile enables a marketer to know what type of customer they are. This again is driven from experience behaviors, such as page navigation history, click-through details from marketing campaigns, or other rules you can configure. Personalization is the most powerful tool a marketer can employ within their Sitecore experiences to create value for their business.

There are two main ways to enable personalization within Sitecore: 1) through a rules-based configuration, and 2) based on user behavior. The rules system is very straight forward. Presentation rules can be applied to any piece of content. For example, you may want to show/hide a piece of content based on what persona the user is. Or you may want to show different news articles based on what country the user is coming from (geographic targeting). There are innumerable examples that could be provided here. Suffice it to say, there is a robust Rules Editor (Figure 1-13) that accommodates any amount of personalization customization you could ever dream up. Additionally, developers can build custom rules, making the possibilities limitless.

Figure 1-13. *You can configure rules on content to personalize the content. This might be to show/hide content, or to dynamical choose the content source based on customer demographics*

Behavioral targeting is another great way to personalize content. Instead of fixed rules, Sitecore is smart enough to assign a persona to a customer dynamically based on that customer's interaction with your experiences. This is especially helpful for anonymous users who haven't logged in yet, since you really don't know anything about them at that point. As the customer engages with the experience, Sitecore learns with each click how the experience may need to be personalized based on their behavior. This makes the most obvious sense in an e-commerce setting, where you may feature products or sales based on browsing history. See more in Chapter 3 on how to leverage these powerful capabilities.

Federated Experience Manager

Sitecore's federated experience manager (FEM) has been heralded as a game changer in the CXP world. FEM enables a marketer to see customer behavioral data and share Sitecore content across all their experience properties regardless if they are on the Sitecore platform. This enables you to maintain a single view of the customer and a single source of content no matter if you've upgraded/migrated all your digital properties to Sitecore, or if you plan to take a more gradual approach to your migration. Examples might be Sitecore sites, non-Sitecore sites, or native mobile apps.

Additionally, FEM enables better collaboration with partners. You and your partners may want to collaborate on customer data. You can ask your partners to deploy the necessary page scripts on their properties to send a feed of customer data back to your xDB instance to create a consolidated view. Here are a few more examples where FEM can create value for your marketers:

- A company hosts sites that cannot be managed by Sitecore (e.g. non-.NET sites or apps, such as WordPress or PHP sites)

- A company wants to better collaborate with their partners

- A company is in the process of migrating their properties; however, they don't want to wait until they are all migrated before taking advantage of xDB's capabilities

- You may be in acquisition mode and need to take control of new properties and quickly integrate them into your overall marketing objectives

See the appendix for more details on FEM.

Email Experience Manager

Sitecore's Email Experience Manager (EXM) enables greater marketing automation across web, mobile, and e-mail channels. Additionally, EXM can be a great lead trigger in your CRM as customers engage with your mail campaigns. EXM allows the marketer to send three types of mail messages:

- *One-time message*—This is for one-time blasts to your customers. Blasts can have rules associated with them, in case you want to target a specific segment, for example.

- *Subscription message*—EXM allows for customers to subscribe to blasts, such as a newsletter. Anyone subscribed will receive the mail.

- *Triggered message*—A triggered message is a great automation technique to capture customer behavior on your properties and drive greater conversion.

xDB captures click-through rates and subsequent engagement value and realization of campaign goals. For example, you may create a campaign with various goals associated with it, likely across multiple channels. When you send a message from EXM you can associate it to a campaign. As xDB captures experiences, that data can pull engagement values to show the effectiveness of the message itself as well as the campaign. Figure 1-14 shows a sample report that EXM provides.
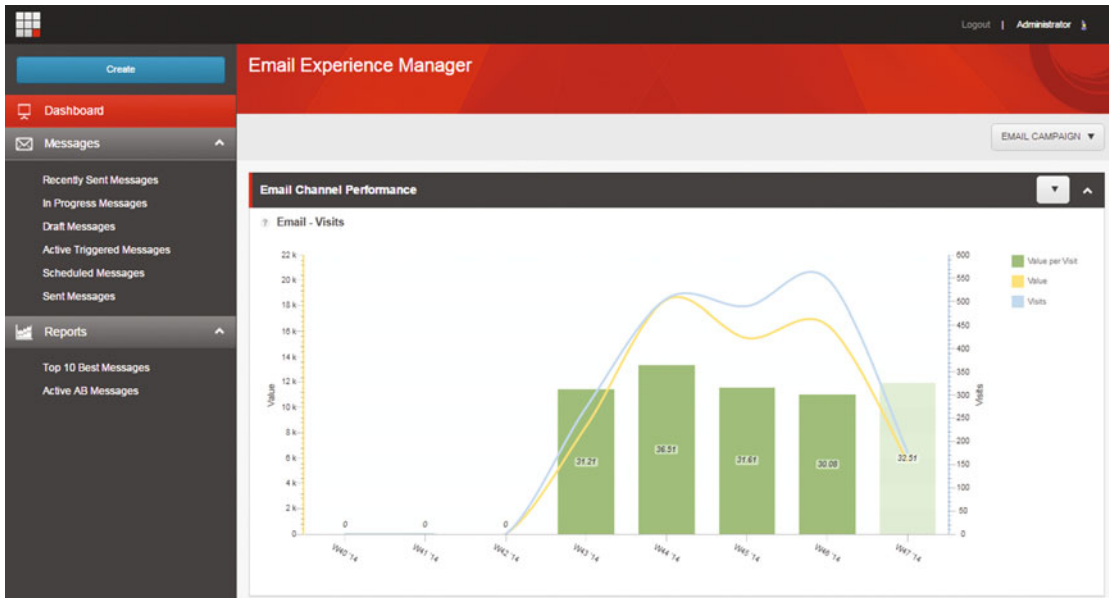
Figure 1-14. *Email Experience Manager (EXM) provides rich reporting to allow the marketer to gauge the results of the message and engagement value derived, which also feed into the campaign's result*

■ **Note** EXM also supports multivariate testing, which allows you to try different versions of your messages to best understand which versions drive the most engagement values.

Print Experience Manager

Print experiences remain a critical component of a marketer's arsenal. During sales presentations, expos, conferences, and in displays, sometimes print remains the best channel to create a customer and communicate your brand's value. However, all the aforementioned expectations customers have in the "age of the customer" haven't changed. Customers still expect you to anticipate their needs. They expect highly relevant, personalized experiences, even with print. Print Experience Manager (PXM) takes the capabilities we've already discussed and delivers them onto a print experience.

PXM utilizes the same personalization rules, customer experience profiles, and content managed in Sitecore to dynamically create print content your customers need. Use PXM to generate print media in real time, such as when they click to download a brochure. Instead of a canned, "catch-all" brochure, download requests can generate a brochure that's best suited for that customer. This enables marketers to focus their time on interpreting experience insights, versus hours and hours spent generating 20 copies of the same collateral.

Quick Tour of the Sitecore Admin GUI

The goal of this section is to give you a high-level sense of how to maneuver within the Admin screens. The rest of the book will spell out the details. For starters, every Sitecore site is administered from beneath the /sitecore path in the site's root, such as http://mysite/sitecore. When you first navigate to this path you'll land on the Sitecore Launchpad (Figure 1-15). You can navigate to all of the Sitecore administrative user interfaces from this Launchpad view.
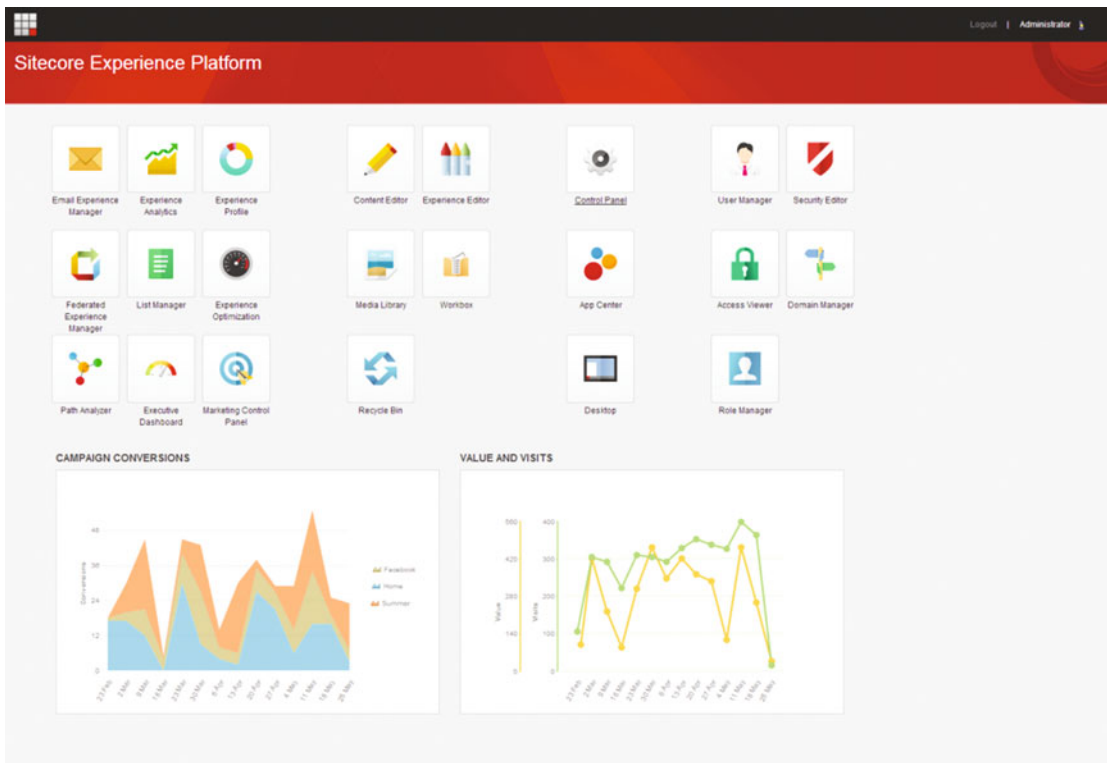
Figure 1-15. *The Sitecore 8 Launchpad offers an alternative to the windowed experience of the desktop view, featuring a couple of high-level analytic reports*

Alternatively, some prefer the more traditional desktop view (Figure 1-16). If you click the Sitecore icon on the lower left, you'll see a launch panel appear similar to what you'd expect from a Windows 7 or earlier operating system. Each of the screens loads in a "window" within the browser similar to a Windows desktop experience. Alternatively, some prefer the Sitecore Launchpad (Figure 1-15) for their default view.
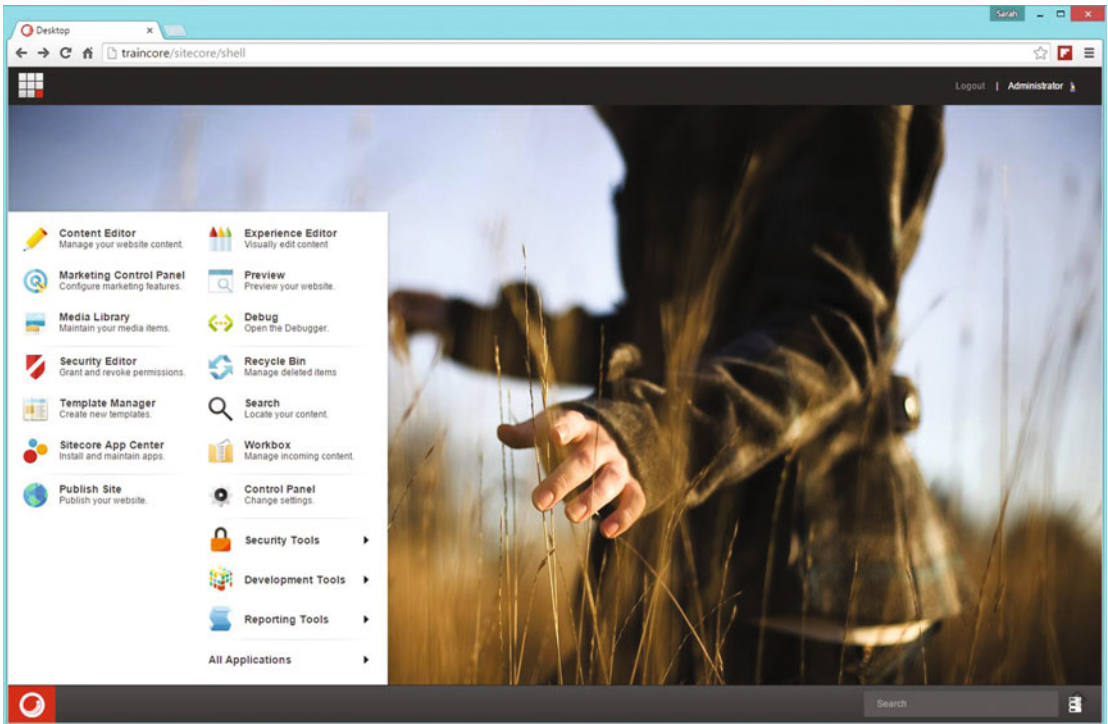
Figure 1-16. *This is the view of the Sitecore Desktop, a launching point into Sitecore's settings and administration*

The benefit of the Launchpad is that you can configure default reports to load on the page for a quick view into how your site is performing, and it is also a bit more tablet friendly. What's more helpful is the avoidance of the windows; each component is loaded full-screen, leaving you to click the grid icon in the upper right to get back to the Launchpad. In the end it is just a matter of preference.

A key point on the desktop view to take note of is the database selector on the lower right of the screen (Figure 1-17). When you administer content or other settings you want to be doing that in the master database. When you're ready to publish your changes, you publish to the web database. Sitecore settings are stored in the core database.
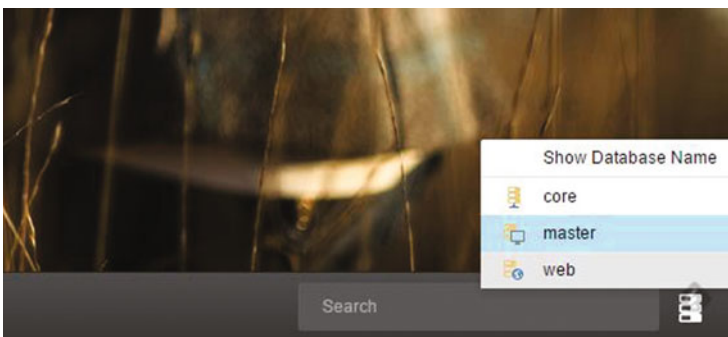
Figure 1-17. *From time to time, you may need to switch between the master and web databases*

By default, the Launchpad and content editors are pointing to the `master` database, which where all content administration should take place. However, there are times where your `master` database and your `web` databases may be out of sync, such as before a large site update. In these cases, you may want to toggle the database to the web to confirm how things are set up in production. Note, however, that you should avoid editing content in the `web` database or that content will likely be overwritten during the next publish.

■ **Note**   You never want to make changes in the `web` database. The `web` database should be for published content only. Changes in the `web` database run the risk of being overwritten when `master` database changes are published.

Another administrative interface that is extremely helpful is the Sitecore Instance Manager (SIM), as seen in Figure 1-18. SIM is available for download in the Sitecore Marketplace (found at `http://bit.ly/1LIf5iZ`), a place where community members can share freely downloadable modules for Sitecore. SIM is a small little GUI that helps you quickly track and administer your instances, and it is especially helpful for developers who may have many instances of Sitecore on their development workstations. Some of the key features of Instance Manager are:

- Export and import *entire* Sitecore instances (a great way to promote an install when you don't have access to SQL Management Studio to restore SQL backups)

- Quick links into IIS (resetting application pools, hot link into the `inetpub` folder, etc.)

- Quick links into the instance's Launchpad items

- Quick links to key configuration files

- Key administrative function (backup, export/import, publish, etc.)

- Download and easily install modules/add-ins
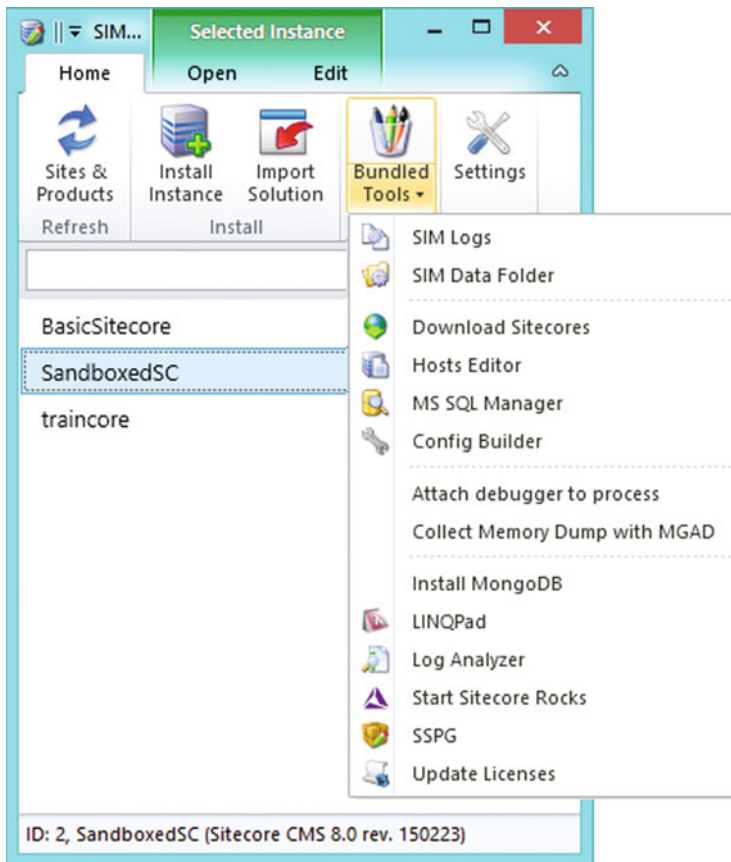
Figure 1-18. *The Sitecore Instance Manager is a great administrator tool for keeping track of Sitecore instances, providing quick links into configurations, and many other great efficiences*

■ **Tip**   There are many fabulous modules in the marketplace. Check them out at
https://marketplace.sitecore.net/.

What's New in Sitecore 8?

There were many new enhancements made in the eighth version of Sitecore that make it stand out from previous versions. The most innovative feature that is widely acknowledged is the new Federated Experience Manager capabilities discussed earlier. These capabilities are really a game changer for marketers; namely, the ability to bring the power of Sitecore to all their properties, whether they are on Sitecore or not.

Other notable enhancements in version 8 include native integration with the Experience Explorer, a very popular feature for marketers who want to "explore" the experience of various personas to see if they are getting the expected experience. Marketers also get a nice bag of tricks with version 8, including more robust segmentation capabilities and the ability to target content with a persona. A key feature from an analytics perspective is the Path Analyzer report, showing entry points and the most comment destinations users take after landing on a page. See Table 1-1.

Table 1-1. *Highlighting the Key Differences Between Sitecore's Verions*

Feature	Sitecore 6+	Sitecore 7+	Sitecore 8
Marketing and engagement automation	X	X	X
Measurable value and efficiency data	X	X	X
Real-time personalization	X	X	X
Dashboards and reporting	X	X	X
Classified origin visits	X	X	X
Content experience platform	X	X	X
Device simulator	X	X	X
Page preview service	X	X	X
Native MVC support	X	X	X
Page Editor and Rich Text Editor	X	X	X
Supports SQL Server DB mirroring	X	X	X
Lucene.NET Search Engine	X	X	X
Executive Insight dashboard	X	X	X
Buckets		X	X
Content tagging/faceting		X	X
Search screens		X	X
Analytics collection database		X	X
Scalable analytics data architecture		X	X
Contact entities		X	X
Tracking across devices/visits		X	X
Launchpad applications			X
Experience Explorer			X
Content tagging using personas			X
Versioned layouts			X
Federated Experience Manager			X
List Manager and segmentation			X
Path Analyzer			X
Simple and advanced testing			X

Summary

At this point it wouldn't be surprising if you found yourself a bit lost in this wide world of Oz. The munchkins told Dorothy to follow the yellow brick road, and I know that as you proceed through the rest of this book you'll find your way through this massive, beautiful, and yet sometimes scary world we know better as Sitecore.

You've already seen how Sitecore is helping redefine a marketer's expectations on a Web Content Management Solution (WCM). In fact, Sitecore is helping to create an entirely new category of Customer Experience Management Solutions (CXP). This is predicated on the emergence of the "age of the customer," where customers expect more from digital experiences, such as highly personalized, relevant, targeted content.

Fortunately, Sitecore meets the needs of the marketer, and then some. With popular features such as personalization, goals and campaign management, and rich analytics and reporting, marketers have all the power they need to take their digital experiences to the next level. The beginnings of this journey include managing content, which is where the yellow brick road takes us in Chapter 2.

CHAPTER 2

■ ■ ■

Managing Content

This is probably the most important chapter you will read in this book, because it contains the most foundational concepts that all other chapters build upon. All future topics branch out from their roots in this chapter. The goal of this chapter is to lead you through the features, capabilities, and configuration options found within Sitecore's content and experience editors.

Before diving right in, however, the chapter begins by reviewing the Sitecore hierarchy. Understanding the difference between data templates, content items, and layouts represents the most foundational knowledge a Sitecore user is can have. Surprisingly, it's not as straight forward as one might think to pick up on, so an entire section is dedicated to ensuring you understand this more theoretical concepts.

Beyond this is a section geared toward helping you learn the fundamentals of content management in Sitecore. This includes managing rich media, working in the Experience Editor, and managing multiple language translation, among other important topics.

It should be noted early on that this book leverages Launch Sitecore (Figure 2-1) as a foundation for all examples and images. Launch Sitecore is a freely downloadable Sitecore package. The package contains a full functionality demo site that leverages all of Sitecore's key features and capabilities. Additionally, Launch Sitecore comes with the source code, making it easy for developers to learn the internals of the solution and key customization techniques. You actually don't even need to download and install Launch Sitecore. Even without downloading, you can navigate to `http://www.launchsitecore.net/` and play around within the site, testing personalization and viewing your assumed persona. However, I recommend you ask an admin to install Launch Sitecore on a sandbox environment somewhere where you can be granted administrator access. It's a fabulous learning tool, and that would make it easier to follow along in this book.
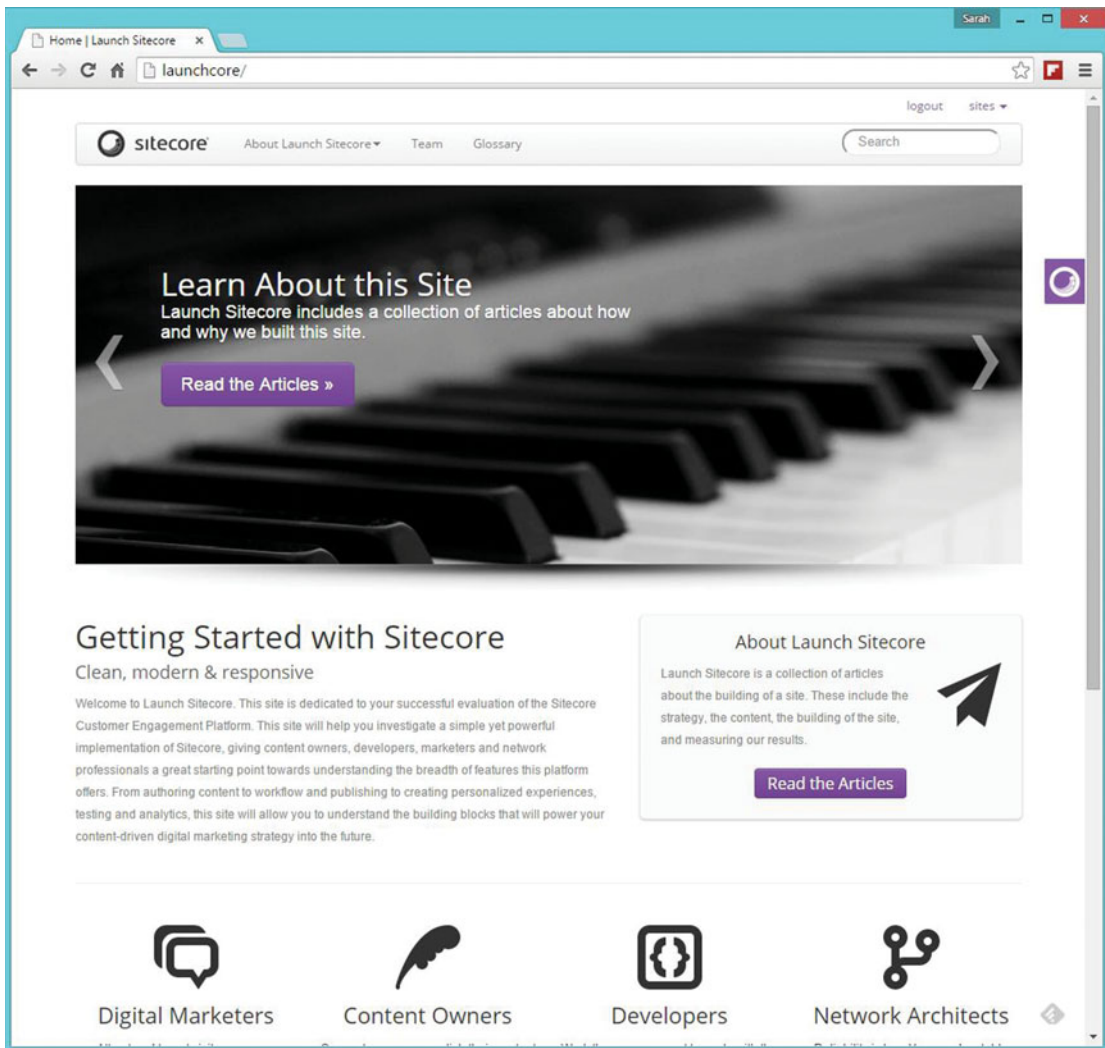
Figure 2-1. *The Launch Sitecore site is free to download and a great tool for learning Sitecore. You can download it by registering at* `http://www.launchsitecore.net/`

The Sitecore Hierarchy

The first step a Sitecore user needs to understand is the tree view you see in the Content Editor. Figure 2-2 shows the default view of the content editor when you first open it, featuring the tree view off to the left. The three most important nodes in the tree to familiarize yourself with are Templates, Content, and Layouts. There are others, and they will be covered later. For now, it is important to not move on beyond this section until you fully understand the concepts of these three nodes, as all else depends on them.
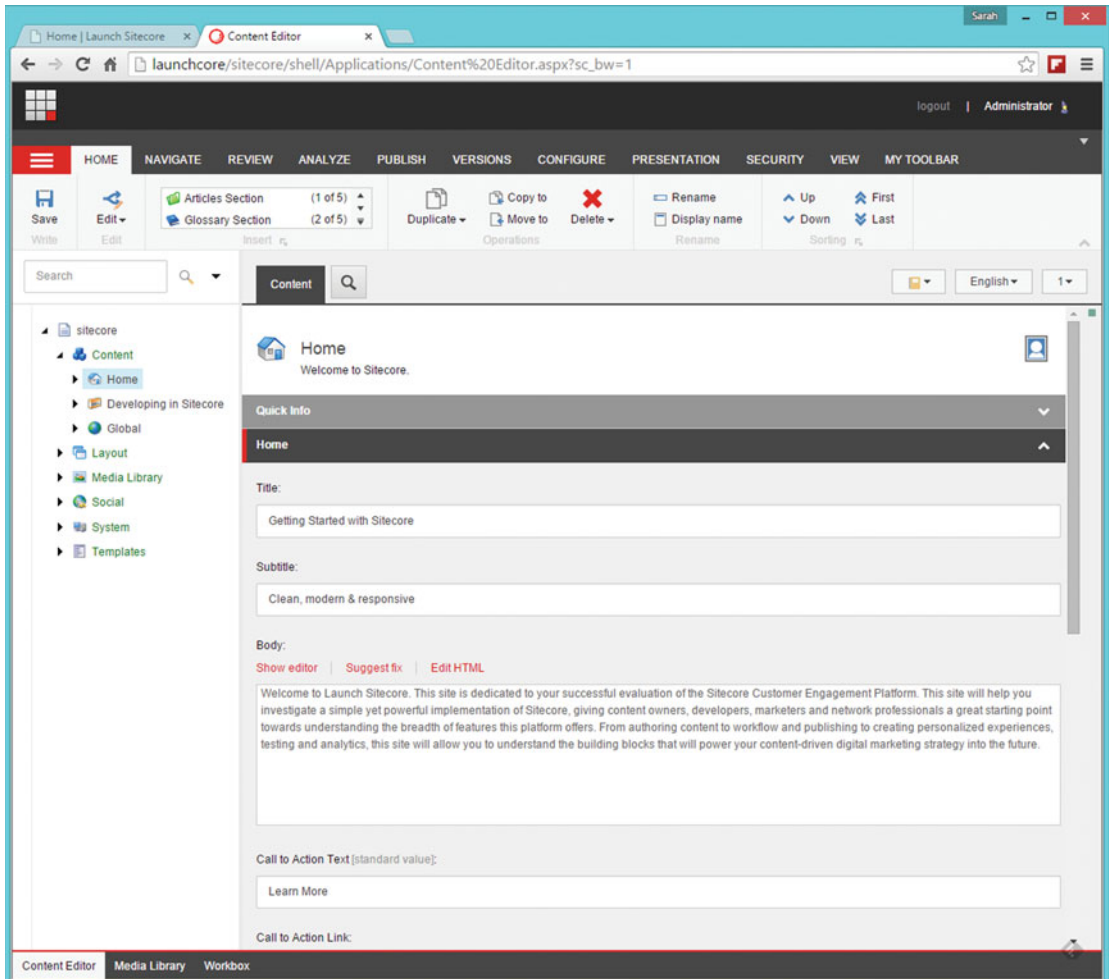
Figure 2-2. *This is the default view of the content editor, featuring a tree of items on the left and an item's details on the right, with the ribbon across the top*

■ **Note** Most marketers will only see "Content" and "Media Library" in the tree when they log in. The other areas, such as "Templates" and "Layouts," are managed typically exclusively by developers and administrators. However, to provide a more holistic overview of Sitecore, these concepts are introduced in this section.

Many marketers and content editors may prefer skipping to the next section, "Content Editing Fundamentals," to get straight to the point. Power users are advised to continue reading this section.

Templates

Templates are defined within the Templates node in the tree view. Templates, also commonly referred to as "data templates," are the foundation of your Sitecore deployment. Every piece of content in Sitecore needs a data template to define what it is. For example, you might want a carousel featured on your home page that rotates featured news stories. The first step to set this up is to create a new data template for this component/functionality. You may choose to name your data template "Carousel Item" and give it a few fields you would expect to see in a carousel, such as a title, a caption, and an image.

■ **Note** Many people are confused by the term "template" because they expect a visual thing, which, in Sitecore, is more akin to a "layout". Templates are just definitions of metadata around some type of object.

Figure 2-3 shows where within the Templates node that data template is defined (more on location best practices later). Note also in Figure 2-3 the data template's fields defining the template. Again, the data template does *not* store any data. It is simply a template you use when you create content.
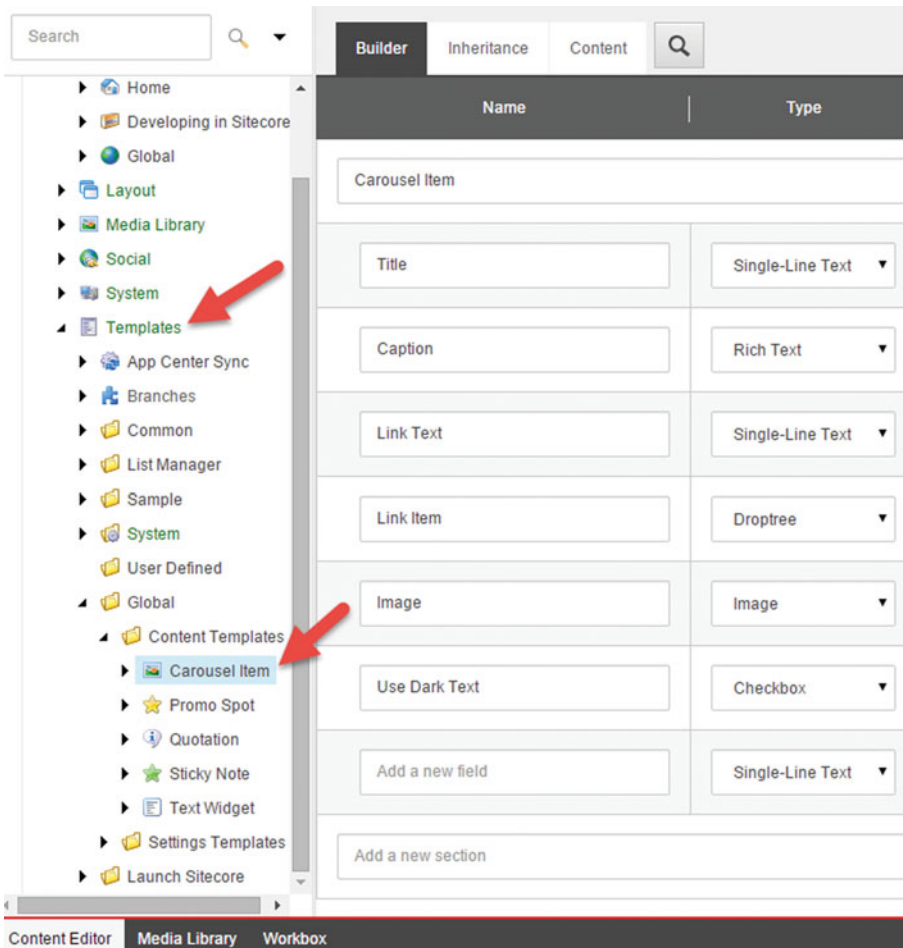
Figure 2-3. *Data templates define what metadata and settings get applied to content items*

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■ **Note**   See the appendix for more details on creating and managing data templates. Since most marketers and power users will not be responsible for these settings, they are not covered in this chapter. However, proper data template setup is one of the most foundational elements of a good Sitecore deployment, so they are covered in more detail in the appendix for those who want to take their understanding to the next level.

Content

Content is administered below the Content node in the tree view. Sitecore end users and marketers will commonly spend the majority of their administration time below this node in the tree view. Administrators commonly restrict them via security settings to just this node, in addition to the Media Library node, where they can upload imagery, video, and other digital assets.

Content in the Content node is just an instance of a data template. When you create a new content item you must select which data template you will use as the basis for what that content will be. Figure 2-4 shows a user inserting a new carousel item to be used on the home page's image rotator. In this case the administrator created a item called "Carousel Items" and limited that item's children to only allow items using the Carousel Item data template to be created below that node (more on the Saved Search and Insert from Template options later).
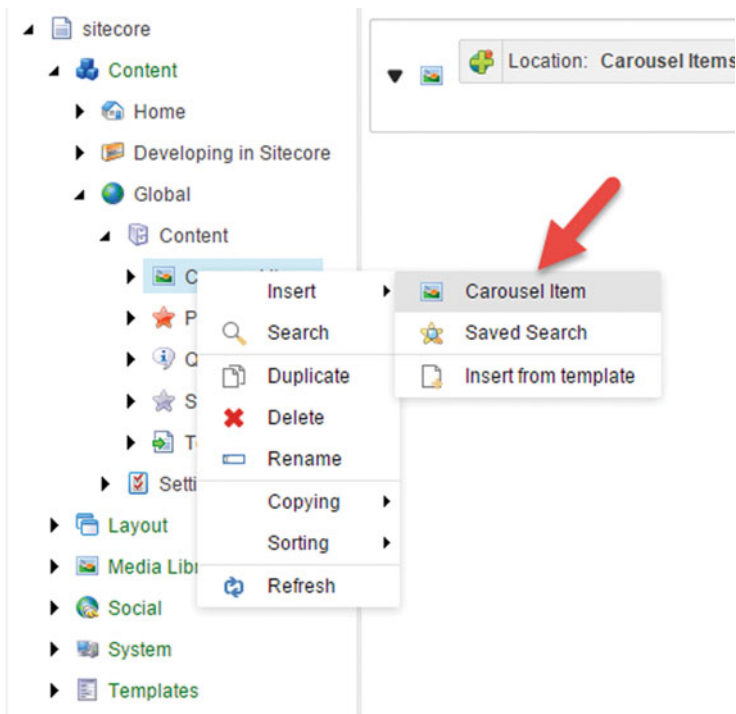
Figure 2-4. *You can insert child items below nodes in the tree view. In this case we're inserting a carousel item below the Carousel folder*

STRATEGY BITS: HOW TO HARNESS THE POWER OF CONTENT

Our world is driven by design. We now design features, structures, and repositories; we spend hours pouring over user research and technical requirements. But one area still so often lies forgotten—the area of content.

Content has equally been described as "whatever you fill your CMS boxes with" and "everything". Essentially, content is what you use to convey your thoughts and persuade others to feel and take action. "Content" can be words, pictures, icons, video, tables, and calculators—it truly is the meat of your experience and it's becoming the most "in demand" area to get right.

Unbelievably, 5 exabytes of data were created between the birth of the written word and 2003. In 2013, 5 exabytes of data were created *every day* (reference http://aci.info/2014/07/12/the-data-explosion-in-2014-minute-by-minute-infographic/). So, how do you keep ahead with this insatiable demand for content when you're the one having to plan or execute a digital project for your team or business?

For many years, platform-first approaches meant that content is often an afterthought ("here's your box, now please fill it with something, oh, and you only have a few days to figure it out"; sound familiar?). Just as importantly, once the haze of the launch party is over, you need a way to ensure that the experience you've spent months creating continues to generate results in the long term.

This is where the discipline of content strategy comes in. In simple terms, content strategy helps you plan the best way to engage and connect with people, so that you achieve your goals and theirs. Good content strategy also helps defines decisions, processes, and tools around how organizations plan, create, and manage content.

Four focus points can help establish even the most straightforward of strategies.

The "Why"

This is often the most neglected step but is also the most important. If you don't have goals clearly defined for your experience (whether a web site, app, intranet, and so on), this is your chance to shine. Think of your goals as your anchor in a storm. They will help you center your team in the months that follow with a clear vision as to what you want to accomplish. Ask these questions:

- What do we need to accomplish with this experience? (This can be a combination of soft goals, such as changed perceptions, and hard goals, such as $$ in sales.)

- What does success look like for this experience?

- What does failure look like for this experience?

- How will we measure it? (Which tools and process will we use to measure and communicate results, and who will be accountable for it?)

The "Who"

Unless you're really going for a cookie cutter experience, you need to be clear on "who" you're trying to reach. In other words, who is your audience? Instead of thinking about all of the content you want to write, think more about what your users will respond to. What will resonate with them? How can you help them succeed? What do you want to avoid? This activity can be executed in many ways—on a basic

level, you can document your internal team's assumptions, then test them after launch. Or you can invest in user research to gain a first-person view of who your audience is and what they expect from you.

The "What"

This is where the substance of your content comes into play and is often the most challenging aspect to content strategy. But you don't have to start with a blank sheet of paper (or template) if you follow the right steps.

Step 1: Be a Visionary

First, create a vision for what you want your content to achieve. Some people do this with a content vision (ref: "Content Strategy for the Web" by Kristina Halvorson, Melissa Rach http://contentstrategy.com/); others write a brief document or "manifesto" that outlines the mandatories for what they hope content will drive for their experience.

Whatever you do, make sure you have buy-in on this vision from senior level decision makers in your organization (preferably you'll have worked with them to write it). You'll need this agreement when decisions need to be made down the line.

Your vision should be flexible enough to evolve with your knowledge and changing business needs, aspirational and motivational to help lift your content efforts, and practical enough to deliver what your organization and business needs.

Step 2: Know Where You Are Today

Digital experiences are rarely created on a whim. Many larger projects need to unravel years of content, technology, and features to get to a new state. Sometimes things are deemed so "broken" that they simply need to be blown up and recreated.

But sometimes, knowing what you have in front of you can be a good first step to creating something new. A content inventory can help with this—an inventory is a catalog of the content that exists within your experience today. Typically executed within a spreadsheet format, it includes information such as the reference for the content (e.g. home page banner), the actual content itself, the content source (a person, a vendor, or data), the content owner, and other pertinent information.

Step 3: Be Honest About Your Gaps

The beauty of the creative process is that you're creating something new. However, you may have existing content you already know you want to use in that experience—perhaps content you know has worked well before or organizational "must-haves".

One way to get a sense for how much content you will need is to conduct an audit. An audit can take many forms, but two favorites are often:

- *An opportunity analysis*—This audit helps you understand how close your current content is to your vision and your user needs and generally reveals broad areas of opportunity within your intended experience. For example, your content vision could say that you want your customers to connect together to share ideas, but your existing web site may simply be online brochure-ware that promotes products. An opportunity analysis will highlight gaps in content and features that you'll need to address.

- *A "nuts and bolts" audit*—If you're considering keeping and transferring content from an old experience into a new one, this more qualitative approach can be very helpful in determining what you might need to update to create consistency or accuracy. In this audit, you're reviewing aspects such as content accuracy (e.g. correct spelling and grammar), use of best practices in experience design, whether you have broken links, etc.

Within your audit, be sure to note what content you may want to keep, what content you want to forget, and what content you need to create.

Step 4: Become a Content Wrangler

When a new digital experience is being created, it suddenly seems that everyone is an expert on what topics to write about! This can become challenging to manage if you're in an organization bigger than, say, the number of fingers on your left hand,

A helpful way to think about content is to create content themes, which are based on your content vision, and also any brand pillars your organization may have.

This means creating a prioritized list of what matters to your organization. Then doing the same with what matters to your audience. You bring those together and create a common set of "content themes". Let's just say you work for an architectural firm that is passionate about sustainability. Start with sustainability as a content theme. Define it. And use that definition to help guide editorial conversations you have with your team—a top-down approach rather than bottom up.

Once you have your content themes in place, you'll find it's easier to create posts yourself or organize larger teams of content creators.

The "How"

The "how," often also called *governance*, is the key to sustaining an effective content strategy. Find my strategy bit in Chapter 9 for the all-important conclusion to harnessing the power of your content strategy.

Laura Best
President, Best + Co
http://www.bestdigitalstrategy.com

Layouts and Components

Layouts are the third leg in our journey. We have content created from a template, but what does it actually look like? Layouts tell Sitecore *where* to render the component, and components tell Sitecore *how* the data template and the content instance should be rendered. A layout contains one or more content placeholders marketers can add/remove components into. A component has a controller (a web control if you're using Web Forms; see the sidebar entitled "What Is a Component?") that renders the component on the page.

Should the title of the Carousel item be Heading 1 and Red or Heading 3 and Black? Should the image be to the left of the title, or as a background? This is the responsibility of the component's controller and view, and for better or worse, this is where you will rely on a developer. For better, because you and your developer team will appreciate the near infinite control to meet the needs of your requirements, but for worse because as a marketer your control is limited to how much control the developers build into the system to empower you to make these formatting changes (more on this later).

However, marketers can control where on the page components are dropped by adding components into placeholders. Placeholders then can be configured to only allow certain components to help enforce a standard information architecture. Additionally, developers should be adding configuration properties onto components to make component settings editable by marketers. As a best practice, developers should consider making settings editable by marketers to make the solution as maintainable by as many people as possible.

As an example, notice the Presentation Layout Details dialog box on the home page (Figure 2-5). In this case, a Carousel component was added to the components collection for the default device (mobile devices use the default in this case since there are no settings for mobile specifically). The default device is set to use a layout called "Main" that controls the positioning of the components on the page via placeholders. A developer builds, deploys, and maintains each layout, such as Main in this case, according to the marketer's specifications. But the marketer can choose where within Main the carousel should be rendered.
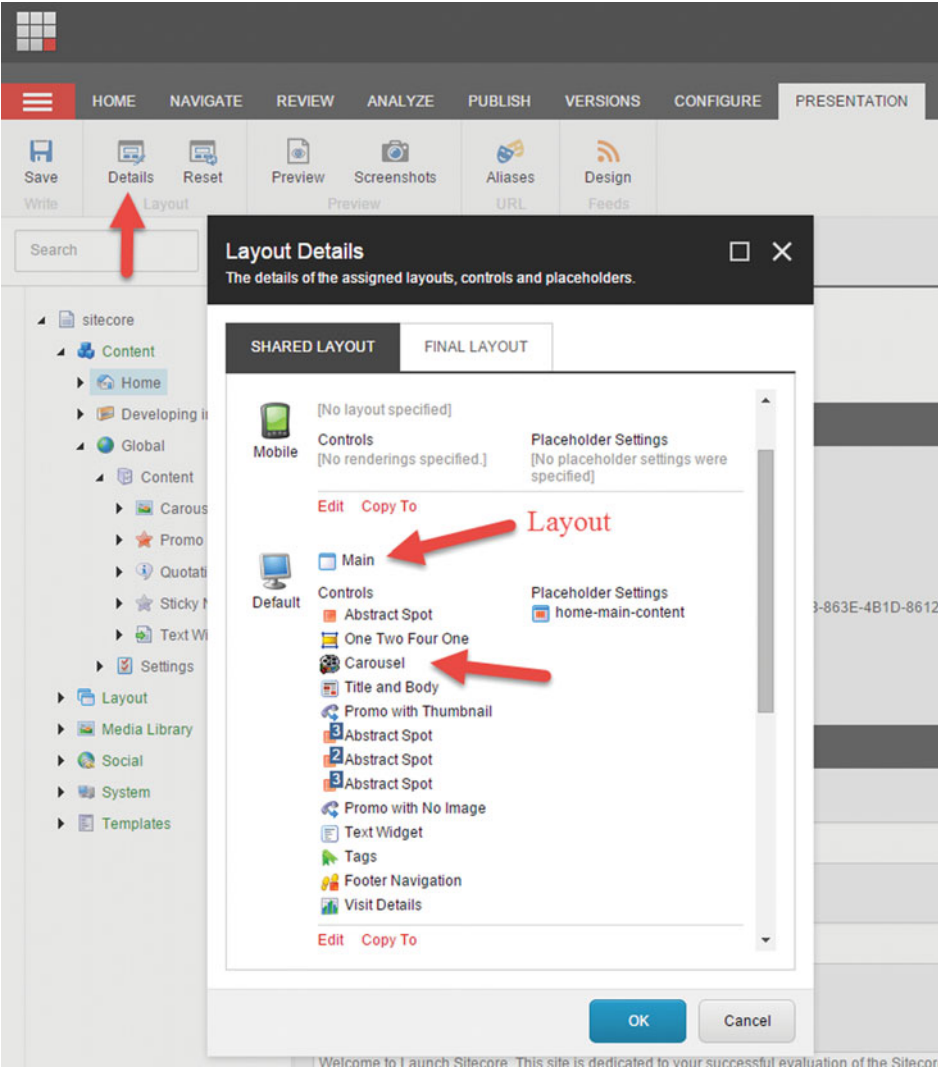

Figure 2-5. *An item's Presentation Layout Details, PLD, is where you can configure the settings Sitecore uses to know how to render an item*

WHAT IS A COMPONENT?

A developer can build a component via Web Forms (legacy) or via MVC (Model-View-Controller) design patterns. Alternatively you can download/buy components from the marketplace (`http://marketplace.sitecore.net`) or from third parties.

MVC is the best practice when developing your own, in which case the component's view is deployed into the Renderings folder within the Layout node. The view/rendering has a property that specifies the controller used to execute and render the component. In Figure 2-6, you see the Controller property that specifies the namespace and class name that renders the component. The Controller Action property specifies which MVC controller action (method) that is called specifically for this component (view).
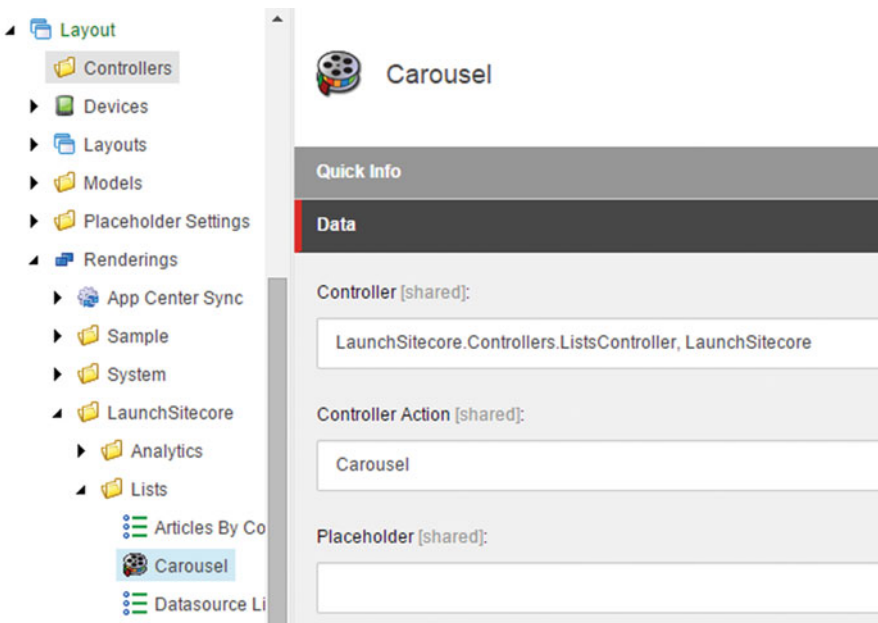
Figure 2-6. *Developers can use MVC to build renderings*

The scope of this book doesn't go deep into Sitecore development and how to build MVC-based Sitecore components. Suffice it to say, components live in the Layout ➤ Renderings node and generate the HTML needed to render the content instance based on a data template. Components can be added to pages by marketers within the page's Layout's placeholders.

Content Editing Fundamentals

With your data templates established, you can finally begin entering some content! As you would expect, content is managed from the Content node within the content editor tree view. More commonly, marketers tend to favor editing content in the Experience Editor, because they see visually how the content will look real-time while editing the content. The Experience Editor is covered later in this chapter, but with the Content Editor being most foundational, we'll begin there.

■ **Note**   Many examples in this section extend data templates discussed in the appendix's section called "Data Templates". You are not expected to have read the appendix to understand this chapter; however, it's a good place to go if you're looking to take your understanding to a deeper level.

Typically below the Content node, you'll have child nodes for each web site you are managing (in the case of Figure 2-7, "Home" might instead be called "Site 1"). In addition to you site root nodes, you'll have a Global folder for content that is shared across sites.

```
▲ 📄 sitecore
  ▲ 🔷 Content
    ▲ 🏠 Home
      ▲ 📋 Audience
          🔲 Digital Marketers
          🔲 Content Owners
          🔲 Developers
          🔲 Network Architects
        ▶ 📓 About Launch Sitecore
        ▶ 👥 Team
        ▶ 📗 Glossary
          🔑 Login
          🔑 Register
          🔍 Search
        ▶ ⚙️ Configuration
      ▶ 📖 Developing in Sitecore
    ▲ 🌐 Global
      ▲ 📒 Content
          ▶ 🖼️ Carousel Items
          ▶ 📁 Featured Products
          ▶ ⭐ Promo Spots
          ▶ ℹ️ Quotations
          ▶ ⭐ Sticky Notes
          ▶ 📲 Text Widgets
```
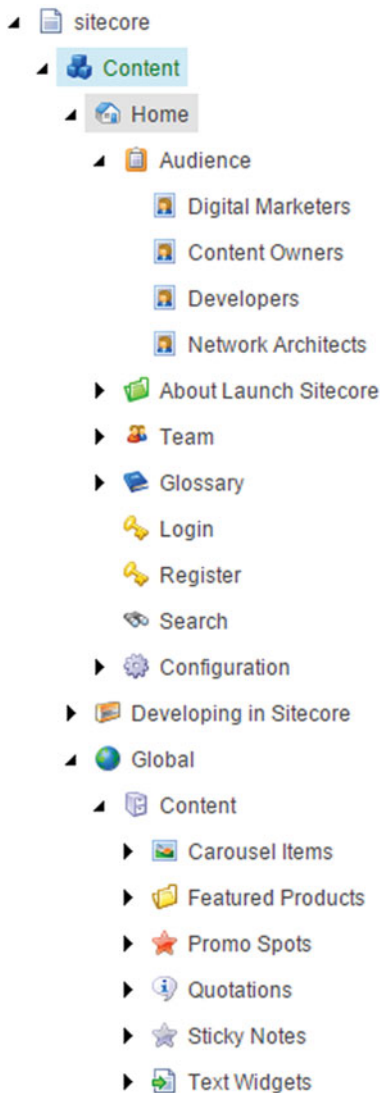
Figure 2-7. *Direct decendents below Content typically include site-level nodes and nodes for globally shared content*

Every item below the site's root home node is URL accessible. In the case of Developers below Audience, you would access that content by navigating to `http://launchcore/audience/developers`. Therefore, all content items below the site's home root node will need to be given a layout to control how the item is rendered when a user browses to that URL. This is a rather complex topic and will be handled later in the section called "Presentation Details and Applying Layouts". For now, we'll skip all those details and focus on creating content for our Featured Product and Product Promotion data templates created earlier.

Getting Started

To get started we're going to create content for a couple data templates, named Featured Product and Product Promotion (steps on how to create these can be found in the appendix). We start by going into the Content node within the tree view and considering where to put this new content. Here are some objectives for these two components to help us understand where to put the content:

- *Featured Product*—When someone visits the home page we want a model dialog overlay of the site showing a featured product based on that user's persona and/or browsing behavior.

- *Product Promotion*—On the home page there is already a Promo Spot, but it is generic and doesn't have the fields we want when/if we want to promote a product, such as the discount, its price, etc. In our data template we've extended Promo Spot to incorporate these extra fields.

Since both of these are components within a page, not a page in and of themselves, we don't want the content to be URL accessible. There are a few ways to accomplish this. We can 1) create the content below the site's start item, but in not giving it a layout it won't be accessible, or 2) create the content outside the start item, such as in the Global folder. In the case of Featured Products and Promotions, there are very reusable and would benefit from being in the Global folder. Use the following steps as a guide to create the featured products and promotions:

1. Create a Global folder below the Content node if one doesn't already exist. Below that folder create a Content folder if one does not already exist. You create folders by right-clicking the parent, choosing insert, and then choosing Folder in the drop-down menu.

■ **Note** Oftentimes a developer or administrator would have first set up the Content node's structure that a marketer will be working in. You might not have the security access rights needed to create folders. In general, this chapter assumes you will have a rather high level of access. If you find yourself not seeing an option in the user interface that aligns to these steps, ask your administrator to make your requested changes or to increase your access rights.

---

2. Below the Content folder, create two new folders—Featured Products and Product Promotions.

3. Give the two folders icons to make it easy for end users to know what they're working with. Click the folder. Under the Configure tab, click the Icon drop-down within the Appearance section.

Before we start adding content to these folders, we need to talk about insert options. The standard behavior of a folder is that only administrators can add content or folders, unless you specify insert options that allow non-admins the ability to create content specifically permitted within that folder. The Insert from Template option allows an admin to select from all data templates that exist, but that option is only available to admins. So it is important to specify insert options, since marketers can't create content if you don't, and you want to control what content goes where. If we have a folder called Featured Products, we only want featured products to be in that folder. The following steps walk you through setting up insert options:

1. Click the Featured Product/Promotions folder.

2. Under the Configure tab, within the Insert Options section, click Assign.

3. Select the data template(s) you want to permit, which in this case would be Featured Product and Product Promotion, respectively.

4. Remove the Folder insert option because we don't want users creating folders below these nodes.

When it's complete, the Insert drop-down menu should look something like Figure 2-8 (note again that only admins will see the Insert from Template option).
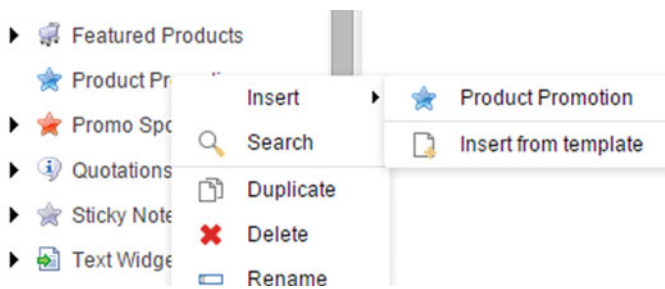
Figure 2-8. *Insert options can be used to control what new content can be added below certain nodes*

Remember the Source column on our data template fields (steps found in the appendix)? For Featured Product and Product Promotion we had Image fields and Related Product fields. Each of these fields allows the user to navigate to or search for other items within Sitecore, such as an image or other related product. Since our Source columns are not established, the user will have to navigate across the entire content tree to find our Featured Products. Rather, let's go back and set the source now that our Featured Products folder exists. Use the following steps to get this done:

1. Select the Featured Products folder below the global content node. Then, click the red menu next to Home and then click Item Properties (Figure 2-9).

Figure 2-9. Every item has standard properties, such as its path within Sitecore
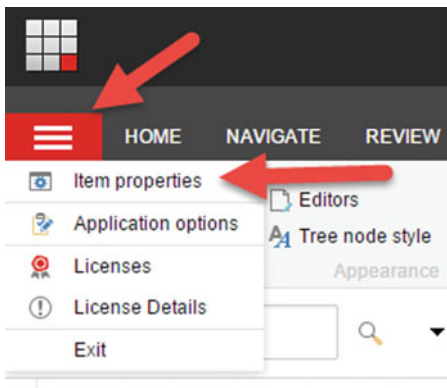
2. Select and copy the Item Path value. This is the path to the folder within the tree view and will become the source for our Related Products fields.

3. Paste this value into the Source column within the Related Products fields within our Featured Product and Product Promotion data templates.

    Finally it's time to add some content into Sitecore! It only took about 20 pages to get to this point. In some sense that sounds a bit ridiculous, it's a good example of what it takes to really get to a point where you're adding content. There's a saying: "Sitecore is like a Ferrari engine. You know it's fast, but just because you bought it doesn't mean you can use it." The foundation must be paved before our marketer friends can get productive!

4. Create three Featured Products and Product Promotions. Don't worry about the Image fields or Persona field just yet. We'll cover media next and personalization in Chapter 4. Click Save after each one. We'll discuss publishing later as well.

Managing Rich Media

You will want to store all your rich media in the Media Library node within the tree view. The Media Library is your one-stop show for all your digital assets, including images, documents, videos, and audio recordings. You will want to organize your items within folders named appropriately. After you create a folder, when you click on that folder you will see three options: 1) Upload Files, 2) Upload Files (Advanced), and New (Sub) Folder. You can upload one or many files by simply clicking the Upload Files button and selecting the files you want to upload.

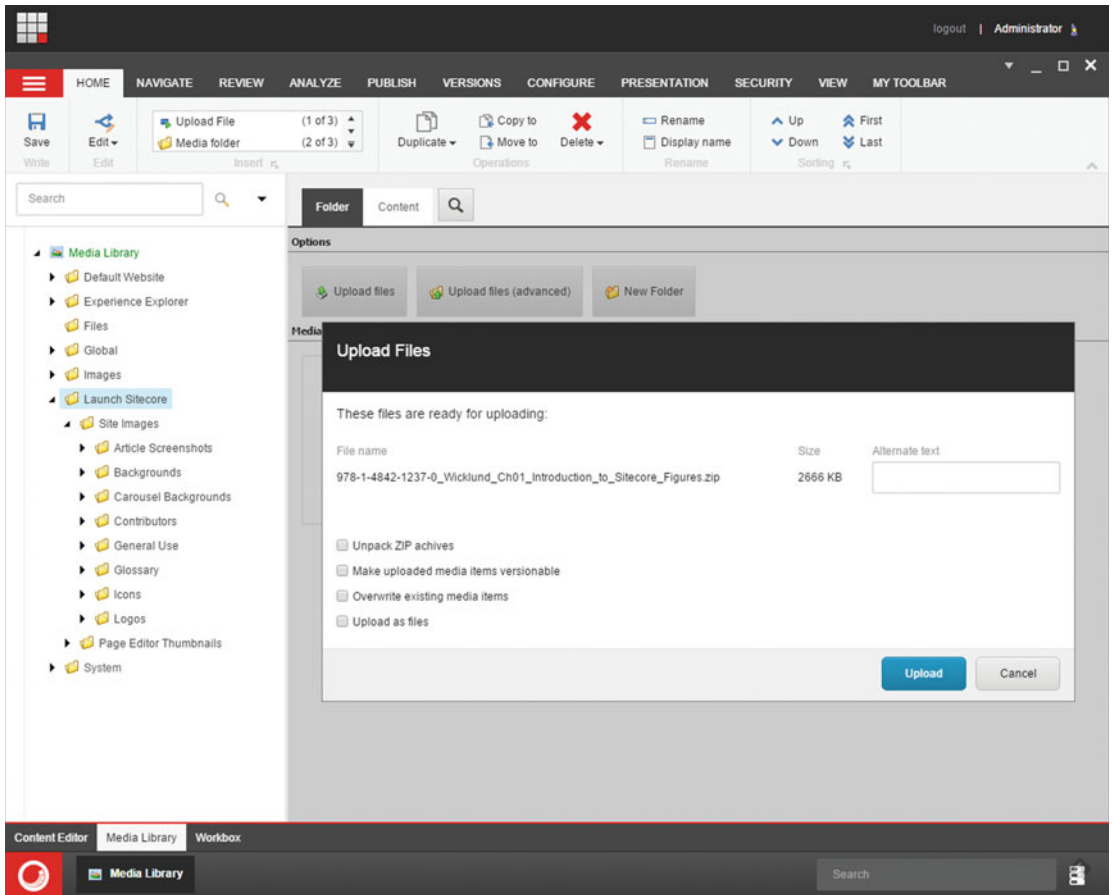Advanced (Figure 2-10) upload provides a few extra features worth noting.

Figure 2-10. *Advanced media upload can be handy, such as upacking a ZIP file*

- *Unpack ZIP archives*—This option will unpack a zip file containing an image, rather than upload the ZIP file itself.

- *Make uploaded media items versionable*—By default media files are not versionable (see the "Content Versioning" section later in this chapter). You can specify language-specific versions of a file by making the files versionable. Additionally, you can rotate in/out a version of a file, say when you have a seasonal promotion.

- *Overwrite existing media items*—Check to overwrite existing files of the same name if they exist.

- *Upload as files*—Files will not render a preview.

A neat feature of the Media Library is the Image Editor (Figure 2-11). The Image Editor allows you to make minor cropping, resizing, and rotation edits to photos. To open the editor, simply click the image you want to edit, and then under the home page, click Edit under the Edit section and then click Edit in Image Editor.
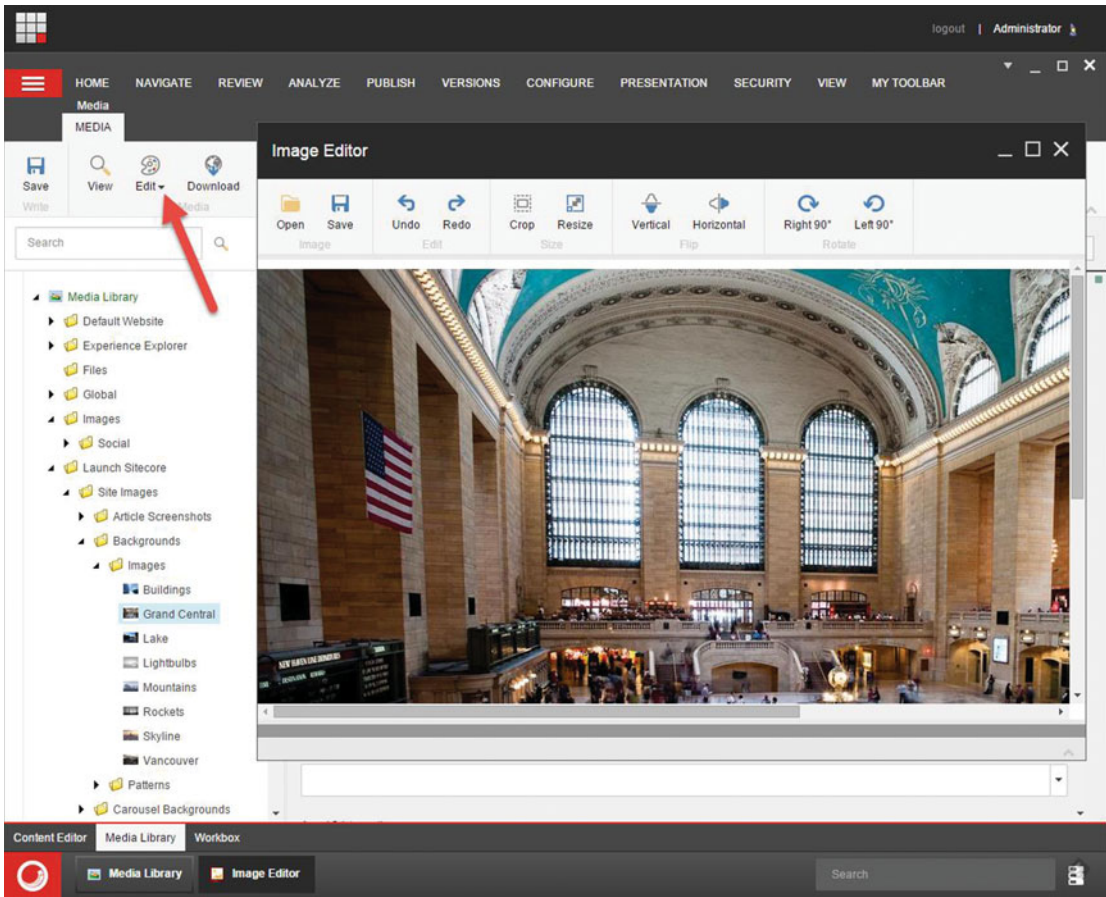
Figure 2-11. *Sitecore comes with its own image editor for basic editing, such as cropping or resizing images*

Execute the following steps to continue our configuration of our Featured Product and Product Promotion components. This will limit a Featured Product's product image to be chosen from a specific location within the Media Library:

1. Start by creating a Products folder in the Media Library below a folder named similarly to the site's name below Content and Templates for consistency.

2. Click on the new Products folder, and then click the red menu and click Item Properties (Figure 2-10). Copy the Item Path value.

3. Now that we have a folder for our product images, navigate to the Featured Product data template and update the Source field on the Product Image field. Paste the Item path into the Source column in the Product Image field, clicking Save when complete.

```
┌─────────────────────────────────────────────────────────────────────┐
│         SHOULD YOU STORE MEDIA IN THE DATABASE, FILESYSTEM,          │
│                             OR A CDN?                                │
└─────────────────────────────────────────────────────────────────────┘
```

By default, all media is stored in the SQL database. An alternative to storing your media as BLOBs in the SQL database is to store them on a network path with SQL simply serving as a pointer, similar in concept to remote BLOB storage.

Storing media in the database offers unique advantages and disadvantages. The biggest advantage to this is the peace of mind of a simplified architecture and fewer steps to worry about during a disaster recovery. The biggest disadvantage is the potential for very large databases that might make recoverability times longer during an outage if you needed to restore from a full backup.

Performance, in some cases, might benefit from getting the files out of the database. Specifically, large, infrequently used files such as videos, would benefit from being served from the file share. The ASP. NET BLOB cache can be used on your web front-end servers to cache large, frequently accessed files, thus mitigating performance concerns in those cases. However, if you have thousands of videos being accessed often, but each individually infrequently, that initial deserialization out of SQL can be a doozie. In these limited scenarios you have a strong case to move your media files out of SQL. A CDN is the best choice if performance is a concern. Offloading all assets to a separate provider can have a significant positive impact on your infrastructure. However, using a CDN is commonly the most expense of options for very busy sites.

For 99% of the cases, leaving the media files in the database is the best practice. Fortunately, files can, on a case-by-case basis, be put in the database or the file share. This can be helpful for the edge cases; however, users will need a lot of training to understand when to select the Upload as Files checkbox. Or, you can force it one way or another.

Consider the following web.config settings to tweak this behavior:

- *Media.DisableFileMedia*—By default Sitecore permits the user to specify at upload time where the file should go, in the database or in the file share. This setting by default is false, thus permitting file share uploads. You can disable file share uploads by setting this to true, forcing all files into the database.

- *Media.UploadAsFiles*—By default media files are uploaded into the database. This setting changes the default behavior to upload to the file system (Upload as Files setting checked in the Advanced Upload dialog). This setting is ignored if DisableFileMedia is set to true.

- *Media.FileFolder*—Here you can specify the UNC of the path to which files will be uploaded.

Working in the Experience Editor

Now that we have out data templates in place, and we have content created that our components can render, it's time to add those components to our site with the Experience Editor. But first, a brief tour is needed, as there is a lot you can do with this tool!

A Brief Tour

The experience editor within Sitecore allows users to administer content within a WYSIWIG editor (what-you-see-is-what-you-get). This can be very helpful, because in the content tree you are often left guessing what it will look like when you click Publish (or better yet, Preview), leaving you to click Publish dozens of times before getting it right. With the Experience Editor you can see those changes immediately. See Figure 2-12 for an example. In this case the user is updating the hero image header text to "I know exactly where this will go" by simply selecting the text and typing the new message.
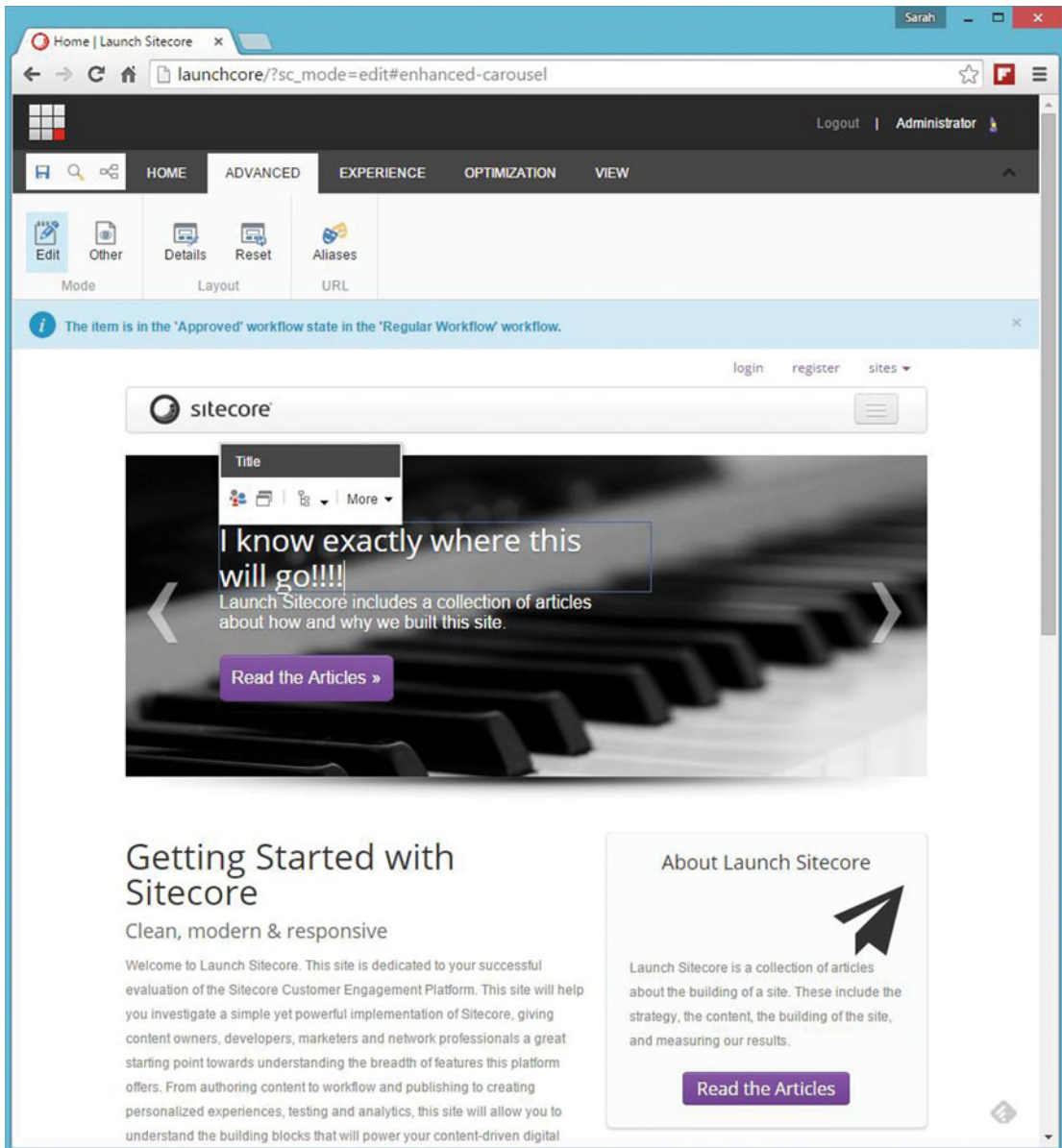

Figure 2-12. *In this figure you can see how users might go about updating the content on a page. They simply select the content placeholder that they want to update and start typing! Very easy*

Home Tab

The Experience Editor is administered with the following tabs in the ribbon: Home, Advanced, Experience, Optimization, and View. The Home tab is the logical place to start (Figure 2-13). When you set out to edit a page, the first thing you may want to do is lock the page so others can't override your changes (proper configuration should make this unnecessary). In the Home tab, within the Edit section, notice the Lock/Unlock button. When you click this that page will show up in your My Items (count) bucket. The My Items button shows you all the content that you have locked for editing. It's important to keep an eye on that to ensure you're not causing your colleagues frustration. Additionally in this section, you can rename the page's name and display name, where the name is the key and the display name is a language-specific translation of the name.
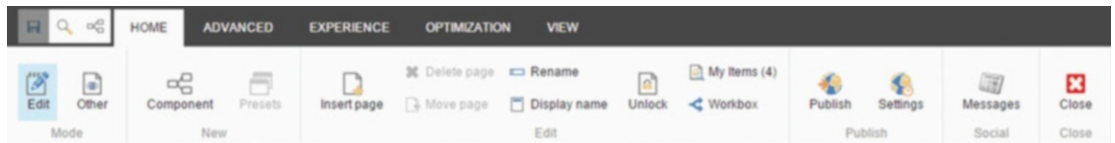

Figure 2-13. *The Home tab has basic settings, such as adding components and pages, locking items for editing, and publishing settings*

From the Home page you can also insert new components onto the page. Under the New section you'll notice the Component button. When clicked, you'll be able to see all the locations where you can add new components, as seen in Figure 2-14's Add Here links. The Add Here links correspond to content placeholders within the layout the page is assigned to. When you click one of the Add Here links, a pop-up will appear showing you which components are permitted within that content placeholder. If your component doesn't appear in the dialog pop-up, you can add it to the allowed components list, steps continued from previous sections.
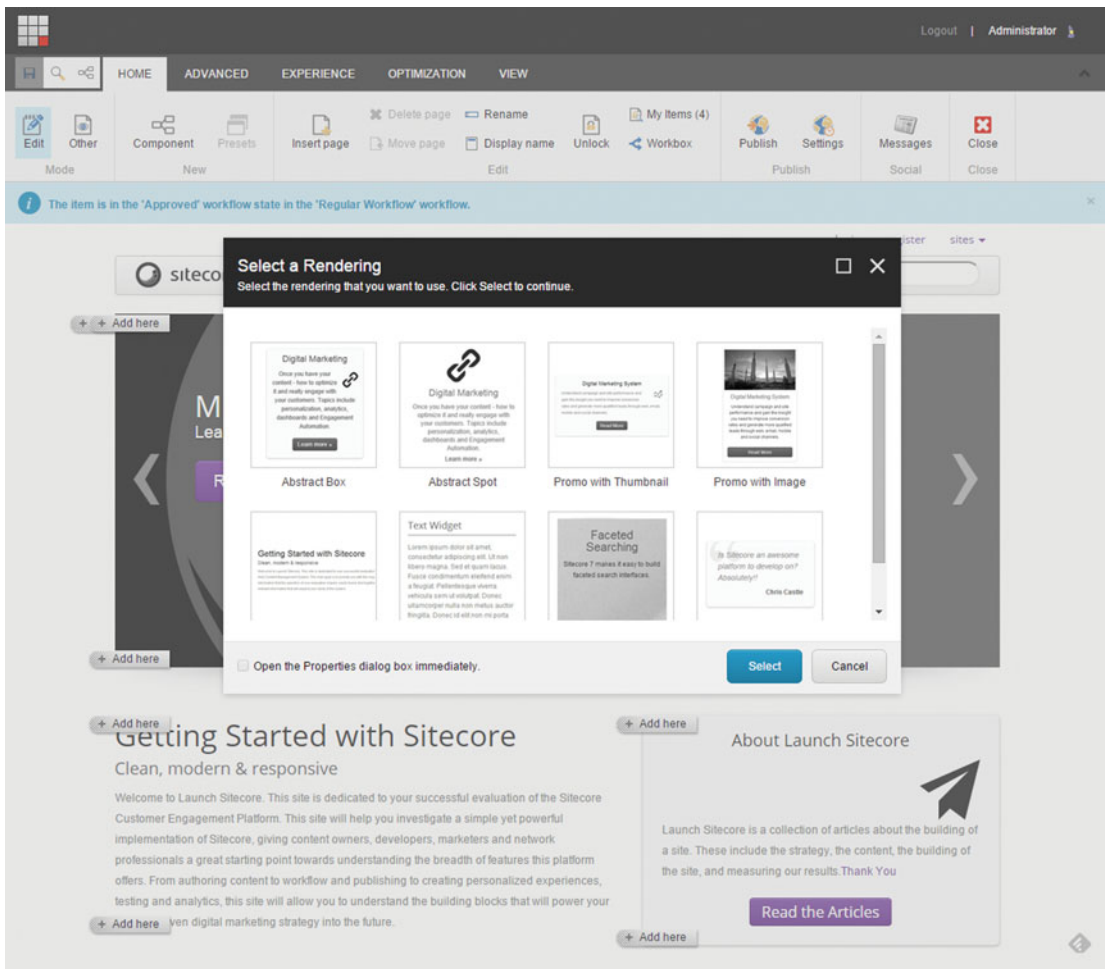
Figure 2-14. *You can set an icon on components to make it easy for editors to know what to choose when adding new components onto a page*

Notice also the Insert Page button within Edit. Recall earlier how in the Content tree the Home node below Content is URL accessible. Any page, therefore, below Home can support child pages. Each child page can have a set of data templates marked as allowable to be created below any given page. When you click Insert Page, those allowed templates will appear, and if those templates have a Layout assigned they will act as child pages (more on layouts later in this chapter). Refer to earlier steps in this chapter on setting Insert Options to control what types of pages should show up in the Insert Page dialog (specifically, Steps 16-19 apply here as well).

The Publish section will be covered in more detail later in this section. However, the obvious is obvious—you need to Save and then publish your changes before they will go live on the site. Workflow makes this a bit more complex, and therefore will be covered in greater detail later.

The Social section makes it easy to post links to this page on social networks, such as Facebook or Twitter. You can store credentials to your account in Sitecore, and from the Social button (Figure 2-15) you can enter your message and even associate links back to campaigns you're running (more on campaigns in Chapter 5).
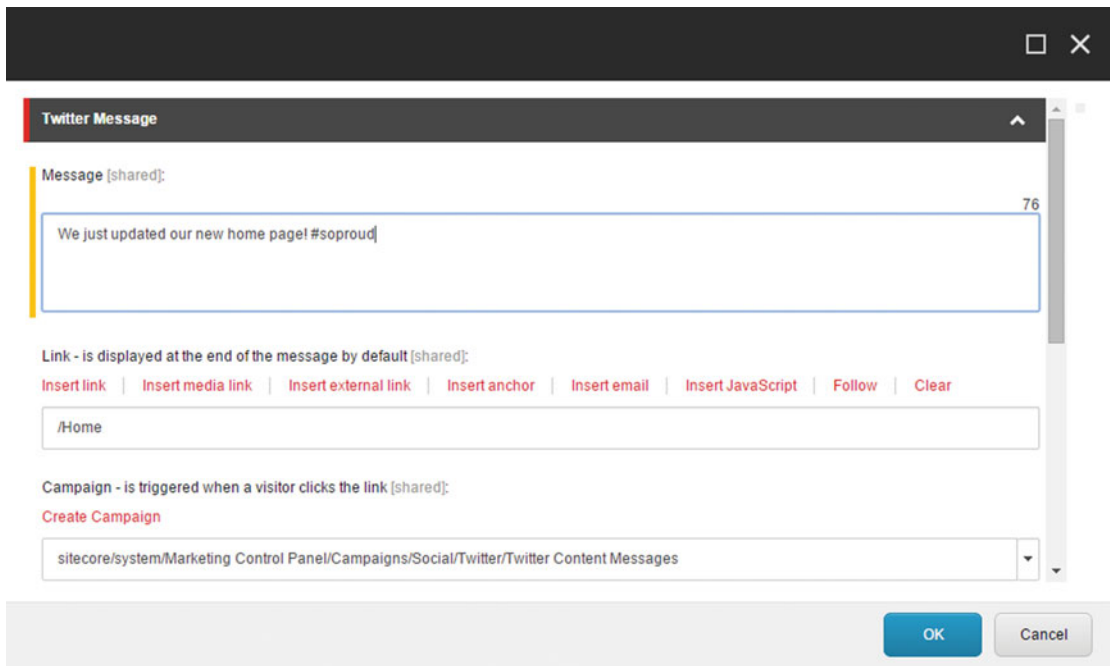
Figure 2-15. *Built-in social integrations make campaign integration easy*

View Tab

There's not a whole lot to say about the View tab (Figure 2-16), but what there is to say can save you a lot of annoyance. The important point is the Enable section. There are basically two things you can do when in the Experience Editor: 1) you can edit content, and 2) you can design the page (add/remove components, change component properties, etc.). The trouble is it can be tricky to do both at the same time, which is the default. Sometimes you might be trying to configure a components properties, but since the component renders a lot of text it can be impossible to actually select the component apart from selecting and editing the text.
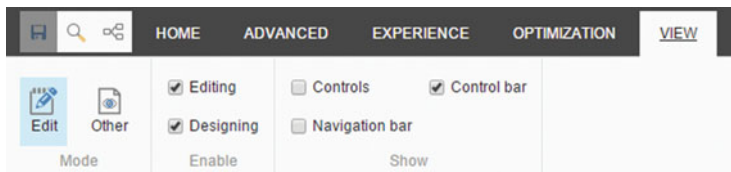

Figure 2-16. *The View tab controls what options are shown within the Experience Editor, such as what mode you are editing in, showing/hiding the nav bar, and so on*

To disable inline text editing, simply uncheck the Editing checkbox. This will enable only the design features of the Experience Editor. Vice versa is true if you only want to edit text, but that usually is less of a problem. Rather, it is *very* helpful to disable both of them, because until they are unchecked you cannot click on links. If you want to edit something other than your home page, this is worth noting. Alternatively, you can launch into Preview mode from the Content Editor by clicking Preview on an item deeper in the tree—jumping straight to that item.

■ **Tip**   Uncheck both the Editing and Designing checkboxes on the View tab if you want to move the Experience Editor onto another page. Otherwise, you'll be stuck on the home page.

Experience Tab

The Experience tab (Figure 2-17) has a few neat tricks worth considering. The first is the Date section. Publishing will be covered more later, but in regard to the Experience tab and the Date section it's worth noting that publishing can happen in the future and for only set durations. For example, you might want two versions of a page, a main version and a version for a holiday promotion coming up. The holiday version is not the current published version, but it's coming up this weekend. If you change the dates you can see what the page will look like for future publishing event.
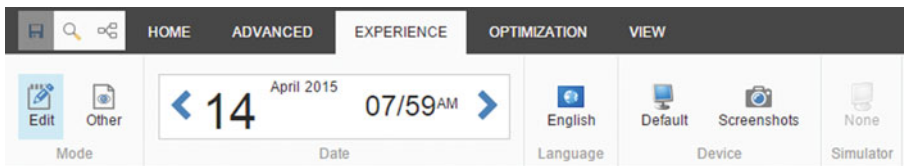

Figure 2-17. *The Experience tab allows you to toggle between languages and devices to get a sense of the user's experience from various perspectives*

The Language section lets you toggle to other languages you have installed. You can translate, save, and publish those versions. Similarly, you can toggle the Device to see what the page will look like on different devices. Layouts will be covered in more detail later, but for this point it's worth noting that you can have a layout dedicated to each device you are supporting, such as phone, tablet, and desktop. This is often referred to as adaptive design. In most cases, however, you'll have a responsive design so you'll only see the Default device as selectable, since one single layout responds automatically to all browser widths.

When you toggle the device to, say your mobile layout, note that it only toggles the layout. If your browser wide is 2,000px wide, obviously that's not a good test of what it'll look like on an iPhone. In this case you can install Simulators (Simulator section, Figure 2-18) to see for real what it will look like on those devices.
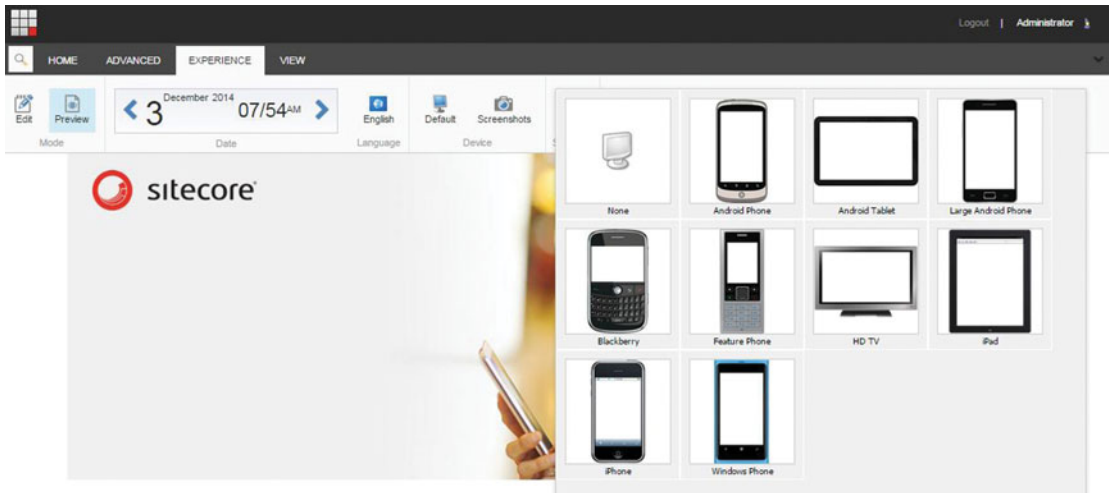
Figure 2-18. *You can add device simulators to get a sense for how the site will look across a multitide of devices without actually needing to buy that device*

Advanced and Optimization Tabs

The Advanced tab is used to configure presentation details and is covered in the "Presentation and Applying Layouts" section later in this chapter. The Optimization tab is all about content testing, such as A/B testing. This is an advanced topic warranting its own chapter; see Chapter 5.

Previewing, Exploring, and Debugging

The explore and debug features of the Experience Editor are some of the most compelling features in Sitecore. You'll notice a Mode section within the ribbon while in the Experience Editor. By default you'll be placed in the edit mode, which has already been explained previously. If you click Other, you'll notice three hidden options, Preview, Explore, and Debug (Figure 2-19).
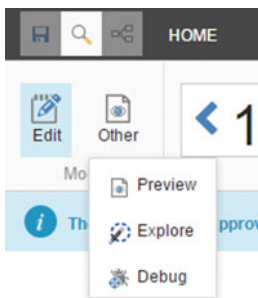

Figure 2-19. *The Experience Editor has four main views: edit mode, preview mode, explore mode (called the Experience Explorer), and debug mode*

Preview removes the editing/design capabilities similar to unchecking the boxes within the View tab. This allows you to easily click around the site and navigate to the page you want to edit.

Explore is very compelling. Explore is more formally called the Experience Explorer. The Experience Explorer allows you to monitor your activity on the site and see how optimization and personalization rules are reacting to your behavior. Notice the drop-down menus on the left and the right in Figure 2-20. Among other options, the left is showing which goals you're hoping your behavior will trigger for testing purposes. On the right you'll notice how the behavior has categorized the user as a "Developer" persona. Future personalization is using this classification to drive rendering behavior, such as which components to show developers versus other personas. At the top of the right drop-down, notice that the page views are counted along with the Engagement Value that has accrued as a result. More on these concepts can be found in Chapter 4.
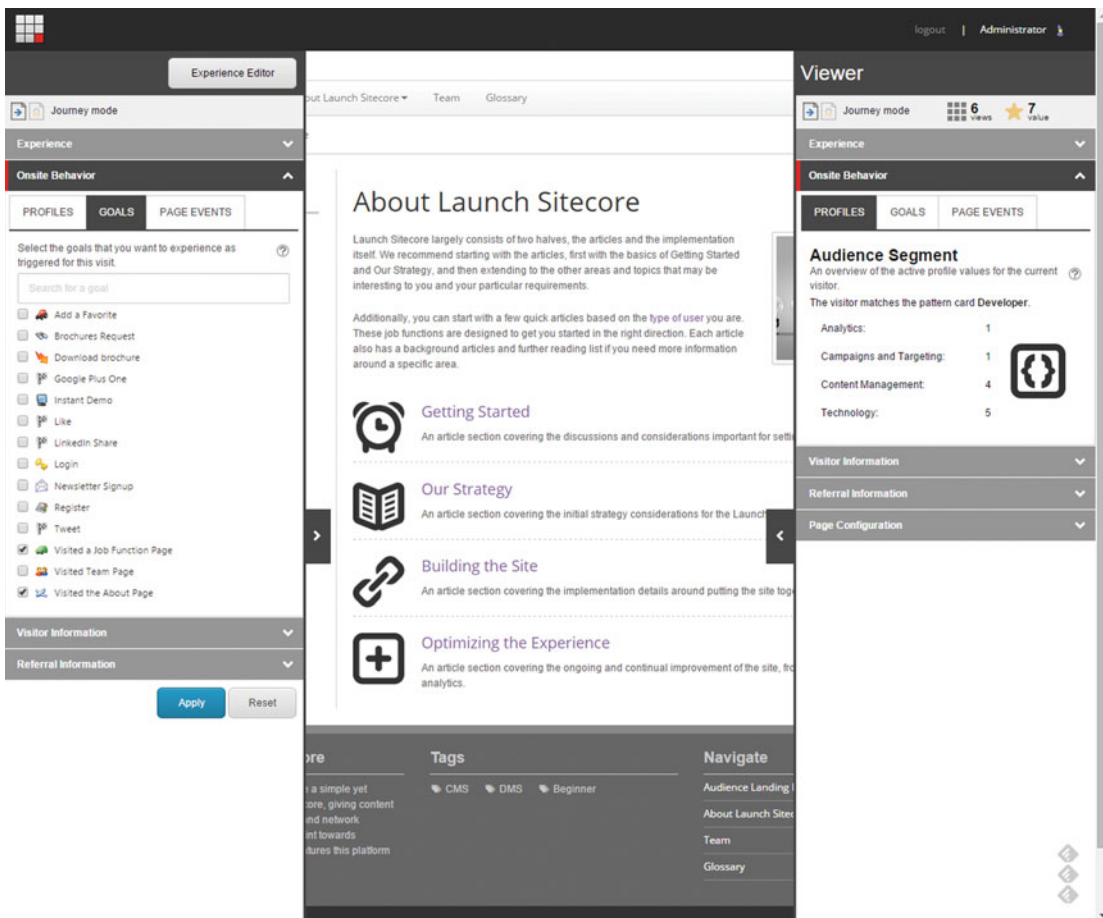
Figure 2-20. *The Experience Explorer allows you to simulate user personas and test user personalization configuration*

The other helpful mode is Debug mode (typically for Developers only). Debug mode spits out a bunch of reporting at the bottom of the page, which shows performance and exception feedback (Figure 2-21). This is a great tool to use if your page is responding very slowly and you want to understand which component is to blame.

Figure 2-21. *The Debug mode within the Experience Editor allows you to see helpful performance data so you can better troubleshoot problems*

Working with Components

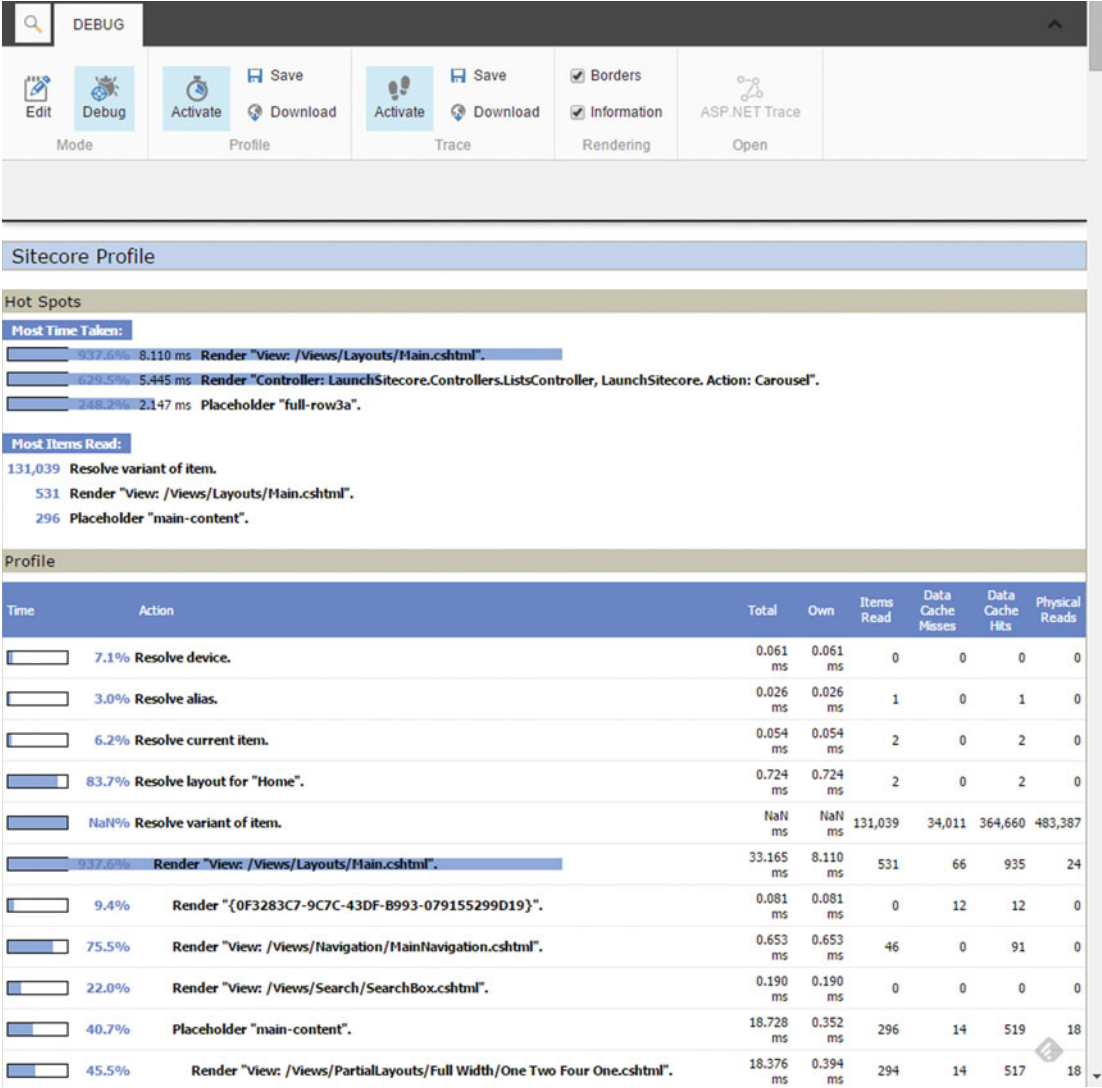In this section we'll continue our previous steps of configuring our Featured Products and Product Promotions. We're at the place where we have just about everything ready to add our components to the page. Our data templates are configured, and we have content in the content tree built using those data templates. Our last step is to drop components on the page that renders our content, which in this case are our featured products.

A component renders data stored in the content tree based off a template. You will need a developer to build components to your specifications. The following steps show general guidelines for working with components, but some of the settings may differ depending on how your components were constructed.

If you recall, it is easy enough to add a component to a page. Simply open the Experience Editor, and from the Home tab within the New section, all you will click is the Component button. This will load the component picker dialog showing all the approved components you can select from. Every layout will have one or more placeholders. These placeholders are set up in the Content Editor, below Layouts ➤ Placeholder Settings ➤ your site name. Follow these steps to allow marketers to add components to a placeholder:

1. Open the Content Editor. Expand Layouts ➤ Placeholder Settings. Continue to browse until you find the placeholder you want to edit. Note: If you don't know the name of the placeholder you want to edit, you can delete the components out of that placeholder and then select them. You'll see the name of the placeholder (and a shortcut to editing its properties), such as in Figure 2-22.
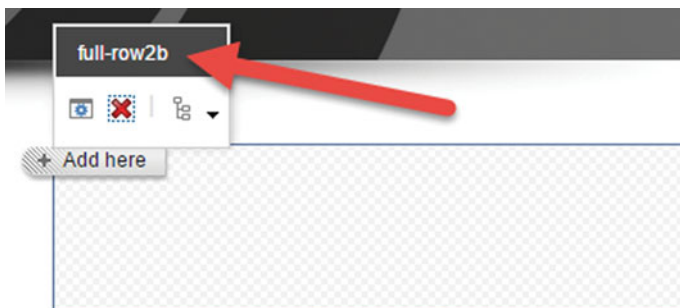
Figure 2-22. *You can delete or move the components out of a placeholder if you want to get the name of that placeholder*

2. Select the placeholder, and under the Data section, note the Allowed Controls list. Click Edit.

3. Browse to the component(s) you want to allow. Double-click them or click the right arrow to move them to the right side of the selector. Click OK and then click Save on the placeholder.

4. To add our Featured Product placeholder, go back to the Experience Editor and delete the Promo with Thumbnail component. Select it while in Design mode and click the red X (Figure 2-23).

Figure 2-23. *A component has a myriad of settings you can configure, such as its datasource, personalization settings, or even custom settings*
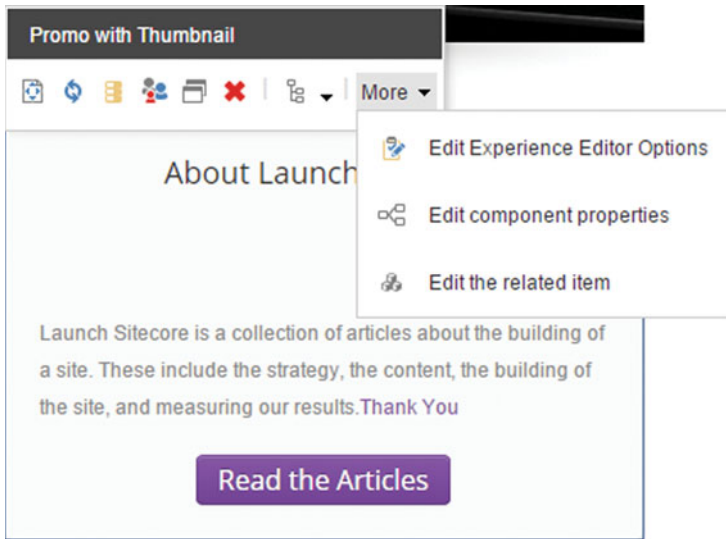
> 5. Click New ➤ Component in the Home tab, and then click Add Here in the placeholder you recently edited. Select the component and click OK.

Yay! We have a component on the page. Oftentimes you will have components that need to render a content item. In our example, our component needs to render a featured product. There are three main ways to do this: 1) user configured by setting the component's datasource, 2) user configured by setting a component property, and 3) programmatically controlled by a developer. We'll focus in on the first two since the third option will be different for each implementation.

> 1. Setting a datasource: click the component, and then click the Datasource icon in the gold component menu (third from the left in Figure 2-23). A pop-up will appear; select the item from the content tree you want to associate to the component, such as a Featured Product.

■ **Tip** A best practice is the component would prompt the user to select the datasource once it's dropped on the page. This can also be the right time to prompt the users to create a new content item if one doesn't exist that they want to use. In this way, marketers can be empowered to administer content wholly from the Experience Editor, never needing to go to the Content Editor and learn two systems.

> 2. Setting a property: Click the component, and then click the More button in the component's menu, and then click Edit Component Properties. If you scroll to the bottom of the component properties you'll notice a Parameters section (Figure 2-24). You can add any arbitrary set of parameters that you want to pass to the code/developer, but know that the code needs to specifically be looking for them or nothing will happen. Click OK.
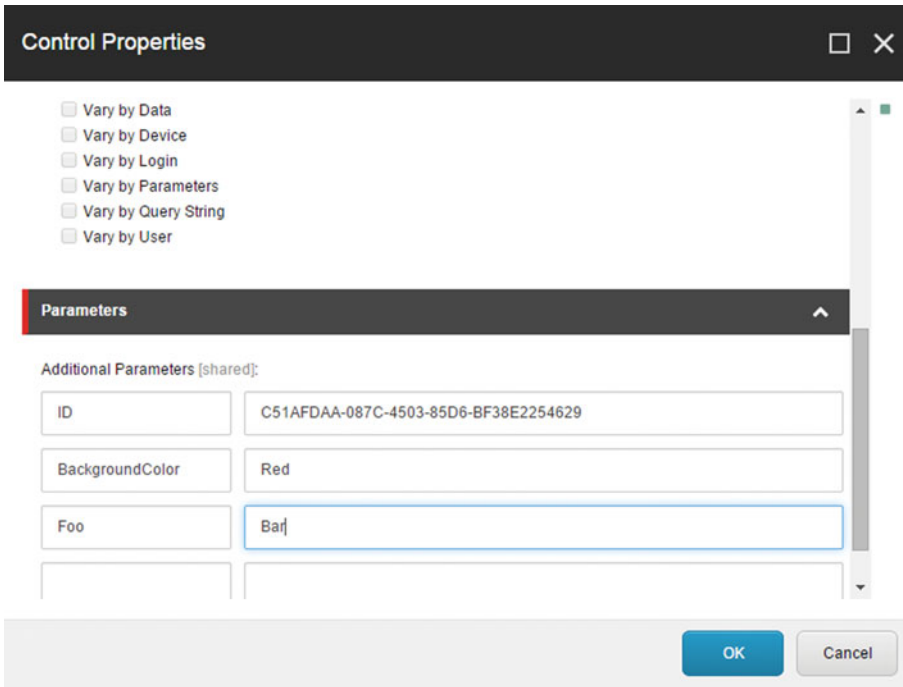
Figure 2-24. *Custom component properties allow marketers to easily tweak how a component behaves*

You'll notice a few interesting options on the More drop-down (Figure 2-23). The Edit Experience Editor Options dialog lets you configure a lot of valued component settings, such as the following list. Edit Related Item takes you to the content item assigned to the datasource, making it easier to navigate to the Featured Product, for example, and make some updates without digging for it in the tree view. Here are the settings you can apply to a component from within the Experience Editor options:

■ **Note**   Only Developers or above will see the More button on a component.

- *Thumbnail*—When you're browsing for components it is very helpful to see a thumbnail image to help you select the right one quickly.

- *Editable*—Uncheck if you do not want users editing the datasource item's content values. If unchecked the content drawn within the component will be static.

- *Datasource Location*—This helps you narrow down for your content admins where the content should be coming from. In the case of our Featured Product component we would want to set this to the Featured Products folder within the content tree.

- *Datasource Template*—Alternatively you can narrow the results to just a specific data template.

- *Compatible Renderings*—In Figure 2-23 the second icon in the menu is the replace icon. At times you may want content admins to be able to swap out one component for another, but retain the properties. To enable this, you must specify which components are compatible with this component. Note that it is a two-way street; you must do the same on both components so they are compatible with each other.

- *Experience Editor Buttons*—Developers can create custom buttons to show on the component menu. After they are installed they will show up in this list if you want to add them to the menu.

■ **Note** Personalization and testing are also driven at the component level from the component button bar. These topics are covered in more detail in Chapter 4.

Managing Thousands of Items with Buckets

It's great that we now have our Featured Product being rendered on the home page, but before we go beyond content editing fundamentals, we need to cover a few miscellaneous topics. One of those topics is that of *buckets*.

Buckets enable you to make sense of thousands of items in your content tree. Take for example our Featured Products. It is very likely that over time you may have hundreds of products you may want to feature. If you put all that in the tree view, that tree view will become virtually unusable. The tree view will become very long, and it will be very hard to find the product you are looking for. By converting that folder to a bucket, all of the child items are hidden from the tree view and all that is left is a search box.

■ **Tip** If you have a lot of items in a bucket (even 100, but certainly 1,000,000), you will be relying exclusively on search to retrieve them. If you need to retrieve "an item" your search will require carefully planned metadata. The more fields that you items are tagged with, and the more unique values that are placed in those fields, the better chance you have at not losing those items, or during an audit, of finding them.

Converting an Item to a Bucket

To convert an item to a bucket, simply click the item, and then under the Configure tab, click Bucket. This may take a few minutes. All the child items should now be hidden after the process completes. If some items remain unhidden, that means those items are not marked as "bucketable" in their data template's standard values definition (more on standard values in the appendix). For now, just know that on the standard values you need to ensure the Bucketable Settings, Current Item checkbox is checked (Figure 2-25).
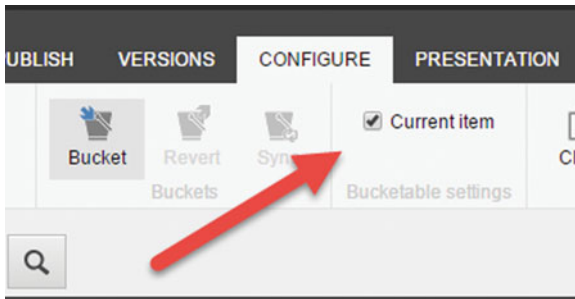
Figure 2-25. *You can convert an item to a bucket to more easily manage thousands or millions of items in Sitecore*

■ **Note** Usually only administrators or other advanced users see the buckets settings and convert items into buckets. Specifically, you need the Sitecore Client Bucket Management role to perform this configuration.

If this value wasn't checked, you don't need to re-bucket your bucket after checking it. What you can do is simply check the box, save the standard values, and then go back to your bucket and click the Sync button under the Buckets section within the Configure tab. This will attempt again to add all child items to the bucket that have their standard values set to bucketable.

Searching a Bucket

Searching a bucket is pretty much like searching anything else. Since, however, search in this case is critical (because you can lose items if you can't find them later) it's worth calling out in particular. The key to searching buckets is to do constrained field searches. If you have 1,000,000 items in a bucket and you want a result set of one single item, you will likely need to filter the results based on several specific field values (if you developer hasn't setup readily available facets). To do this, simple enter your field name in the search box followed by a colon. You'll then see the search change, prompting you to ender the value for that field. Additionally, you can configure "can include," "must include," and "cannot include" rules on the fields. Figure 2-26 shows how the search is trimmed to items that match on the Title, Department, and Customer fields (for example, the fields will be whatever is available in your data templates).
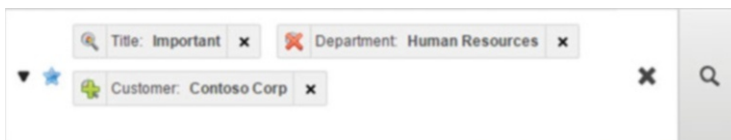

Figure 2-26. *Once an item is a bucket it is easy to search that bucket for items and even to create property restrictions to narrow the result set*

You can toggle the can|must|cannot settings by clicking on the search magnifying glass on each field. Notice how the Title field could start with Important; the Department field must not start with Human Resources, and the Customer field must start with Contoso Corp.

Archiving Content and the Recycle Bin

Deleting and archiving content will happen all the time in the lifecycle of a content administrator. The Recycle Bin and the Archive are two separate things, and it's important to understand their differences.

Recycle Bin Settings

By default, when you delete an item in Sitecore it is not deleted permanently. Instead it is moved to the Recycle Bin. Your Sitecore Recycle Bin behaves just like a Windows PC recycle bin. Stuff sits in the Recycle Bin until someone permanently deletes everything in it. This is good and bad. It's good because it takes an intentional action to delete stuff. It's bad because your Recycle Bin might get huge and waste valuable storage space. Additionally, if you have many people working in Sitecore, you may delete things that someone else later might have wanted to restore, so it's important to use discretion.

The Recycle Bin can be accessed from the desktop or the Launchpad. From the desktop, click Start and then you'll notice the Recycle Bin link under the All Applications drop-down. Simply click an item and then click the Restore button to restore that item. You can also use search to find your items if there are too many to sort through.

■ **Note** By default, only administrators can see items they themselves didn't delete.

The Delete button will permanently delete the selected items in the Recycle Bin. The Empty button will permanently delete all items in the Recycle Bin. The Show Versions checkbox will expand versions of the items in the Recycle Bin in case you want to restore just one particular version of a deleted item, rather than all versions.

It is common for Recycle Bins to grow forever and become a nuisance for your administrators and infrastructure team who is concerned about restorability and recovery times. You may prefer to simply disable the Recycle Bin rather than run the risk of it growing too large (not a best practice). In this case, a simple web.config change can do this. Disable the Recycle Bin in web.config by setting the `RecycleBinActive` setting to false, or for a given database, remove the /archives/archive/recyclebin element.

Archiving Content

There may be content that you want removed from your site, but not deleted permanently. Perhaps this content has legal implications, such as customer correspondence data. In these cases it makes more sense to archive this content. Sitecore has an out-of-the-box archiving provider that looks and behaves nearly identically as the Recycle Bin behaves. It's a bucket of stuff waiting to be deleted, but with a name that is less inviting to deletion (Archive vs. Recycle Bin).

Anything in the content tree can be archived. Simply click the item, and then in the Review tab click the Archive drop-down (Figure 2-27) to show three options. You can archive that item immediately, archive just a particular version of that item, or set a future date to archive it.
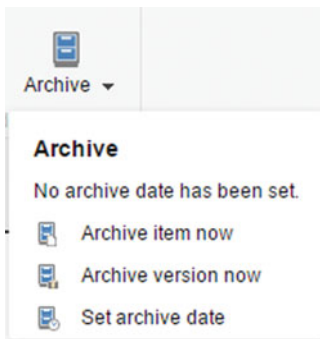
Figure 2-27. *The Archive is similar to the Recycle Bin, except that archived items typically are not meant to be deleted perminently*

These basic settings may or may not meet your legal compliance obligations. It's a bit beyond the scope of this book, but it's worth noting that this archiving framework is extensible. A common pattern is to disable the Recycle Bin and force all deletions to be sent to the Archive instead. Then, code can inspect the incoming item for legal complications. If it matches legal requirements for archiving, you may want to send it to an external archiving system or database. If not, you might instead send it to the Recycle Bin or just delete it on the spot.

In the web.config, under archives/providers, you can specify your class that handles an incoming archive request. That class can have whatever logic you need to meet your compliance obligations.

■ **Must Read**   See one of John West's blog posts, which shows sample code for how to tap into the archiving pipeline: http://bitly.com/1DxntPw

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Content Versions and Multilingual Language Support

Any piece of content can have more than one version of that content. Each version can be translated into one or more languages. This section shows you how to configure multiple versions and how to translate those versions into multiple languages.

Managing Multiple Versions

A seasonal promotion is a good example of why you may want to have more than one version of the same piece of content. Perhaps you're having a sale over the Black Friday weekend and you want your home page to look different from Thursday through Sunday. Instead of making all the changes and clicking the Publish button Thursday morning, and then reverting all those changes and clicking the Publish button again Sunday night, you can handle this with a second version of that page. Use the following steps to create a second version of your home page (repeatable for any content item) that is published only for a specific date range:

■ **Note**   Versions can also be used for experience optimization, such as A/B testing. This is a topic beyond the scope of this chapter and is covered it great detail in Chapter 4.

---

1. Click the item you want to add another version to. Then, under the Version tab, click the Versions drop-down. This will show you all the versions available for this item (Figure 2-28 shows there is only one version so far).
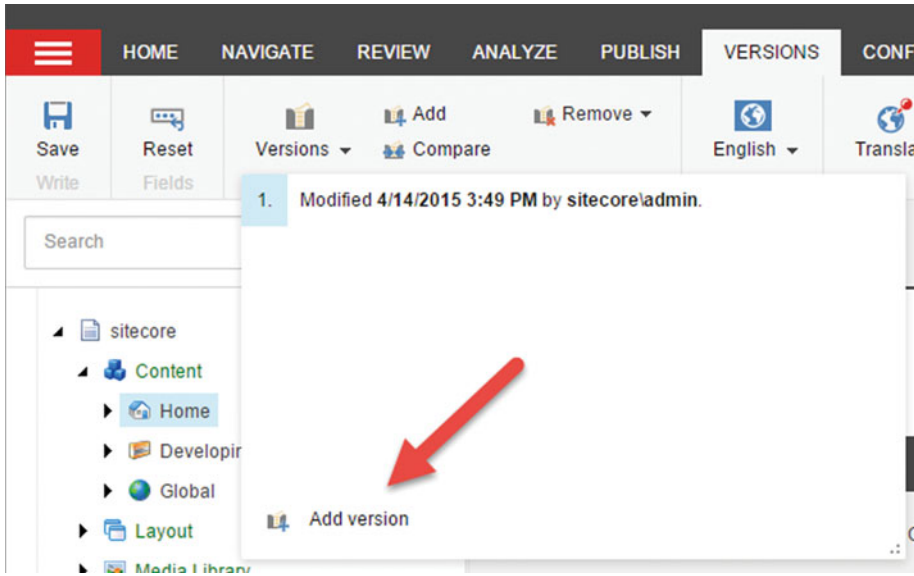

Figure 2-28. *You can add a new version to an item. Perhaps you would do this to manage an upcoming weekend promotion. Or, you may want that item translated into another language*

2. At the bottom of the drop-down, click the Add Version link.

3. In the Publish tab, click Experience Editor to launch the Experience Editor.

4. While in the Experience Editor, on the Home tab click the Settings button within the Publish section.

5. Configure the date ranges you want your alternate version published, such as seen in Figure 2-29.

Figure 2-29. *You can set a data window to control when a specific version will be the published version*

6. Publish the alternate version by clicking the Publish button in the Home tab (you may need to approve a few workflow items to get it totally published).

7. Back on the Experience tab within the Experience Editor, toggle the dates forward and backward to confirm that your alternate version and original version are swapping on the expected dates.

The publishing viewer offers a graphical representation of when things will be the published version, as can be seen in Figure 2-30. Within the Content Editor, click the item and from the Publish tab click Publishing viewer. As you can see in this figure, the only version published over the Holiday weekend would have been version two. Thereafter, version 1 is the published version again.
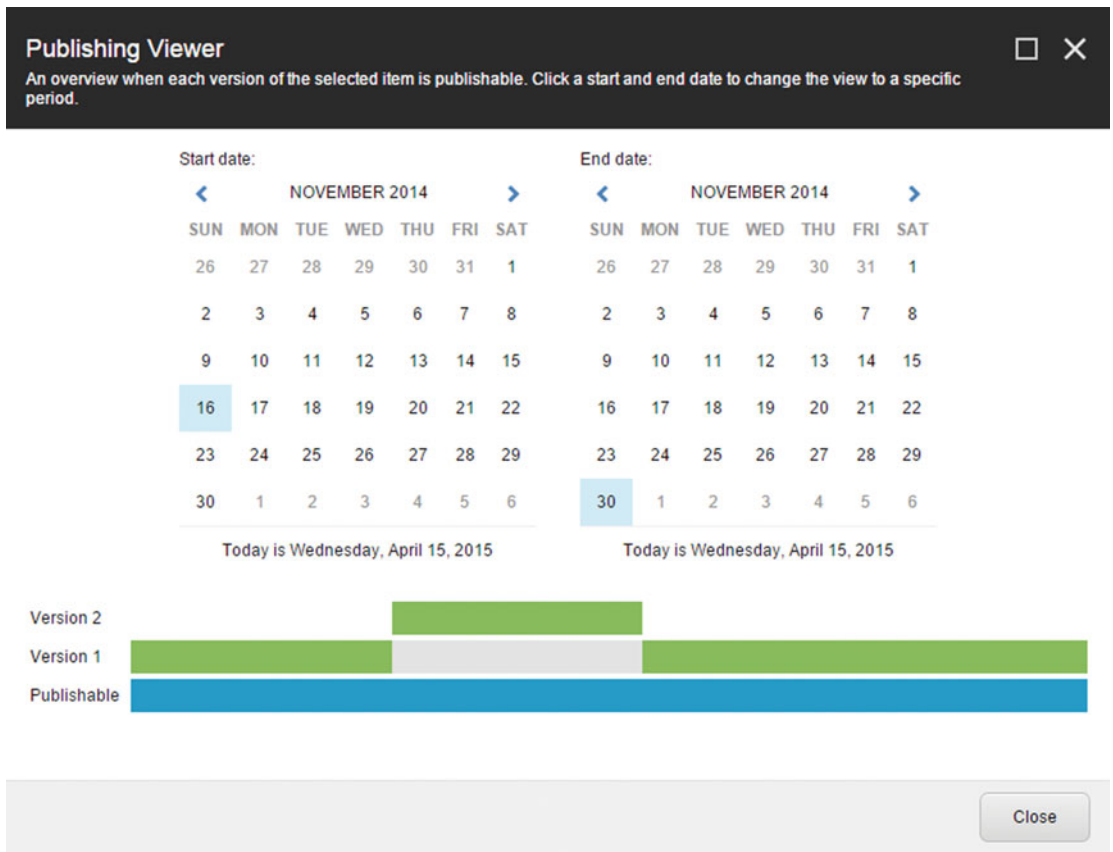
Figure 2-30. *There is a nice report to see which version will be published on which dates. In this case, version 2 represents a custom home page created just for the thanksgiving holiday weekend*

■ **Note** If you don't fully approve/publish an alternate version it won't be the published version even if it falls on the date specified in publishing settings. If the expected version isn't approved, Sitecore will choose the first version that is published.

Content Language Translation

Sitecore does a phenomenal job managing multiple language translations of content. Truly supporting global sites is where many web content management solutions (WCMS) break down. Not Sitecore. Not only is it easy to set up, it behaves and is managed nearly identically to any other content management we've already discussed.

As described in the last section, any piece of content can have any number of versions. Any version can have any number of languages that it is translated into. It is a simple process to create a new language (below System ➤ Languages), and then on a piece of content toggle to that language and translate the values (Figure 2-31).
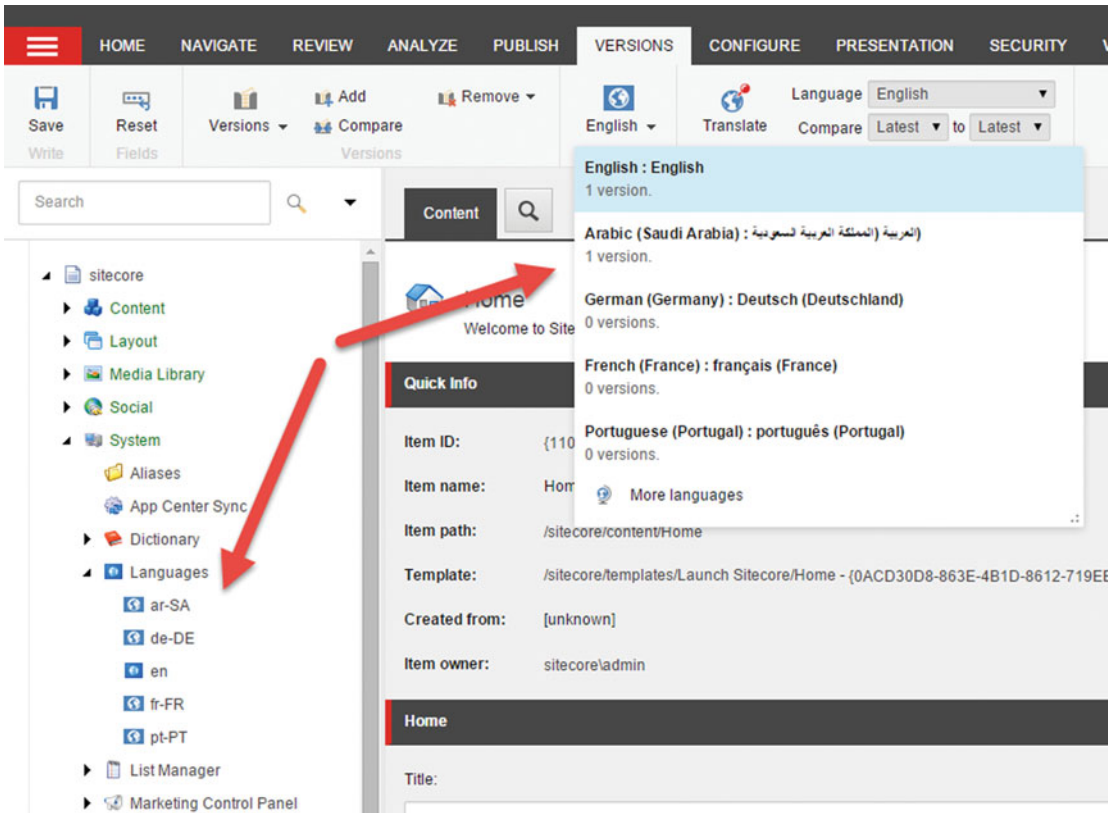
Figure 2-31. *It is easy to toggle between languages when on a piece of content. Just click the drop-down!*

■ **Tip**   It's also worth checking out a service called Clay Tablet if you want to route content for external translation. Their Sitecore connector makes for the easiest content translation imaginable. See more at: http://www.clay-tablet.com/products/cms-connectors/sitecore.

Follow these steps to create a new language and a new language version for a piece of content:

1.   Right-click Languages and choose Insert Language.

2.   Choose the language from the supported languages drop-down. Click Next to accept the default language and country region codes (recommended).

3.   Click Next to accept the default encodings (recommended), and click Next again to accept the default spellcheck files.

4.   Find the content you want to translate. With that content selected, click the Language button from the Versions tab. Select the language you want to translate the content into.

5.   You will see a prompt informing you that a language version does not yet exist for this new language (Figure 2-32). Click Add a New Version to create one.
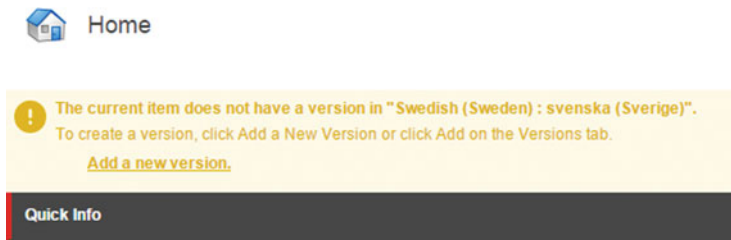
Figure 2-32. *You may notice that a content item doesn't have a translated version for all configured languages. Simply click Add a New Version to remedy this*

At first you'll see an empty item with no data. You'll want to add your translated content into the fields. A helpful way to know what to add is to click the Translate button in the Versions tab. This will open up a side-by-side view of two languages helping you know what to translate. Notice in Figure 2-33 we have Swedish on the left being translated from the English version. The source language can be changed to another language version by toggling the Language drop-down next to the Translate button in the Ribbon.
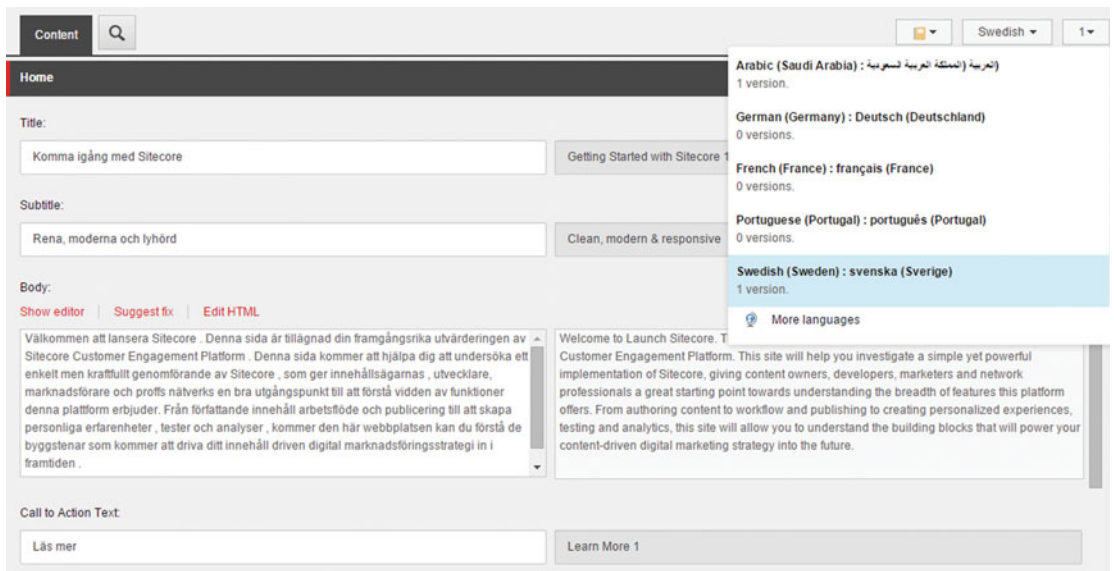

Figure 2-33. *Translation is made easy with a side-by-side comparison of source to destination languages*

When you are done translating the content you will want to publish it. Click the Publish Item button found within the Publish drop-down on the Publish tab in the ribbon. Notice how in Figure 2-34 we have multiple languages to select from. By default they will likely all be selected. It is important to deselect versions not yet ready for publishing. After you have approved it you will likely need to publish the workflow before it will show up. From the Home tab, click the Edit drop-down and click Submit. Then, click Approve Without Test (Figure 2-38) to finally get the item published to the production web site (workflow is covered in greater detail later in this chapter).
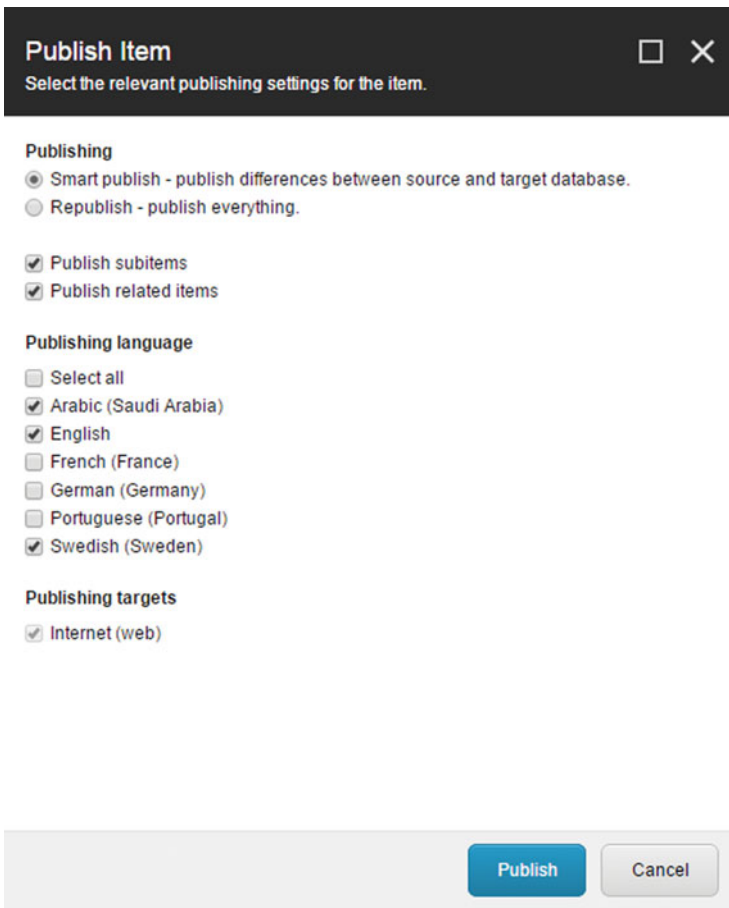
Figure 2-34. *Now when you publish you need to be specific as to which language to use*

Yah! In the following example, we've just published the Swedish version of the site. But oh no! It looks horrible. It may seem obvious, but you have to translate *all* the content before you'll want to publish the item, especially an item as high level as the home page.

■ **Tip** A good thing for your developers to consider is what the language fallback strategy should be. A developer can configure Sitecore to fall back to the default language if not all fields are translated (called a "partial language fallback"). Without a plan in place you'll notice behavior similar to what's seen in Figure 2-34. Language Fallback is now built into Sitecore 8.1. It requires administrator configuration to enable. See the following kb article for more details: `https://doc.sitecore.net/sitecore_experience_platform/` `language_fallback/enable_and_set_up_language_fallback`

Note in Figure 2-35 how the Home page data template fields have been translated as you saw earlier in Figure 2-33, but the rest of the page is blank. There is one piece of content that shows up—the Developer audience component. Each component on the page is pointing to a piece of content. Those components will start rendering their data as each of those pieces of content are translated, published, and approved.
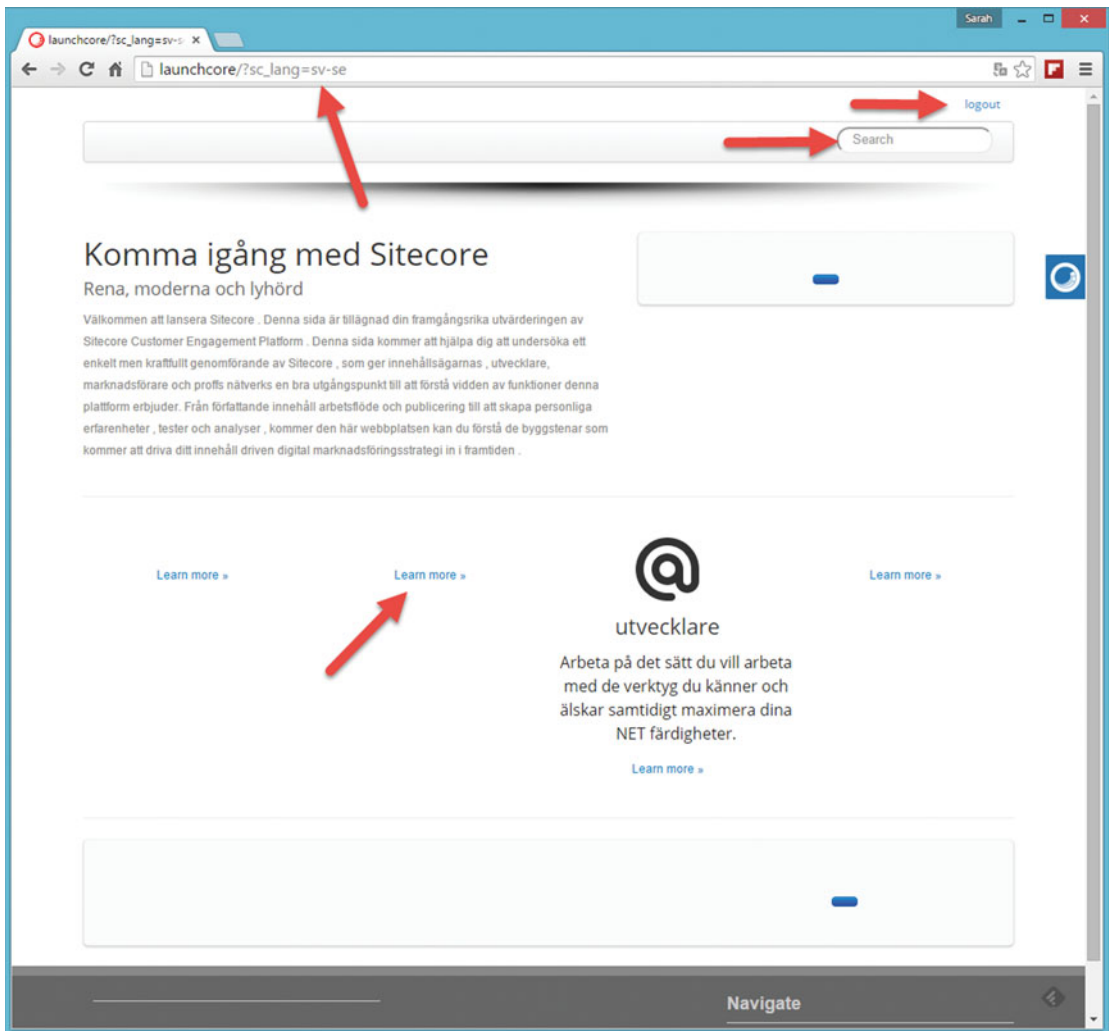
Figure 2-35. *Notice the URL. This is a simple way to force a language change on the user*

There's also another problem with the Swedish site. Namely, there is still a lot of English on it! Notice the search box says Search, as well as the Learn More links. This text is hard-coded into the components, rather than localized. Instead, these values should be values in the content tree like everything else. A good place to put them would be Content ➤ Global ➤ Settings, since they are likely settings easily shared across all sites. If they were in the content tree, you would be able to translate and publish them just like other content. A development best practice is to retrieve these localized values, versus putting them directly in the code.

<div style="border: 2px solid black; padding: 10px;">

PRACTICAL TIPS: CONTROLLING THE DEFAULT LANAGUAGE WITH GEO-LOCATION AND BROWSER PREFERENCE

Notice the `?sc_lang=sv-se` in the URL (Figure 2-35)? This is how you control which language the user sees, which in this case sv-se is the code for Swedish. Using a convention of `http://www.site.com/sv-se` is actually the more normal practice.

In either case, this code is whatever you put in the language country/region codes form when you originally set up the language. A developer can write code to do geo-location to detect the IP of the users and where they are coming from. Based on this location information you can append this little bit onto the URL to change the language.

A second option is that the developer can look at the browser settings of the user. A browser stores language preferences and you can use these to know which language to show. You probably want to use some combination of both geo-location *and* language preferences to know where the users should go (or better yet, offer a suggestion of what you think they want, and ask them to confirm). For a global site, you may need to redirect them to the Chinese site based on geo-location, but you may need to rely on browser preference to determine if you should show Mandarin or Cantonese.

After the user is first sent to the page with the `?sc_lang=ab-cd` value, the language will be set for that entire session. Thereafter, you no longer need to worry about keeping that value in the URL, unless of course you want to change it to something else. Note, however, that for SEO purposes this isn't a best practice. A `http://www.site.com/sv-se/xyz` convention is preferred.

</div>

Content Cloning

Content inheritance is a powerful tool in your information architecture arsenal. Imagine a single piece of content replicated across 100 instances (*clones*, as they're called) across your site. This ability to manage content in one, centralized location can have many uses. Global sites are a great example. Perhaps your U.S. site is the main site, but you also have regional sites. Some of the regional content is unique, but much of it needs to be reused. Content inheritance here allows you to manage the content centrally and have it propagated to all your regional sites.

To clone an item, simply click the item in the content tree and then click the Clone button under the Configure tab. A pop-up will appear asking you to specify where you want to place the clone. This can be anywhere in the content tree, even another site.

After the clone is created you'll notice it reuses all the values from the original item. Note in Figure 2-36 how next to the Title field there is a [original value] message. This is informing you that the field is getting its value from its original item. Note as well there is a value now in the Created From Quick Info details. The original item's value for this is blank, but the clone has a reference back to the original item. "Original Item, en, 1-{guid}" represents the name of the host item, the language of that item, the version number of the item, and that item's global ID.

Figure 2-36. *"Original item" text next to a field informs you that the item is a clone and it's getting its value from another item*

While this is all fine and good, there are important scenarios and gotchas worth considering. Consider the following scenarios:

- *You edit a clone's field and thereafter the original item's field is updated*—In this case the clone will not receive the update from the original item. Instead, when you browse to the clone, you'll see a prompt (Figure 2-37) asking you to resolve the conflict. You can 1) review the original item and see what the new value would be, 2) accept the incoming value, or 3) reject the incoming value.

Figure 2-37. *Cloning can result in conflicts. Fortunately, Sitecore recognizes conflicts and will help you through them*

- *You delete an item that has clones*—Upon deletion you will receive a prompt informing you of the existence of clones. If you proceed all clones will essentially be "uncloned" and they will act like normal items going forward.

- *You create a child item below an item that has clones*—Upon creating the item you will be prompted to see if you want to also clone the child items as an optional step.

- *You clone an item that has running workflow*—When you clone an item with a running workflow the workflow data is also copied but not cloned in the same sense that field data is. There is no link between the parent workflow and its state and cloned workflows. They will behave independently.

- *Cloning an item that has multiple versions*—A clone is only the clone of one single version, whatever version you had selected on the original item when you clicked the Clone button. If that original item has many versions you'll need to click Clone on each individual one.

- *You add a new version to a clone's original item*—This won't be a problem since, again, a clone is based on one single version, so adding more versions won't affect existing clones. However, you get a helpful prompt on the clone notifying you of the new version and asking you if you want another clone for that version.

- *You add a new version to a clone*—If you add a new version to a clone, that new version becomes a new clone pointing back to the original item the original clone was based on. This is basically like copying a clone, and there are not many good reasons why you'd need to do this.

- *A version of the original item is updated*—Only the clone(s) created from this version will receive the update.

- *You remove a version from the original item*—If you delete a version on the original item that has clones, those clones are essentially "uncloned" and will act like normal items going forward.

■ **Note**   You can always unclone an item later. Simply click the Unclone button in the Configuration tab. Afterward, the item will act like any other.

Workflows and Publishing Overview

The term "published" in Sitecore means a few things. First, the item has been approved via a workflow and rests in the final state of the workflow. Second, the item has been copied into the web database and is available on the content delivery server. A piece of content is never published until the workflow is over, assuming a workflow has been assigned to the data template, and the content is copied to the web database. There are a few out-of-the-box workflows that this section seeks to explain.

■ **Note**   This topic of workflows quickly moves into building custom workflows, since no business operates in the exact same way. Custom workflows, however, are an advanced topic typically performed by developers (even though it doesn't necessarily require coding). As such you can read more in the appendix if you want to take your knowledge of workflows to a deeper level.

A workflow in Sitecore is composed of three main building blocks: states, commands, and actions. A workflow "state" is basically the status the workflow instance is assigned to. For example, a state might be "pending approval," "approved pending publishing," or "published". The state helps explain what the workflow is waiting for, such as some human interaction.

Within a workflow state you can have multiple commands. A command is something a human will execute as they interact with the workflow. For example, Approve and Reject are two common commands a workflow approver would perform. A command's primary job is to move the workflow from one state to another. The Approve command might move the workflow to the next state, and the Reject command might move the workflow back to the start, for example. Commands show up in the Edit window (Figure 2-38) on an item for those who have access to click them (see Chapter 8 for more details on workflow security).
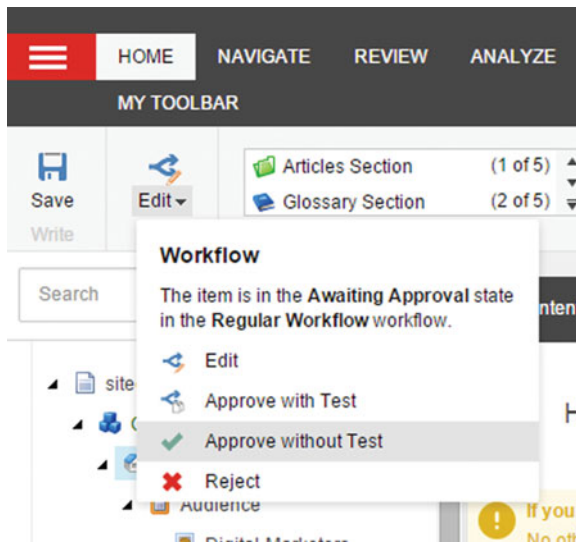

Figure 2-38. *Workflow commands appear in the user interface for those who have access to advance the workflow from one state to another*

A secondary duty of a command is to have a collection of actions. When users click the Approve command, you may want to send an e-mail or send a message to an external system. Unfortunately there are only a few valuable out-of-the-box actions, such one for sending e-mails another for validating the data before it gets approved. This means you will likely rely on a developer for more advanced business processes beyond simple Approve/Reject and basic notifications.

■ **Note** Sitecore is not a Business Process Management (BPM) system. Complex business processes should be managed outside of Sitecore. Rather, the workflow capabilities Sitecore are meant for near-finalized content. Anything beyond this requires heavy customization that you typically get out-of-the-box in an enterprise BPM solution. Keep focused on basic approval of content, where you're more focused on how the content looks on the site (such as mobile renderings) than the content itself. If you're a third-party ISV, there is a ton of opportunity here for a lightweight BPM add-in into Sitecore, as a full BPM solution is likely also more than what most marketers need.

The out-of-the-box "sample workflow" is a good case study when learning on these building blocks work together. You can find and create new workflows from the System node ➤ Workflows within the Content Editor. Notice in Figure 2-39 we have a workflow with three states: Draft, Awaiting Approval, and Approved. Below each state we have commands, such as Submit, Approved with Test, and Auto Publish. These commands correspond to the earlier figure, Figure 2-38.

Again, these commands move the workflow from one state to another. Notice in Figure 2-39 the workflow settings. There is a setting to designate the initial state. Anytime an item is modified it will land within this initial state. The commands have a Next State field where you can select from a drop-down that the workflow should move to when that command is executed. In the case of sample workflow, the Submit command below Draft moves the state to Awaiting Approval. Likewise, Approve with Test and Approve without Test both move the state to Approved. Reject as you can imagine moves the state back to Draft. It's important to note that workflows and A/B testing are tied at the hip; Approve with Test is literally how you will start your A/B tests (see Chapter 4 for more details).
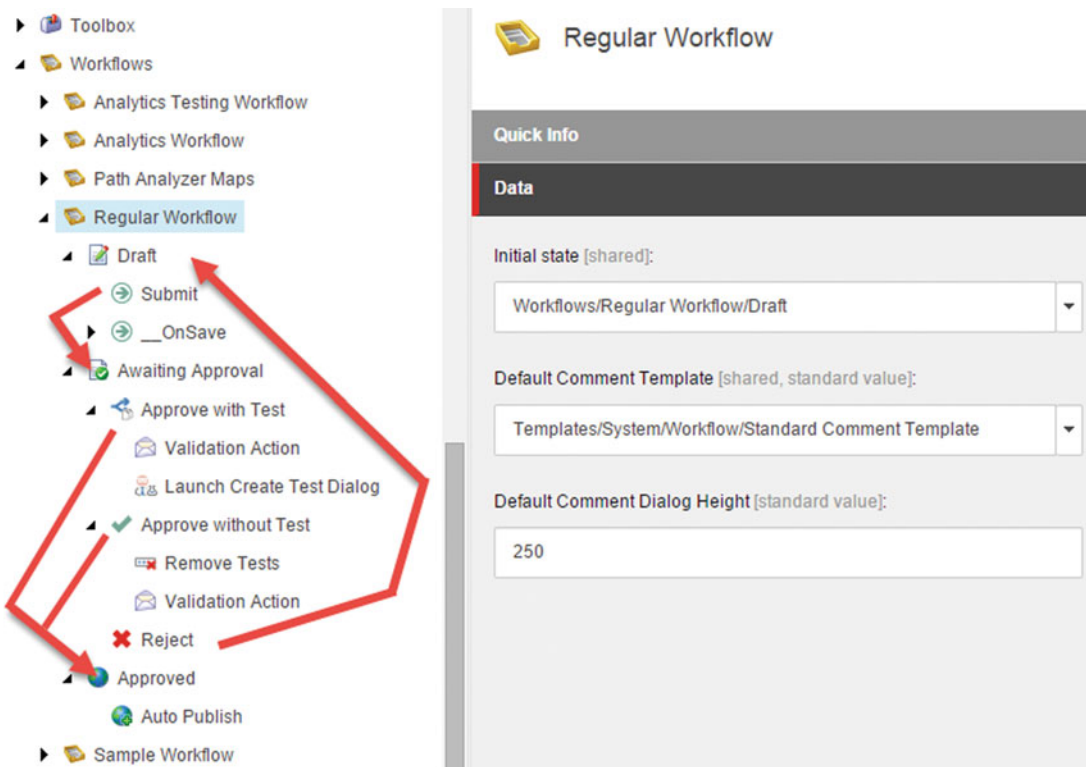

Figure 2-39. *Regular workflow is an out-of-the-box workflow within Launch Sitecore (similar to sample workflow)*

■ **Caution** Administrators bypass workflows! This is why you don't want administrators administrating content, as you will no longer have tractability into who changed what, why, and when.

At each leg of the journey the users are prompted to enter comments as to why they approved or rejected the item. These comments are stored in the item's workflow history for tractability later, such as during an audit. The workflow history can be viewed from the Review tab ➤ History button within the Workflow section, as can be seen in Figure 2-40.
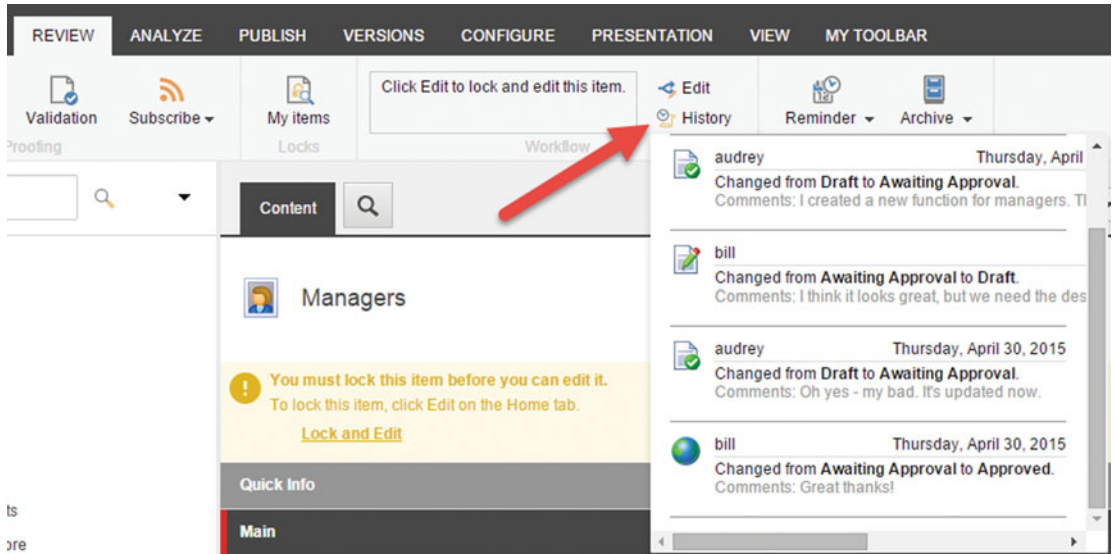

Figure 2-40. *Workflow history provides a helpful way to determine why content was changed and by whom*

It can be very hard to manage your workflow tasks, such as approval requests, when you're working across hundreds of items with content being published continually. E-mail actions can help mitigate this pain, by notifying you of when someone is requesting your approval. However, this has its limitations as well. Within Sitecore there is a concept called the "workbox" where all your workflow tasks are aggregated. This creates a one-stop-shop if you're unsure of the state of things. You can get to the workbox from the Launchpad or from the desktop.

Notice the workbox in Figure 2-41. When you first get there you will probably see a blank screen. You must first check which workflow you want to see status on (upper-left corner of the workbox). Thereafter you will notice all running workflow states you have security access to see (such as Draft or Awaiting Approval, as can be seen in Figure 2-39), along with quick access to the commands you have access to execute (buttons). In this example for the "regular workflow," you'll notice in Figure 2-41 there are seven items in a draft state with two items waiting my approval.
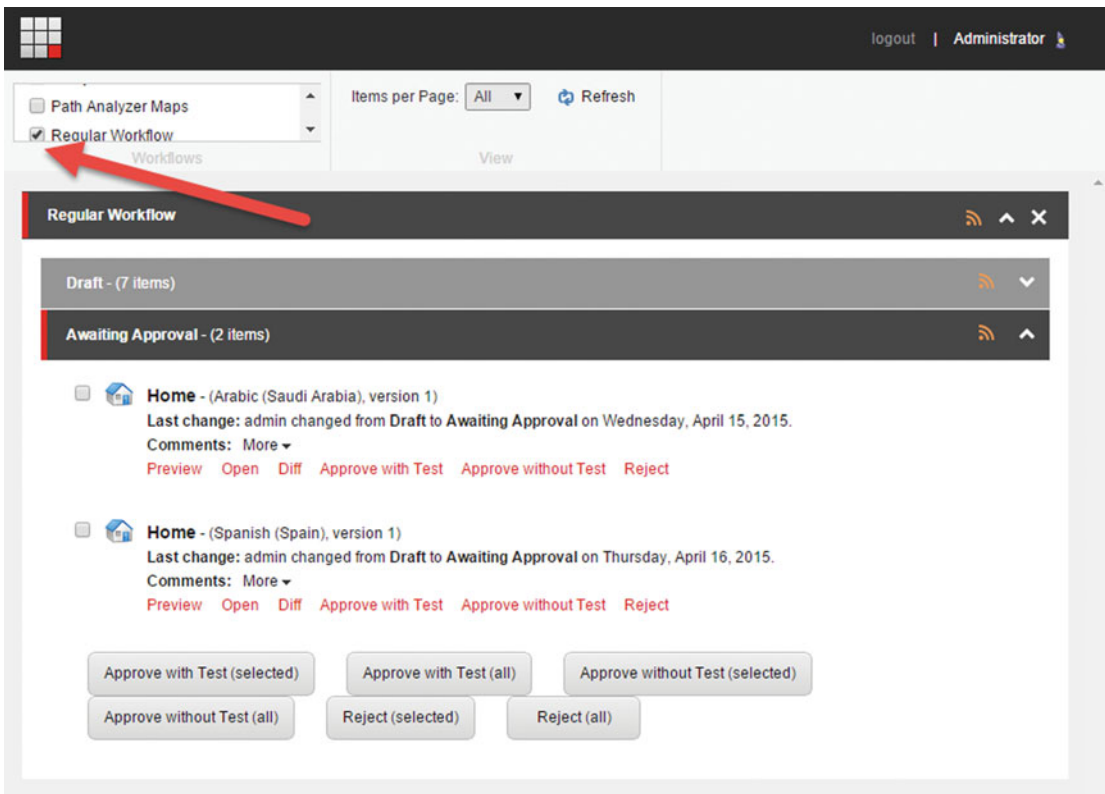
Figure 2-41. *You can use the workbox to easily see the status across multiple workflows in Sitecore*

■ **Tip** The RSS feature of the workbox is really powerful and unfortunately too often underused. It's a great way to be notified that you have something awaiting your attention. If you don't want to use an RSS client, a developer can set up e-mails based on the RSS feed that are better than the built-in workflow e-mails. See this blog post for more details: `http://bit.ly/1JdO3A0`.

We should now go ahead and add a workflow to our data template's standard values, now that we have a basic understanding of workflows. A workflow will not run on a new item's creation or when content is edited unless a workflow is assigned to that piece of content. The best practice way to do that is assign it to the content's data template's standard values.

■ **Note** In almost all circumstances, a developer would be the one to configure standard values. See the appendix for a description of what standard values are, how they're configured, and why they are helpful. It's an advanced topic beyond this chapter and the core audience of this book. However, because of the universal tendency to apply workflows to standard values, the subsequent content is left in context.

Like any other time when you need to configure standard values, expand the data template and select the __Standard Values item below the template. Workflow settings are hidden by default. You need to check the Standard Fields checkbox within the View tab to get them to show up. Thereafter you'll see like 20 new sections of configuration options appear, with workflow being one of them. Set the Default Workflow field to the workflow you want assigned to that item. Leave the other fields alone, as they are used after the item's instantiation. Note these three steps in Figure 2-42.
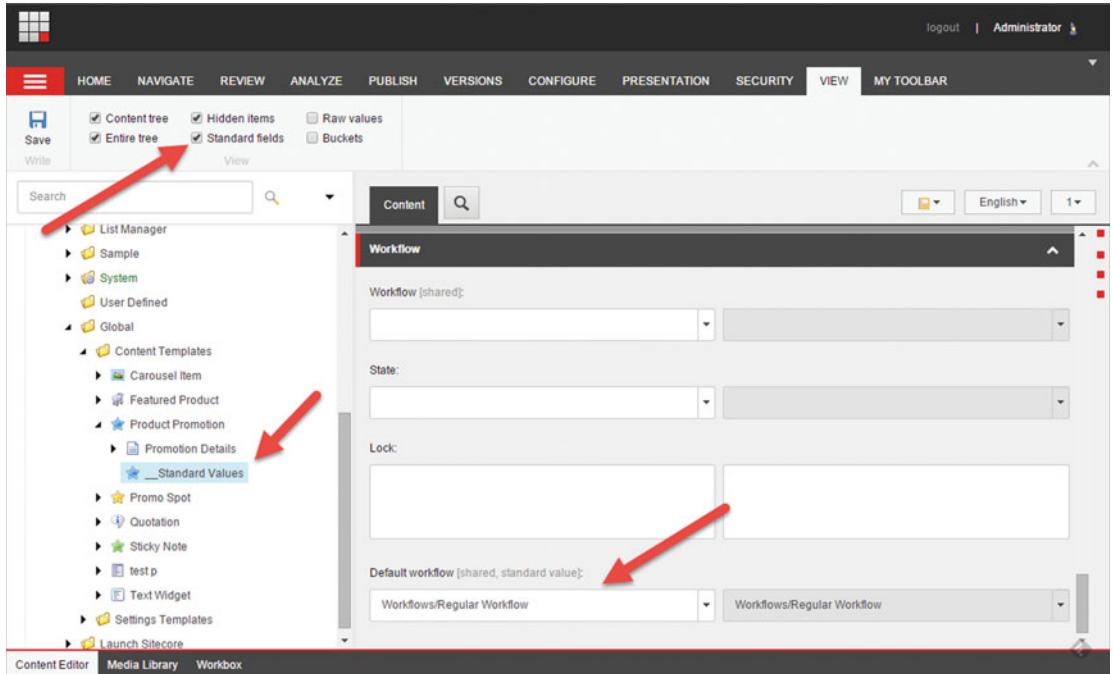

Figure 2-42. *You can make a workflow start automatically when someone edits a piece of content by adding the workflow to that content's data template's standard values item*

■ **Note** The __standard values of your template should only have the default workflow field set. Do not set the workflow field on the __standard values. That would set the __standard values item itself as a workflow. Similarly, do not set the State field on the __standard values item as that is saying that the __standard values item is in that state.

INTRODUCTION TO WORKFLOW SECURITY

There's an entire chapter dedicated to security (Chapter 8). However, workflow is pretty tightly coupled with security, since you typically have different people creating version-approving content and subsequently have the authority to publish that content.

You can find more details in Chapter 8, but suffice it to say workflow security is treated like security for any other item. Security is applied to items within the content tree. You can grant rights to items to roles or users individually. Typically you will create a role and assign that role access rights to items.

From a workflow perspective you are securing the workflow items, which in this case are the states and commands different roles or users are allowed to participate in. For example, if you don't have access to the Awaiting Approval state but you do the draft state, you will only see Draft items in your workbox.

It is a common pattern to create three main roles: Editor, Reviewer, and Publisher. An Editor can create content, but can also have access to the Submit Workflow command to move the item to the Awaiting Approval state. Reviewers might not have access to publish content, but they would have access to review and approve content. A Publisher then may tee up batch publishing during select windows, and therefore are the only ones who would have the access to move the items to a Published state. See the appendix for how to create a custom workflow with four states such as this, and see Chapter 8 for how to take that workflow and apply security.

Summary

Wow, we're making progress now! By this point we have definitely picked up our friend Mr. Scarecrow and well on our way to the woods where we hope to find more friends, like, perhaps a tin man. We'll see. For now, it is suffice to say that we've effectively paved a solid foundation of Sitecore that we can use as we continue our journey home in subsequent chapters.

The key points in this chapter were the fundamentals of the content editor, and specifically how information is organized in Sitecore. We discussed the importance of having a solid grasp of key concepts, such as data templates, content items, and their presentation details. The Sitecore hierarchy is truly Sitecore bread-and-butter, and prerequisite knowledge before continuing on into future topics.

Beyond this overview we went deep into each of those three foundational items. We covered what goes into a data template, how content inherits those templates, and options for configuring data fields.

Next we covered content editing fundamentals, including a deeper tour of the Experience Editor as well as administering content within the content tree. We learned how you can manage millions of items with buckets, as well as how to manage multiple languages and translations. Content needs presentation details, so Sitecore knows how to render that content. Those details include configuring layouts and content placeholders. All of these settings can be configured on a data template's standard values to ensure that new items leverage common, global settings. Even things like workflows can be configured as default settings, to ensure items flow through your standard business processes.

With content editing under our belt it's time to take things deeper and start building more robust experiences and web applications. The next step in our journey is to learn how to add forms into our site to capture customer information and interactions. We'll take a deep dive into a popular and foundational module: Web Forms for marketers.

CHAPTER 3

■ ■ ■

Experience Personalization

This is the chapter we've all been waiting for, and it's likely the chapter you bought this book for in the first place. We all think personalization is going to save the digital marketing world. Personalization makes all sorts of promises that we all get really excited about.

Personalization is kind of like the Good Witch of the South in the *Wizard of Oz* in this regard. She promises a path to digital marketing bliss, meeting the unique needs of each user in this "age of the customer," or world of Oz we live in.

However, just as the Good Witch shows you the path to ROI and your eventual promotion, you realize that the path has many perils. Few have survived to see personalization in all its glory as she describes it. In fact, it's rumored that nearly 85% of so-called "digital marketers" still are not fully utilizing these capabilities at their fingertips. Too bad the "good witch" didn't go with you on your journey, much like Gandalf did in *The Lord of the Rings.* Dude—he fought a Balrog for Frodo! Nope, no such help with our friend from the south of Oz; you must fend for yourself. With a wave of the hand and a friendly, but sort of sinister, "good luck," she's off to finish her cup of tea.

Fortunately for you, you have a good book in your hands that will guide you to the ROI and promotion she so shallowly promised you. This chapter seeks to explain the ins-and-outs of personalization in Sitecore.

The discussion on personalization will start with a comparison of rules-based and predictive personalization. These two types represent degrees of complexity, but also degrees of reward. Rules-based is great for basic personalization, but lacks the all-encompassing knowledge of your customer that predictive promises.

Predictive personalization is heavily dependent on personas. The next part in this journey is understanding personas, tips for defining them, and how your personas get implemented in Sitecore. From here we can finally start configuring personalization and hopefully experience the wonderful bliss we've so desperately been searching for all these years.

Let's begin!

What Is Personalization?

Web site personalization usually results in three different changes you would choose from:

- Change the content that's rendered (i.e. update a component's datasource to something other than the default).

- Change which component is rendered (i.e. swap the default component out for a totally different component).

- Hide the component.

There are two main ways to configure those changes. You can assign display rules onto the components, or you can use pattern cards and drive the personalization based on which persona Sitecore thinks the current user is (formally called predictive personalization). These two options are compared in this section. In the next section, we'll show the steps to configure each.

There are other options for personalization beyond the web site. You can also personalize e-mail and print experiences. Those topics are more advanced and not covered in this book.

Rules-Based vs. Predictive Personalization

You can personalize your site to match unique customer needs in two main ways: rules-based personalization (also often called ad-hoc personalization) and predictive personalization (also often called behavioral personalization). Rules-based personalization is super easy to understand and configure. When you personalize a component, for example, a pop-up appears showing you dozens of rules you can select from to change the behavior of that component.

Rules are essentially if/then conditions. You can assign multiple rules to a single component and the rule that matches first wins. The winning rule dictates how the component is personalized.

Notice in Figure 3-1 the Rule Set Editor. Again, there are many dozens of rules to choose from. For example, you may want to change the datasource on a component if the user entered the experience from an e-mail campaign (first item in the figure). Perhaps the e-mail promoted a specific product and you want a 10% off coupon to display on the home page in an attempt to get that user to convert.
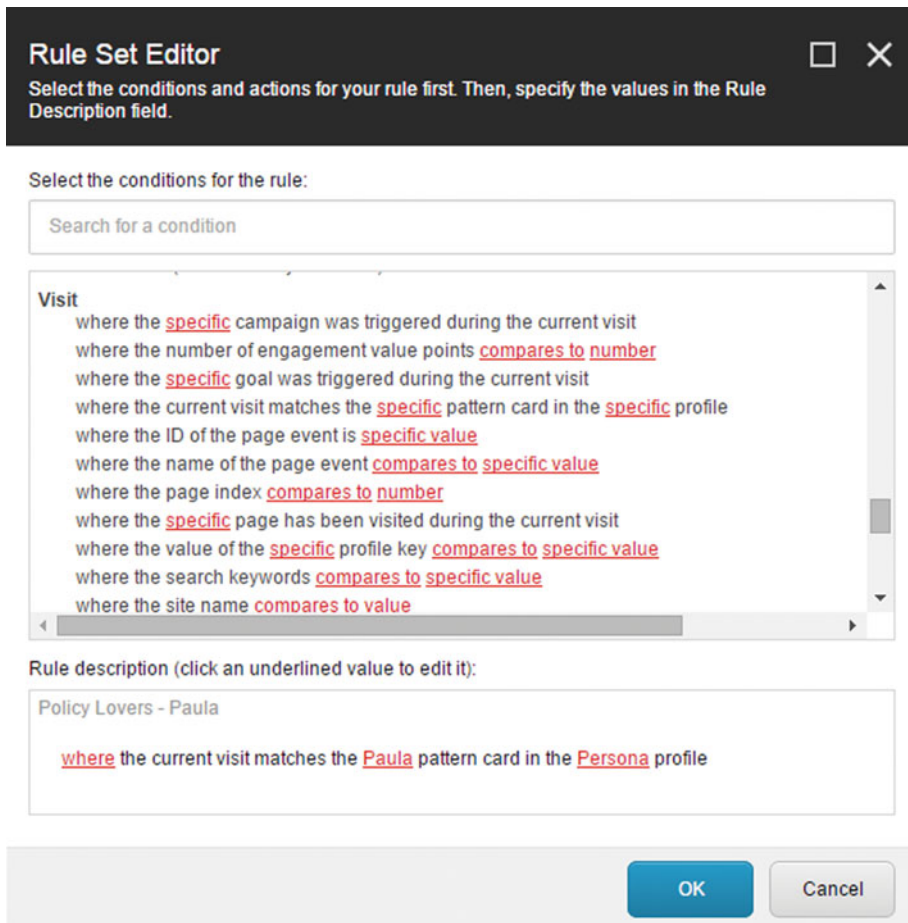
Figure 3-1. *The personalization Rule Set Editor lets you quickly apply rules to your content to change how it behaves based on your user's needs*

The second option is interesting as well. Engagement value points are accrued as the user completes goals or events. Maybe you have a user who is highly engaged, but has not yet converted or accomplished the goal you are really wanting her to accomplish. Perhaps in these special situations you would want to sweeten the pot and offer a 20% off coupon to push her over the edge. This rule would help you do that.

In both of those examples the rule is again a simple if/then clause. The rule does not know or care about *who* the user is, i.e. their assigned persona.

Personas are a way to characterize a set of behaviors that different types of customers may share. You may have 4-8 personas trying to represent your different customer's behaviors. Personas help you prioritize features and the design of your site based on which personas get the highest priority. However, they can also drive personalization.

Persona-based predictive personalization is easily the most robust personalization option in Sitecore. Instead of a series of if/then clauses, Sitecore can watch the movements, behaviors, and actions taken on the site and attempt to match those behaviors to the persona that most closely personifies those behaviors.

The benefit here is that personalization requirements are not usually so simplistic and if/then clauses fall short of a marketer's expectations. You may need to personalize based on 5-10 considerations, many of which are less objective than a rule. A persona can characterize those more subjective qualifications.

Predictive personalization works by tagging content with profile cards. Basically a profile card has different keys and each key is scored. Notice the keys in Figure 3-2 (i.e., Contributor, Learner, People-Finder, etc.).
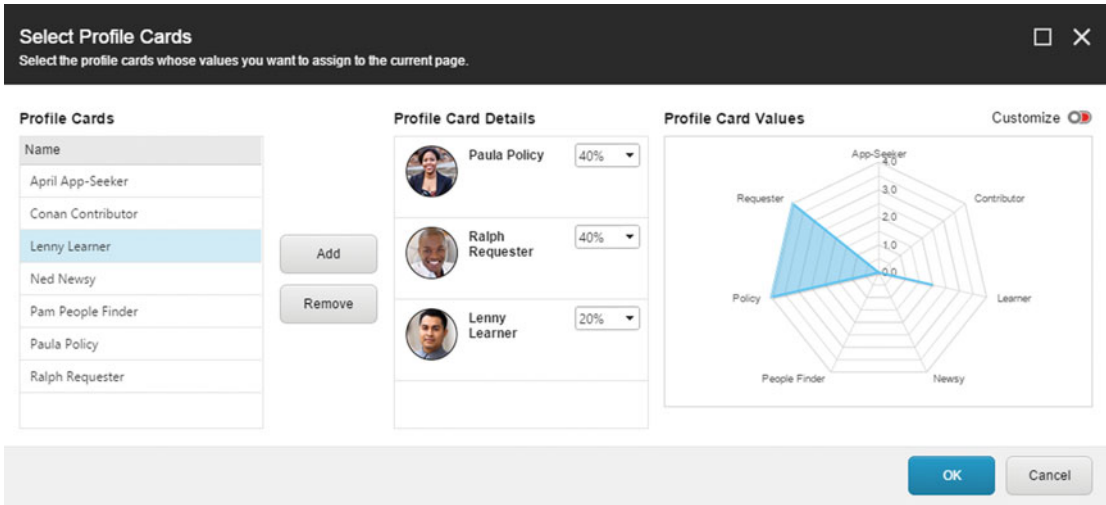
Figure 3-2. *A profile card is composed of keys with each key having a value. Together these keys/values represent the wants, needs, and desires of a persona*

These keys are assigned to profile cards and weighted differently based on what that profile card represents. Personas are represented in Figure 3-2, with Paula Policy, Ralph Requester, and Lenny Learner assigned to a content item at different weightings (note the percentages).

A profile card may or may not be a persona, but usually is. A profile card could instead be more generic, such as "High-Level" or "Detailed" if you want to tag content based on its information type. In that case, rather than persona (or in addition to) you may want to keep tabs on the level of detail the current user prefers to see. Perhaps you have people named Paula who prefer high-level content, and people named Paula who prefer the details; but in both cases these Paulas want to see policy information. This example lends itself to using two separate profile cards: one for their persona and another one (or more) for their other preferences not represented within the persona itself.

■ **Tip**   Don't go crazy with profile cards! It's best to create solid personas that characterize your users. Information Type actually isn't a great example to use a second card. "Buying stage" might be a better example, with keys such as Prospect, Qualified, and Customer (post-conversion). In this example, the persona is not changing when the user flows through your funnel—it's still the same customer. High-Level/Detailed would most likely be manifested in the persona itself, thus making them redundant and adding needless complexity to your personalization strategy. You want a really good reason to create profile cards that extends beyond your personas.

In Figure 3-2, notice how the requester and policy keys are both assigned four points, and the learner key is assigned two points. Any user who browses to this content item will accrue these points across these categories.

■ **Note** You can test this and watch points accrue through simulations in the Experience Explorer. See the "Personalization Testing in the Experience Explorer" section later in this chapter.

Over time, as the customer engages across many pages/items, these points can start being matched against profile cards and a card will be assigned to the users when their points matches a card. Then, you can show personalized information to that card, such as content tailored specifically to the needs of Paula Policy or content that is "high-level" if you were tracking something more generic such as information type.

Notice in Figure 3-1 there is a rule you can assign to a component to target a profile/pattern card. The rule matches when the current user has been assigned to the Paula Policy persona. Of all the rules in the rules picker, this rule is the most powerful. In the next section we'll dive more into personas, since good personas are the foundation of your personalization strategy.

STRATEGY BITS: SEGMENTING YOUR USERS

Personalization begins with knowing who your users are. What do they expect from you? What are their needs, wants, and desires? What are their preferences? These questions are very difficult to answer without a segmentation strategy.

Your segmentation strategy should encompass two main points: 1) implicit segmentation, driven from user behavior and 2) explicit segmentation, based on data you have on file about that user.

Fortunately your persona strategy gets you through most of the first point—your implicit segmentation strategy. By tagging pages with your personas, users accrue points for each aspect of the persona and eventually fall within a persona based on a matching algorithm that works to get them into a persona that is closest to their behavior.

However, in addition to personas there are other things you should consider when creating your implicit segmentation and personalization strategies. For example, what goals and events did the user perform during their visits? Did they enter the experience as a result of a campaign? If so, how then should the experience be tailored? Perhaps the user experienced a failure event. Can you respond and rebuild trust?

These are all more complex examples, but it could be as simple as location or basic demographics. Would someone in an urban setting want to see something different than someone in a rural setting?

All these questions may or may not be represented in a persona. You need to think beyond personas to really grasp a complete implicit segmentation and personalization strategies, especially regarding things such as goals and campaigns, which are so often glossed over in a Sitecore context.

Explicit segmentation and personalization is another area that is commonly overlooked when creating segmentation and personalization strategies. It's great to personalize based on behavior, but what if their behavior falls short of answering some important questions you have about the user? What do you do then? Funny enough, the answer is quite simple—ASK THEM! ☺

Explicit segmentation is very pragmatic. Present a call-to-action where you collect important information about that user. News sites often use explicit segmentation to drive their personalization. Have you ever gone to your local news site and they prompted you for your news preferences, such as neighborhoods you do/don't want to see news about, or your preference to see sports over crime news? This is explicit segmentation at work.

Another example of explicit segmentation might be a request to fill out a survey, or even as basic as site registration. When your customers register for your site, what can you ask them to better understand what their expectations are?

The fundamental problem with explicit segmentation is user resistance to provide the data you need. This resistance is usually due to laziness, but sometimes due to security concerns. Laziness needs to be overcome with simplicity and a strong call to action. It's your job to make them really want to enter that information. If you don't, they won't. Security needs to be overcome with statements of trust. Provide them details into your security hardening strategies and other customers who have entrusted their data to you. Additionally, show them a transparent and easy-to-understand privacy policy.

The bottom line here is that your personalization strategy needs to be paired with a segmentation strategy, which asks the question, "how will we know who are users are?" Don't rely solely on behavioral patterns, and don't rely solely on just the data you have in your CRM. Don't forget about goals, events, and relation to campaigns. You need to bring it all together in one holistic segmentation strategy that accounts for all the facets of implicit and explicit segmentation. Leave no stone unturned in your search for what motivates your customer!

It All Starts with Personas

Since personas are the foundation of creating an effective predictive personalization strategy, it makes a ton of sense that you want to create good personas that match the needs, motivators, and attitudes of your customers. There is a ton of literature on personas you can read elsewhere. Since, however, personas are so foundational to a Sitecore deployment, a quick intro makes sense. Personas tend to be categorized in three main categories: their goals, their behaviors, and their attitudes.

- *Goals*—Some personas are driven by a specific purpose, such as the need to find the best price on a specific watch. They come into your experience with a specific goal in mind and they want you to help achieve that goal right away.

- *Behaviors*—Behaviors are patterns you observe a persona taking, such as reading every review possible or coming back to the site five times per day.

- *Attitudes*—An attitude is a point of view the persona brings with them when they enter your experience. For example, a persona might be a staunch believer that used cars are preferable to new cars or that Cannon makes the best cameras. You need to understand the attitudes of your customers to ensure your tailor to those expectations right away, or are very intentional to change those opinions.

Personas are behavioral categories that combine these three dimensions into unique statements of purpose or intent on behalf of any given customer who may enter the experience you are building. Personas are not roles, such as Director of Operations or CEO. Personas are clusters of behaviors. It is especially important to know the difference for sites such as vendor portals or customer portals.

The Persona Workshop

So how do you actually go about creating your personas? Holding a 2-4 hour persona workshop with key stakeholders is a great way to go about it. Fill the room with 6-10 individuals who either are your customers or know them very well. Use the following process as a guide. The result of this should be a common agreement to who your experience's personas are and how they should be prioritized.

Identify all the roles—When dealing with portals, such as customer portals or partner portals, it helps to identify roles. Personas and roles are not the same things! However, people tend to understand roles better than personas and getting them on the table helps facilitate a discussion. Roles likely won't exist for public-facing brochureware sites or e-commerce sites. Create a large post-it note for each role and stick these around the room.

Identify all the events—Events are things users can do on your site. Go through each role (or generally if no roles exist) and create a post-it note for each event that user/role would want to perform on the site. Stick it under the appropriate role, if applicable.

Identify behavioral patterns—Throw all the role post-its away and instruct the room on the difference between roles and behaviors. Stack up all the event post-its into one pile. One by one, compare each post-it to another and ask this question: When the user comes into the experience motivated to do event A, will they likely also be doing event B at that time as well? If the answer is yes, group the two together. If no, create two groups. Move on to event C and do the same, either putting it into category one or two, or creating a third category. Do this until all the events are sorted into behavioral categories.

■ **Tip**   Don't let the room fall back into role-based thinking! Two different roles may come into the experience both motivated to do the same thing. It will be impossible to prioritize personas, features, and campaigns if there is a ton of redundancy in your personas!

Remove obvious behavioral categories—Take a look at the categories. It is likely that you may have 15-20 categories on the board if you had 75 event post-its you sorted through. 15-20 is way too many. You should shoot for 5-10 personas at most. Compare each category to your company's business objective or more specifically the objectives of the site, and give each one a rating from 1-10 on how well it aligns in support of those objectives. Discard anything rated <7. If your team finds this hard to do, remind them that a site needs focus. A watered down experience that leaves users unsure of what they can use the site for is not effective. A separate site/experience may be needed to better support those categories rated <7.

Create personas—The categories that are left become the building blocks for your persona. Go through each category and describe that persona's motivators, pain points, and alignment to business objectives. Also, describe the goals you have for the persona, things you want that persona to do that they might not themselves know to do or plan to do (such as make a purchase when they are just coming to read reviews). When complete you may have a high-level persona description such as the one for Lenny shown in Figure 3-3.

Lenny Learner

Weighted Score: 266 (26% of total)
Priority Weighting: #1 of 7

"What's the process for doing this?"

Lenny visits the partner portal to locate training and process documentation related to his current work or personal situation. Within the context of his situation, he has an idea of the type of information he is looking for (how to update benefits, how to use team member discounts, etc.). However, he expects additional suggestions so he doesn't inadvertently miss a critical piece of material.

Lenny is a self learner and would rather find the material himself or collaborate with colleagues than attend training. Additionally, his busy schedule dictates that he completes his learning and gets back to his day.

Lenny's alignment to business objectives

Improve partner retention and recruiting

Achieve 80% partner adoption

Improve and modernize partner engagement

Improve operational efficiency

Lenny's motivators
Lenny comes to the site to...

- Find technical manuals and updates for his equipment/domain
- Find installation best practices for equipment he services
- Understand how other partners or team members are overcoming their challenges/issues
- Read "how to" resources so he can perform self-serve tasks
- Collaborate with partners and team members on understanding and improving process documentation
- Locate pertinent process and/or document templates

Our goals for Lenny
What we want Lenny to do...

- Overcome his installation/support issues and challenges
- Perform his task our way
- Advocate usage of the partner portal

Lenny's pain points
Lenny dislikes experiences that...

- Make him hunt for information.
- Cause him to question the accuracy of the information.
- Showcase information not relevant to his needs

Figure 3-3. *Creating your personas on paper before you create them in Sitecore is critical. Be behavior-centric, not technology-centric or role-centric in your persona strategy*

You can much more easily create a personalization strategy when you have personas such as Lenny identified for your site. Additionally, when personas are prioritized against the site or company's business objectives, it is much easier to understand which features or capabilities of the site need to take priority and which features can wait for a later release.

Creating a Persona Journey

The next stage in creating a persona personalization strategy is to determine each persona's unique journey you want them to embark on. Sure, priority #1 is the create an experience that *they* want to engage with; however, it's just as important to know what you want to get each persona to do. In the case of Lenny, he is a basic information seeker engaging in a partner portal solution. He has a question and he wants it answered. But, can we get him more engaged? Can we work to change his behaviors and attitudes, such that he becomes an active contributor and an active promoter of the portal? Can we change Lenny's persona to another persona that creates more value for our business? What we want to do is create an engagement plan for Lenny that leads him toward becoming a more engaged, more valuable customer.

One could argue that each persona may get its own yellow brick road of sorts. In Sitecore, a persona's yellow brick road is called an engagement plan. An engagement plan leads a persona toward a desirable outcome. Engagement plans dovetail closely with campaigns and are covered in greater detail in the next chapter. However, now, when discussing personas, it's helpful to keep engagement plans in mind. In

Figure 3-4 you'll notice a persona engagement funnel that we want Lenny to flow through. He starts as a basic information seeker, but in the end becomes an active contributor and promoter of the partner portal solution. Create something similar for each persona. In the next chapter we'll work to make these journeys a reality by incorporating the user into an engagement plan. This is the foundation of Marketing Automation in Sitecore.
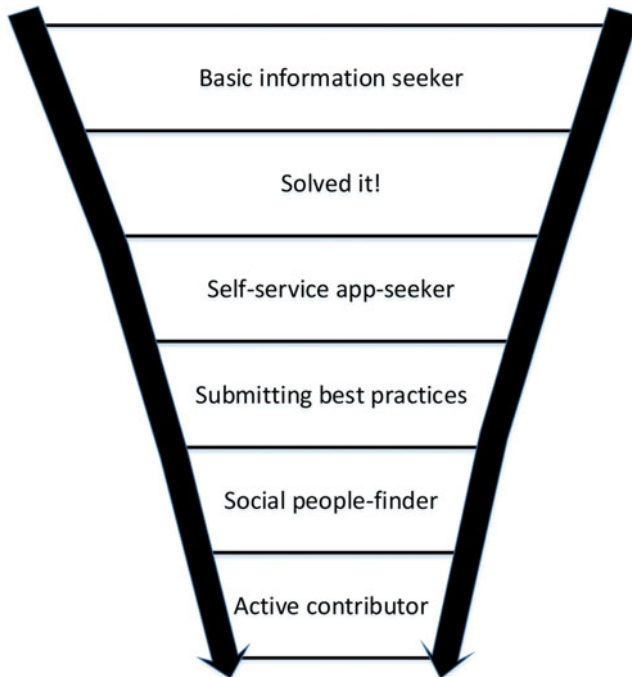

Figure 3-4. *People have aspirations and goals for their life, and so should your personas! Create a persona digital funnel and map out how your want your personas to evolve over time (and become better customers)*

For now, describe each stage in the funnel. How do you nurture this persona in particular? How do you get them to advance their stage? Content should be aligned and personalized to each persona and ideally each stage to ensure the persona is advancing deeper into the funnel. This exercise will help you add greater depth into your personalization strategy beyond the obvious. You will likely find content gaps, and gaps in your strategy for various personas and their respective stages. This is a good thing! Work to close these gaps over time, and in doing so your digital experience will be increasingly personalized, customer-centric, and value-laden for your business.

Predictive Personalization Terminology

We need to get some nomenclature under our belt before we dive in and configure our personas and thereafter personalization. The following are all key concepts for Sitecore personalization. Most of them are covered in detail in this chapter, but others, such as goals and outcomes, are covered in the next chapter with more context provided. For now, however, when planning your personas it is good to have all the nomenclature in mind so you know holistically what you should be planning for.

Profile cards—Remember that a piece of content can be tagged to a profile card. As the user navigates around, numeric values are accumulated and those values are used to match the user with the closest profile card that represents the user's behavior (pattern card to be precise—more on that later). A profile card commonly is akin to a persona. However, you may have profile cards for individual goals, behaviors, or attitudes, such as the example provided earlier about information type—High-Level and Detailed.

Profiles—Profiles are just categories of profile cards. Profile cards are what you attach to content so Sitecore can start tracking behavioral patterns and match a user to the nearest cards. However, you can have multiple categories of cards assigned to a piece of content. Figure 3-5 shows some content that has assignments for the Persona and Information Type profiles.
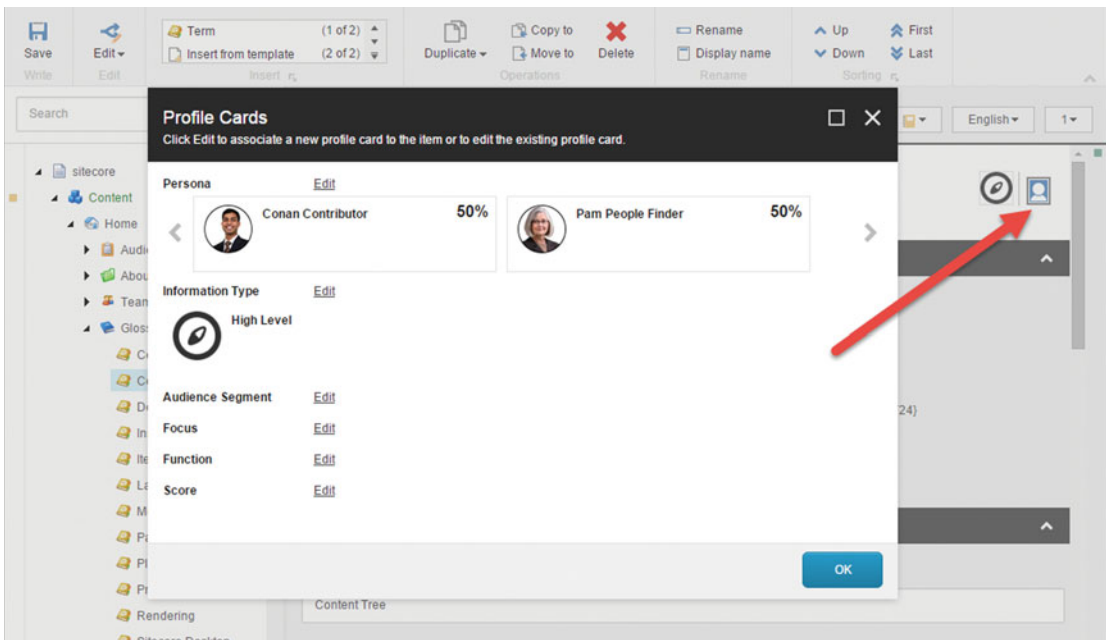
Figure 3-5. *You can assign your personas to content items to help drive a matching algorithm for site visitors*

Profile keys—Keys represent the goals, behaviors, and attitudes of a profile card. Take the Lenny persona profile card shown in Figure 3-6. The Persona profile has the following keys: App-seeker, Contributor, Learner, Newsy, People Finder, Policy, and Requester. Lenny, then, has values set against those keys to tell Sitecore who Lenny is and what his preferences are. You can see that Lenny is primarily a learner, but also cares a fair amount about getting the official policy stance on important subjects. To a lesser extent he is a contributor and people finder. Keys, as you can see, weigh the persona accordingly.
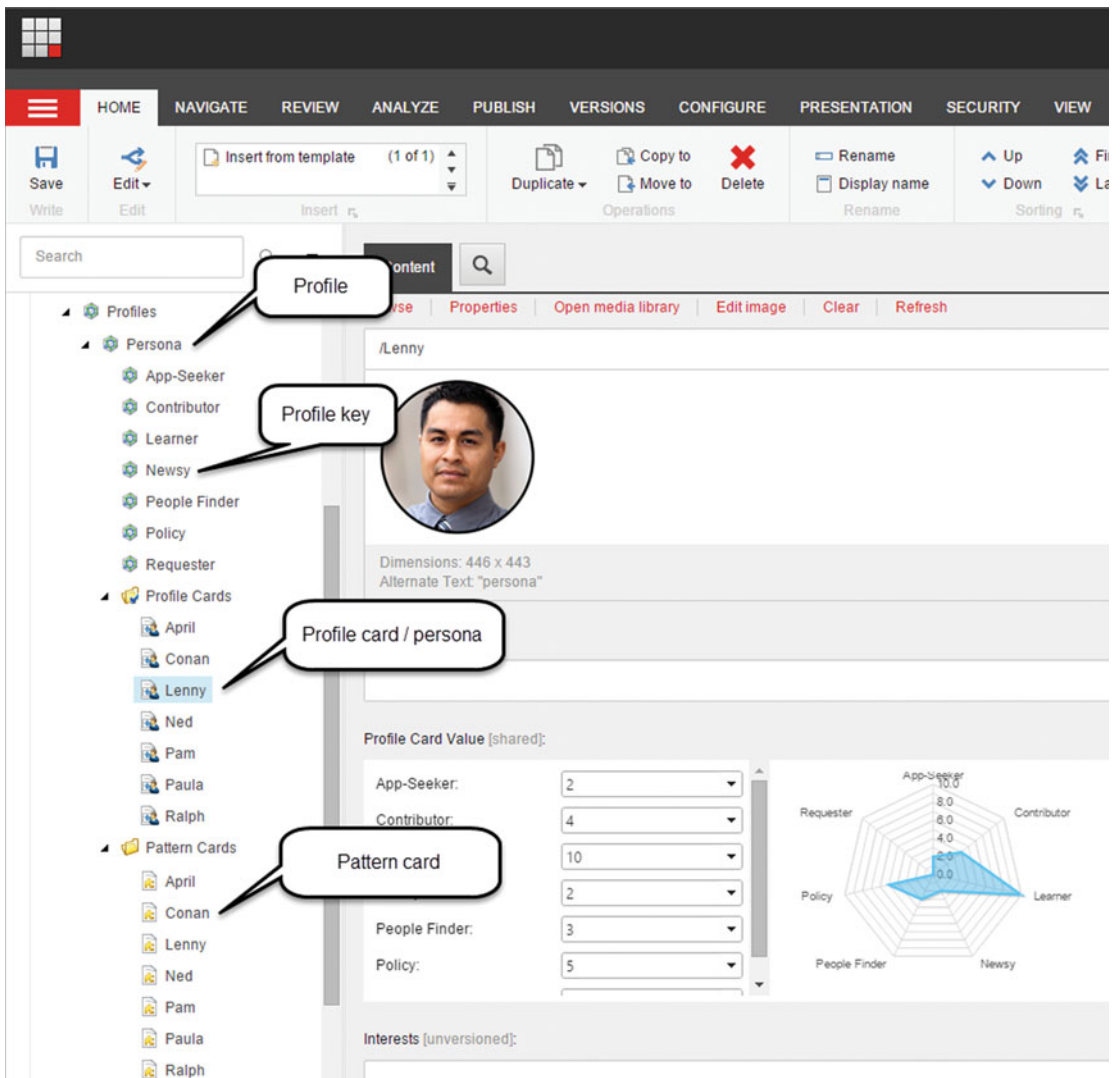
Figure 3-6. *Technically speaking, personas match profiles, profile keys, profile cards, and pattern cards (and events, failure events, and goals—but more on that in Chapter 5!)*

> *Pattern cards*—Pattern cards are used to match the current user's key values and accrued points against some set of standard values. To be perfectly explicit, a user is matched to a pattern card, not a profile card. Profile cards set how much value is given to the different keys, whereas pattern cards look at how much value the user has accrued across the keys, with the closest matching pattern card being assign to the user. It's all rather confusing, but suffice it to say your pattern cards most of the time will be configured to look identical to your profile cards.

EVENTS, FAILURE EVENTS, GOALS, AND OBJECTIVES

Events, failure events, goals, and objectives are all covered in more detail in the next chapter. However, they bare significant consequence to personas, so this is a teaser as to what is coming next.

Events—Look back at Lenny's persona in Figure 3-3. Note specifically the Motivators section. Events are these motivators. You can tag content and actions to events that correspond to a persona's motivators. The benefit to doing this is reporting. Wouldn't it be nice to validate post-launch that your assumptions about your personas are accurate? Reporting can also help you see event trends, where trending up means that personas are getting better and better at accomplishing what they are setting out to accomplish.

Failure events—Notice the pain points in Figure 3-3 as well. These pains points are also events, but tagged as failures. Again, reporting can help you understand when you are letting your customers down. If you see high failure actions you should update the design/strategy of the site to reduce the amount of discomfort you are causing your customers.

Goals—Goals are things you want the customer to accomplish. Goals are also noted on the persona in Figure 3-3. Again, goal attainment is easily measured. Goal examples might be downloading a whitepaper, registering for a webinar, or just about any action imaginable.

Outcomes—These are high-level, macro goals you have for a persona. This might be a conversion from lead to customer. In Lenny's case it means growing beyond just an information seeker and becoming an active contributor.

Your measurement strategy will benefit by considering objective events, failure events, goals, and outcomes during the persona development process. It helps to pair up a persona definition with a measurement strategy across these dimensions. The persona itself can remain rather abstract, but a technical resource, such as a Sitecore architect with xDB experience, should be weighing in and providing ideas to make these points measurable and a bit more objective.

Personalization Testing in the Experience Explorer

The Experience Explorer is amazing. There is no doubt that your personalization strategy will be rather complex by the time it's implemented on your site. How do you know if the implementations is built according to specification? How do you simulate a persona and see how your site responds to their preferences? The answer is you do your personalization testing in the Experience Explorer (Figure 3-7).
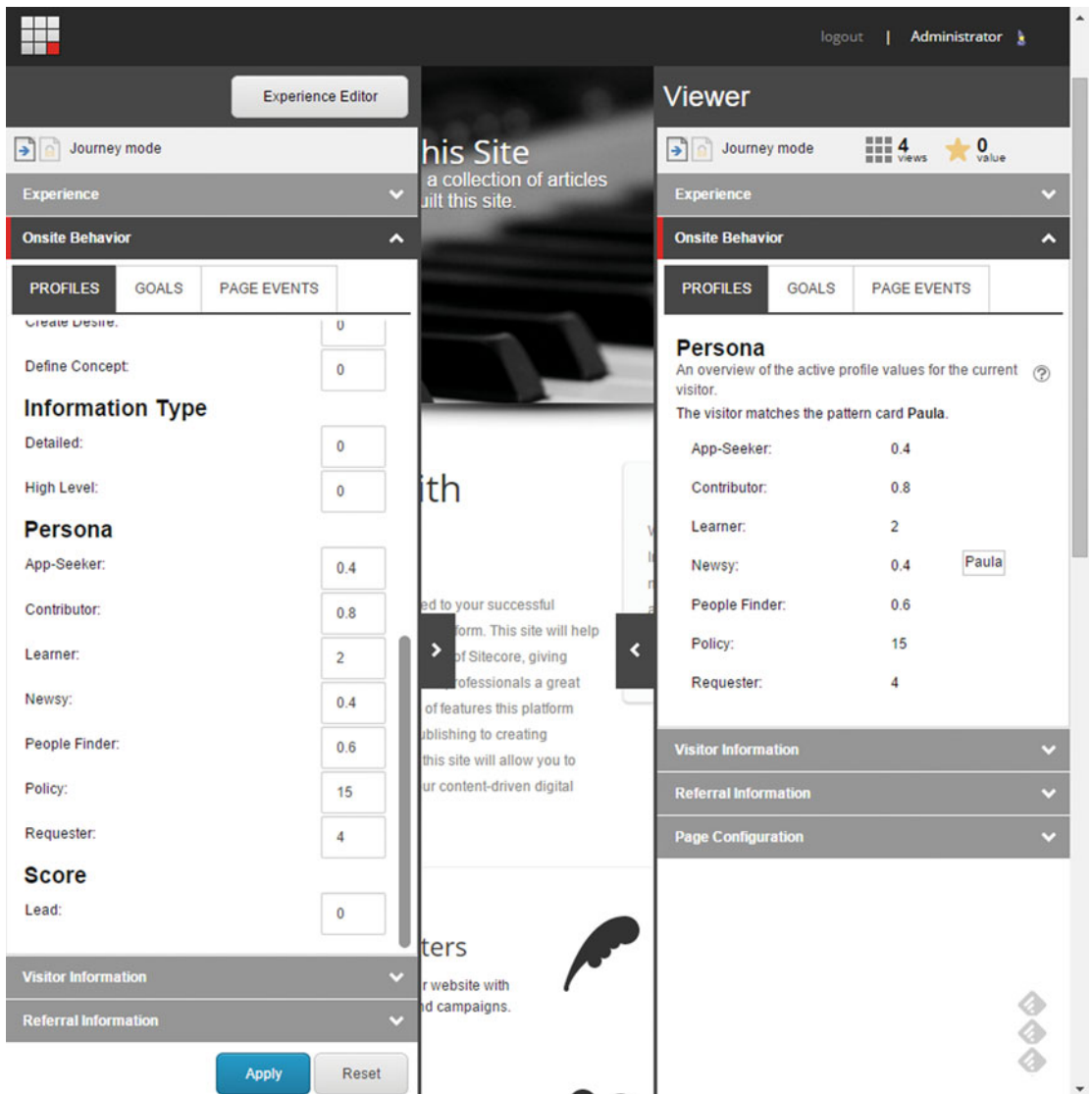
Figure 3-7. *The Experience Explorer is a great way to see how your session is aquiring persona points*

There are a few use cases you should be aware of:

- Monitoring profile key value accrual
- Monitoring assigned pattern card/persona
- Watching the site respond to that persona
- Manually setting key values to force different behaviors to occur
- Manually setting the persona you want to set

- Monitoring goals and events you're engaging with

- Validating user information, such as location or demographics

- Manually attributing the visit to a marketing campaign to again monitor how personalization responds

The left panel lets you manually set the details of what you're testing. The right panel shows what the values are set to. In the case where you're in Journey mode both will be whatever Sitecore matches you with. In the case of Fixed mode, the values in the right will be whatever you set on the left panel. These values can be key values, but you can also tag which goals and events you're anticipating the testing will encounter. Additionally, you can set a marketing campaign as a source in the Referral Information section to view how your personalization is responding to campaign referrals (Figure 3-8).
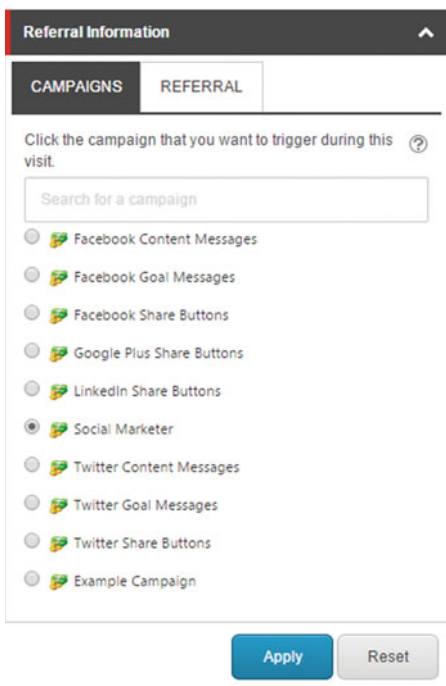
Figure 3-8. *You can assign your Experience Explorer session to a campaign*

The Visitor Information tab on the left lets you assign a device channel as well as location information. If you recall, you have create layouts that support different device formats. If your site is fully responsive, you likely only have one layout and just one default device. Otherwise, you may have multiple devices and you can swap between then here (the Device tab in Figure 3-9). As you can see in Figure 3-9, it is also very easy to simulate location information. Just click the Apply button after your settings are made to see how the experience responds.
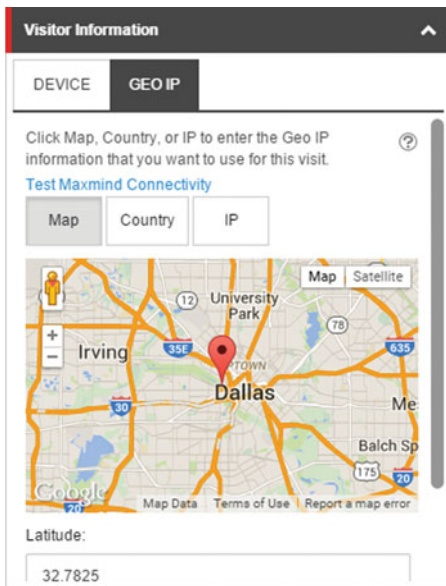
Figure 3-9. *You can also set presets around location and device*

You can configure presets if you get tired setting all these Experience Explorer configurations over and over again. Your presets can be found in the Experience section. By default there are two: Default and Anonymous. It is very easy to create your own, however. Use these high-level steps to guide your creation of a preset:

1. Navigate to the Marketing Control Panel from the Launchpad.

2. Expand the Experience Explorer node.

3. Right-click Presets and click New Item ➤ Preset Persona.

4. Enter as many presets as you want. See the following list for some of the most helpful.

   - *Name*—Name of the preset mostly likely consistent with the persona

   - *Image*—Always good to give your presets an image especially if it's correlated to a persona

   - *Viewed pages*—Pages you want the preset to have already viewed

   - *Device*—Perhaps the preset should be configured to come in on a mobile device versus the default

   - *Location section*—Here you can set the location information when location drives personalization

   - *History*—You can preset up to four different histories, such as page views or downloads

   - *Profiles*—Most important; preconfigure a persona

   - *Goals*—Configure the goals you want the user to accomplish

   - *Attributes (events)*—Configure events you want the user to accomplish

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■ **Note**   Profiles, goals, and attributes can all be found in the Advanced section (Figure 3-10). That section is hidden by default. Under the View tab, check the Standard Fields checkbox to show the Advanced section.
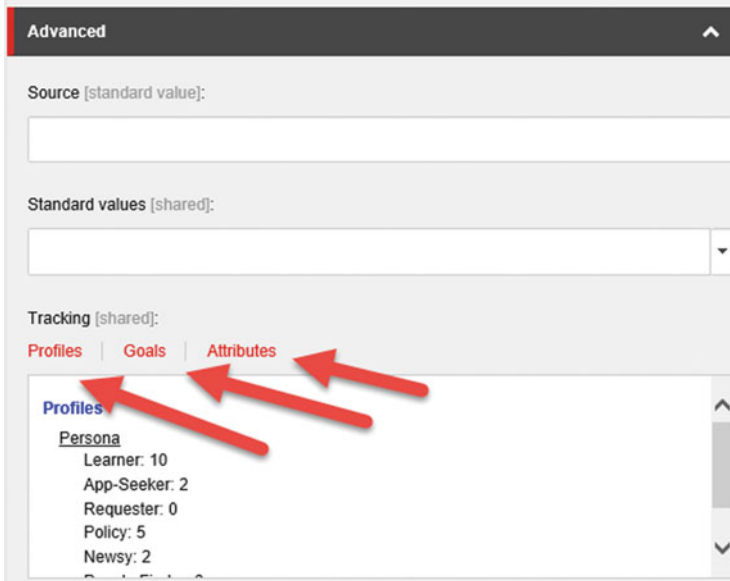
Figure 3-10.   *Presets around personas, goals, and attributes (events) help save time when testing your personalization implementation.*

Configuring Personalization

This section covers the two main ways to configure Predictive personalization: ad-hoc personalization and predictive personalization.

Configuring Ad-Hoc Personalization

Personalization is configured at the component level for web experiences. The easiest way to configure personalization is from the Experience Editor. While in the Experience Editor, select a component you want to personalize. Click the Personalization button in the menu (note the arrow in Figure 3-11).
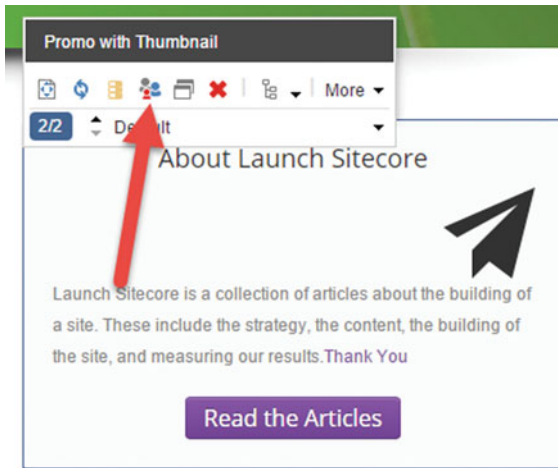
Figure 3-11. *Configuring personalization on a component is easy; you simply click the icon and set the rule*

After you click the Personalization button you should receive a pop-up similar to that in Figure 3-12. Begin by clicking the New Condition button at the top right. The Rules Editor pop-up will appear showing you several dozen rules you can choose from. Select the rule you want and fill out the required settings to satisfy the requirements of the rule.
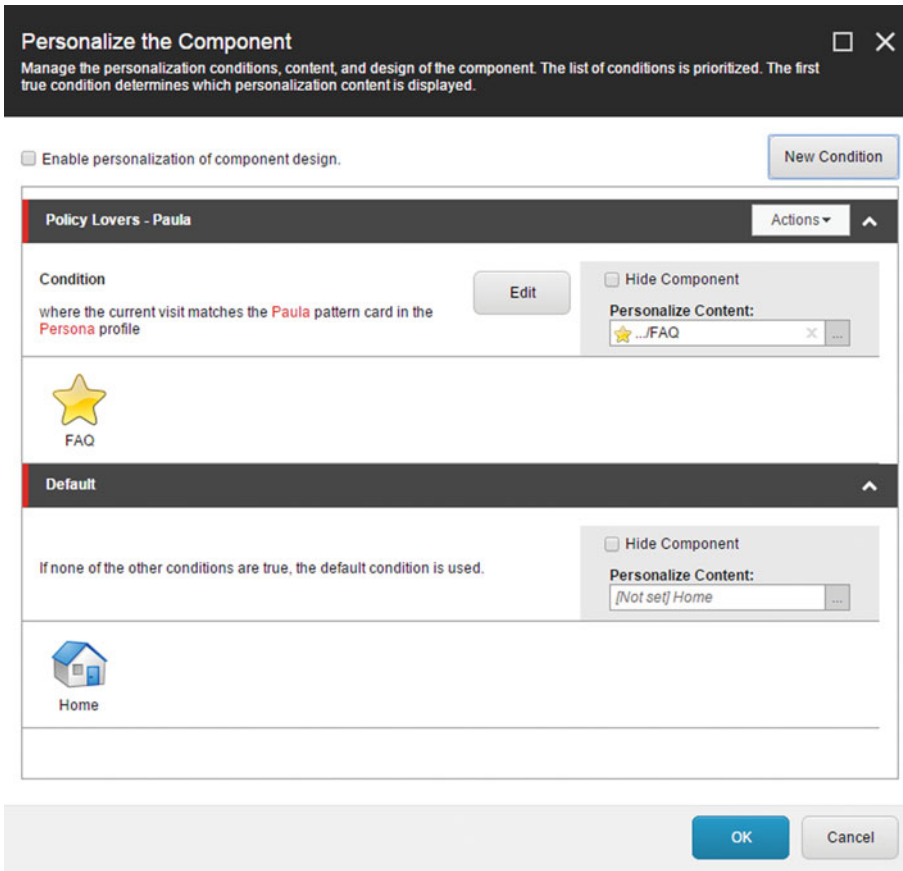
Figure 3-12. *Conditions are used to tell Sitecore which content/component version should be used*

Note that the conditions are served on a first-come, first-serve basis. The first condition whose rule is satisfied wins, and that condition controls how the component is personalization. This is done from top to bottom, so ensure that your default rendering is the last condition in the list. To change the sort order, click the Actions drop-down on the condition and select Move Up or Move Down.

After your condition and rule is configure you need to decide how the component should be personalized. Note the Personalize Content setting in Figure 3-12. When you choose this you will be able to change the datasource on the component and set it to alternative source in your content tree. This is the most basic form of personalization imaginable. Alternatively, you could opt to hide the component altogether by selecting the Hide Component checkbox.

Another option is to swap out the component entirely. Note the Enable Personalization of Component Design checkbox in Figure 3-13. When this is selected you will be able to swap the default component for an alternate. Note now in the figure there are two options: one to select which component is rendered, and the same option as was available previously to select the datasource.
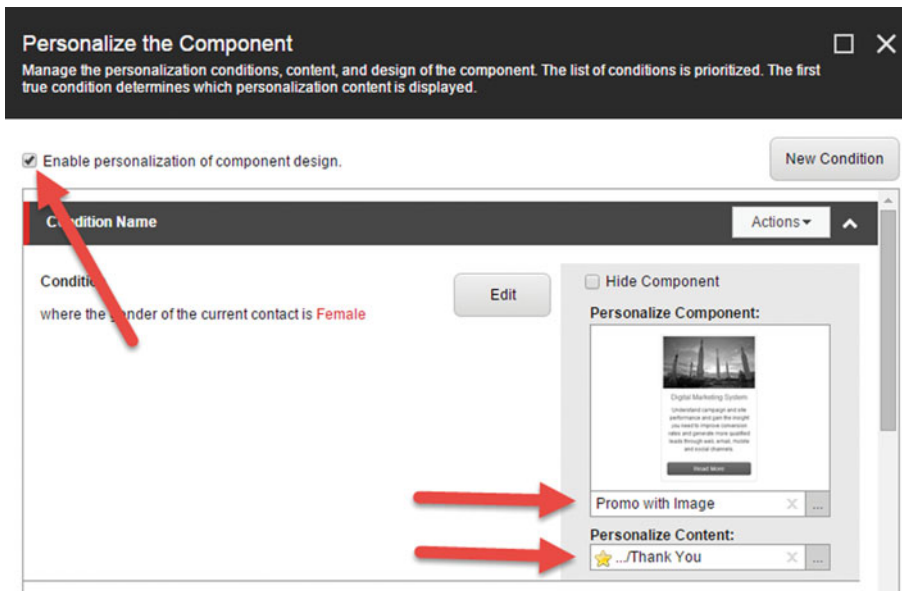
Figure 3-13. *Component personalization is enabled by checking the checkbox*

Simply click OK when you're done personalizing the component. After publishing, your personalization settings should be ready to go! It can be quite difficult to know what is personalized on pages, especially very busy pages with a lot of personalized components. In the Optimization tab within the Experience Editor, there is a Personalization button that shows a helpful pop-up. Figure 3-14 shows this pop-up. You can see a quick view of what is personalized on this page. Each component is highlighted with a red box for a quick view. Also helpful is some easy-to-understand reporting that shows how often the versions of the component are being rendered. Each personalized component is listed on the left with each version. Each version will tally how many times it is rendered, giving you insight into how often your personalization rules are taking effect.
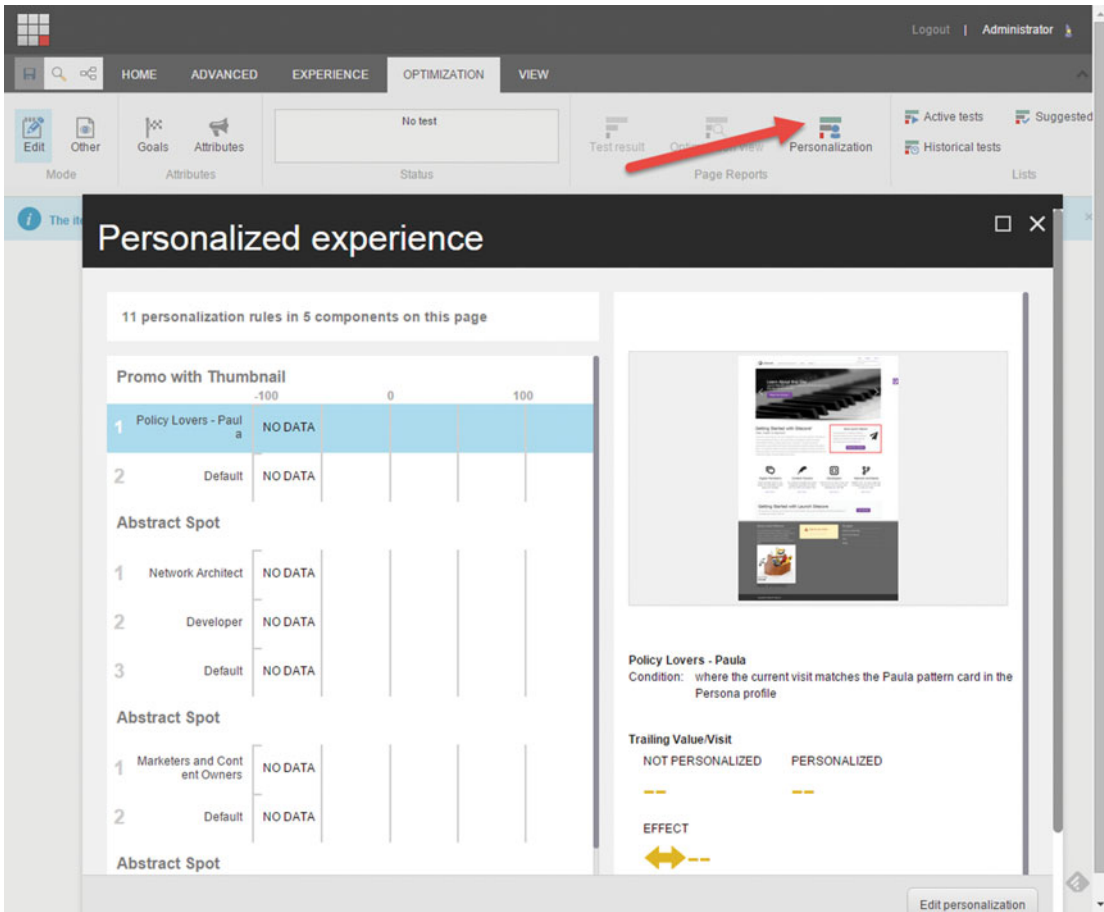
Figure 3-14. *You can quickly see what is personalized on a page by clicking the Personalization button on the Optimization tab in the Experience Editor*

Configuring Persona-Based Personalization

You configure predictive component personalization in pretty much the same way you configure rules-based personalization, as described in the previous section. Figure 3-1 still applies; there's a "pattern" rule to personalization against the assigned profile/persona. The only difference with predictive personalization configuration is setting up your profiles and personas and tagging them to content items. Your customers will accrue value points assigned to those personas as they browse your site and interact with those persona-tagged content items. Let's start first by configuring a persona, and then we'll move into tagging content with that persona. Personalizing a component, as described in the previous section, will not be repeated.

■ **Note**   A new concept introduced in Sitecore 8.1 is 'persistent profiles' and the concept of 'profile decay'. This means that historical behavioral personalization will be carried over from previous visits. However, you may want more recent visits to weigh heavier on how the site is personalized, hence the concept of 'decay'. If you have 100 points for one persona for the current visit, and your decay score is .75, only 25 points will carry forward into the next session. See the following post for how to configure decay:

http://sitecoreskills.blogspot.co.uk/2015/10/behavioural-profiling-improvements-in.html.

Predictive personalization configuration starts in the Marketing Control Panel (Figure 3-15). You can find the Marketing Control Panel on the Launchpad or in the desktop. The Marketing Control Panel contains all the marketing automation features that will be describe a bit in this section, but more specifically in the next chapter. In particular, there is a node called Profiles where you can add all your personas and other predictive personalization profiles.
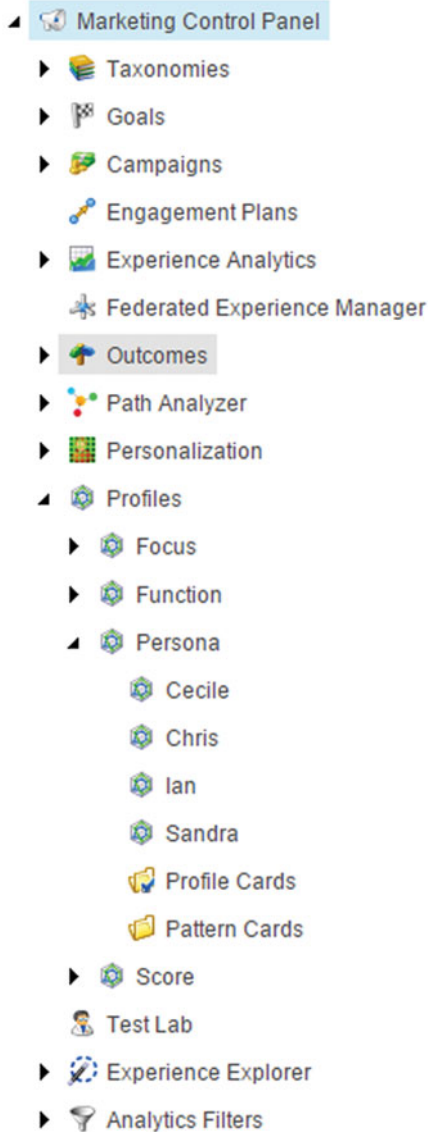
Figure 3-15. *The Marketing Control Panel is where all the marketing action is. More on this in Chapters 4 and 5, but for now, suffice it to say this is also where your personas are configured*

The structure of the Profiles node can be seen in Figure 3-16, as described previously. It is most common to store personas below a profile node called Persona. An out-of-the-box Sitecore installation has a bunch of profiles (e.g., Focus, Function, etc.) that you probably want to delete. Likewise you will want to delete the out-of-the-box personas since they are just there for example purposes (e.g., Cecile, Chris, etc.). It is also a best practice to have the Profile Keys align with the persona behaviors, *not* with the personas themselves, as is out-of-the-box and can be seen in Figure 3-15. Instead, create keys that align to the behaviors, and below the Profile Cards folder create profile cards for your personas. This is demonstrated in Figure 3-16.
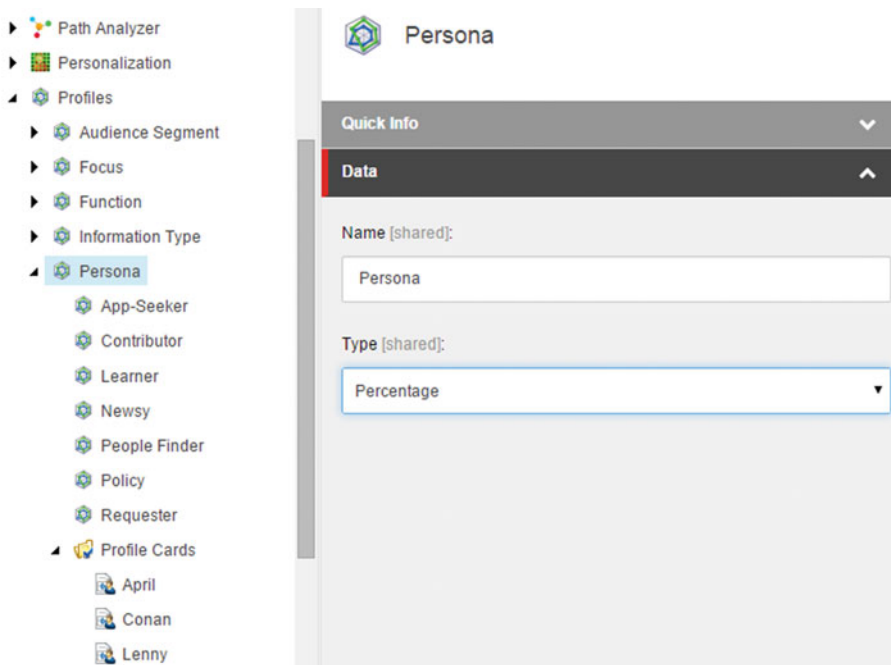
Figure 3-16. *A profile has a Type field that's used to track how the behavior value points are accrued*

■ **Note**   The profile node also as a helpful type setting, as can be seen in Figure 3-16. This setting controls how the value points are accrued as users interact with your persona tagged content. You may prefer a different type based on your reporting requirements and the nature of the persona/profile card.

In addition to the profile type, you should also consider the Authoring Selection setting (Figure 3-17). You can configure the profile to allow adding a single persona to a content item, multiple, or multiple with percentages. In some cases a content item has relevance across more than one persona so applying multiple tends to be necessary. It is a general best practice to apply with a percentage; however, since most commonly that content item does not apply equally across all personas. Setting a percentage tells Sitecore what percentage of the total points should be applied to the current customer's browsing experience.
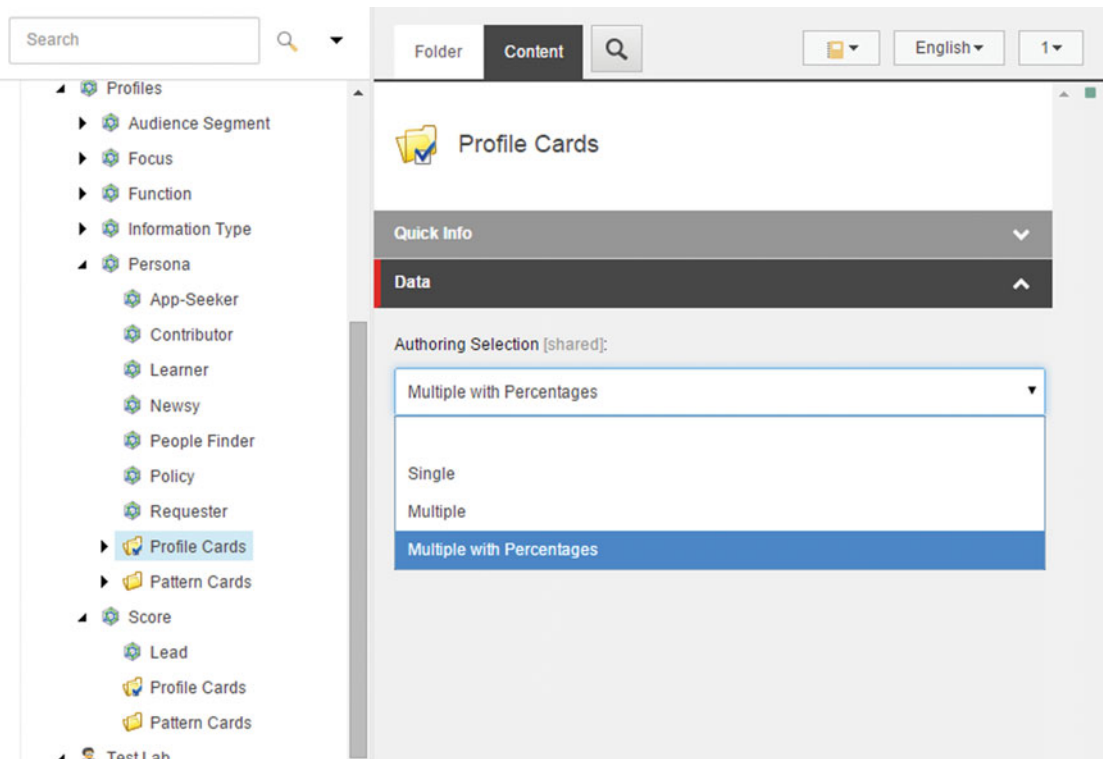
Figure 3-17. *A content item can have one or more profile cards assigned to it*

You will create profile keys below your profile nodes. Right-click the profile and choose Insert New Profile Key. There are a few settings, most important of which is the key name, such as Learner, and the max value. The max value is what is configured when setting up the profile card/persona. A typical max value is 10. A max value of 1 may be helpful for Yes/No circumstances. Min Value and Default Value may or may not be helpful depending on what you're trying to accomplish with your persona.

The real excitement begins when you create your persona cards. These persona cards are tagged onto content items, and each of the profile keys can be weighted on the card. A sample profile key configuration on a persona can be seen in Figure 3-18. Along with the profile card values, it is helpful to set a persona name and an image to represent the persona. The images show up as icons when you tag content, so it's helpful to pick a headshot that is distinguishable when trying to quickly see how a piece of content is tagged.
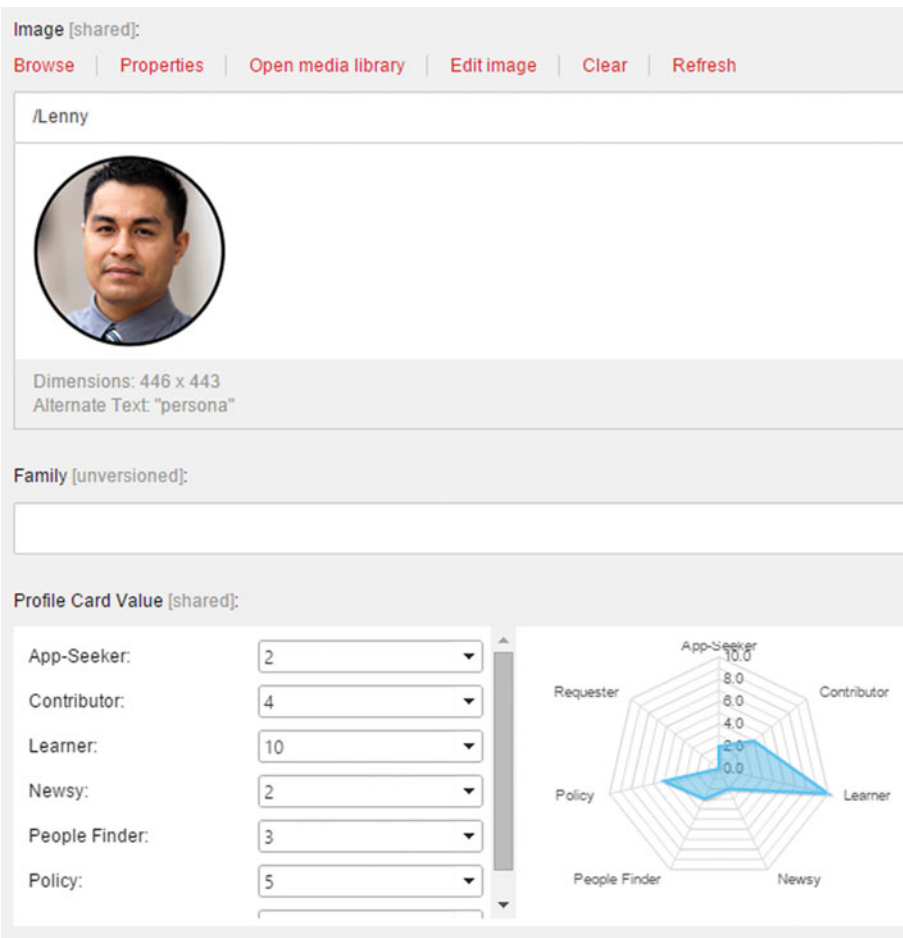
Figure 3-18. *Create a profile card and assign the key values to connect the card to the persona*

■ **Note** Profile cards are created below the Profile Card folder, as you may have guessed. However, there are two types of cards that you can create: a default card and a persona profile cards. The only difference is the persona cards has a bunch of extra fields you can use to give the profile cards a more "human" touch, such as Age, Interests, and Education. These fields are optional. At a minimum, configure the Card Name, Image, and Profile Card values.

Pattern cards are what a current user's value accrual are matched with. So again, profile cards are what applies value points onto a user's experience, and a pattern card is what that experience gets matched to if the points align to the pattern. The pattern field on the pattern card in most cases is configured identically to the profile card. So the settings in Figures 3-18 and 3-19 would look the same. Sometimes administrators name the pattern cards "Looks like Lenny," since they just want to match the user with a value score that is similar to Lenny to Lenny himself. About all you need to configure on the pattern card is the name of the card and the pattern itself. Thereafter, this pattern card can be used on a component's personalization settings to change behavior for users who behave like Lenny, for example.

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Figure 3-19. *Pattern cards are typically created identically to profile cards*

The last step is to add the profile cards/personas to content items so that when users interact with that content item they accrue those value points. Notice the content item in Figure 3-20. There is a little blue profile card box to the right of the content name. When you click this box, you are prompted to add the cards you want to associate with the item.
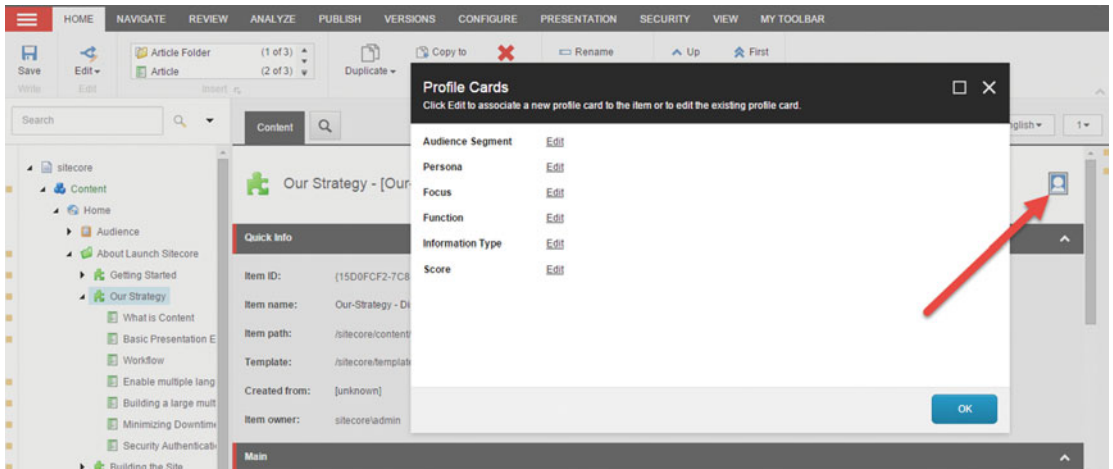
Figure 3-20. *When you're ready, assign the pattern cards to content so Sitecore starts tracking behaviors*

You can assign as many cards as you want from as many profiles as you want. Note, however, that when more than one card is allowed (Figure 3-17), you may need to specify a percentage allocation, as can be seen in Figure 3-21. This tells Sitecore how many points to allocate when a content item has relevance across more than one persona. In any case, add the applicable profile card(s) to the content item and click OK. You will need to publish the item, as well as ensure all the profile cards are published, before the personalization will be working in production.
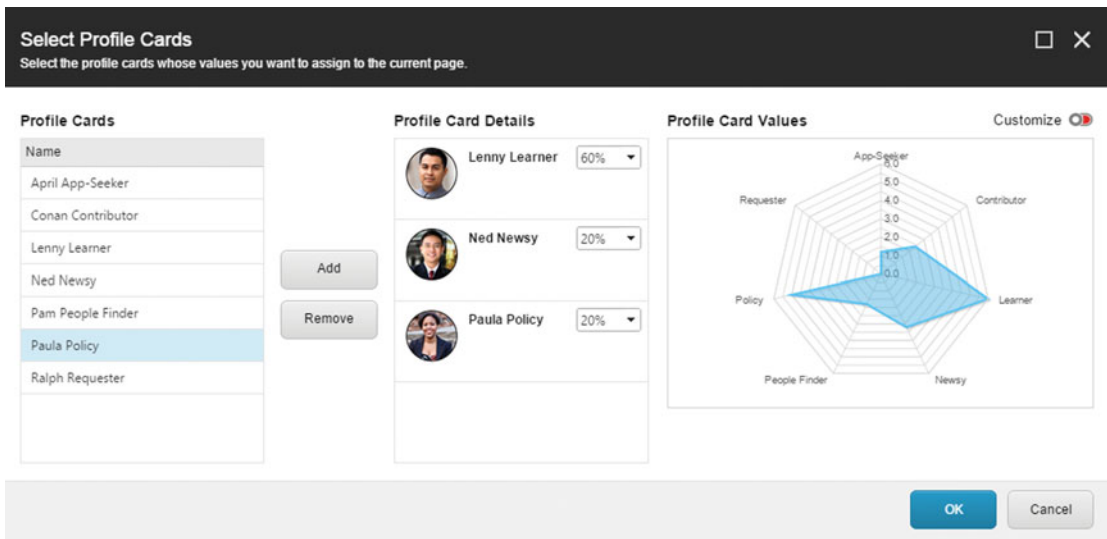
Figure 3-21. *You can assign multiple profile cards to a piece of content. When you do you can optionally set a percentage weight*
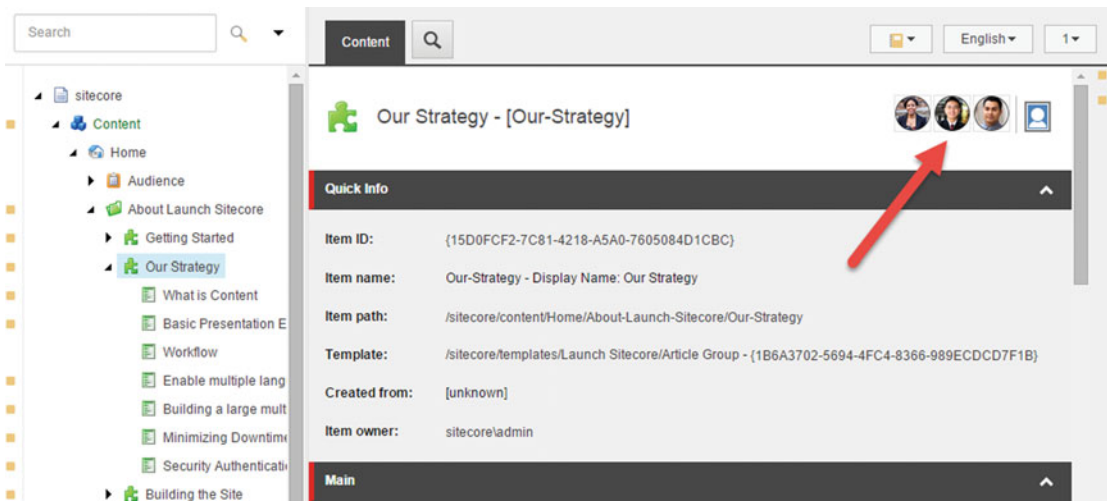
Figure 3-22. *Afterward the personas appear next to the profile card blue box*

Alternatively, you can assign profile cards through the Experience Explorer (Figure 3-23). If you have a *super* wide monitor you will notice a Profile Settings area within the ribbon in the Optimization tab. Once you click the double-down arrows, and then click Edit profiles, you will see the same pop-up that you see in Figure 3-23.
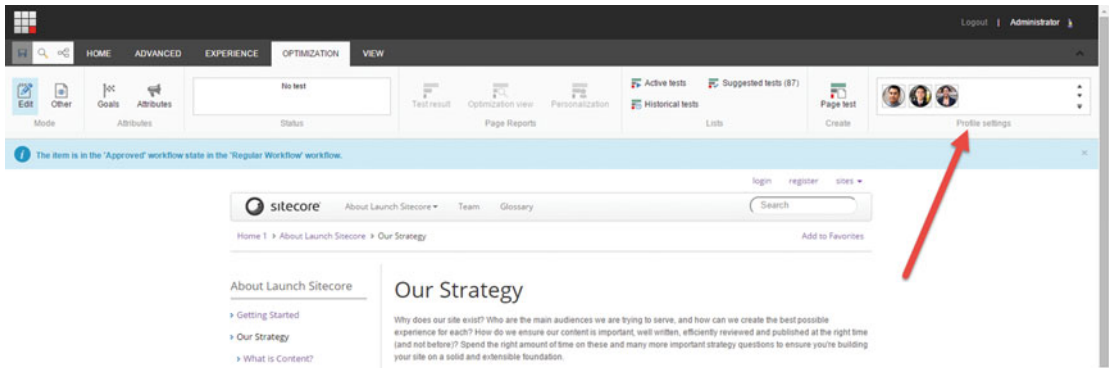
Figure 3-23. *Alternatively, you can set profile cards from the Experience Explorer*

Summary

Well, there you have it! Sitecore personalization at its finest. You can imagine the power and intrigue that personalization offers to a marketer; you can create experiences directly correlated to the wants, needs, and desires of your customer! That is pretty amazing, and in the "age of the customer," it is pretty much table steaks for web experiences.

This chapter compared rules-based, ad-hoc personalization to predictive, or what is often referred to as behavioral personalization. If you remember, ad-hoc personalization is the easiest to configure; simply add a rule to a component. However, predictive personalization is where the fun really begins.

As you know by now, your persona strategy is the bedrock of your personalization strategy. Beginning with rock solid personas is key. They must be well aligned to your business objectives, and just as importantly, the objectives of your customers. With that in place, it is easy enough to configure those personas in Sitecore, tag content to them, and configure your components to be influenced by them.

The question we now face is, "is my personalization strategy actually working?" With that we transition to Chapter 4, where we dive into multivariate content testing. You know what they say about ass-u-me(ing) your strategy is working; best not leave it to fate and risk our reputations!

CHAPTER 4

■ ■ ■

Experience Optimization

We just discussed personalization in Sitecore, which is no doubt one of the most exciting capabilities Sitecore provides. However, having good, highly effective content is the first step to any personalized experience. What good is showing your customers content that should be interesting to your customer, if that content is arranged in a really crappy way or written poorly? Experience optimization, aka testing, tests different content variations and component layouts in order to determine which combination creates the most engagement value possible. Experience optimization, then, goes hand in hand with experience personalization. The two work together to create the most engaging, valuable experience possible for your customers and your business.

Sitecore offers out-of-the-box page comparison testing and multivariate A/B/N testing to ensure your content, components, and pages are structured and written as effectively as possible.

Do you have a hypothesis, a potentially better way to structure your page? Test it! Know, don't just guess. Are you fresh out of hypothesis? Do you just want to click the Publish button and move on with your life? Well, test it anyhow! Test everything! Sitecore's motto is, "Test everything, everywhere, and all the time!" You will benefit from testing whether or not you have a hypothesis. Sitecore, a few days or weeks later, is kind enough to e-mail you, letting you know of the results, and asking if you want to take its recommendations and update your pages based on them. Pretty easy *and* cool!

This chapter discusses key considerations for testing that will help you create a testing approach, or at the very least, understand some of the terms and get your expectations aligned. Thereafter, we'll dive in and configure the two types of tests available, page tests and multivariate A/B/N tests.

Experience Optimization Considerations

It makes sense to begin with some considerations before we dive straight into configuring experience optimization and testing in Sitecore. What is A/B testing and how does that compare to multivariate testing? There are also some mobile and personalization considerations to keep in mind as you plan your testing strategy. Lastly, you need to put your statistics hat on; you don't want the data to lie to you!

What Is A/B and Multivariate Testing?

A/B testing is simply the process of comparing two options and picking the one that performed better. A/B testing splits the load across both experiences, where half the traffic goes to variation A and the other half goes to variation B. You then want to compare the results of those two experiences. Goals, events, and thereby engagement value is the measurement of success in the Sitecore world. You will most likely choose the variation that drives most engagement value to become the permanent selection, but because of the test, you pick that variation in confidence.

That is the big attractor with A/B testing. Instead of theories, you have concrete conclusions. Instead of telling your boss, "I think we'll get more conversions by putting the call to action on the right side of the article," you can say, "I compared four variations, and the modal dialog pop-up produced the most conversions so it's now live on the web site across all segments".

■ **Note** A/B testing isn't a replacement for a good content plan/strategy. There's a good (and entertaining) Atwood article on how A/B testing is really just about smoothing out the details: `http://bit.ly/1ipf2bw`

Experience optimization in Sitecore enables you to try things and play around with different options. These options might be different content variations, different components, hiding components, adding new components, as well as trying different personalization settings. In the end you can drive a lot more engagement through tested pages than just assuming the current arrangement is best.

What then is multivariate testing, and how is that different than A/B testing? In reality, there is no practical difference in Sitecore. We're at the mercy of industry standard terms. In Sitecore, all testing, or more specifically, experience optimization, is multivariate in nature. Multivariate means you can have multiple variations all being compared, where the best combinations of variations wins the day. In this sense, you are not limited to two variations, A and B. You could have as many as you want. In fact, for busy pages such as your home pages, you may find yourself testing 100+ different variations, when you count up all possible testing and personalization combinations.

There are three kinds of test candidates:

- *Page Version*—The previous version of the page can be compared to the new version, or to another page altogether.

- *Component*—Components can have variations of content (by setting an alternate datasource) or variations of the component (such as swapping out the component for a different one).

- *Personalization*—All personalization settings on components are treated similar to component test. They are a great way to validate that your personalization settings are optimized.

■ **Tip** The data doesn't lie, but that doesn't mean it can't be way better. Personalization testing should be a key priority for testing in general, not just component variation testing. The test results might show an increase in conversion for a given test across all users, but certain users may fare significantly better with a variation that is personalized. The selected variation, despite performing best across the aggregate, may actually hinder certain customer personas. Knowing the overall conversion rate is 4% is far less valuable than knowing the conversion rate for each persona.

STRATEGY BITS: GETTING STARTED WITH TESTING

The digital marketing world moves quickly, as do the expectations of your users. So, when you're managing content for one of your digital properties, it can sometimes feel like a constantly moving beast. How do you keep up? The answer is to integrate testing into your overall content plan.

Is your brand or product department considering a change to design or messaging? Conducting tests can provide leading indicators of what will resonate best.

Are your audiences diverse in their demographics or needs? Testing can help you find common themes that resonate across your audiences.

Is your leadership insisting on "consistency" regardless of the impact on your goals? Running quick low-risk tests can help prove your case for performance-focused marketing and will help you gain their confidence in your approach.

Are you reconsidering a web site redesign or big media campaign? Testing can be a cost-effective way to test concepts before larger investments are made.

So, where to start? Think about your content as a recipe you are adjusting to bake the perfect cake. You have multiple ingredients that you need to mix together in the right way to get the result you need.

To execute organized, successful tests, follow these steps:

1. Create a "test plan" by:

   Creating clear goals for your digital properties, then setting goals for the content you plan to test within it. Ask yourself what should this piece of content do to help me achieve my broader digital goals?

   Considering what you want to learn from your test. Maybe you simply want to drive more sales. Perhaps you are interested in what content different audiences respond to. Maybe you're simply trying to learn more about who your audiences are. Think about what knowledge will help you be most successful, and then create a test to help you achieve that knowledge.

   Creating your hypothesis. This could come from your research department, or you may just have a hunch that people will share video A more than video B. Be sure to start out with a hypothesis, so you can prove yourself right or wrong.

2. Choose a testing approach. There are typically two core approaches:

   OPTION 1. A/B. These are simply two versions of the same page or page elements that are tested at the same time. Traffic is sent to both versions and the response is evaluated. A/B testing can help organizations become familiar to the idea of testing; they're low-risk yet can reap significant results in short time periods, especially if you have higher site volumes.

   OPTION 2. Multivariate is popular in organizations that have experience with testing. This tests multiple elements at the same time on the same page. This method can be a fast way of getting to your ideal "recipe," especially if you're testing landing pages or e-mails.

3. Select the testing platform, such as Sitecore.

4. Decide on the location and time of your test. Start small and build your testing volume and complexity over time.

5. Test, evaluate, and share your results with peers and senior management.

6. Repeat.

Looking for a good place to start? Focus on where people will take action so you give yourself the best chance of seeing response—your "ingredients" here might be Click Here buttons, form style, placement, and words/color/style.

Above all, enjoy it—consider testing your secret weapon to achieving your goals!

Laura Best
President, Best + Co
http://www.bestdigitalstrategy.com

Good Expectations (1% Rule)

The question, "how do you eat an elephant?" is similar to that of "how do you create a highly optimized digital experience?" The answer? You guessed it. *One bite at a time!*

The biggest problem with experience optimization in Sitecore isn't the effectiveness of the tool, nor its ease of use. The biggest problem is its lack of use. Too often, customers dabble around with testing. They run a few tests, recognize they need two weeks to run the test instead of two hours, and only see a 1% gain in engagement value as a result. Dismayed, they give up, never to return.

How sad! 1% can be add up and become serious revenue if you stick with it. Experience optimization is all about continuous improvement. It might be best compared to that of Toyota's principal of Kaizen, than say the U.S. moon landings. Yet often people expect the moon out of testing, which is unfortunate because they pass up the 100 small gains that lead them to competitiveness and larger market share.

■ **Tip** Understand the impact of your tests beyond their localized results. If you increase conversation rates, driving more event registrations, does that take away from them purchasing a product?

Landing Pages vs. Corporate Web Site
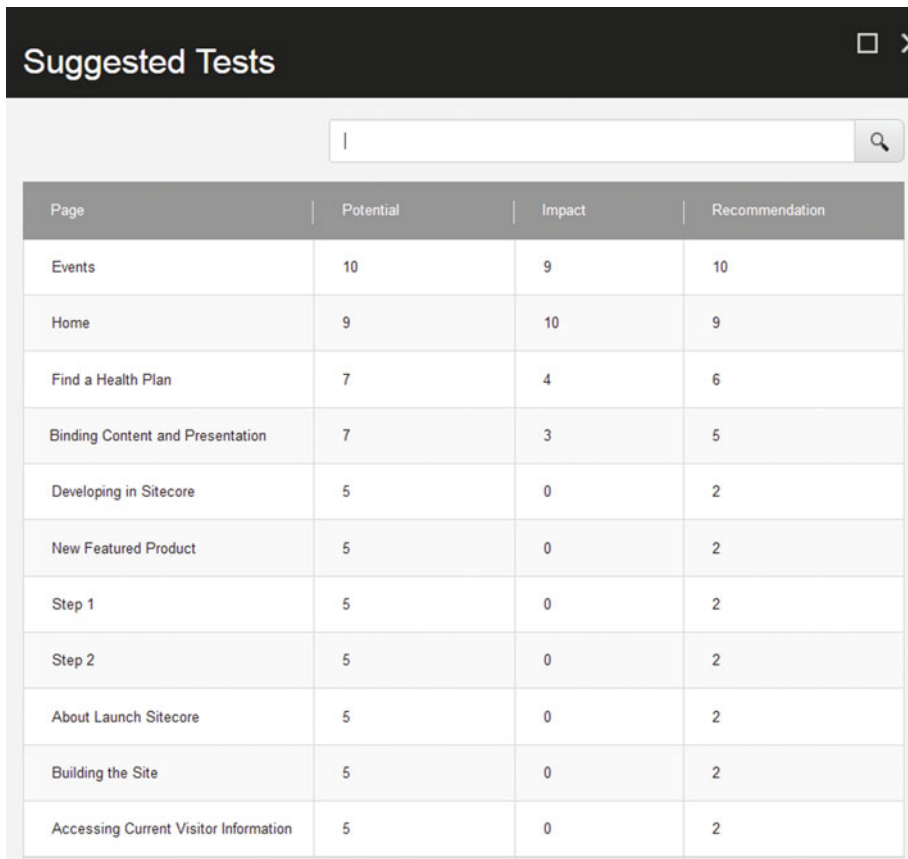
We discussed what you can test (pages, components, and personalization), but where should you test? Historically it is far more common to test campaign landing pages, as compared to, say a company web site's home page. The attraction to landing pages is their association to a campaign. That campaign has a budget and you need to drive conversions to demonstrate ROI. Testing, then, becomes a way to optimize that landing page to ensure you're driving as many conversions as possible. Additionally, landing pages often are far more targeted and personalized than corporate pages. Simplicity requires less testing time, fewer impressions, and clearer impact of the test.

However, by sheer volume, we often fail to test our corporate pages to our own peril. A corporate page may drive 10x more conversions than a campaign, and yet since the home page isn't associated to a budget or initiative we often fail to do the testing where it can have the biggest impact on the company. Oftentimes it requires intentionality at the CMO level to drive changes in governance policies to instill this behavioral

change. Marketers often get too focused on one campaign, taking their eyes of the company's cash cow, their corporate web site.

Fortunately for us, Sitecore offers a recommendation on what pages it thinks you ought to be testing. This report is shown in Figure 4-1. The recommendations stem from several criteria:

- Number of variations—or previous versions—available to be tested (you need something to test)

- Amount of traffic that page receives (it takes *a lot* of data/traffic to validate a theory)

- Engagement value that page drives (you don't want to test dead ends)

Page	Potential	Impact	Recommendation
Events	10	9	10
Home	9	10	9
Find a Health Plan	7	4	6
Binding Content and Presentation	7	3	5
Developing in Sitecore	5	0	2
New Featured Product	5	0	2
Step 1	5	0	2
Step 2	5	0	2
About Launch Sitecore	5	0	2
Building the Site	5	0	2
Accessing Current Visitor Information	5	0	2

Figure 4-1. *Sitecore is kind enough to recommend which pages it thinks would benefit from testing*

So by all means, optimize campaign landing pages, where you have the most tangible opportunities for a conversion to occur. But do not neglect your corporate pages, where you have the by far the most volume and thereby the most potential to create new customers.

Calculating Statistical Significance

Have you ever heard an election poll discuss its "margin of error"? In statistics, understanding the margin of error is key to understanding how trustworthy the results and recommendation are. Another way to look at the margin of error is to consider a data set's "statistical significance". In Sitecore, a test with high statistical significance, such as 95%, has a small margin of error and the test's results are trustworthy. It takes a lot of samplings (traffic) to generate a high level of statistical significance.

■ **Note**   The statistical method Sitecore uses is the Pearson's Chi Squared test.

If you fail to meet statistical significance you may be working on false or incorrect assumptions. Above 95% should be your goal. There are a few things that impact your ability to achieve high statistical significance:

> *Number of things being tested*, such as number of pages being tested, number of components versions being tested, and number of personalization rules being tested. The more things being tested, the harder it will be to achieve statistical significance.

> *The amount of samplings available*, such as page hits. If your test for a page gets 10,000 hits you stand a much better chance of hitting 95% than if the test only encounters 100 hits. The more hits, the more confidence the results are because they have been validated many times.

■ **Must Read**   Most winning A/B test results are illusionary! See: `http://bit.ly/1LtaLkV`

If you're doing a page test and are comparing two very different pages, it will take far fewer samplings to generate statistical significance and thereby confidence in which page creates the most engagement value. If you are doing a page test comparing only one page, but 100+ component or personalization variations, you are going to need a large sampling size and perhaps a lot of time to get the same level of confidence. As such, multivariate page tests with dozens or hundreds of variations should usually be reserved for your busiest pages, or you'll find you need weeks or months (or infinity!) to get enough samplings to validate your theories.

MOBILE CONSIDERATIONS

It's important to consider mobile in your testing strategy. Traffic sources between desktop and mobile continue to shift, commonly becoming a 50/50 split between the two. When the mobile vs. desktop experience is vastly different, you may need a different testing strategy. Too often users set up tests across desktop and mobile and apply the results equally to both.

Perhaps the test resulted in an increased level of conversion for desktop, but a decreased level of conversion for mobile. But you never knew and took a recommendation that negatively affected 40% of your user base.

Responsive design makes this more of a problem. With adaptive design, it is easy to segment mobile and desktop users and view results individually, and then make individual modifications to the experience. With responsive design, you do not have as much flexibility. If the experience is dramatically different, it may be worth considering adaptive to allow for greater testability.

Resist the temptation to implement changes based on early feedback. If your test has not achieved statistical significance of 95%, be weary of its recommendations.

■ **Caution!**　Watch out, too, for false positives. Seasonal variables, such as running a test over the Christmas season, may create false confidence for other months of the year.

Fortunately, Sitecore provides a report when your test is complete (and in progress) of the current level of statistical significance. You can see this report in Figure 4-2, specifically the Confidence measure. When the confidence exceeds 95% it is safe to stop the test by picking a winner (Pick as Winner button when one of the tested experiences is selected).
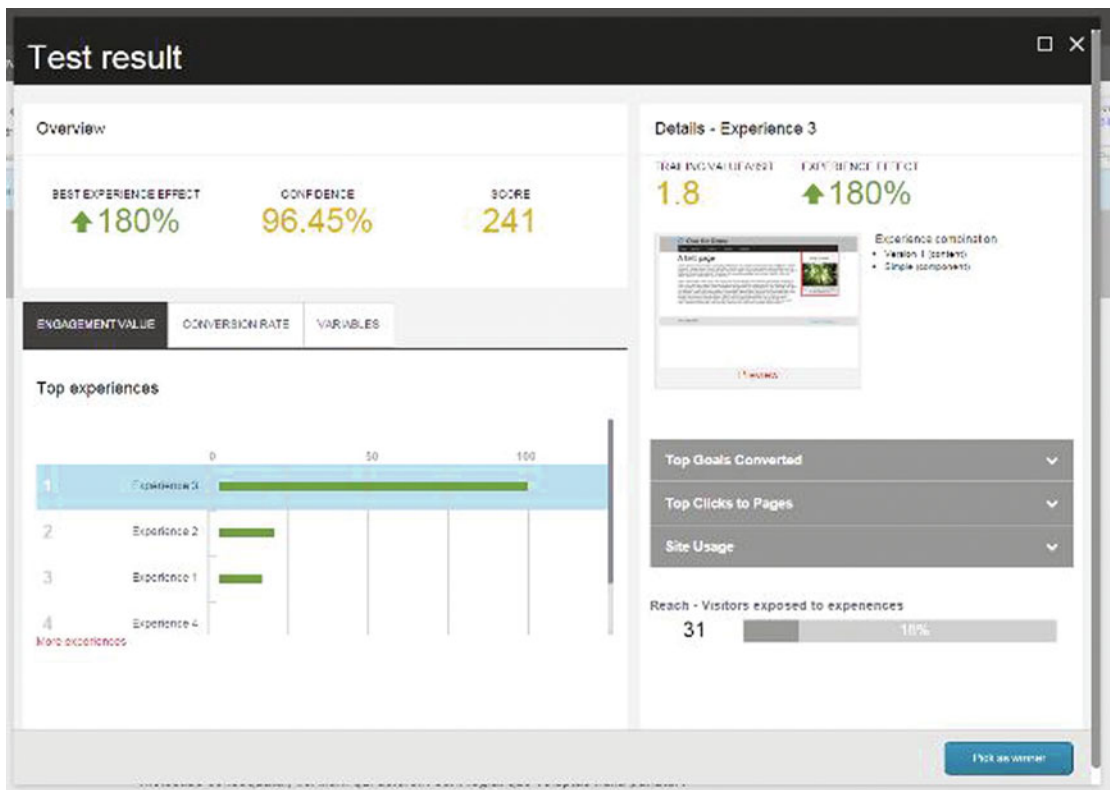
Figure 4-2. *After a test is complete you can compare results and select a winner that will take over as the published version*

Additionally, before you even start the test you are shown Sitecore's guess at how long it will take the test to achieve statistical significance. You can see this warning in Figure 4-11 later in this chapter when we create our first test. Note how Sitecore tells you how long the test will take. In the case of Figure 4-11, I know I won't be able to wait the 18,986 days to achieve statistical significance (due to one request per day on my laptop's Sitecore instance)!

Getdatadriven has a fun little tool (Figure 4-3) you can use if you want to do some basic calculations on your own. This is helpful when you are planning your tests, so you can get an idea of whether statistical significance is possible or not without needing to do the work of setting up the test. Unfortunately it only works for two tests and not multiple. Check it out at: `http://getdatadriven.com/ab-significance-test`.
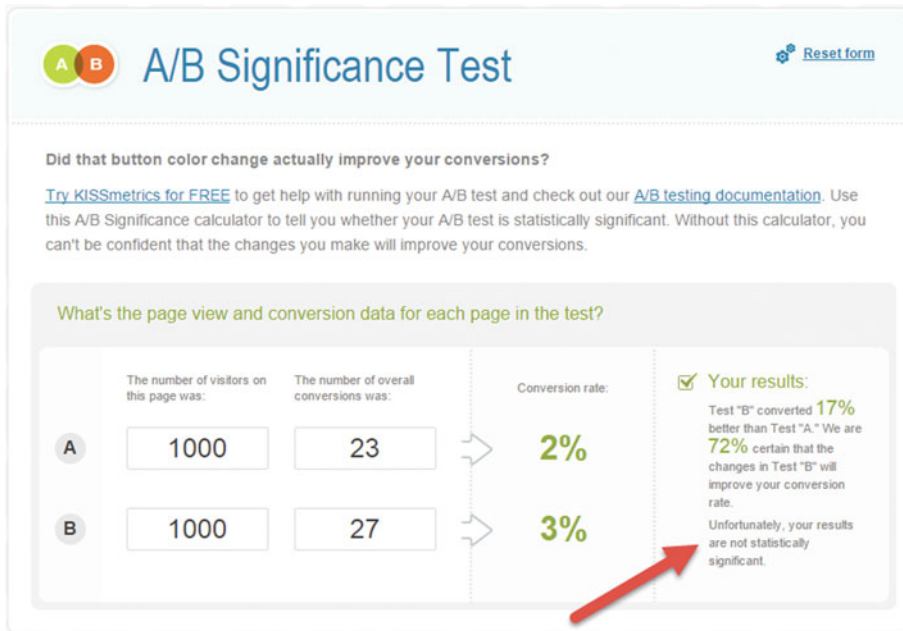
Figure 4-3. *This helpful tool helps you think through your ability to achieve statistical significance before you go through the legwork of setting up a test in Sitecore*

PRACTICAL TIPS: ONLY USE MULTIVARIET CONTENT TESTING FOR YOUR HOMEPAGE OR OTHER BUSY PAGES

You just saw an example test with two versions of the item, version A and version B. Multivariate testing is when you have a myriad of versions and combinations and the goal is to figure out which combination is the best. Personalization adds another dimension to the mix. You may want to test variations of content, variations of components and display patters, and for various persona/segments. You could have hundreds of possibilities when you combine all three of these dimensions.

As you can imagine, multivariate testing is incredibly powerful. You can find the best combination for each persona out of a hundred options. The problem with multivariate testing is, yet again, statistical significance. You will need *a lot* of data (hit counts and conversions) to achieve statistical significance, or you will likely be making decisions based on false positives.

Therefore, multivariate testing (testing in general beyond more than a couple options) typically should be done only on your busiest pages, such as your home page. You don't want to make dramatic changes to your home page without solid justification!

Optimization Gamification

If you have a large marketing team, you will benefit from Sitecore's Experience Optimization gamification capabilities. Gamification is a term that describes the intentional creation of friendly competition amongst your peers. Sitecore tracks who started a test. It tracks their expectations for the test, whether they are guessing, or whether their theories are well founded. When a test is complete, Sitecore produces results of the tester's impact to the experience over time, as well as if they are good guessers.

The Experience Optimization dashboard landing page is where all this fun takes place. The dashboard can be found on the Launchpad ➤ Experience Optimization button, and is seen in Figure 4-4. The figure example (local PC) has limited data, making it somewhat underwhelming; however, you can see a month over month comparison of June against July. Within each you can see a leaderboard of testers who did the best those months, who were the best guessers, who had the biggest positive impact on the experience, and who were the most active in their testing. This dashboard can certainly be a fun way to drive adoption of testing, and is a great way to baseline the giving of recognition or awards on a monthly basis.
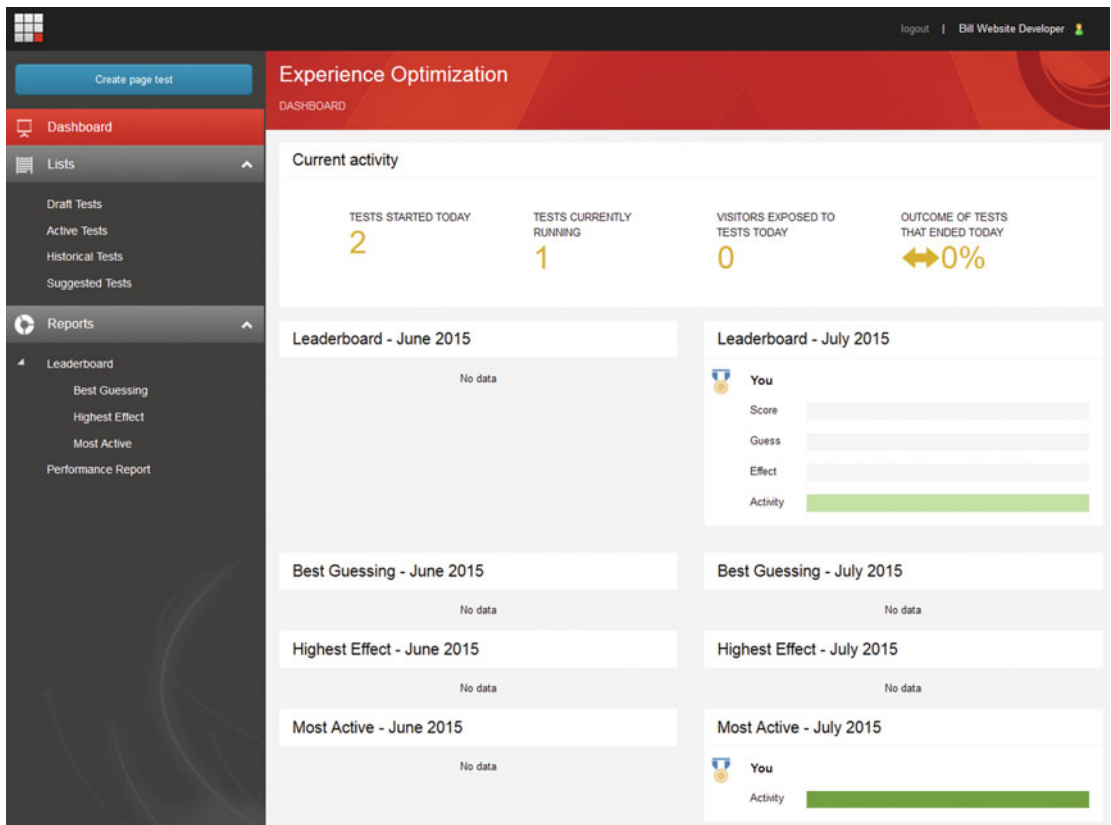
Figure 4-4. *Sitecores Experience Optimization gamification dashboard brings an element of fun into your testing*

Running Your First A/B Test

To begin testing, you first want to decide if you are going to compare two different pages to compare which page drives the most engagement, or make tweaks to a single page with the goal being to optimize that page. The path to start the test is different based on which approach you take. The former is oftentimes used to compare two very different landing pages for a campaign, and the latter is, in general, by far the more common approach, where you want to optimize existing pages to make them better.

Creating a New Page Test

A page test is used to compare two very different pages to see which page generates the most engagement value. This is commonly used when testing different campaign landing pages. Use the following steps to set up a page test:

1. On the Optimization tab within the Experience Editor, click Page Test within the Create section.

2. This will launch a new window similar to Figure 4-5. Select Use Existing to compare the current page to another page.
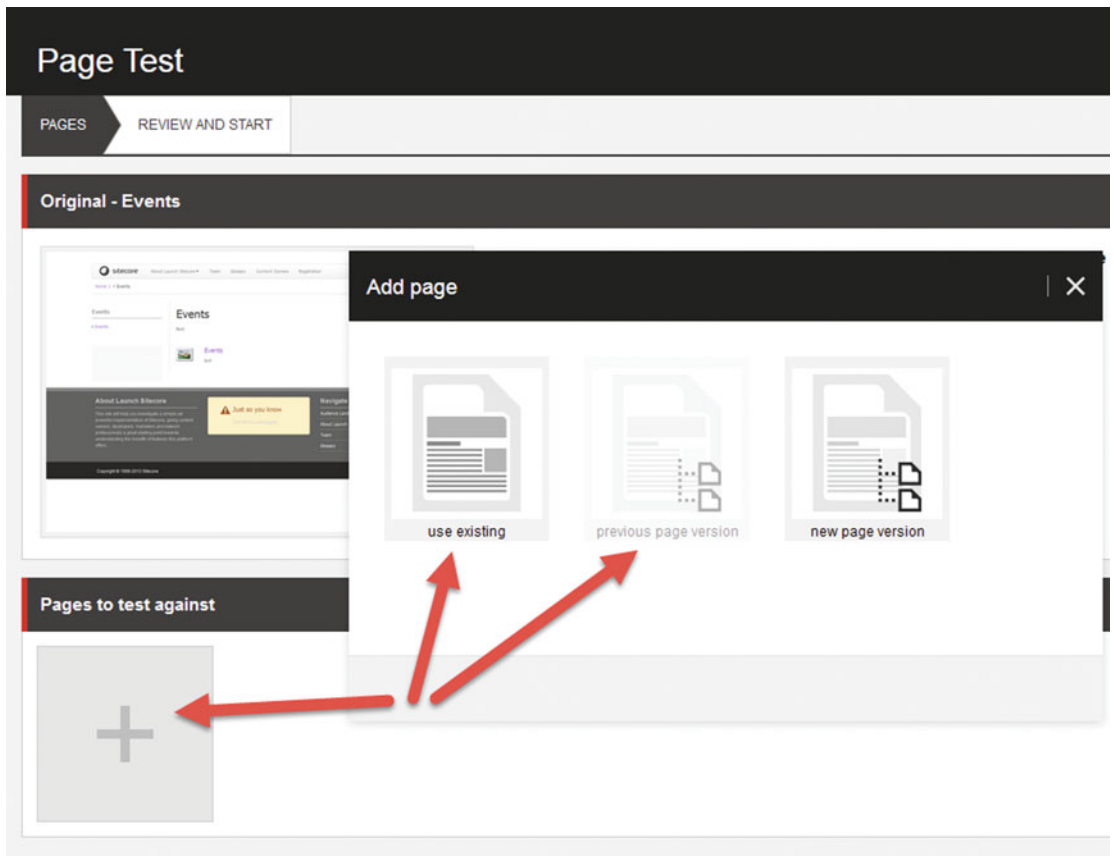
Figure 4-5. *When you create a new page test, you must use a totally different page, use the current page's previous version, or create a new page version to compare*

3. Select the page you want to test against. A pop-up with the content tree will appear, allowing you to make your selection. Make sure your pages are fully published before starting these steps.

4. After you added the page you want to compare, click the Review and Start tab, as seen in Figure 4-5.

5. The Review and Start tab has many sections that you need to configure.

   • *Test preview*—Nothing to configure here; it just shows the pages you've selected.

   • *My expected effect of the changes*—This helps populate the "guessing" reports, showing how accurate your assumptions are over time. Move the slider to one of three positions: I expect a negative, neutral, or positive impact.

   • *Percentage of visitors exposed to the test*—For a busy page, such as your home page, you may not want all traffic to participate. Optionally, slide the percentage to a lower level. Note: This may make achieving statistical significance take longer or impossible.

- *Statistics*—You can set which level of statistical significance you require before the test is deemed complete, optionally 90%, 95%, or 99%. 95% should be used in most situations.

- *Test objective*—What are you hoping the test will accomplish? You can select a specific goal. Whichever variation drives the most goal completion for that goal can be automatically deemed the winner, or you can manually select a winner. For landing pages this may be appropriate, but for home pages, you typically want to select a winner based on engagement value, not a goal (in which case leave Trailing Value, the default, selected). Note: Engagement Value is covered in more detail in Chapter 5.

■ **Note**   When testing commerce pages such as a shopping cart, you will typically want to use a Checkout Complete objective, especially for brand sites where commerce is potentially one of many goals. Engagement is still important but changes to the cart/checkout are typically aimed at increasing cart conversions.

- *Duration*—You can select how long you're willing to let the test run.

6. Click Start Test when you're ready.

Hereafter your test is running and live on the site. You can always view the status of the test by clicking Active Tests on the Optimization tab. You can see the active tests report in Figure 4-6. It shows how many experiences are being tested, how much time is left before the test completes, and the effect of the engagement value that has been demonstrated thus far. For more detail you can click on the test to show the tests details, as seen in Figure 4-7. From there you can also change the settings for the test, such as shortening the duration or the traffic allocation.
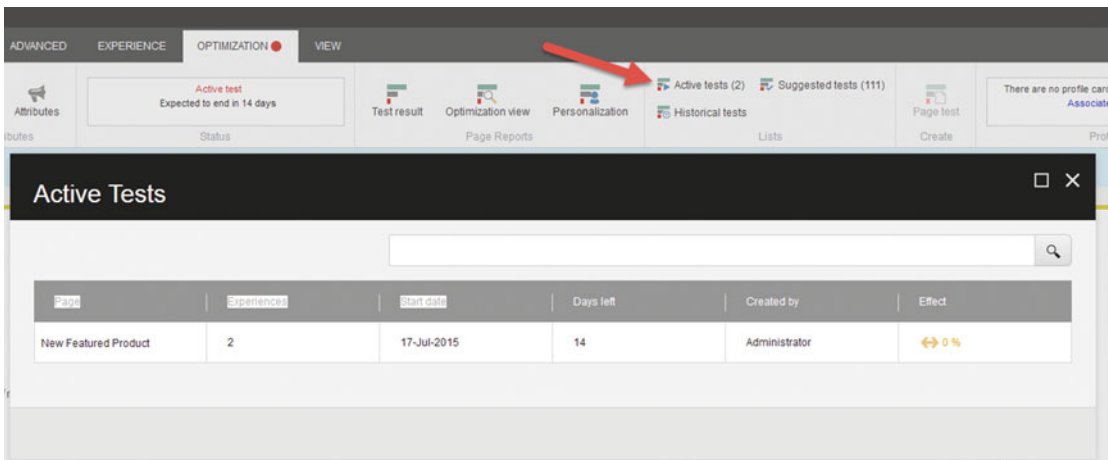
Figure 4-6. *The Active Tests button in the ribbon is where you can go to see the status of your currently running tests*
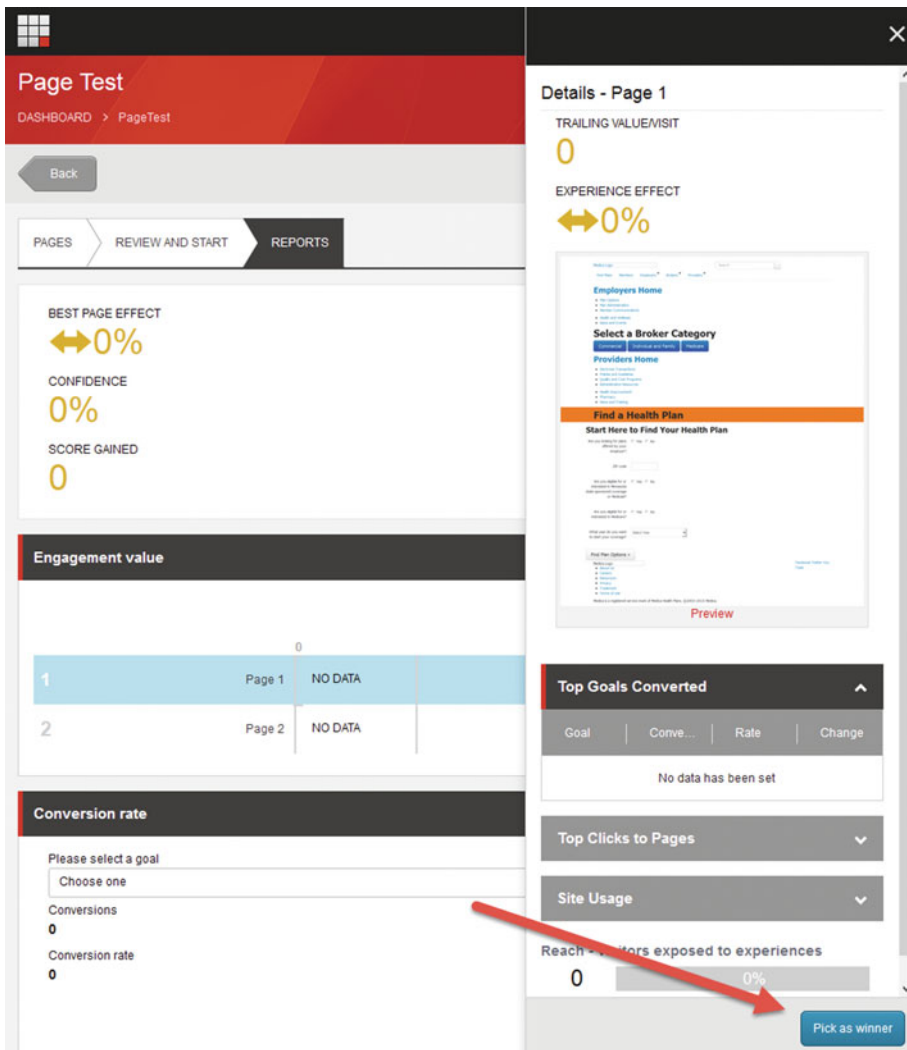
Figure 4-7. *A test results page shows the effect the different experience had on engagement value. You can select the one that created the most value, and then click Pick as Winner so that version is used for future requests*

From the test details page, you can also see specifics around how each experience is performing against others involved in the test. The Engagement Value section, as seen in Figure 4-7, will tally up the engagement value accrued for each experience. If you select one of the experiences you will see details for that experience, such as top goals converted, exist points, and site usage. Also from here you can choose a winner and stop the test. Stop the test by clicking the Pick as Winner button when you have an experience selected. That experience will then become the published version for all future traffic.

After you have picked a winner and the test is complete, you will be prompted with a test results summary. The summary includes the results of the tests, how accurate your assumptions were going into the test, as well as suggestions for future tests that Sitecore thinks may create value for you. Notice the summary in Figure 4-8.
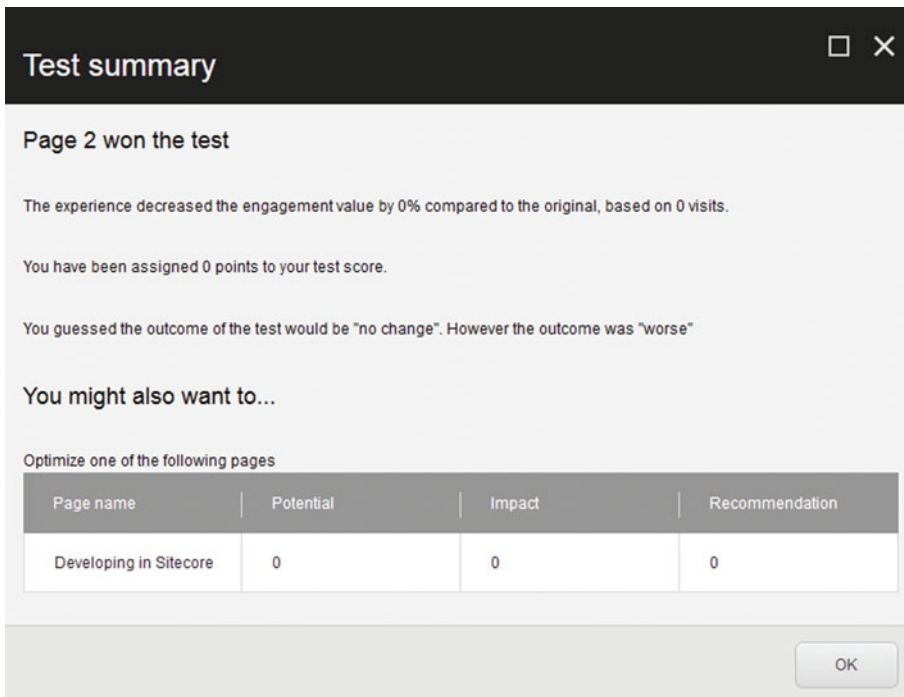
Figure 4-8. *When you pick a winner you're presented with a summary screen that shows you what transpired*

Creating a Multivariate Page-Level Test

A multivariate page-level test is more about optimizing a page than comparing two pages, as was demonstrated in the previous section. What we want to do this time is configure component variations on a page, such as differing content or different components altogether. We also want to test the helpfulness of our personalization. We will begin by creating a new page version, much like you would when you want to update the page in general. This is why testing is Sitecore is so elegant—every time you update your content you can test it! This is why Sitecore's motto for testing is, "Test everything, everywhere, all the time". Basically, when you update a page as part of the workflow, click Approve with Test to validate that the updates perform better or at least as good as the previous version, or to see certain component variations work better than others before you commit the publish for good.

■ **Note**   Your Sitecore site has to be built with a proper component-based architecture to allow testing of components, as seen next. Some Sitecore implementations, especially older/legacy implementations, follow more of a "page template" approach. Unfortunately these implementations would need to be refactored to take advantage of component testing. In Sitecore 8 though, they could still do page testing.

The following steps demonstrate the process of creating a new page version, editing multivariate testing on a few components, and approving that page with a test.

1. The easiest way to create a new page version is to simply make a change from within the Experience Editor. Note: If you're an admin your changes won't go through as new versions and you'll need to create a new version through the Content Editor ➤ Versions tab ➤ Add Version link. Another reason to never edit content when logged in as the admin!

2. Select a component you want to test. Click the Test this Component icon, as seen in Figure 4-9.
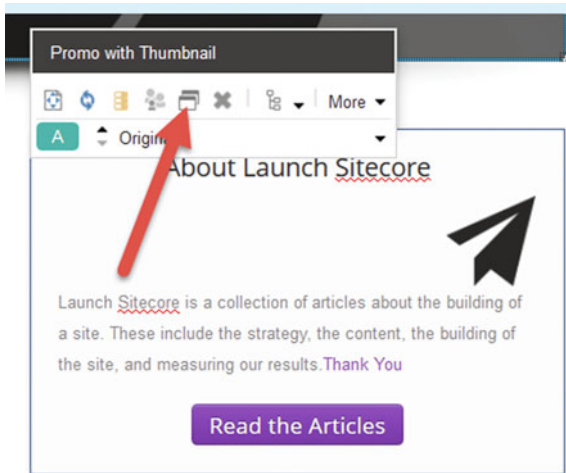
Figure 4-9. *Click the Test this Component icon to start adding component tests to the page*

3. Click the New Variation button one or multiple times, depending on how many variations of the component you want to test. Select a datasource for each that is different, based on your test (you may need to create new content items to set up your tests).

■ **Tip**   Using the Clone Current Content option can be an easy way to test small changes to existing content (Figure 4-10).
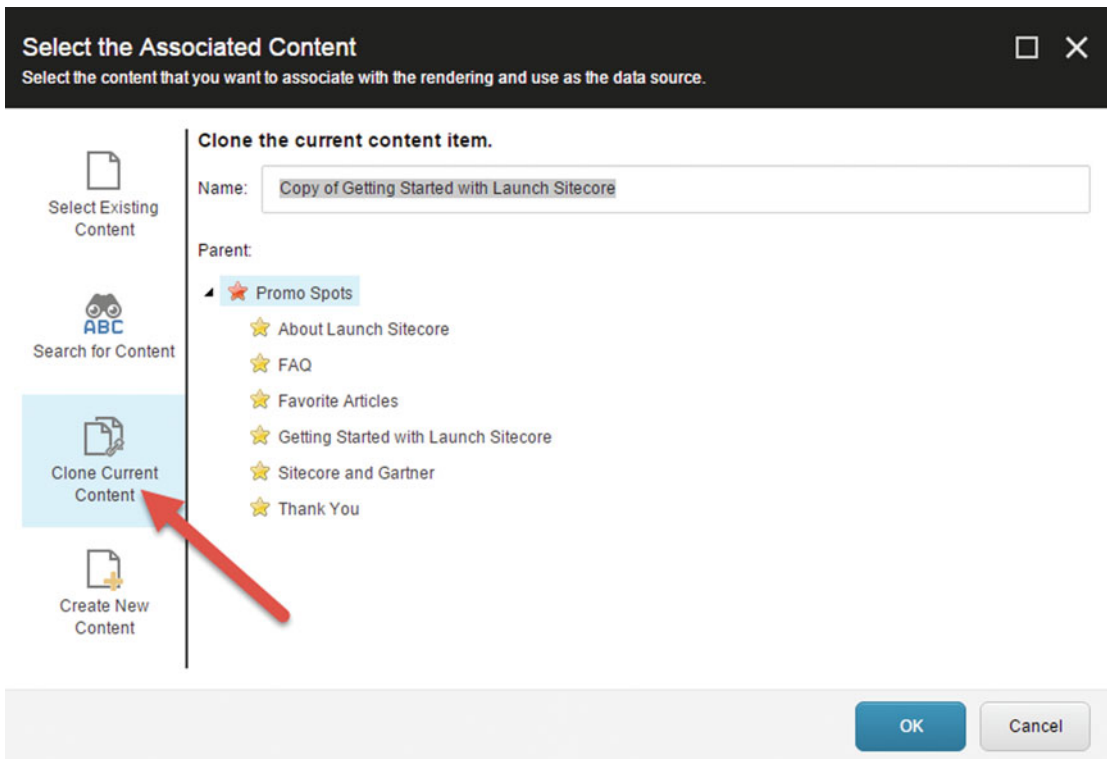
Figure 4-10. *Using the Clone Current Content feature is a great way to make and test tweaks to your content without starting from scratch*

4. Optionally, click Enable Variation of Component Design to configure the component's display rendering to another rendering. Between this step and the previous step, you can configure any number of content and display variations imaginable.

■ **Caution** Sitecore doesn't appear to restrict the available renderings to those that are compatible with the current rendering. You may have unexpected results or errors if the datasource (test content item) and the component design (rendering) aren't compatible. If there isn't already an existing "compatible" rendering to test with, you'll need a developer to create it and deploy to your Sitecore installation.

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5. Optionally, check Hide Component if you simply want to remove the component.

6. Click OK to save the component.

When you are done editing your components with their tests, simply click Submit below the Edit drop-down. You will now see an option to Approve with Test (Figure 4-11).
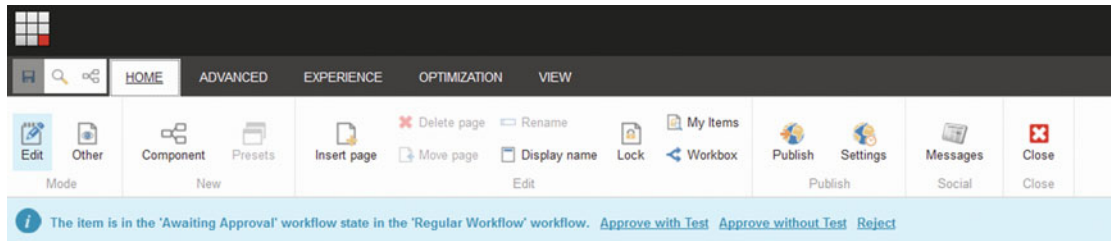
Figure 4-11. *To start a multivariate test, simply click Approve with Test*

When you click Approve with Test you will see a preview pop-up with a button to start the test. The Preview page is similar to the Page test seen in Figure 4-5. What's interesting, however, with multivariate tests is the Variables tab where you can see a list of all the variations configured. Notice in Figure 4-12 how we have two types of tests discovered on our new version: component tests and personalization test. In total, there are 14 variations that produce altogether 144 unique combinations that can be tested. Again, this is where statistical significance is important to consider. A page with 144 combinations will need a lot more samplings than a page with two combinations, such as what was described in the previous section, to arrive at statistical significance.

Figure 4-12. *You may want to enable/disable different tests to hone in on the specific question you're asking*

Fortunately, you can enable/disable variations that you may not want to be included in the test. This can reduce the level of samplings needed, and thereby time needed to complete the test. After you've made your selections, simply click Start Test and publish the page and any other related content items you have changed in the process. Thereafter, your test is live.

You can view the tests status and end the test similarly to what was described in the previous section. Specifically, note Figure 4-7 again to refresh your memory.

■ **Caution!**   If you are an admin and you want to end tests without selecting a winner you can choose Marketing Control Panel ➤ Test Lab and search for the test. Below Edit you will see the End Test link, as seen in Figure 4-13. I have noticed inconsistent results with ending a test this way and I do not recommend it.
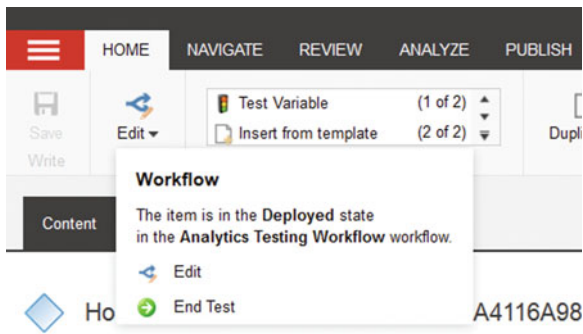
Figure 4-13. *Back door way to end a test, but beware!*

Summary

Test everything, everywhere, all the time. That is Sitecore's motto. This chapter walked you through some important considerations for testing, such as the three different types of tests, statistical significance, and considerations for mobile and personalization. In the end, testing is incredible easy to do; you simply Approve with Test! It can also be a ton of fun. If you're the director of digital marketing, create some friendly rivalry by hyping up the experience optimization dashboard, highlighting your team's efforts to make your site better and better, bite by bite. Give a gift card away each month to the team member who increased engagement value via testing the most that month. These sorts of capabilities, as well as culture of continuous improvement, is sure to drive a more customer centered experience, as well as competitive advantage.

■ ■ ■

Marketing Campaigns

Welcome to the chapter on marketing campaigns! You could describe the goals of this chapter in two main ways:

- Understand how well your digital experiences are performing

- Automate your marketing processes to create more valuable customers

Most of the core "marketing" features in Sitecore are there to drive more powerful analytics and insights. Page hits and geo-demographics are only so helpful. What is more compelling would be to understand how well your "Lenny" persona is actually aligning to your visitors. Or, are we hitting Lenny's pain points more often than meeting his motivators? These sorts of detailed questions are answerable through the use of Sitecore's "marketing" features, delivered out of the Marketing Control Panel.

I put "marketing" in quotes because things like events, failure events, goals, campaigns, and outcome actually have more to do with analytics when you think about it. "Big M" marketing comes into play with engagement plans. Engagement plans are at the heart of Sitecore's marketing automation capabilities.

Engagement plans help you "nurture" a lead; they help you create more valuable customers without the need of human intervention. They help you take a customer with passive interest in your brand and present personalized experiences that move toward being a marketing qualified lead, and even all the way to being a customer.

The possibilities are endless with engagement plans; it is truly a feature of Sitecore worth getting excited about. As such, the chapter begins with a theoretical discussion on the possibilities with marketing automation to set the tone for what is possible through the use of the concepts found in this chapter.

Sitecore Marketing Automation

So what are we trying to do here? I think the best place to start a marketing automation conversation is with Figure 5-1, introduced to you in Chapter 1. As you may recall, a customer journey can be a bit schizophrenic. A customer may engage your brand from any multitude of channels and will likely do a lot of research before making a buying decision. Sitecore's marketing automation capabilities can help you reach across all these channels, engage your customer with personalized, relevant, and timely content to help drive them deeper in your digital marketing sales funnel.
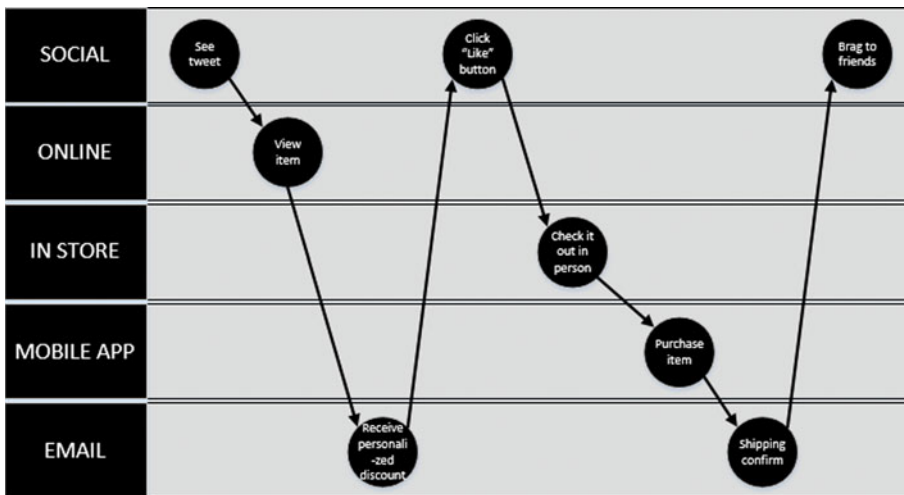
Figure 5-1. *A customer's journey is all over the place; mareketing automation can help you keep the customer engaged*

A Looking Glass and a Rudder

Sitecore's marketing automation capabilities behave a lot like a looking glass and a rudder. A ship captain needs to know where she's going (looking glass) and needs a way to get there (rudder).

It can be near impossible to see what's going on with your customers when you're working across 6-7 channels and you have tens of thousands of customer interactions a day. In this regard Sitecore's marketing automation capabilities are like a looking glass, in that you can see what's going on (powered by xDB analytics). You can see what actions your users are taking, all the way from downloading a whitepaper to something incredibly granular, such as clicking a link. You can also see what paths your customers are taking, as they go from one channel to the next, or from one page to another. The Federation Experience Manager helps us tie all customer actions across all channels into one single view of the customer. From a marketing perspective, this is invaluable.

These analytics, along with the Federation Experience Manager, will be covered in more detail in Chapter 7. For now what is imperative is understand that reporting isn't the end goal. Engagement *value* is the end goal; we need to drive more valuable customer experiences that lead to higher revenues for our business. This is where automation and the rudder analogy comes in. Yes, there is a steady flow of data, but Sitecore gives you a rudder to steer the experience and the customer in the right direction so you get to most value out of every interaction as possible.

Tactical (t) versus Transformational (T)

Similarly, there are two main ways you can get started with Sitecore's marketing automation capabilities. You may elect to start off tactical (t), working to employ as many events, goals, outcomes and other analytics across as many channels as possible to get as best a view of your customer as possible. Many in fact do start this way. One main benefit is most do not want to bog down their web site redesign project, for example, with what seems like the big unknown of marketing automation. Fortunately, many of these tactical strategies, when done correctly and thoroughly, form the building blocks of marketing automation, which is more *transformational* (T).

Big T marketing, however, is where the true power of the Sitecore platform resides. Personalization is neat and helpful, but most personalization is more complicated that a simple A/B example. Big T marketing helps the customer through a multistage buying journey, again like we see in Figure 5-1. How do you get the customer from their passive interest to make a purchase? Is that as simple as just showing some simple personalization, such as location, demographic, or content preference personalization? For simple sales your digital strategy may stop at personalization, but for complex sales, personalization is only the beginning. If you want to move beyond tactical reporting and develop a transformational marketing strategy you need to start incorporating more complex automation concepts such as the ones that Sitecore provides in campaigns and, especially, engagement plans.

Tactical (t) helps you know what your customer just did, but transformational (T) helps you affect what your customer will do next.

STRATEGY BITS: MARKETING AUTOMATION IS MORE THAN JUST E-MAIL

Marketing automation is hot right now, finding a place on all the trend charts, and it's a buzzword used at all the conferences. Yet with all the coverage, many still look at marketing automation as just a fancy name for e-mail marketing. While e-mail is a major component of marketing automation, it is more than just a tool to manage newsletters. Marketing automation is all about managing the ever-increasing complexity of a marketing funnel or sales cycle. It's about creating a path of least resistance for the prospect to find out about your company, do the appropriate research needed to make a buying decision, and then ultimately convert to a customer.

The goal of marketing automation is to map and manage the paths that customers could take as part of this journey and automate steps that normally would add resistance to the buying process, or that wouldn't be feasible if they had to be done manually. Marketing automation is built to help a marketing department get as close to one:one marketing as possible. Sure, everyone would like to customize every step and message for every customer and their unique situation, but scaling that to the masses is often impossible.

Understanding marketing automation starts with thinking about the goals of marketing. In very general terms, marketing is about generating awareness for your brand, eliciting consideration and interest from prospects, delivering materials to help them make the appropriate decision, and then ultimately propelling a prospect to convert into a customer. Once a prospect becomes a customer, marketing should start over and work on retaining the customer and generating future purchases through the marketing loop.

How marketing automation fits in at each of these stages depends on your company and how you plan your marketing, but let's look at some of the key areas where marketing automation can be leveraged.

Generating Awareness

From branding ads, events, social media, and search marketing, the main goal of this stage is to get your brand in front of prospects and get them to pay attention long enough so that you can get permission to continue marketing to them on a personal level. Marketing automation tools at this stage are all about capturing information from the potentially fleeting prospect and getting them into your marketing funnel.

For example, events are a great way to get in front of a large amount of people, but too often the list of prospects generated gets put into excel and left to sit. Marketing automation tools, on the other hand, force a more structured follow-up. Imagine a prospect comes to your booth or brand experience

at an event, signs up for a contest, and opts in for messages from your company. Set up properly, the marketing automation system will capture that lead, tag the event as the source, and send an immediate thank you e-mail for signing up. If it's a multi-day event, the system may send a follow-up e-mail reminding people to stop by your booth for the big drawing, or showcasing other things going on at the event. Following the event, the system sends out an e-mail with more information about your company and a couple paths that the customer can take. Using this concept, you can use lead scoring to help you determine their level of interest and their potential buying stage.

What about all those people who aren't at the actual event, but might be following along on social media? As part of your campaign, you also post to appropriate social channels and offer a way for prospects to enter the same drawing or contest. These prospects are captured and tagged as part of the larger campaign, but also as non-attendees, so your can track their source. They get a slightly different set of follow-up e-mails because they weren't at the event.

Now that all these prospects are in your funnel you can leverage marketing automation to move them through each stage.

Eliciting Consideration and Interest

Now that you've captured these prospects in the system and they have received the welcome e-mails and first follow-up from the event, it is time to drive interest in your product and to sort your prospects into groups so that you can begin tailoring messages to their level of interest and propensity to purchase.

In the follow-up e-mail, you offered the prospect an option to visit the company blog or to download a whitepaper. You may have also included a link to pricing or features of your product depending on what your sales cycle looks like.

Based on the action the customers took with your follow-up e-mail, you can branch your campaign out, using a lead scoring model to determine who is a good prospect to follow up with. Anyone who clicked on multiple links and visited multiple pages might be the most likely to convert at this point because their buying signals are the strongest. Using information that is tracked by your system, these leads are sent an offer to sign up for a demo or webinar, or even a deal to make a purchase. This could be sent a day or a week after the follow-up e-mail, all configurable and automated by your system. Prospects who visit an online store or sign up for a demo are obviously interested and are moved to a targeted list to convert.

Customers who don't click any links or don't fill out the form/make a purchase might still be interested but just aren't ready. This branch of prospects should receive more information about your company, another unique use for your products, or even a customer testimonial in a follow-up message. All these options are focused on driving continued interest in your brand and getting a prospect ready to buy.

But as I said, e-mail isn't everything. Maybe at this point you also want to send a direct mail piece to these prospects. Anyone who has opened the e-mails but isn't moving to the next stage could be targeted to get a glossy catalog, or a coupon deal to drive traffic to your retail store. Your marketing automation tools could manage this list and fulfillment.

Decision Making

Customers whose actions are expressing interest by clicking e-mail links, visiting your site directly, or downloading materials, but aren't converting currently have moved into the decision-making stage. They are interested, but there is some point of friction keeping them from taking action. It's time to get serious with these prospects. At this point, it's time to get a salesperson involved if you have them in

your organization. Marketing AUTOMATION allows this to be done automatically once your criteria is met. The follow-up task is generated and assigned to the sales executive and who can follow up with the prospect, and ultimately get the customer to convert.

Other prospects who have stopped clicking links, or may just read the e-mails but not take any action aren't ready to make a decision and would just feel bothered by a salesperson calling them. It's time to split them off into a list of prospects that have shown awareness but don't have distinct interest. Maybe you'll send them your quarterly newsletter and a few other major announcements. Until they start raising their hands and expressing interest again, let the system automate these customer and keep them in the loop. This frees up the sales executives time to focus on the best customers, while not letting potential future customers fall away completely.

Converting to a Customer

Whether a prospect becomes a customer on his or her own, or through the help of a sales professional, it's important to attribute this conversion to the original campaign and source that drove them to your business so that you can track the return on investment of your marketing. It's also time to take these customers out of the sales cycle so that they don't continue to receive sales messages. Instead, they should be moved to your customer-focused campaigns which make sure they are receiving the level of quality and service you expect, as well as showing them additional items they could purchase to complement what they already have.

This is just one way to set up your marketing funnel using marketing automation. The power in marketing automation is about the process that takes a customer through the journey, and when you think about all the actions that you would have to take manually to achieve the same level of marketing, it becomes clear why this buzzword is picking up steam.

Zack Wenthe
Marketing Strategist, RBA
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Sitecore Marketing Building Blocks

Events, failure events, goals, outcomes, campaigns, engagement plans, and taxonomies are the building blocks of Sitecore's marketing automation platform. The following sections discusses each, including when they are used and how you can get started using them.

Events, Failure Events, and Goals

Events, failure events, and goals are all customer behaviors recorded by Sitecore during a customer's journey across your channels. Events, failure events, and goals are amazingly more valuable from an analytics perspective then, say, page clicks or other pretty, yet rather useless, data you might get in Google Analytics without customization. The reason events, failure events, and goals are so important to a marketer is twofold: 1) they can be tied directly to your user personas, and 2) they track occurrences *and* value.

Recall Lenny, the persona from Chapter 3. Personas are great because they help us capture a set of behaviors, preferences, goals, and all sorts of other characteristics into a single, fictitious character (like Lenny) to help us understand and prioritize what our digital experience ought to be doing for our customers. In the case of Lenny, you can see in Figure 5-2 that we've captured his motivators, goals, pain points, and alignment to business objectives (among a lot of other, less applicable characteristics). Notice however

how motivators are things Lenny comes to the site to do. I like to think of motivators as events; they are things Lenny does when he engages with our brand. Events help us track and measure how well our digital experiences are meeting Lenny's needs.

Lenny Learner

Weighted Score: 266 (26% of total)
Priority Weighting: #1 of 7

"What's the process for doing this?"

Lenny visits the partner portal to locate training and process documentation related to his current work or personal situation. Within the context of his situation, he has an idea of the type of information he is looking for (how to update benefits, how to use team member discounts, etc.). However, he expects additional suggestions so he doesn't inadvertently miss a critical piece of material.

Lenny is a self learner and would rather find the material himself or collaborate with colleagues than attend training. Additionally, his busy schedule dictates that he completes his learning and gets back to his day.

Lenny's alignment to business objectives

Improve partner retention and recruiting

Achieve 80% partner adoption

Improve and modernize partner engagement

Improve operational efficiency

Lenny's motivators
Lenny comes to the site to...

- Find technical manuals and updates for his equipment/domain
- Find installation best practices for equipment he services
- Understand how other partners or team members are overcoming their challenges/issues
- Read "how to" resources so he can perform self-serve tasks
- Collaborate with partners and team members on understanding and improving process documentation
- Locate pertinent process and/or document templates

Our goals for Lenny
What we want Lenny to do...

- Overcome his installation/support issues and challenges
- Perform his task our way
- Advocate usage of the partner portal

Lenny's pain points
Lenny dislikes experiences that...

- Make him hunt for information.
- Cause him to question the accuracy of the information.
- Showcase information not relevant to his needs

Figure 5-2. *Your user personas should have a platform persepctive, incorporating events, goals, and failure events in the form of motivators, goals, and pain points*

Goals are a bit different than events, in that goals are what *we* want Lenny to do. Sometimes what your customer wants to do is not what you want them to do. Lenny is a good example. He is coming to the experience to find information and to research policies. However, we want him not just to consume content, but to become a customer. As such our goals for him are to get him to convert. Goals, therefore, tend to have a higher value than events because we always want every customer going deeper down the funnel (and not just kicking the tires, as is the case of events).

Failure events, or in the case of Lenny, pain points, are things Lenny hates. Yes, you should track in your digital experiences where you are letting your customers down. Are you creating experiences that work well for one persona, but poorly for another? If you don't track failure events against your persona's pain points you'll never know the answer to this question. When you are tracking failure events, you may conclude that separate experiences are needed to create highly specific experiences tailored to a given persona to match their buying behavior as closely as possible.

Secondly, events, failure events, and goals are far superior to simple page hit counts because they can help you track *value*. Not every interaction means as much to your business as another. Is it twice as valuable for a customer to register for a webinar as to download a whitepaper? If so, don't treat them equally.

This is one of the best features of Sitecore; namely, that you can attribute Engagement Value scores onto each of these—events, failure events, and goals. I don't mean to take away Chapter 7's thunder here, but the timing is too important. Look at Figure 5-3, how we see a measure of number of hits to the site and their corresponding Engagement Values. This way, in combination with events, failure events, and goals, you can set out to create strategies that drive Engagement Value (make your experiences better) and separately set out to drive more hits (such as pay-per-click campaigns).
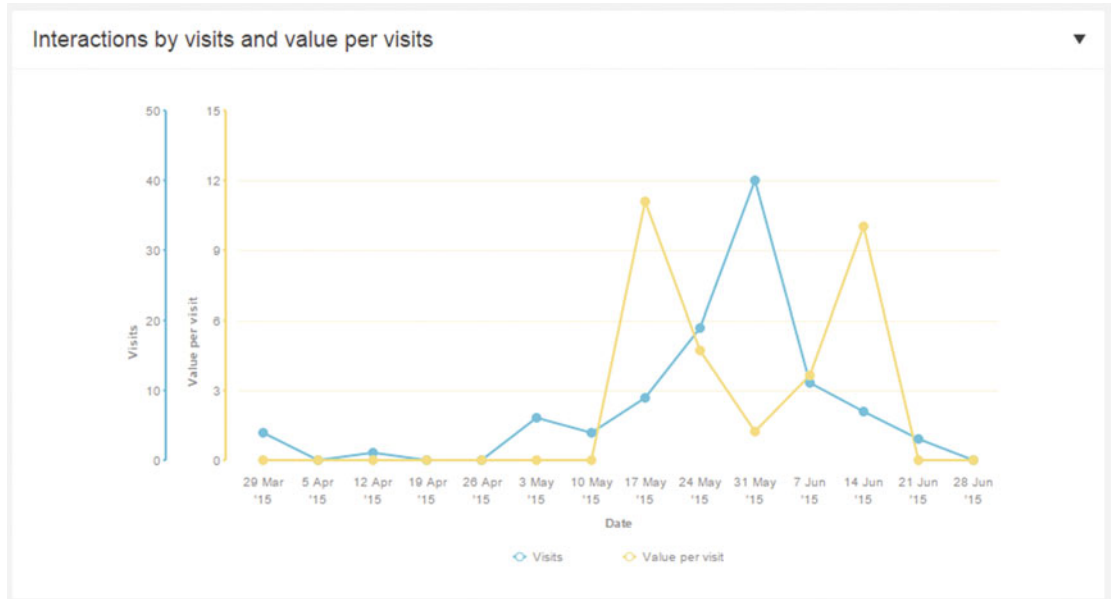
Figure 5-3. *Sitecore analytics report not just visit counts, but the value of those visits to your business*

Value is an important point to think carefully about. You shouldn't be too quick to throw out value assignments to your goals, failure events, and events. The number is less relevant than that assignment's relation to other assignments.

For example, is an event registration twice as valuable to your business as a whitepaper download? If so, perhaps the Event Registration goal receives a value score of 10, while the Whitepaper Download event receives a value score of 5. Would you prefer one customer request a product demo over 10 customers register for an event? If so, perhaps you should assign the Request a Demo goal to a value of 100. Does a subscription cancelation represent a loss of a customer? If so, perhaps this failure event should receive a value score of -100.

In this way it is important to create a hierarchy across all persona events, failure events, and goals ahead of time so you can agree on scoring options. A simple matrix with the following columns serves best to align on this deliverable:

- Name

- Type (event, failure event, and goal)

- Value

- Persona (multiselect)

- Description

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■ **Note**   More on analytics in Chapter 7, but for now it's important to know that all of these events, failure events, and goals can be viewed from a customer's experience profile for future reporting.

Use the following steps to create an event or a failure event:

1. Navigate to the Content Editor and find the Page Events node under System ➤ Settings ➤ Analytics ➤ Page Events.

■ **Note**   Alternatively, others prefer to create page events in the Marketing Control Panel below the Goals node. They intermix goals and events. In many ways this is preferable, but an administrator will need to edit the insert options of the Goals node to allow page events to be created there; otherwise, only admins can create them there. As such, the standard place for page events is demonstrated in these steps. Check out the steps to create a goal to see where to create your page events if you want to follow this best practice.

2. Create a new Page Event Category (right-click Page Events, Insert) for your site below Page Events, such as Launchcore.

3. Right-click your category and insert new a page event.

4. Provide a name and a point value (Engagement Value score).

5. Scroll down on the settings and note the following settings that you may or may not want to configure:

    - *Is Failure*—Selecting this marks the event as a failure event

    - *Show in Events*—Selecting this ensure this event appears on a user profile report (it is associated to the profile regardless, but you may want it to display on the profile by default)

    - *Track as Latest Events*—Similar to Show in Events

6. When your event is complete, below the Home tab click Edit ➤ Deploy to publish your event.

Notice in Figure 5-4 there's a customer event called View Best Practice. This event can be used to report on our customer's consuming information that you consider to be a best practice.
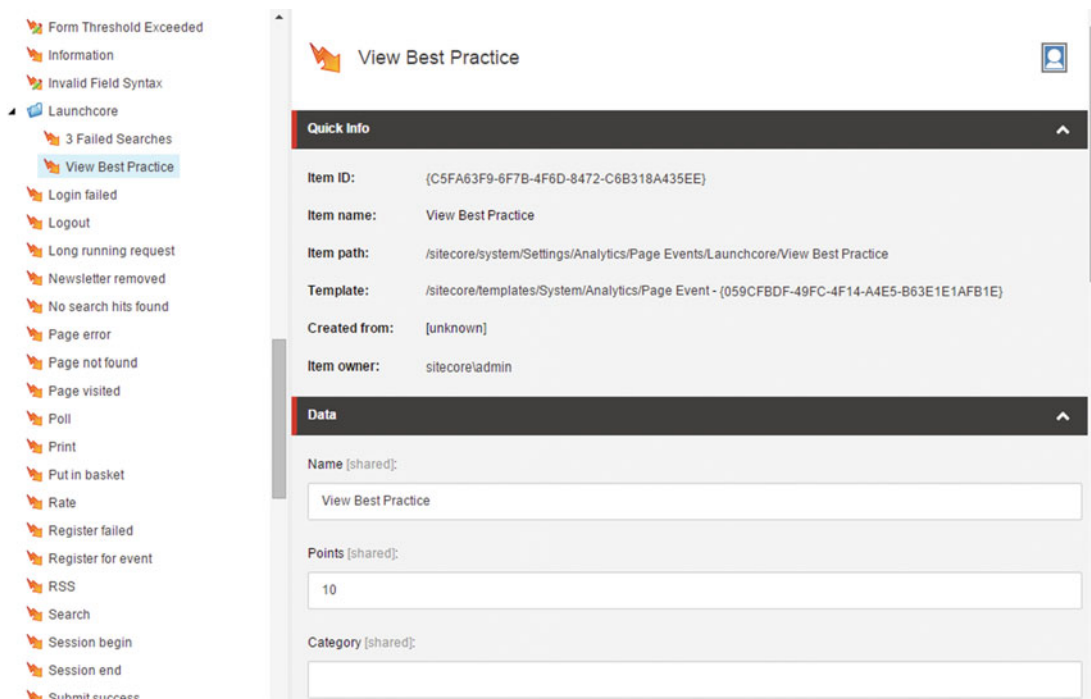
Figure 5-4. You can create custom events and failure events to measure how your personas are actually interacting with your digital experiences. Don't guess; know!

Use the following steps to create a new goal:

1. Goals are administered from the Marketing Control Panel, so navigate there from your Launchpad.

2. Expand the Goals node; this is where you will create your goals.

3. Create a Goal category by right-clicking the Goals node ➤ Insert Goal Category. Provide a category name that aligns with your site or digital property name.

4. Create a new goal below your category by right-clicking your category and choosing Insert. Provide an appropriate goal name.

5. Skip the classification section for now (goal properties). See the section on Taxonomies later in this chapter to understand how you can categorize your goals in reports.

6. Confirm the goal name and then provide an Engagement Value to the Points property.

7. When complete, click Edit below the Home tab, and then click Deploy to publish your goal.

With your events, failure events, and goals created it is a very simple process to get those assigned to pages within Sitecore so they are getting logged. Note also that goals can be logged as a result of a form submission (such as requested to download a whitepaper). Form submitted goals are discussed in Chapter 6. For page events and goals, see Figures 5-5 and 5-6. Under the Optimization tab within the Experience Editor

you will notice a Goals button (Figure 5-5) and an Attributes button (Figure 5-6). The Goals button is where you can select which goals are triggered as a result of the user visiting that page. The Attributes tab has a bit more going on, with tabs for Campaigns, Events, Failure Actions, and Settings. The Events and Failure Actions tabs are applicable in the case of our events and failure events. Simply check the events, failure events, and goals you deem appropriate for that page and click OK (along with Publish, etc.).
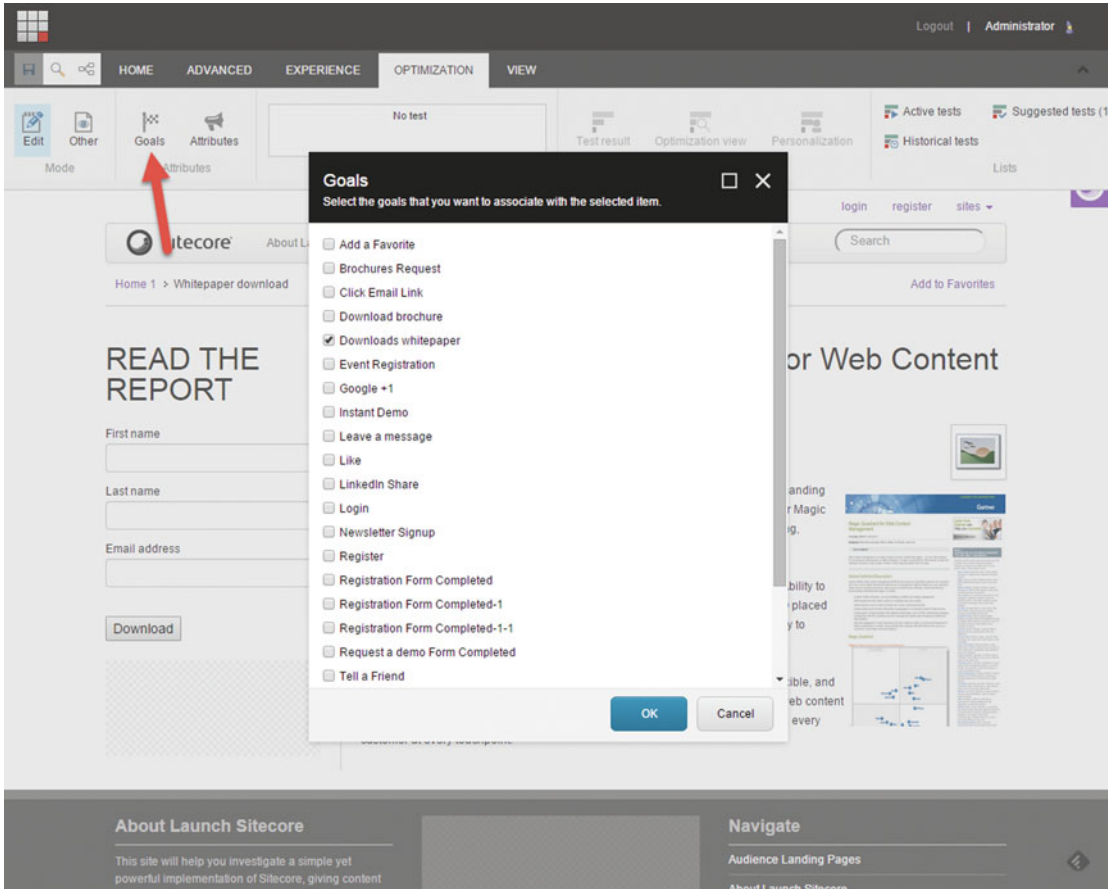
Figure 5-5. *Goals can be registered to a page with just a few simple clicks*
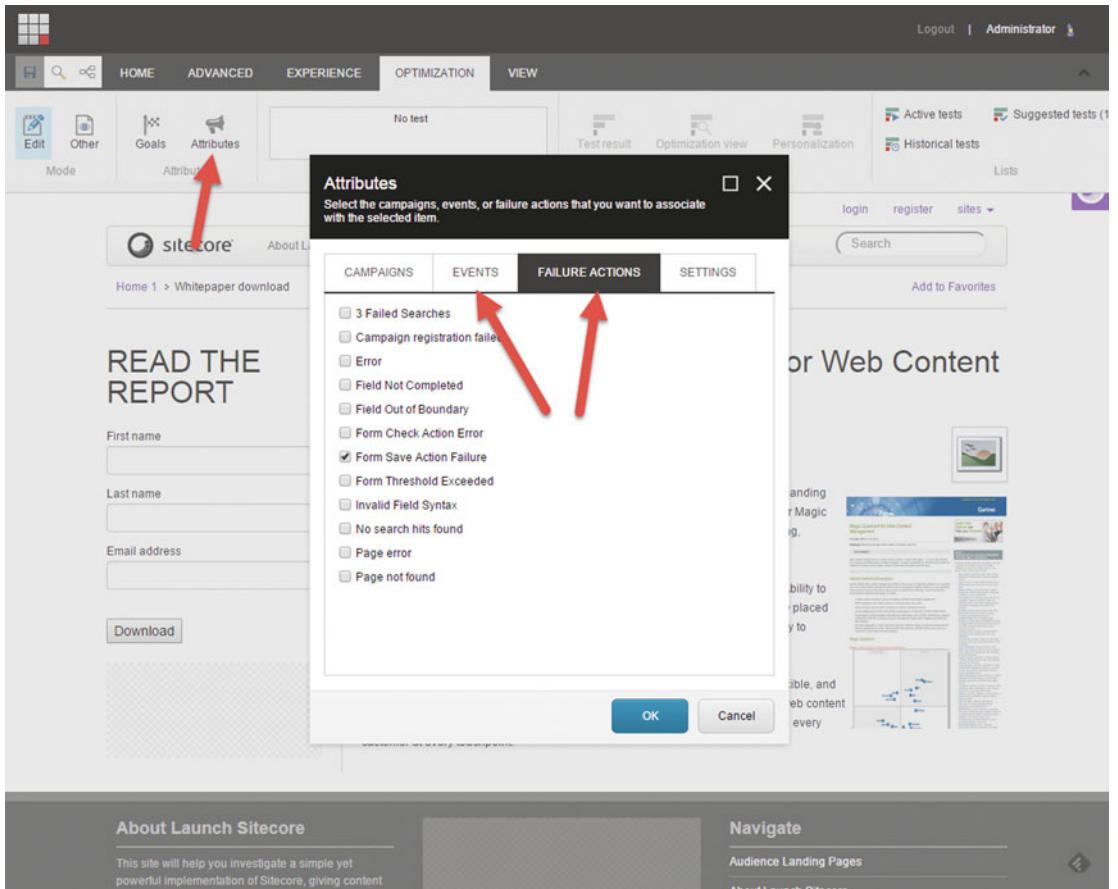
Figure 5-6. *Likewise, events can easily be registered to a page*

■ **Note**   Events, failure events, and goals can also be triggered programmatically. In most cases, page level events and goals are entirely sufficient. However, sometimes it is more appropriate for them to be triggered in code, such as in response to a button click or some other interaction with a customization. Check out this helpful blog post for more details on how to do this programmatically: `http://bit.ly/1CFvPiC`

Outcomes

Outcomes are used to track the lifelong value a particular customer is to your business overtime. An outcome in its most basic form is just a tag on the customer's profile. That tag name can be whatever you want it to be and it can represent whatever you want it to represent. Typically, outcomes represent some combination of events, goals, and/or campaign interactions.

For example, you may have goals around social media sharing. Perhaps a customer is sharing a lot of your content on social media and has reached 10 "shares". In this case, you may use this milestone to tag that customer with the "Promoter" outcome so you can segment your promoters for an e-mail campaign down the road, such as a new product launch.

■ **Tip**   Outcomes can also be used for content personalization. Search for "outcome" in the Rules dialog to find the "where the user has registered the outcome during any interaction" rule that you can apply to your personalization condition.

You can create custom outcomes from the Marketing Control Panel, below the Outcomes node (Figure 5-7). You first will create the outcome type, followed by the outcomes themselves below the type. This hierarchy helps with organization and reporting purposes.
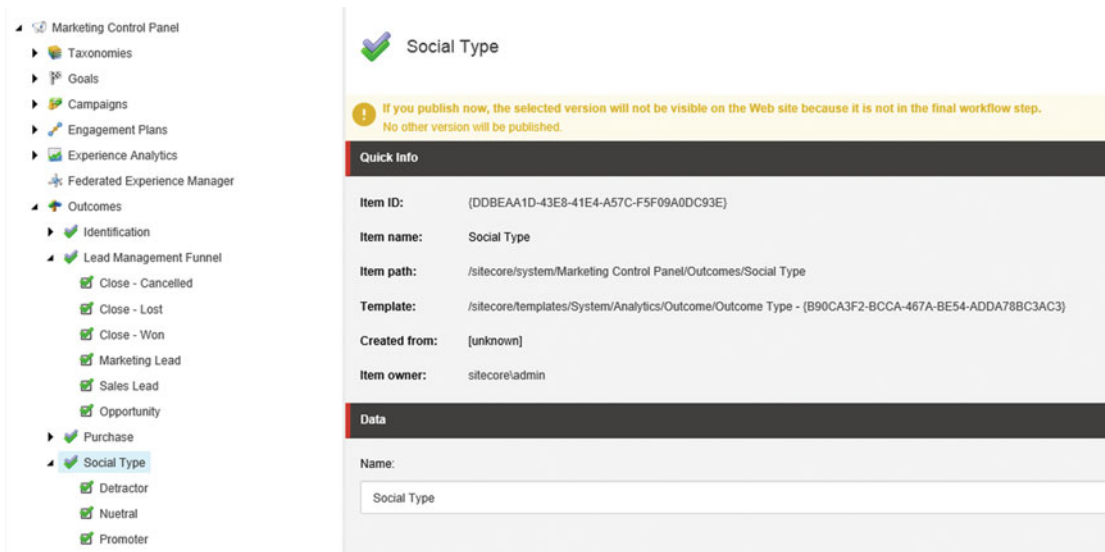
Figure 5-7.   *Create custom outcomes to track the financial value of a customer to your business over time*

There are three out-of-the-box outcomes in Launch Sitecore you can use, including:

- Identification
  - Contact Acquisition
- Purchase
  - Purchase Product
- Lead Management Funnel (Figure 5-7)
  - Marketing Lead
  - Sales Lead
  - Opportunity
  - Close Cancelled
  - Close Lost
  - Close Won

Again, with outcomes tagged on customer profiles, it would be easy to retrieve all marketing qualified leads if you are tagging customers to marketing lead when, say they register to download a whitepaper on the heels of an e-mail blast.

When you create a new outcome, you'll notice the Monetary Value Applicable checkbox. This signifies that this particular outcome is also used to track a financial value of the customer. For example, if the customer purchases a digital camera off your web site, you could tag that purchase with a "Camera Enthusiast" outcome along with the monetary value of the purchase. Simply reporting then could sell you the total value across the life of the customer, assuming all purchases are being reported (see more in Chapter 7 on outcome analytics).

So you have all your outcomes created, but then what? What actually gets the outcome associated to the customer's user profile? Unfortunately outcomes can only be registered programmatically, since they are usually never the result of one event or page request. To read about how to register an outcome, check out this helpful article: http://bit.ly/1LSHujt.

Campaigns

A lot of people, when they think of Sitecore campaigns, are thinking of marketing automation through the use of Engagement Plans (see the next section). Rather, campaigns are tools to help you drive better analytics; analytics tied to a marketing campaign that might be a one off, or perhaps organized in another solution such as dynamics marketing.

Campaigns in Sitecore tie a set of behaviors in a digital experience to a campaign. For example, you may have a Google AdWords purchase driving clicks to your web site. Wouldn't it be good to calculate the ROI of that AdWords investment? Sitecore campaigns can help you calculate that ROI because you can associate each visitor coming from that AdWords campaign to that campaign. From an analytics perspective this will help you determine, on average, how much Engagement Value is created for that AdWords campaign. If you are savvy with your Engagement Value planning, you'll understand how many points of value correspond to a dollar's revenue, and thereby you can calculate ROI on a marketing campaign. It's pretty cool stuff, despite it being embarrassingly simple to configure. It's so simple you begin to feel a bit let down, like there should be more to it than that, but again, check out the next section on Engagement Plans to satisfy that thirst for marketing automation.

■ **Note**   With the release of Sitecore 8.1 a new tool is available called the 'Campaign Creator' you can use to create and manage campaigns. The steps below however are still applicable, but this new UI might be worth familiarizing yourself with. Unfortunately the timing of this book going to print did not afford an exhaustive update to this section.

You can configure a campaign much the same way you do a goal or event. Use the following steps to create a campaign:

1.   Go to the Marketing Control Panel from the Launchpad.

2.   You may have hundreds of campaigns over time, so it's a good idea to create some campaign categories to help you organize them. Do this by right-clicking Campaigns, and choosing Insert ➤ Campaign Category. Give the category a name.

3.   Below your Category insert a new Campaign (right-click, choose Insert ➤ Category) and give it an appropriate name.

4. There are several categories of properties you should pay special attention to:

   a. *Classification*—See the section on taxonomies later in this chapter to help you categorize your reporting data. This may be necessary if you have hundreds of campaigns.

   b. *Data*

      Title—The name of the campaign

      Campaign Link—This is the most important of all properties (see Figure 5-9) since it is what associates the visit to this campaign

      Type—Mostly used for additional reporting segmentation

      Enroll in Engagement Plan—see the Engagement Plan section coming up next. For now it is important to understand that a visit coming in from a campaign can be set to automatically enroll that user in an Engagement Plan.

   c. *Traffic Type*—Used to again provide richer reporting/analytics, in case you want to filter data on its source (e.g., search engine vs. direct vs. e-mail).

   d. *Duration*—You may want to apply a start/end date, again for analytics purposes

   e. *Cost*—You may want to add cost reporting into your analytics. For example, if you are using Google AdWords pay-per-click at a fixed cost of $.25/click, you could enter that cost into the Cost per Click property. In doing so you can see analytics showing campaign visits, the value from those visits, and the cost of those visits. All very handy to see.

A good example campaign might be a request to drive more of your product demos. You might set up a Google or Facebook pay-per-click program to drive more visits to your site and an appropriate landing page. You're hoping that when they visit the landing page they will fill out the form to request a demo, but you'll also present other calls to action to try to get as much engagement value out of the campaign as possible.

When you enter the URL into Google or Facebook ad programs, you want to add the `sc_camp` attribute onto the end of the URL, as seen in Figure 5-8. This associates that visitor to your campaign, and thereby all the analytics you need to calculate the ROI of the campaign.
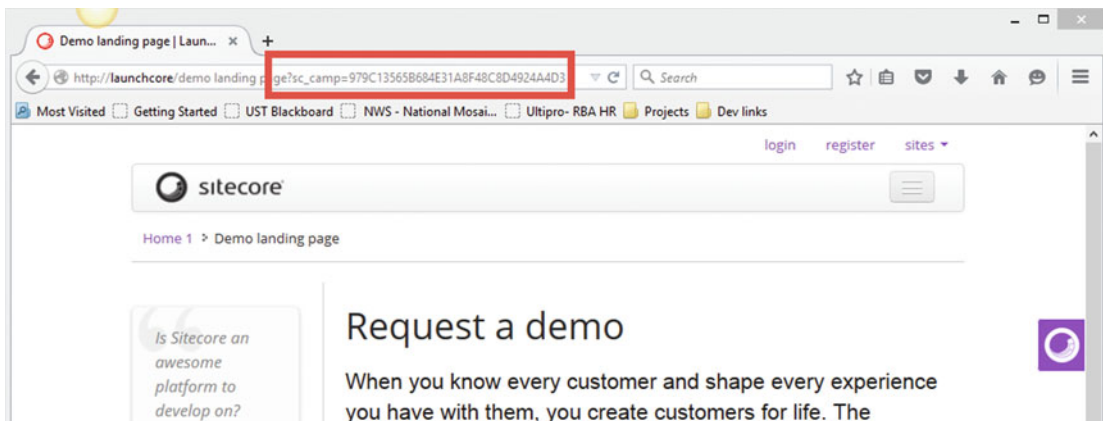
Figure 5-8. *Associate a landing page to a campaign by adding the campaign ID in the query string. Now all future engagement will be associated with that campaign, helping you track ROI*
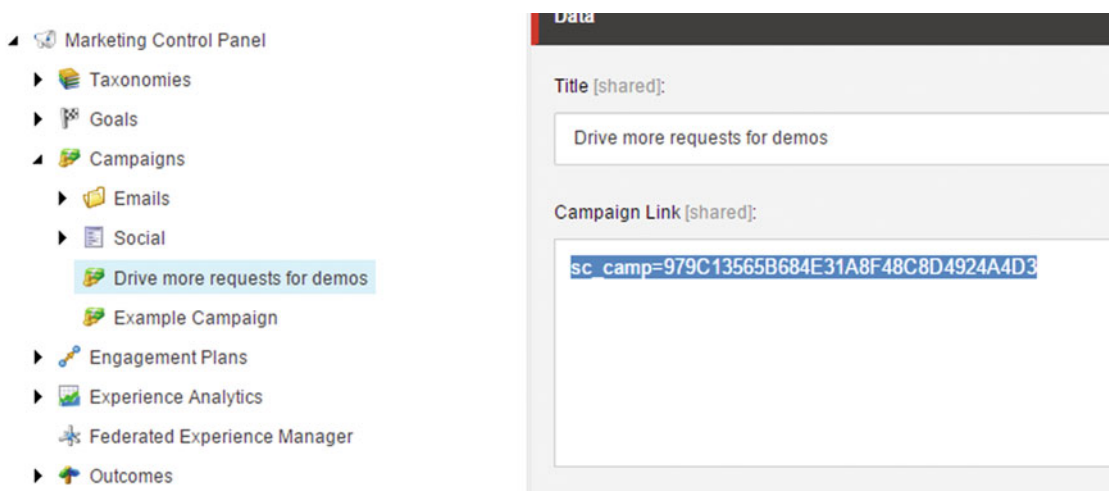
Figure 5-9. *Simply insert the Campaign link into the URL*

■ **Note** Campaigns will only be associated with the visit if the visit's first page has this value in the URL and no other campaigns are already associated. If the visitor already browsed a few of your pages and then found a link with this in the URL, the association would not be made because it wasn't in the URL on the landing page they entered the experience through. The campaign must start on the landing page (you can get around this programmatically if you are so inclined).

Engagement Plans

Engagement Plans are the core building block of Sitecore's marketing automation engine. Engagement Plans might be better named "engagement workflows" because they behave just like you'd expect a workflow to. An Engagement Plan can have one ore many "states". A customer can be assigned into an Engagement Plan and into one of those states. Most Engagements Plans have a start and end state, such as the case when you are trying to sequentially move the customer through a sales funnel, for example. However, the states need not be sequential and a customer can be assigned to any state as their first state. It depends on your business requirements.

The point is, Engagement Plans help you *move* your customer from one state to another; where the goal is to advance them toward a more desirable state. This often results in an outcome that you're trying to help the customer achieve. The following is an example of a sequence of events you could automate through the help of an Engagement Plan.

1. An unknown user downloads a whitepaper, prompting them to register.

2. He is then entered into an Engagement Plan, in a state called "Passive interest in XYZ Product".

3. Personalization drives content for users in that state. That content drives him toward an Event Registration.

4. He registers for the event, progressing his state to "Definitely Interested in XYZ Product".

5. An e-mail campaign targets customers in the Definitely state. The campaign presents a call to action to register for a demo.

6. The customer responds to the call to action, progressing his state to Considering a Purchase.

7. After the demo, the customer never makes a purchase.

8. The next time he visits the site, personalization offers a 20% discount for customers considering a purchase, since 10 days as elapsed since the demo.

9. The customer uses the coupon to purchase the product and is unenrolled from the Engagement Plan.

This workflow is a snap to automate in Sitecore with an Engagement Plan. You could create the e-mail campaigns from a third-party solution, but you would have a bugger of a time driving the personalization on the web site. This is a competitive advantage for Sitecore; your e-mail marketing and digital experience content can both be working together to create marketing generated leads across all channels, versus needing to develop a one-off strategy for each channel.

Engagement Plans can be viewed from the Engagement Plans node within the Marketing Control Panel (Figure 5-10). They are very easy to configure a well; Sitecore provides an intuitive drag-and-drop like experience to configure the flow. Square shapes represent states, and diamond shapes represent conditions. You can see an example Engagement Plan design surface in Figure 5-11. The design surface is loaded when you click the Design button in the middle of the screen, near Options.
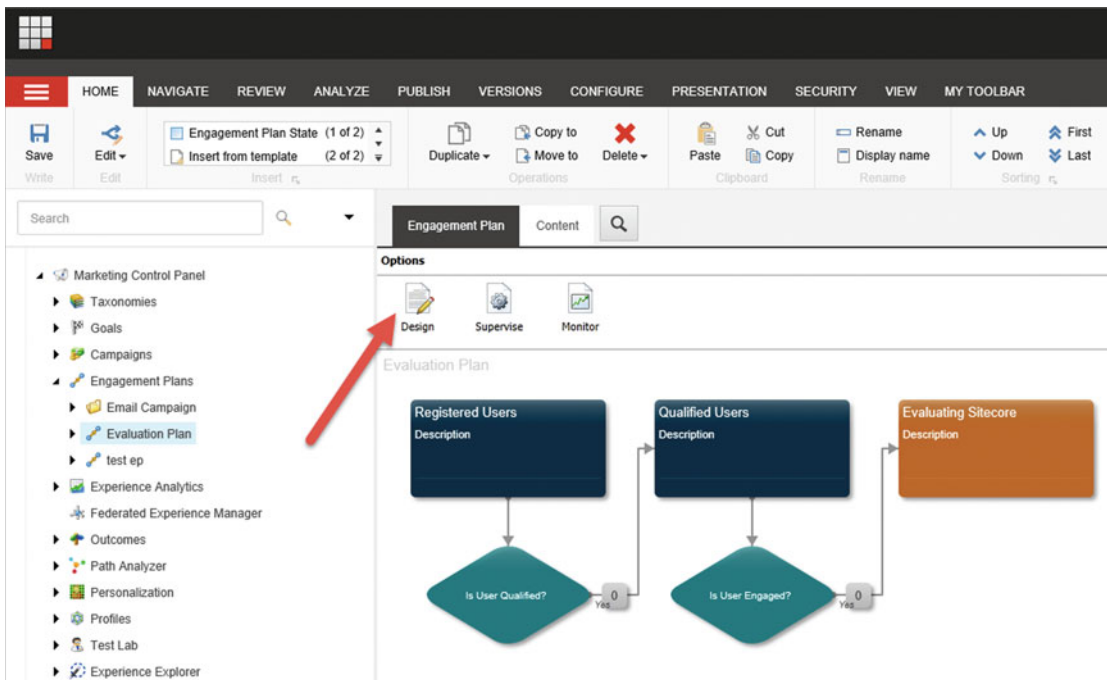
Figure 5-10. *Engagement Plans are where you automate your marketing strategies through the configuration of simple marketing workflows*
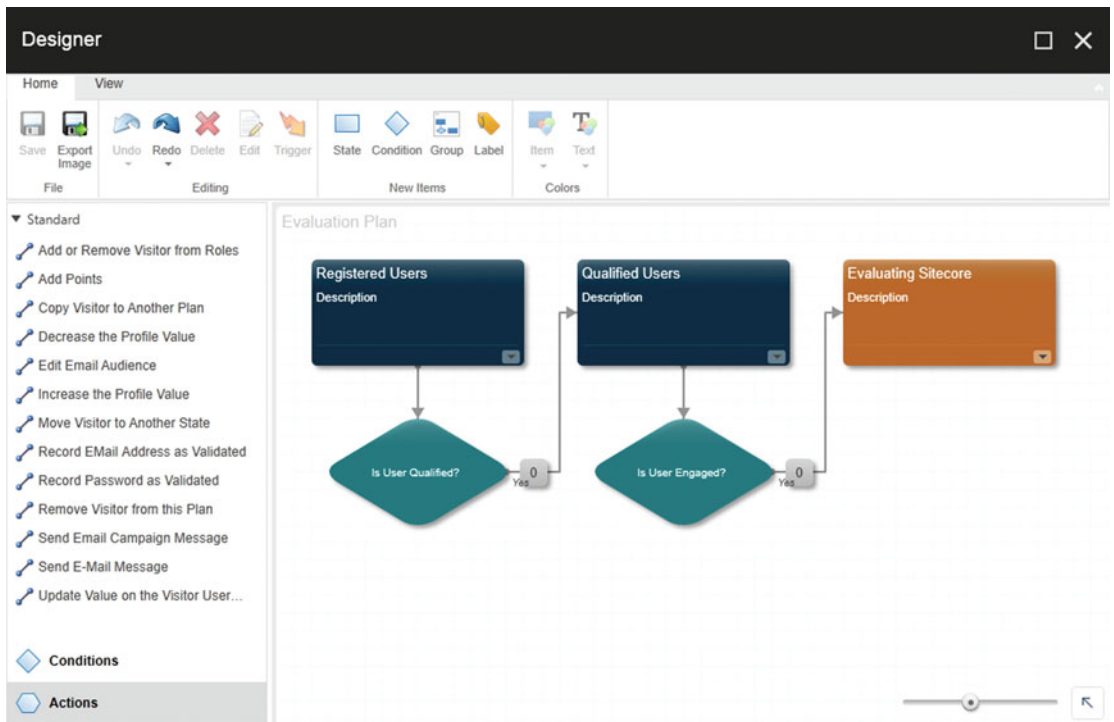
Figure 5-11. *The Engagement Plan workflow designer is a simple-to-use, drag-and-drop experience*

■ **Note** The Engagement Plans use Silverlight for their rendering. For best results, use Firefox or Internet Explorer.

The Supervise button opens a view (Figure 5-12) that allows you to see how many contacts are enrolled in the Engagement Plan, as well as which states they fall into. Perhaps there is a bottleneck in your plan and you need more personalization rules to help customers advance to the next stage faster. Additionally, if a customer is stuck, you can manually move that customer by clicking the Move button. Or, you can add a new contact manually into the Engagement Plan as well with the help of the Add button.
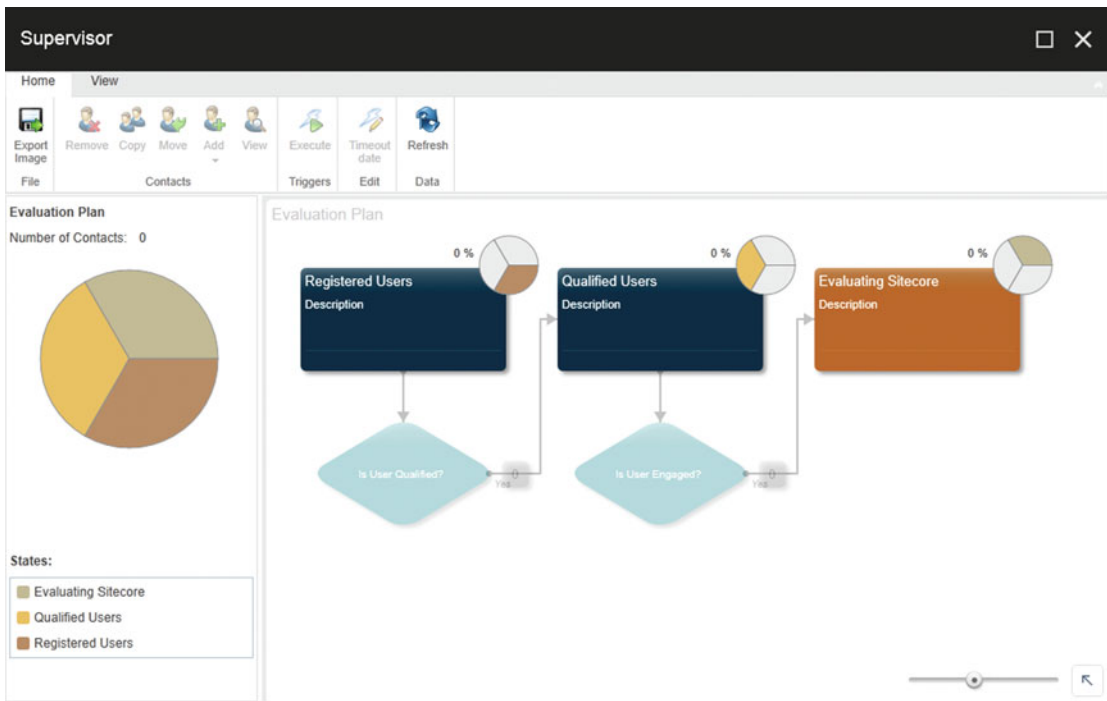
Figure 5-12. *Reporting is available in an Engagement Plan to see the percentage of customers that are in each state, as well as the total number of customers enrolled in the plan*

The Monitor button looks very similar to the Supervise button, except it is in a read-only view. Engagement Plans are a rather elaborate configuration process, and are covered later in this chapter in the section called "Creating Your First Engagement Plan".

Taxonomies

You may have noticed we skipped over the Classification settings in our Goals and Campaigns. Classification properties help you segment your goals and campaigns for reporting purposes. The reality is you may have hundreds of campaigns, and perhaps many hundreds of goals over time. Tracking all this can be impossible without some basic organization. Enter taxonomies.

In the Marketing Operations Panel, you'll notice the very first node is the Taxonomies node. You can configure metadata below the Taxonomies node that you can associate to groups and campaigns to help filter them in reporting. The following are all examples of things you can configure below taxonomies:

- *Campaign Groups*—Campaign Groups are the most basic form of categorization for campaigns. An example of a group might be "Product Launch - Thingy," where you want to associate the engagement value from across 12 different campaigns to show the effectiveness/ROI across the entire group of campaigns for the upcoming product launch. Campaign Groups can be created below the Taxonomies ➤ Campaign Groups node and assigned to Campaigns by selecting them in the Campaign Groups Classification property.

- *Group Categories*—Group categories are not as sophisticated as campaign groups but still serve the same purpose. Groups have a property called Category that is a free-form text box you can use to again filter group reporting.

- *Channel*—Channel effectiveness is another important facet when reporting on the ROI of your campaigns. Campaigns can be tagged with a channel by setting the Channel property. Fortunately there are already just about every channel you could image pre-configured in taxonomies (Figure 5-13).
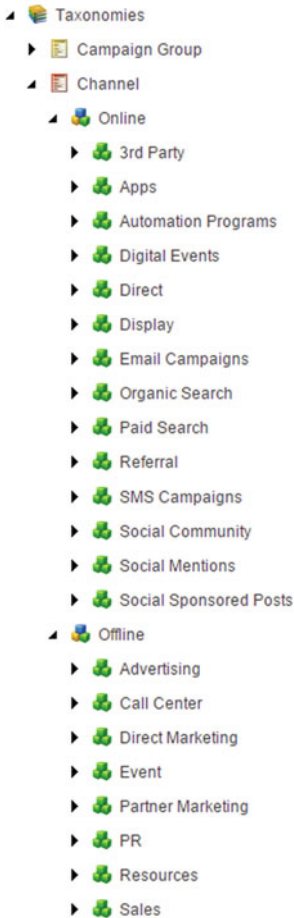
Figure 5-13. *Tag your campaigns to channels to help understand which channels are performing best*

- *Asset Types*—There may be times where you want to associate campaigns and goals to assets types, such as Video or Best Practice or Instruction Manual. Perhaps driving customers to best practices drives more ROI than driving them to instruction manuals. Tagging in this regard can help answer these questions. To tag a goal or campaign to an asset, simply set the Marketing Asset property of the goal or campaign. Sample tags can be seen in Figure 5-14.
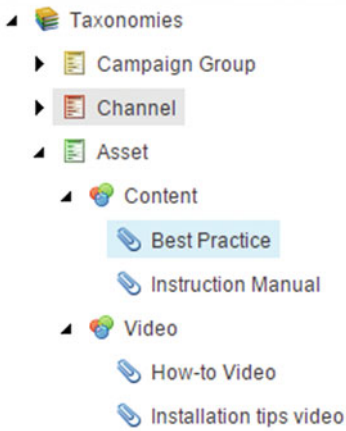
Figure 5-14. *Assets, too, can be a helpful metric to report against*

- *Facets*—Facets exist because Sitecore doesn't know what else you may be interested in filtering on in your reports. Perhaps what you need is a Product Category field or a Region. The possibilities are endless, so Sitecore threw its hands up and created generalizable "facets" you can rename. In the example in Figure 5-15, Facet 1 is known (tribal knowledge) to refer to Region and Facet 2 is known to refer to Product Category. Note how in Figure 5-15 how we've created some Custom Taxons below each facet to start building out the possible values. When you right-click the facet and choose Insert, you'll notice you can create Taxons and Taxon Groups below the facet (groups can be used for organization if you have dozens or hundreds of possible taxons).
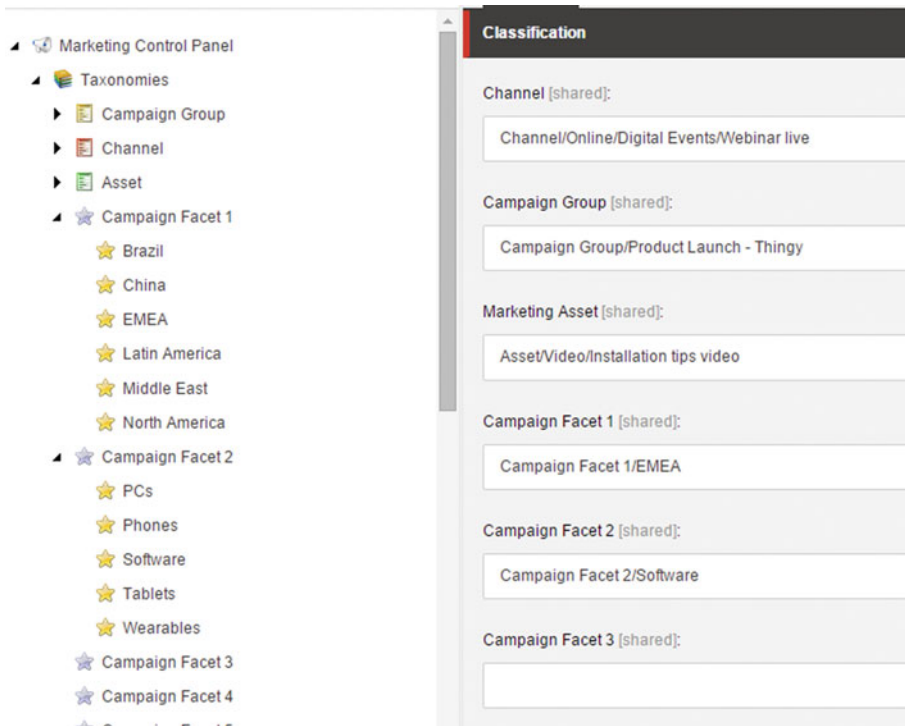
Figure 5-15. *When in doubt, use custom facets to extend your campaign reporting into almost limitless directions*

That concludes the discussion on taxonomies, but remember the real value of them is in the data. Check out Chapter 7 for a continuation of this discussion when we dig into xDB and Sitecore analytics.

Creating Your First Engagement Plan

Engagement Plans deserve special elaboration for a couple of reasons. First, they are at the core of Sitecore's marketing automation capabilities. Secondly, many of the other building blocks, including goals and campaigns, work in tandem with engagement plans because by creating an Engagement Plan you are working with all the building blocks discussed earlier. As such they are great at bringing it all together.

Since Engagement Plans are so important we'll create one, step by step. We'll also use a real-world example to help demonstrate the concept. The setting is the healthcare insurance industry. An insurer wants to better target and nurture leads through the process of applying for Medicare insurance. As you can guess, Medicare is a "complex sale" and requires a lot of hand-holding to get a lead to become a customer. However, they just didn't have the manpower to nurture every lead. Instead, they turned to Sitecore's Engagement Plans to help them automate most of the interactions.

Here are the states of customers as they progressed through the digital funnel:

- *Passive interest in Medicare*—This may be a customer browsing the site and getting tagged to a persona known to be interested in Medicare, or less ambitious goals, such as downloading whitepaper or subscribing to a newsletter. These all signify some interest in acquiring insurance.

- *Qualified interest in Medicare*—When a visitor registers for a Medicare event or webinar, this is catalyst to market them as qualified interest.

- *Researching plans*—Researching plans is the next state. These customers are "hot leads" because they are actively comparing plan options, ripe for a sales associate to help them make a decision.

- *Application initiated*—These are visitors who have applied, pending application acceptance. They can still drop out and therefore need continued nurturing.

Our goal as marketers is to get these potential customers through the digital funnel as quickly as possible with as little human involvement as possible. Because of the volume of leads and limited human capital, it is the only way.

Let's begin by creating a new Engagement Plan with these four states. Later we'll add the rules/conditions/actions that facilitate the visitor moving from one state to another. Use the following steps to create these four empty states:

1. Right-click Engagement Plans node from within the Marketing Operations Panel and choose Insert ➤ Engagement Plan. Provide a name, such as "Medicare Nurture Program".

2. Click Design below Options to launch the Engagement Plan designer surface.

3. In the Ribbon within the Designer, note the New Items category. Click the square State new item to add a new state to the surface.

4. Double-click the state to launch the state's properties. Provide an appropriate state name and description, such as can be seen in Figure 5-16.
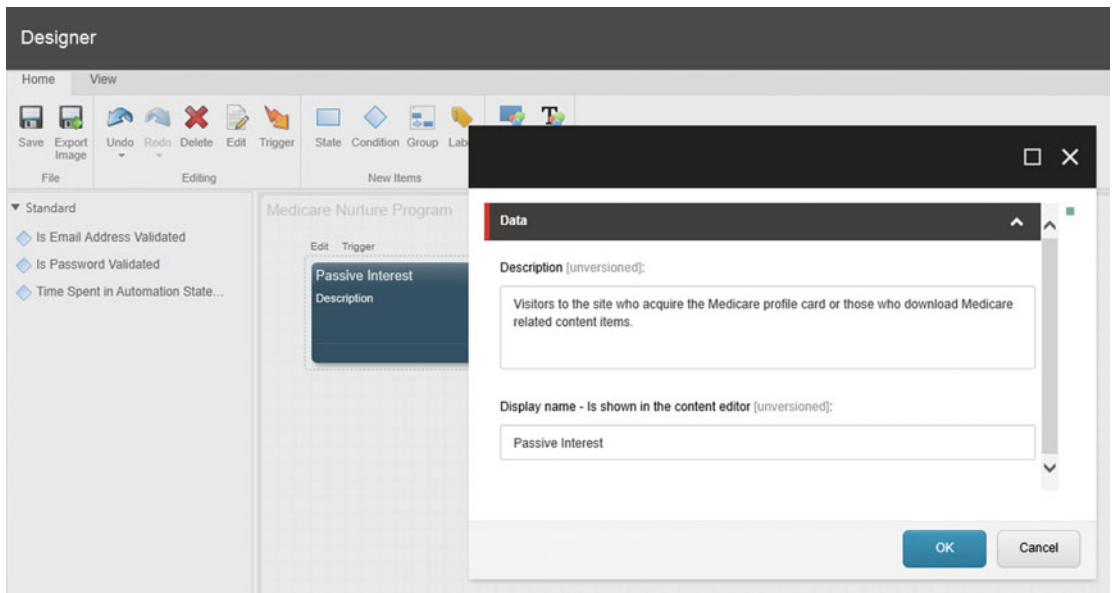
Figure 5-16. *You can add a new state to your Engagement Plan by clicking the State square icon*

5. Next we need to repeat Steps 1-4 for the other states. However, states are separated by conditions. To add a condition, hover over the state and click the diamond icon that appears below the state after you hover, as seen in Figure 5-17.

Figure 5-17. *When you hover over a state you're prompted to add conditions, as noted by the diamond simbles. Alternatively, you can drag the circle symbol onto an existing condition to make the connection*

6. After you click the diamond icon a condition element will appear below the state. Do this same process until all four of your states are created separated by three conditions, as can be seen in Figure 5-18.
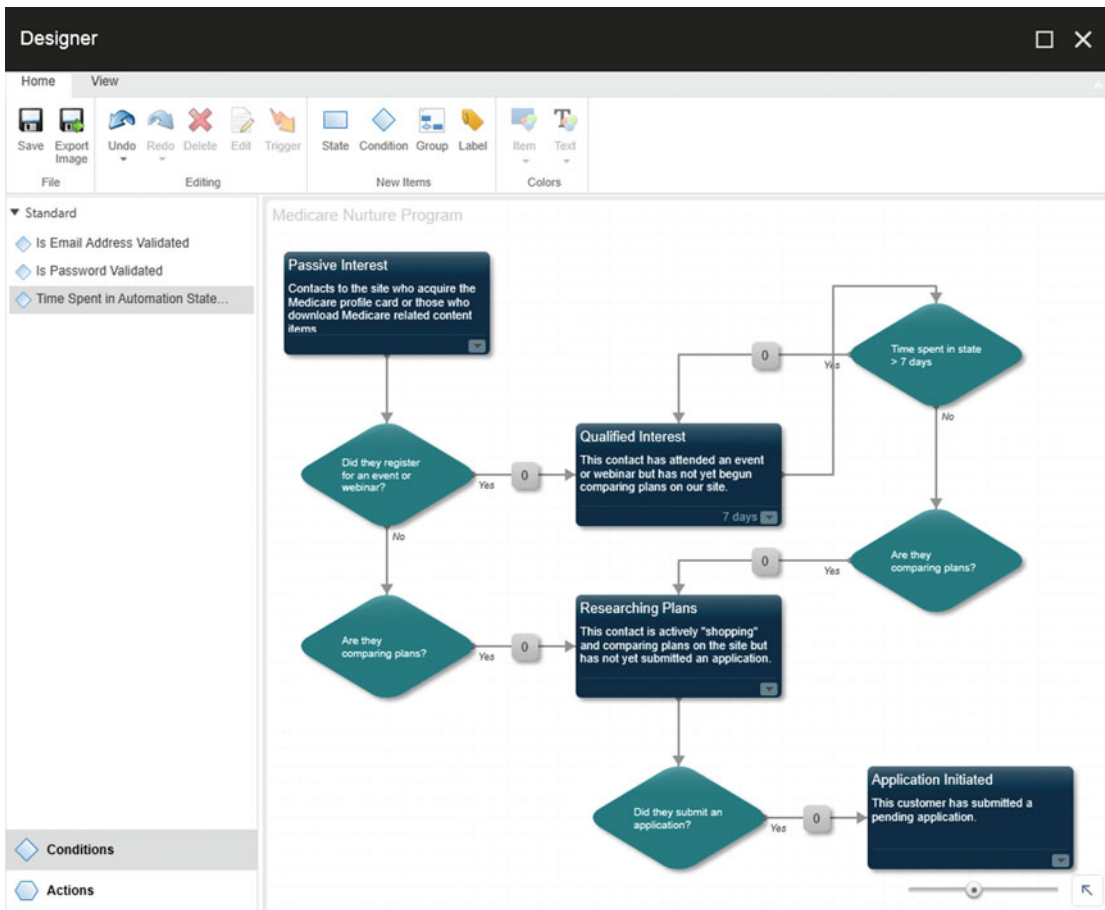
Figure 5-18. *A sample Engagement Plan that nurtures a lead*

■ **Note** You were expecting three conditions, but a fourth was needed because a contact can go from passive interest straight into "Researching Plans" without needing to register for an event first. As such, a duplicate condition is needed since it is a 1:1 relationship between states and conditions. Additionally, we'll configure a fifth in a bit used to send friendly reminders to customers "stuck" in the qualified state (been in the state >7 days), nudging them to keep progressing.

To finish our Engagement Plan we need to configure the following components:

- *Triggers*—Triggers are what the state is waiting for before it evaluates whether the customer can move to the next state or not. Triggers are either events or goals, like what we configured earlier. Simply check which events and goals the state will "listen" for. Triggers are configured on the state.

- *Rules*—After one of those events or goals has fired, rules can be set up to check if the customer is ready to move to the next state. Rules are configured on conditions.

- *Actions*—Actions fire if a rule evaluates true. Actions might be sending e-mails, creating leads in your CRM, or any number of custom actions you might dream up. There are several out-of-the-box actions you can use right away (Figure 5-19). The 0 indicator on a condition indicates how many actions have been assigned to that condition.

▼ Standard

🖉 Add or Remove Visitor from Roles

🖉 Add Points

🖉 Copy Visitor to Another Plan

🖉 Decrease the Profile Value

🖉 Edit Email Audience

🖉 Increase the Profile Value

🖉 Move Visitor to Another State

🖉 Record EMail Address as Validated

🖉 Record Password as Validated

🖉 Remove Visitor from this Plan

🖉 Send Email Campaign Message

🖉 Send E-Mail Message

🖉 Update Value on the Visitor User…

Figure 5-19. *These are the out-of-the-box actions you can add to your Engagement Plans. However, it is also easy to add your own actions to this list for more advanced scenarios*

Let's begin by configuring triggers first, and then rules, and lastly actions. Use the following steps as a guide to configuring triggers.

7. The first trigger we need to configure is on the Passive Interest state. This state is waiting for either the Event Registration goal to fire, or the Comparing Plans goal to fire. Click Trigger on the state and select those two goals (or others as applicable). Click OK.

8. The Qualified Interest state is waiting for the customer to start comparing plans. As such we'll configure a trigger similarly as described in Step 7 to wait for the Comparing Plans goal to fire.

9. Lastly, the Researching Plans state is waiting for the Application Initiated goal to fire. Configure that trigger similar to the other states in the previous two steps.

Now all the states are waiting for the right things to happen before confirming all conditions are met. Assuming all conditions are met, the customer will move into the next state of the Engagement Plan. Since goals/events fire all the time, you probably want to set up some rules to validate it's appropriate for the customer to progress.

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■ **Note**   There is a "where true" rule you can use to send the customer through to the next state. Since a rule is a required field, use this rule when you don't want one.

10. Click the condition after the first state ("did they register for an event…") and then click Edit to launch the Condition Properties window.

11. First you need to specify when you want this rule to evaluate using the following as a guide. Select Always Evaluate. Since we are not configuring a timeout the other two are not applicable.

    a. *Always Evaluate*—Evaluate the rule regardless if it was the result of a goal firing or a timeout expiration

    b. *Only Evaluate on Timeout*—Helpful when you want to wait a set number of days before evaluating if the rule is true

    c. *Only Evaluate for Subscribed Events*—Only as a result of goals or events firing

12. Second, configure the rule itself. Click the Edit Rule link within the Condition Properties window. Then, search for "goal" and set it to evaluate against the goal you are waiting for, as seen in Figure 5-20.
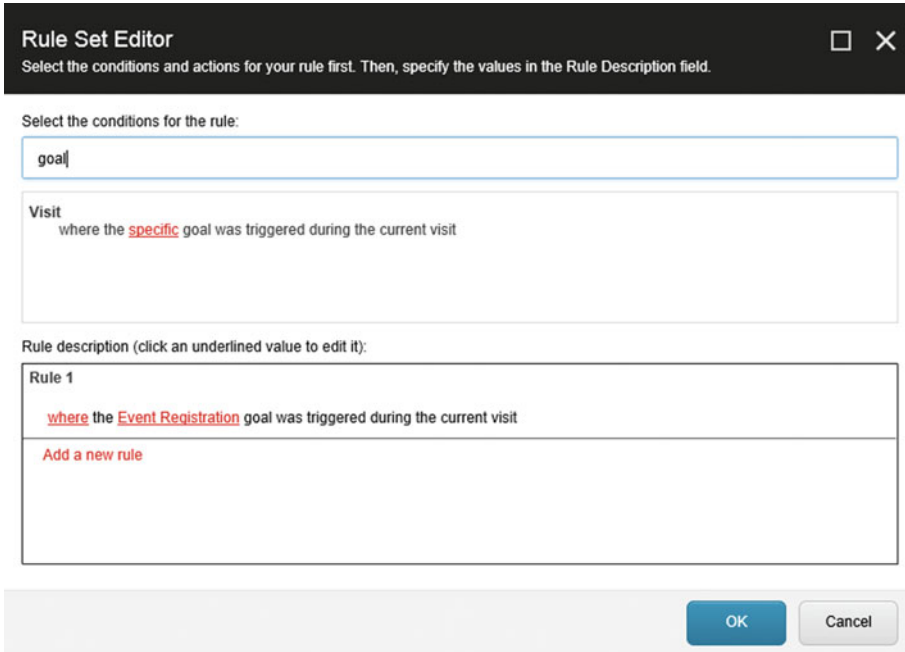
Figure 5-20. *Rules are evaluated to determine if the customer should advance to the next state in the Engagement Plan, or remain in the current state*

13. The "are they comparing plans" conditions/rules are configured similarly to the "did they register for an event" condition/rule, except they are evaluating against a different goal.

14. The "Time spent in state >7 days" condition is a bit different, however. Notice it's configuration in Figure 5-21. We want the rule to Always Evaluate, because if the timeout hasn't expired we want the second condition to check for the Comparing Plans goal. Otherwise, we could use the Only Evaluate on Timeout setting. The rule itself is simple; just check if the timeout has expired or not.

Figure 5-21. *Another helpful rule—wait until a period of time has expired before evaluating. This is helpful when you want to target customers "stuck" in a less desirable state*

15. Next we need to actually configure the timeout. If seven days have gone by, we want to fire the trigger to evaluate the condition. Simply click the arrow at the bottom-right side of the state and enter 7 days, as shown in Figure 5-22.
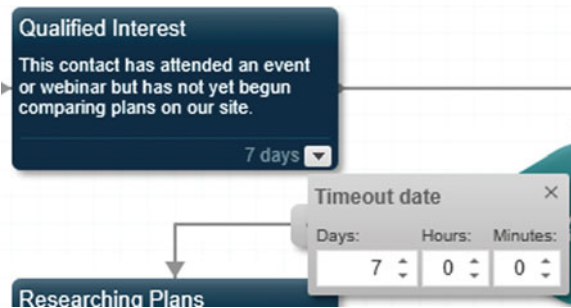
Figure 5-22. *Set the timeout before the rule is evaluated*

■ **Note** If the rule does not pass, the customer will stay in the current state until the goal is fired again and the rule will be tested again. This will happen perpetually until the rule evaluates true.

That does it for the conditions and rule. Next we need to configure actions. Again, actions are optional things that can happen as the customer is moved from one state to another. For example, you could send the customer an e-mail if he has been sitting in the "qualified" state for more than seven days. Use the following steps to configure a simple action:

16. Click on the 0 number next to the Yes to show the Actions dialog (Figure 5-23).
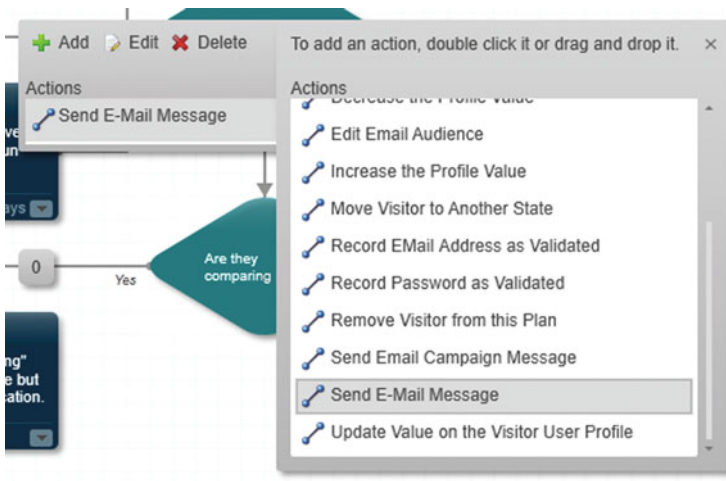
Figure 5-23. *When you click the 0 next to the condition the Actions dialog will appear, allowing you to add actions that fire after the condition has been met*

17. Click Add in the Actions dialog and then find and select the Send E-Mail Message action. Double-click the action to add it to the list.

■ **Note** Current Visitor's Email Address is the default address that will be used, that of the currently logged on user who's enrolled in the Engagement Plan. You can change this value to Fixed Email Address if you need to specify a static address.

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18. Double-click the e-mail action again to load the e-mail properties dialog. Fill out all the properties and click OK.

■ **Note** Unfortunately, you cannot use dynamic tokens in e-mails out-of-the-box, such as the customer's name, which is dependent on context. Fortunately however, a fantastic member of the Sitecore community found a way to extend this e-mail action to accommodate tokens, thus allowing for more personalized, context sensitive e-mails. Check it out here: `http://bit.ly/1GXqFm6`.

The last step in creating the Engagement Plan is to deploy it so it can be used.

19. On the Home Tab, below Edit, click Deploy

Now your Engagement Plan is ready for prime time! However, we still have a couple important steps to consider. Namely, how do we get visitors into the Engagement Plan in the first place? As a reminder, there are three main ways:

- *When they are associated with a campaign*—Campaigns have an Enroll in Engagement Plan property. Enrolling visits into an Engagement Plan is as simple as setting which plan and which state you want them enrolled into from this property. Note, however, that only known, logged-in contacts can be added to a plan so your campaign is limited to authenticated scenarios (such as driving the customer into their shopping cart, where you know they'll need to log in first).

- *When they fill out a Web Forms for marketers form*—You'll see how easy it is to create forms in Chapter 6. Forms can have actions too, and there's an out-of-the-box action to enroll the contact into an Engagement Plan. The nice thing with this is that could be a new contact, such as someone who just registered to download a whitepaper and gave us their contact information.

- *When a goal fires*—Wouldn't it be nice if when a goal fires you could add the contact into an engagement plan just like you can with campaigns? Sadly out-of-the-box you can't, however the Launchcore.net codebase has a goal rule in the solution you can steal! Just have your developer download that source from `http://launchcore.net` and copy that code into your solution so you can do the same. See Figure 5-20 for what that would look like.

- *Programmatically*—You tap into the API to enable all other scenarios. For the Medicare example this was the chosen path because we wanted contacts assigned to a persona to be registered into the Engagement Plan. This was achieved by tying into the pipeline and adding this extra step.

The last and final step in configuring your Engagement Plan is to remove the customer, at some point, from the plan itself. In the Medicare example, this is either when the application is approved, when sales receives confirmation of a loss, or when an opt-out is received from an e-mail, signifying the loss.

Upon approval of the application, it's best to programmatically remove the user from the plan. In the case of the sales representative getting confirmation of the loss, that rep can log in to Sitecore and "supervise" the plan, find that contact, and remove them. Or, more preferably, you tie into an action in their CRM and remove the contact programmatically to make it *much* easier. This would likewise be similar for an opt-out response.

Basically, the programmatic removes is the only practical approach. For this example, that's true, but for yours, not necessarily. See the example extended in Figure 5-24. An Engagement Plan can remove users itself if you tell it to with the Remove Contact action. You can use this action as an out-of-the-box way to remove contacts from an Engagement Plan.
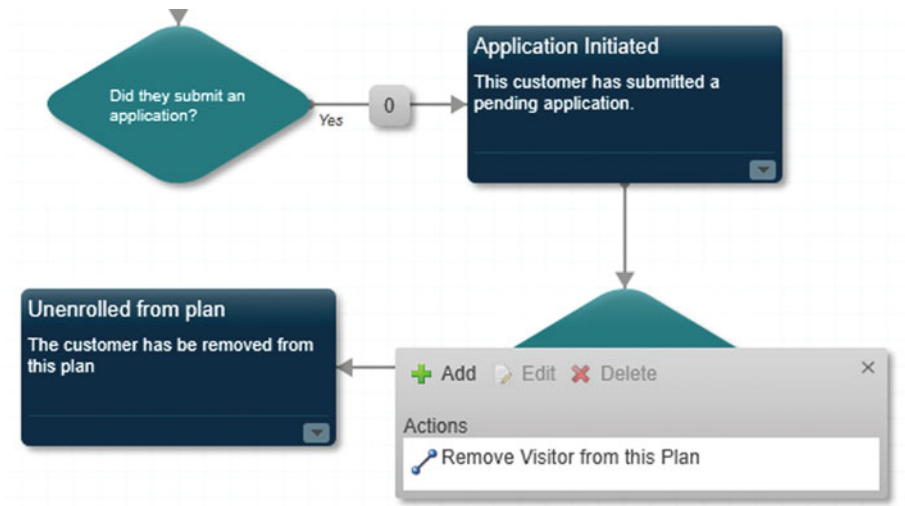
Figure 5-24. *Don't forget to remove customers from your engagement plans or the reporting will be less meaningful over time*

Email Experience Manager

The Email Experience Manager (EXM) is a great solution for small or medium sized businesses for e-mail delivery. You can send hundreds or thousands of e-mails through EXM at a time. EXM can be configured to use Sitecore's hosted delivery service, or you can configure your own delivery servers to facilitate the e-mail delivery. You need to be licensed to use Sitecore's hosted delivery service, and it can be accessed from the Launchpad ➤ App Center ➤ Email Delivery.

■ **Note** EXM is one of the biggest areas of investment by Sitecore in 2015/16. Today it is an "up and comer" best suited for small businesses (thousands of recipients, not millions). Its coverage is limited in this book, knowing the content will quickly be out of date by early 2016. Stay tuned on `sitecore.net` for product updates and `sitecoreconfig.com` for my personal EXM blog updates.

You access EXM from the Launchpad. It requires a separate download/install (download can be found here: http://bit.ly/1INGdal). When you first open EXM you'll be on the dashboard showing e-mail performance for past e-mails, as well as a left pane for more options. The large Create button, as seen in Figure 5-25, can be used to create new messages.
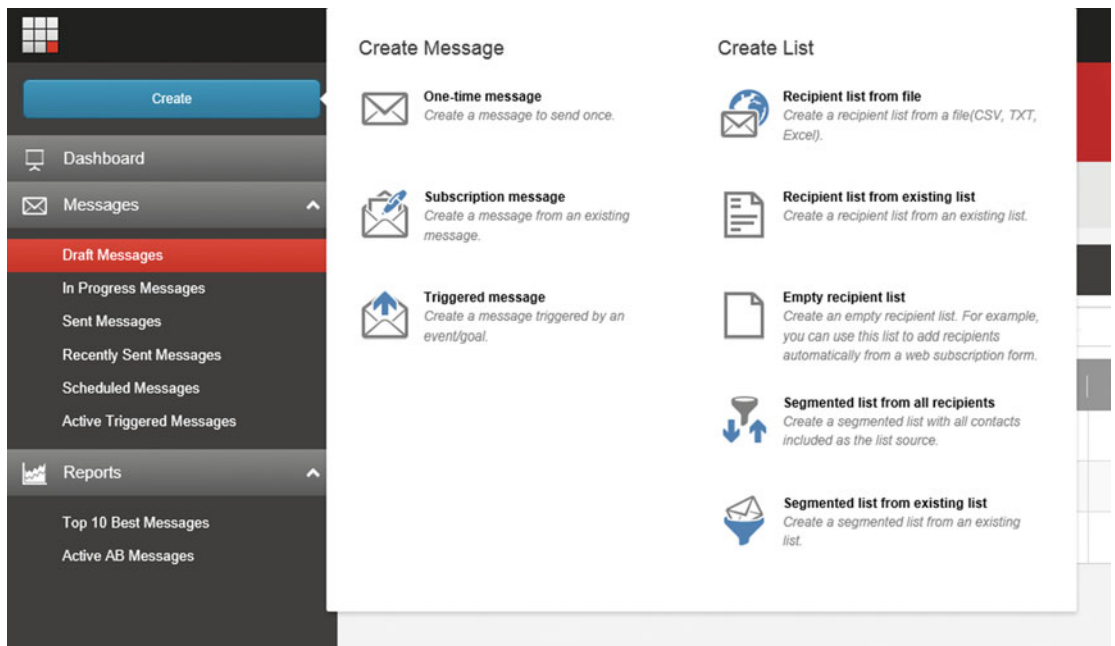
Figure 5-25. *You can create one-time messages, subscription messages such as newletters, or triggered messages as a result of a goal completion*

E-mails are created from lists of contacts. Lists are managed in the List Manager, separately accessed again from the Launchpad. Typically, you might buy a list of contacts in a CSV file that you would upload to the list manager to drive your e-mails. Often you also will manage your own lists. For example, when a customer fills out a form on your site, you may want to at that time add them into a list to enroll them in an e-mail campaign, such as a weekly newsletter. You will be asked to select which list of e-mail addresses you want to use on the Recipients tab on the new e-mail creation wizard, as seen in Figure 5-26.
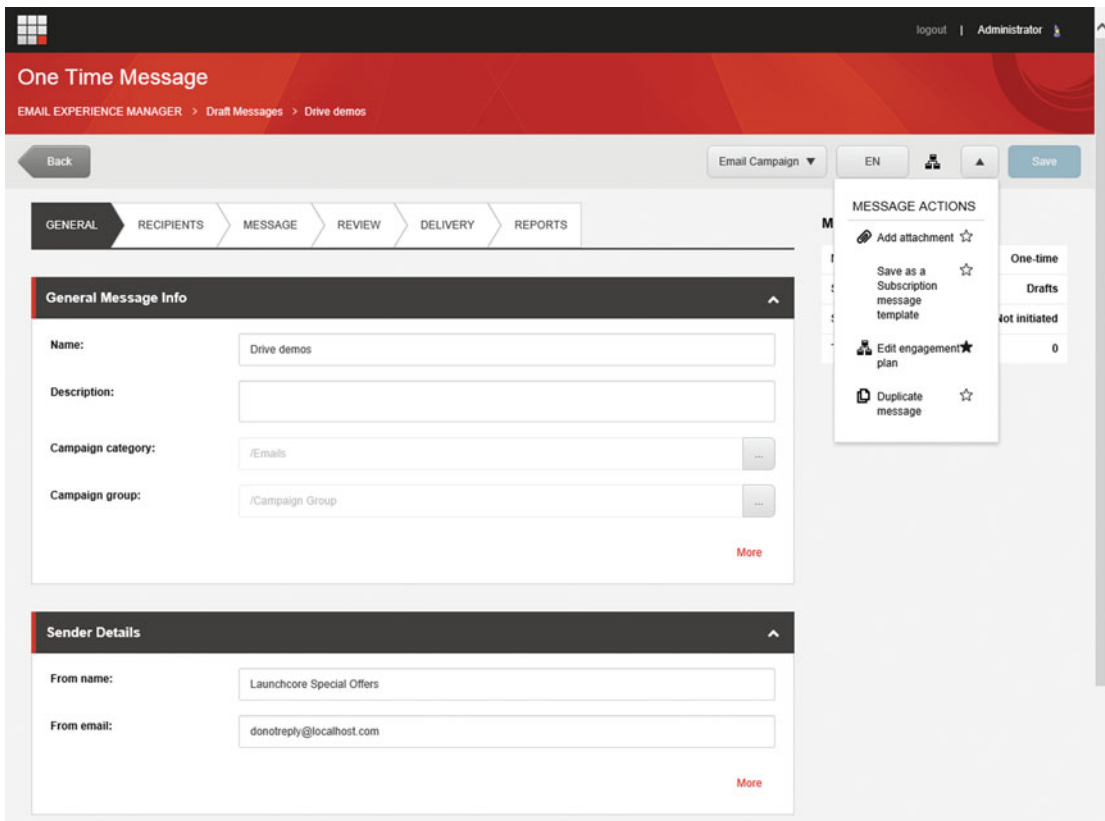
Figure 5-26. *The new message wizard is very easy to use. Simply specify your list, enter the message content, deliver the message, and await the analytics*

The Message tab (Figure 5-26) is where you draft your e-mail message. The tab features a rich text editor. Also, you can toggle which campaign you want the e-mail associated with, which language your message is in, and as you can see in Figure 5-26, there are Message Actions allowing you to add an attachment, save as a template, edit the Engagement Plan, or duplicate the message.

When EXM sends a message all respondents are entered into a rather elaborate Engagement Plan to track their response. You can see this Engagement Plan in Figure 5-27, and you can edit it to your liking from the Message Actions menu discussed previously. Enrolling recipients into a fully customizable Engagement Plan gives you full flexibility as to how your want to engage those on the list; taking their interactions with your brand hopefully well beyond just an e-mail message.
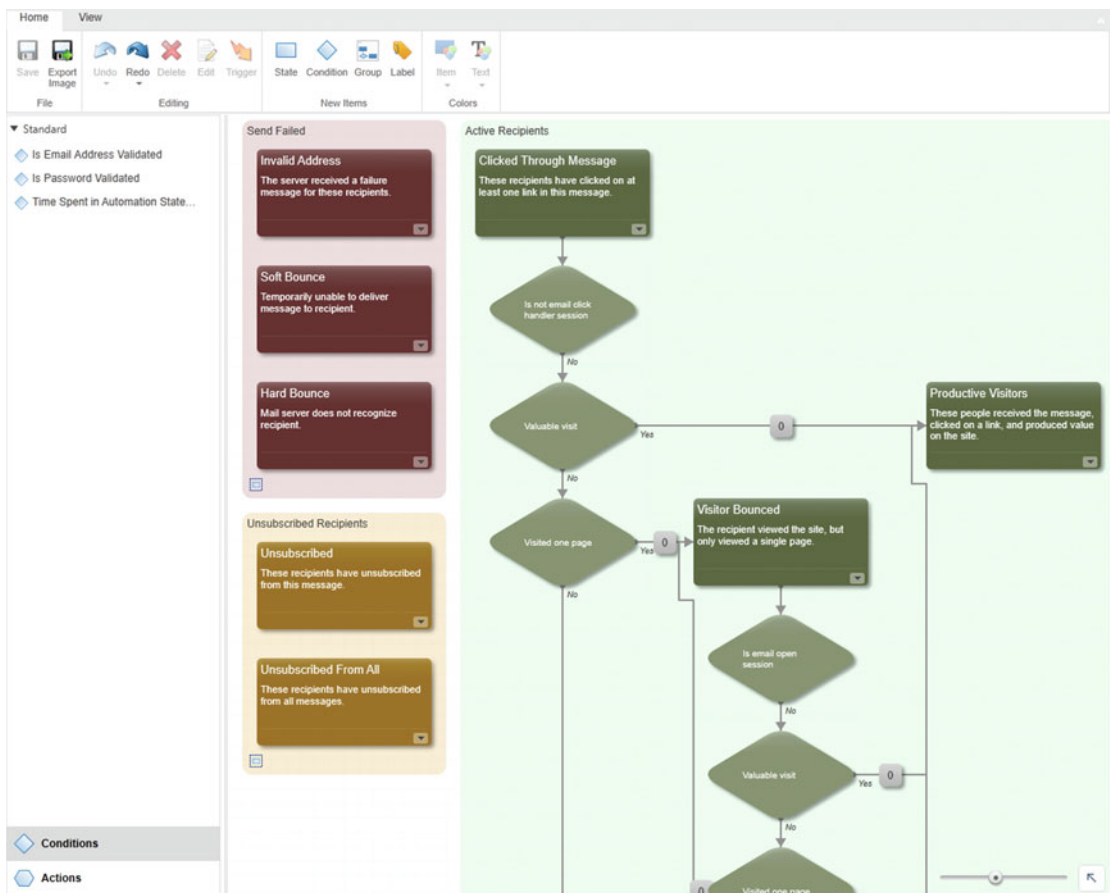
Figure 5-27. *Recipients are entered into an Engagement Plan so you have full control over what happens after the message is delivered*

Summary

This chapter was all about analytics when you think about it. The chapter was about knowing what is happening in your digital experiences. Are your customers finding them helpful? Are they performing according to your expectations, or are there areas that need to be improved? Tracking events, failure events, goals, campaigns, and outcomes provide these insights. With all these being tracked, we'll see in Chapter 7 these data points come to life—a chapter exclusively on analytics.

Beyond analytics however, is a concept called "marketing automation". It's all the buzz these days. Events, goals, and so on, form the foundation of automation, but Engagement Plans are the basis of that automation. Engagement Plans send your customers through a workflow, where you're trying to get them to be an ever more valuable customer. You can use targeted content personalization to "nudge" the customer to take that next step, and progress through your plan for them.

Finally, this chapter concluded with a short tutorial of the Email Experience Manager (EXM). EXM is a great tool you can use to deliver newsletters or one-off e-mail blasts. A lot more functionality is coming to EXM over the coming year and it is a great area of Sitecore to keep your eyes on for new features and capabilities.

CHAPTER 6

■ ■ ■ ■

Web Forms for Marketers

Well here we go, yet another highly touted Sitecore module, Web Forms for Marketers (WFFM for short). WFFM helps a marketer do what marketers often do the most when it comes to digital experiences. WFFM makes it easy to set up lead capture pages. Are you creating an e-mail campaign through the Email Experience Manager (as discussed in Chapter 5), but you want to link that customer to a digital experience where you hope to capture some data and a lead? This is a *great* use case for WFFM. Do you want a small Download Now button on your home page connected to a text box asking the users to enter their e-mail address? Yet another creative WFFM use case. Do you want to ask a developer for help every single time you want to collect an e-mail address? Oh heck no!

Now, WFFM has certainly many uses beyond simple lead capture. You can use WFFM for user registration forms, event registration forms, blog commenting forms, and so on and so forth. These are more common developer use cases, since what marketer wants to configure the registration process? None, I bet. There are countless practical uses for WFFM. However, lead capture has a special place in a marketer's heart and so it's an important use case to highlight.

WFFM forms are simple to create. Simply create a page (or add one to an existing page), add the WFFM component to that page, configure the fields you want to gather, and tell WFFM what to do with that data once it's submitted. *Very* simple indeed!

As you have guessed by now, this chapter teaches you how to apply oil to your elbow—or should I say create simple, effective, and ROI-laden marketing forms. It's so easy!

Overview of Web Forms for Marketers

WFFM is fundamentally just another component you add to a page and configure. Like other components, you must first add the component to a placeholder's allow controls setting before you can add a WFFM form onto a page. Thereafter, you will notice an Edit Form in Form Designer icon within the component toolbar. This icon launches the Form Designer, as you have probably guessed by now.

Figure 6-1 shows this Edit icon, as well as a form used to capture lead information before routing users to download the whitepaper they are requesting. Simple data capture forms, such as this one, are the core use case for WFFM. It is recommended to use a developer to build custom forms for more complex use cases. A developer can make WFFM do a lot of things beyond simple data capture, but you must balance the maintainability promises that make WFFM so compelling. The bottom line: A form such as the one seen in Figure 6-1 can literally take 10 minutes for a non-technical person to create, but don't expect it to launch the space shuttle! If you want to launch the space shuttle, check out Michael Reynold's series on WFFM for developers, an excellent resource: http://bit.ly/1J5lymq.

Figure 6-1. *WFFM comes with its own component that you simply add to your page*

■ **Note** I'm not trying to sell WFFM short! WFFM is a powerfully helpful tool when used appropriately (note all the excellent submit actions in Figure 6-8). However, it is common to see people push it well beyond what it's intended for, such as having 100+ fields with complex display rules, process-like tabbed steps, field-level "security", and so forth. In these cases what you really need is a custom developed component, not WFFM. Notice in Figure 6-2 a graph that shows the tradeoff of the diminishing value of WFFM and when you should consider enlisting the help of a developer.
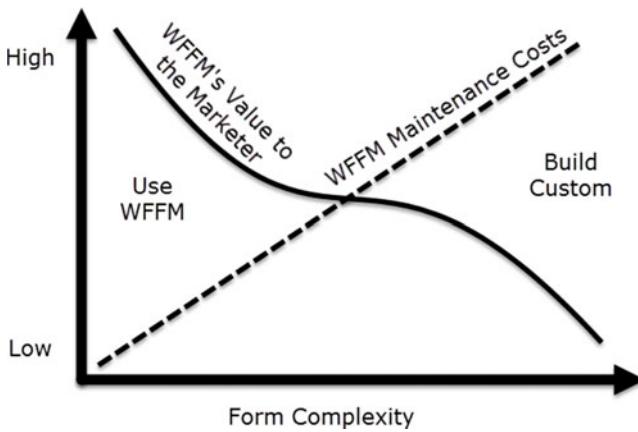
Figure 6-2. *WFFM is easy to use and fast to implement, but you may want ot consider a custom component for forms with a lot of complex rules*

■ **Note**   Like any other component, WFFM can be personalized! Different personas may have different data you want to collect. Using concepts from Chapter 3, you can easily apply personalization rules to your forms to show/hide different variations of the form based on the needs of your customer.

Another way to create a WFFM form is to create it from the Content Editor treeview (Figure 6-3). When you add the WFFM component to a page, as seen in the previous figure, what happens behind the scenes is a new item is created below System ➤ Modules ➤ Web Forms for Marketers ➤ Website. Every WFFM configuration you make is really just editing the item in this location.
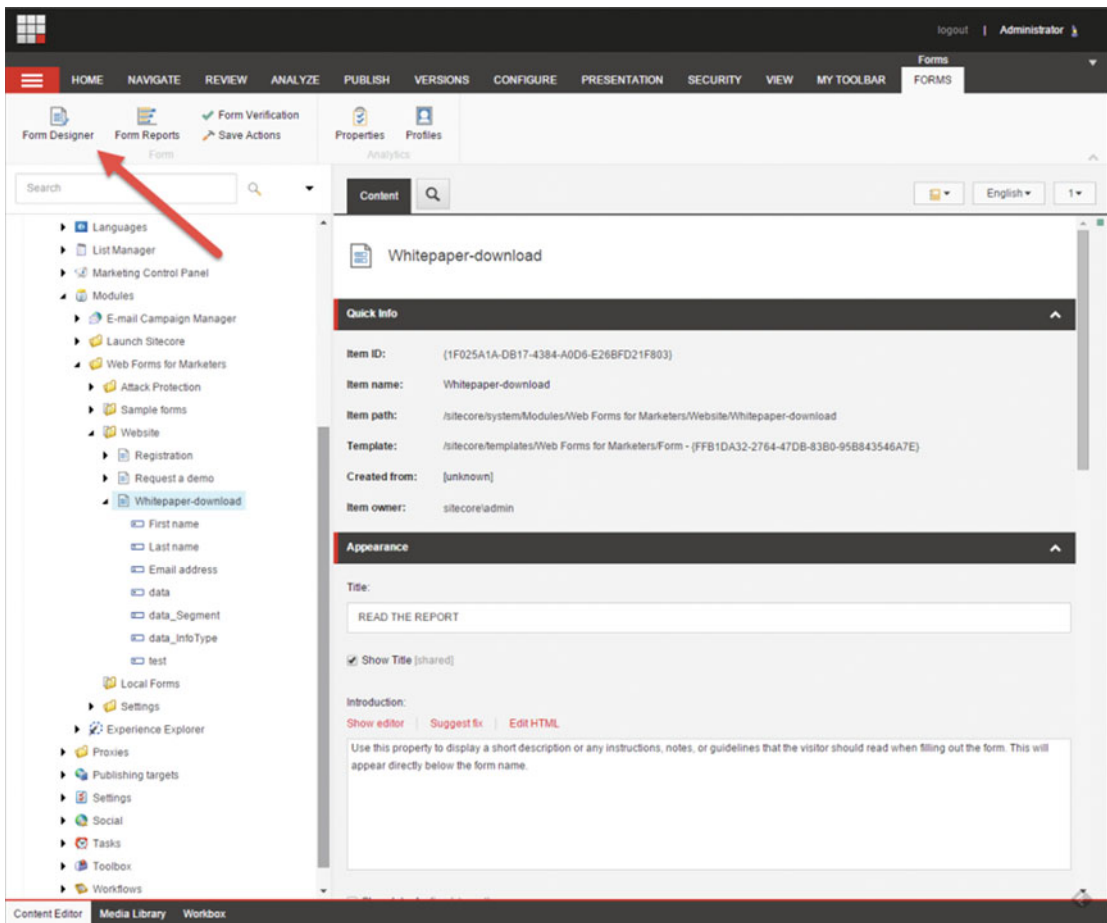
Figure 6-3. *You can launce the WFFM Form Designer either from the Experience Explorer or through the Content Editor*

Notice in Figure 6-3 how a WFFM form item is selected. When selected you'll see a Forms tab bar in the Ribbon with the following options:

- *Form Designer*—This button launches the Form Designer, where you can add/ remove/configure fields, validation, and submit options.

- *Form Reports*—There are several reports that allow you to see how many times the form was submitted, what fields are commonly filled out versus left blank, as well as dropout counts (Figure 6-4). More on analytics in Chapter 7.
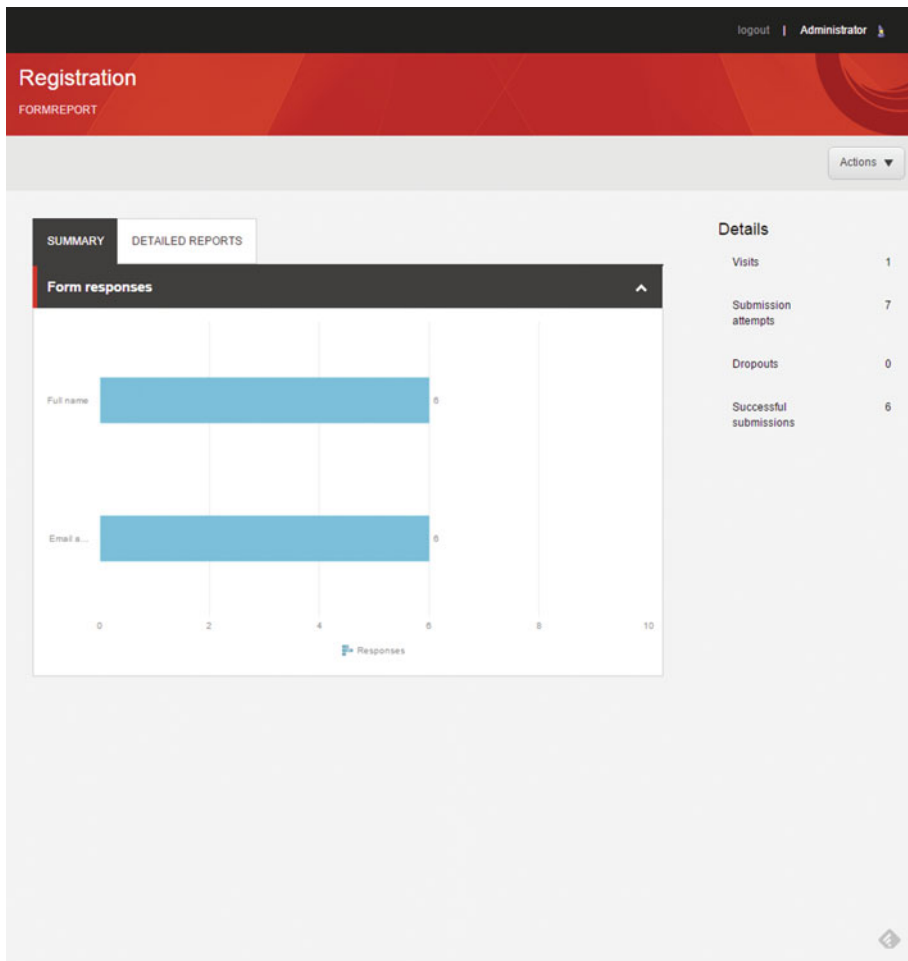
Figure 6-4. *WFFM also comes with its own set of analytics for reporting purposes*

- *Form Verification*—There is an out-of-the-box verification action that checks the form for malicious data when it's submitted. There are several more that can be optionally added, such as checking if a user is in a role, or verifying a password. These verifications must be satisfied before the submit action can proceed.

- *Save Actions*—Save actions take the data in the form and do something with it. There are many to choose from, such as creating an item in Sitecore, sending an e-mail, and even CRM integration to create leads in your CRM, for example.

- *Properties*—The Properties dialog allows you to associate the form submission with a campaign (Figure 6-5). Additionally, you can optionally track dropout data to capture form data that is not submitted. This gives you a feel for how your users are interacting with your form.

Figure 6-5. *Oftentimes you will want to associate a WFFM form submission to a goal setup in the Marketing Control Panel*

- *Profiles*—This dialog lets you associate a profile card to the form item, similarly as you would a page as described in Chapter 3.

■ **Note** Notice the Action drop-down in the upper-right corner of Figure 6-3. From there, you can easily export the form submission data to Excel or XML files for reporting or processing purposes.

The Form Designer itself can be seen in Figure 6-6. A form has the following hierarchy:

- *Title*—You can optionally add a form title when Title is enabled in the ribbon.

- *Intro*—You can optionally add a form introduction paragraph or other rich text (by inserting HTML) when Introduction is enabled in the ribbon.

- *Sections*—A form is divided into one or more sections. By default, there is only one section, but you can add more by clicking the Add Section link.

- *Fields*—You can add one or more fields within a section by clicking the Add Field link. Also, when a field is selected the left settings panel will update showing that field's settings.

- *Submit*—You can have one and only one Submit button assigned with one or more submit actions. You can assign submit actions by clicking the Edit button within the Save Actions setting in the left settings panel after you have selected the Submit button itself (Figure 6-7).
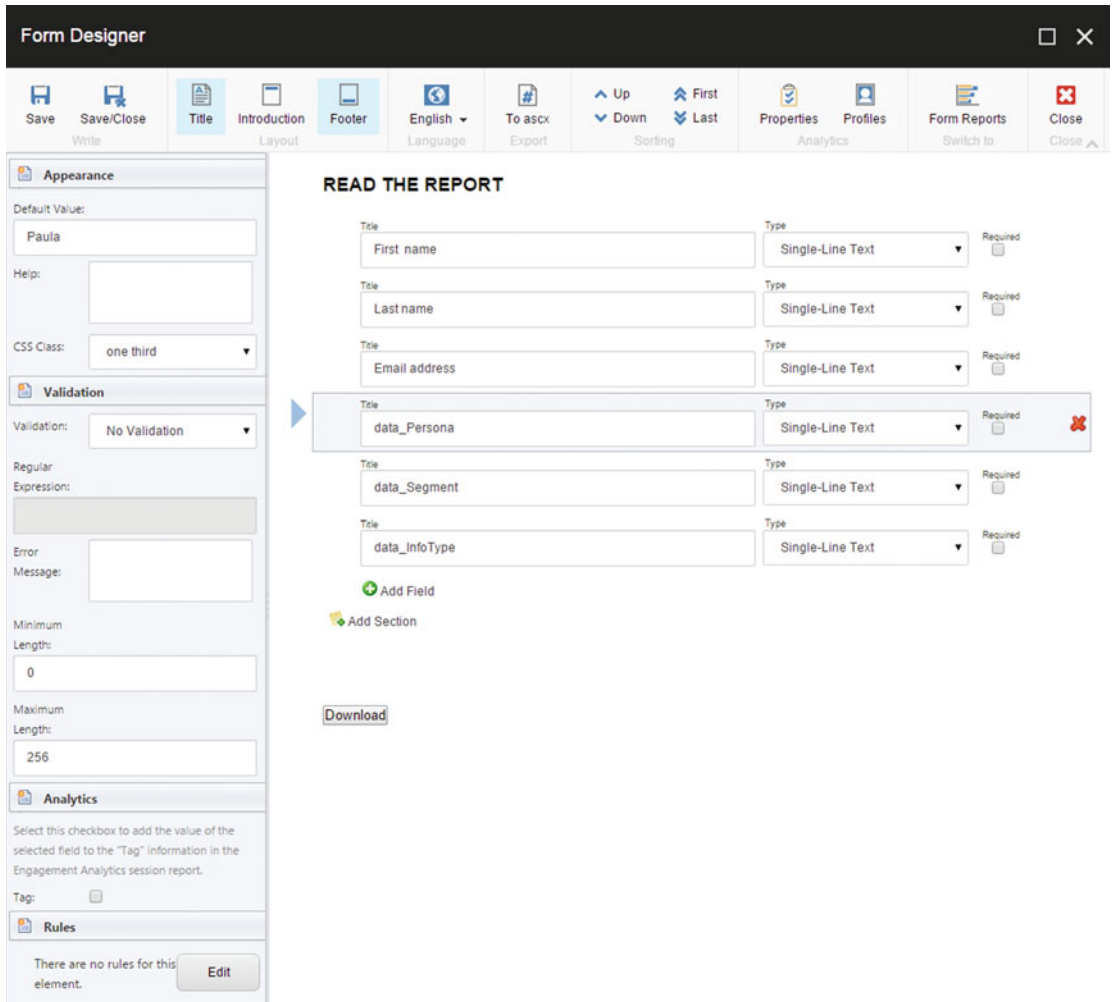
Figure 6-6. *The Form Designer—just click Add Field!*
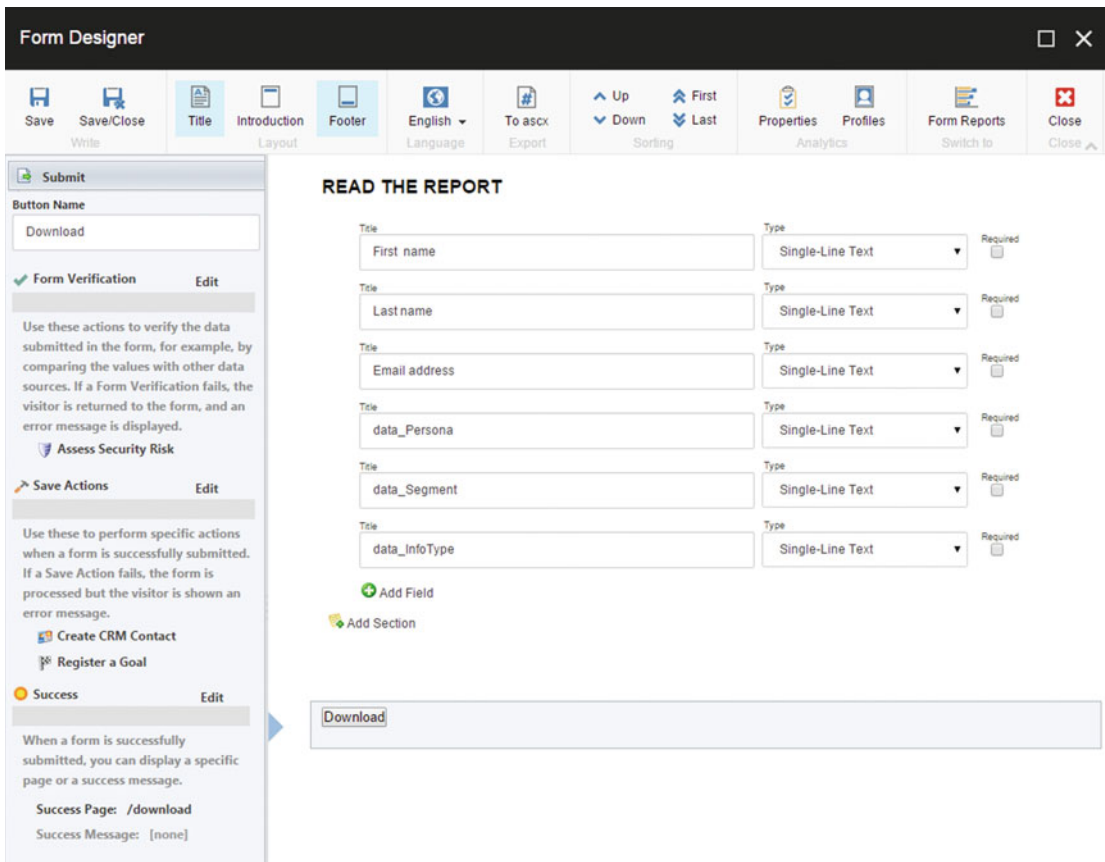
Figure 6-7. *When you select the Submit button you can start configuring save actions from the left panel*

There are a few less than obvious ribbon buttons that may be worth explaining.

- *Layout*—You can enable/disable the title, introduction, and footer text placeholders. You can add any kind of text you want into these placeholders, even HTML/ JavaScript if you want to some advanced displays.

- *Language*—A form item is like any other item, in that you can have multiple versions of that item, either for testing purposes or for multilingual purposes. The language drop-down can be changed to different languages so you can translate the form elements, such as button name and title into other supported languages.

- *Export*—Did you build a WFFM form but your requirements changes adding complexity you didn't originally anticipate, thus forcing you to go down a custom route after all? Don't start from scratch; export the form to an ASCX file so your developers don't have to recreate the wheel.

- *Sorting*—Move fields or sections up or down the list.

- *Analytics*—Same settings as described in the Content Editor.

- *Switch To*—Same settings as described in the Content Editor.

■ **Note**   At this point you have probably noticed the left pane in addition to the top ribbon. The left pane shows settings for the selected field or the Submit button. In Figure 6-5, you see the settings for the data_Persona selected field.

When you select a Submit button you will notice several additional settings appear in the left setting pane (Figure 6-7). Form verification and submit actions have already been introduced; this is simply another way to find these settings. However, an additional setting that is helpful is the Success setting. What should happen when a user fills out the form? You can optionally send the user to a different page, such as a confirmation page. Or, directly inline the form can be replaced with a success message, such as a thank you message. In the case of this example, the user would be redirected to a page that starts the download of the whitepaper. Unfortunately you can't redirect to a document; it must be a page. In these cases you would have JavaScript on the page that yet again redirects the user to the download upon arrival of the user to the download page.

As you can see in Figure 6-8, there are many, many form save actions to choose from. Most are quite self explanatory. However, below are some important actions you will likely be using a lot:

- *Add the contact to a contact list*—Lists can be set up in the List Manager, used primarily in conjunction with Email Experience Manager (as described in Chapter 5). WFFM can help you administer these lists when customers submit their contact information.

- *Account management* (create user, change password, user login, logout, update contact details, edit role membership)—Need to build registration/login capabilities? This is a create use case for WFFM due to a broad swath of save actions that help you create users, assign them to roles, and provide password management capabilities.

- *Create item*—Do you have a news article page template and you want to track comments? Commenting is a great use case for WFFM as well as this action. You can use the Create Item action to create items, such as a comment, below the news article, for example.

- *Enroll in Engagement Plan*—As described in Chapter 5, Engagement Plans can be set up to help drive your customers to a desirable outcome. A form submission is often the catalyst to enroll a customer in an engagement plan.

- *Register a Conversion/Campaign*—You will most likely want to associate the form submission to a campaign and/or conversation to feed into your analytics reporting.

- *Create CRM Account/Contact/Entity*—CRM and digital web experiences are almost always integrated. There are two very important modules (one for Microsoft Dynamics and one for Salesforce) separately installable to help you integrate with your CRM system.
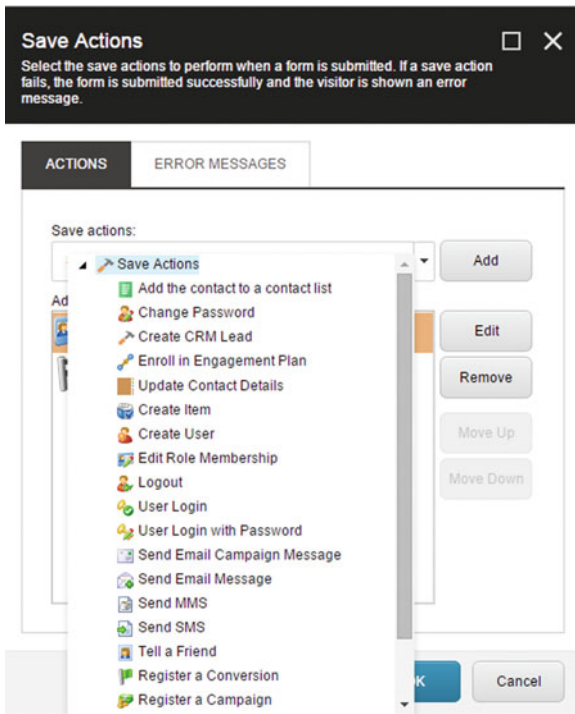
Figure 6-8. *There are many, many out-of-the-box save actions!*

■ **Note** CRM add-ins for Sitecore can be found here: http://bit.ly/1T8ULto (Microsoft Dynamics), and here: http://bit.ly/1KT4SNk (Salesforce).

Do you not see an action you wish was there? It is very easy for a developer to create custom actions for your forms. The basic process is to create a new Action item to register your action, create a .NET class that is executed when the action is executed, and to create a custom settings/properties page so marketers can configure the action. Read more here: http://bit.ly/1Gsaheu

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WFFM INSTALLATION

WFFM is a module that you install over the top of your existing Sitecore instance. Like just about anything with Sitecore, the process involves installing a package and then manually changing a slew of config settings.

The process is elaborate and thoroughly documented for each release. As such, it makes the most sense simply to direct you to the installation instructions for the most recent update, which can be found here: http://bit.ly/1HHKsmz.

Building Your First WFFM Form

Now that we have an overview of WFFM, it's time to build a form from scratch. The example we'll work through involves an Event Registration form. We want to enable customers to browse upcoming events and to register for events that interest them. The setup assumes an event data template exists with a component that queries/renders events. Each event will store registrations as child items below the event itself. When an event is submitted we will send a confirmation e-mail to the registrant. Additionally, we want to create a new lead in CRM for a sales associate to follow up on. Let's begin!

Adding a Form to a Page

The first thing we need to do to start building a WFFM for is to add the Form component to our page. You will want to launch the Experience Editor to do this. Create a new page if you don't already have one.

As we discussed in Chapter 2, you will need to ensure that the MVC Form component is an allowed control of the placeholder you want to add your form into (use Form if your solution is an ASP.NET Web Forms solution—less common and not a best practice). If it's not you won't see it in the list. If you select your placeholder, you can edit the allowed controls by selecting Edit the Placeholder Settings button from the context menubar. From there you can select the Edit button and browse to Renderings ➤ Modules ➤ Web Forms for Marketers and you'll see the MVC Form item you can add as an allowed component.

■ **Note**   You won't see the Edit the Placeholder Settings button unless all components are first deleted from the placeholder.

With that setup complete, add the MVC Form component into the placeholder. Upon doing so you will be prompted to provide a name for your form (Figure 6-9). Additionally, you can select to create a blank form or you can copy an existing form. In most cases you will select to create a blank form.

Figure 6-9. *Give your form a good name and optionally copy an existing form*

■ **Note**   There's no easy way to add an existing form to a page. You can only create a copy of an existing form when you're in the Experience Editor. In many ways this is unfortunate (such as if you accidentally delete a form off the page and want to put it back on that page). The alternative is to set the presentation detail of the page and add the form from there, and thereafter manually set its datasource to the existing form item. This way of adding a form is more advanced and generally not a recommended practice, but it can bail you out when in a pinch.

Once you click Next, you will be prompted to create a new goal or associate the form submission to an existing goal. Goals, as discussed in Chapter 5, are great analytic tools to keep tabs on how your site is performing. An event registration is an obvious goal for this example, as can be seen in Figure 6-10. Additionally, you are also prompted to enable/disable form dropout tracking. Form dropout tracking does more than the obvious, such as tracking how many people visited the form and didn't click the Submit button. It also tracks how they interacted with the form. Perhaps they started filling out the form but became overwhelmed with the 75 fields you want them to fill out. If they filled out the first 20 and then gave up, Sitecore will actually save those 20 so you can see that data and where they got hung up. It's kind of sneaky when you think about it!

Figure 6-10. *When you create a new form you are expected to associate that form to a goal for analytics purposes*

After you click Next, you'll see a confirmation page from which you can click Create. Hereafter, you should see your form on your page within the placeholder you selected!

■ **Oh Snap!** Unfortunately you probably don't see your form! ☹ Call it a bug; call it a feature; I'm not quite sure. Sometimes if you save the page at this point and come back you'll see your new form component where it should be. Often you still won't. If this is what you are experiencing I recommend you start over, but this time first delete all other components out of the placeholder before adding the MVC Form component. This is the surest way to getting it to consistently work.

Now that your form component is on the page, you can launch the Form Designer by clicking the Edit Form in the Form Designer icon on the context menu (Figure 6-11).
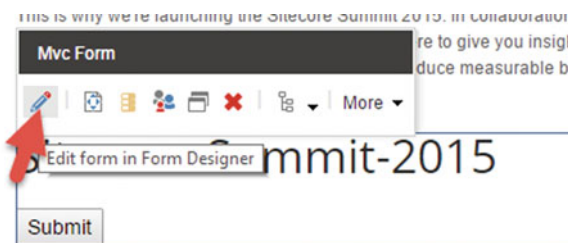
Figure 6-11. *Launch the Form Designer by clicking the pencil icon*

If you created a blank form you will notice that the Form Designer is blank as well. You can start adding fields by clicking the Add Field link. You'll notice also that after your first field you can add multiple sections. In the case of this example, I will be adding two sections: registration details and e-mail preferences.

The first two fields I need to add in the Registration Details section are First Name and Last Name. I can provide those strings in the Title field, and then I need to select and appropriate field type. You can see in Figure 6-12 there are many field types to select from. This is a good thing. Different field types display differently (e.g., text box vs. drop-down vs. radio buttons), but they also have different out-of-the-box validators to control format (e.g., telephone and number types).
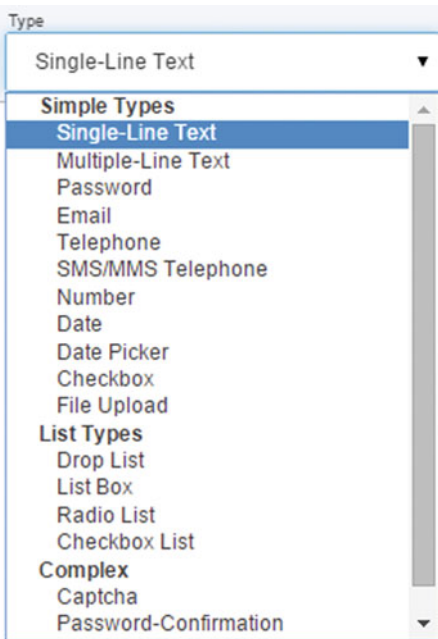
Figure 6-12. *There are many out-of-the-box field types to chose from, and most come preloaded with the appropriate field validators*

Adding Fields to the Form

Table 6-1 shows the fields I will be adding and their types.

Table 6-1. *Field Settings*

Field Name	Section	Type
First Name	Registration Details	Single-line of text
Last Name	Registration Details	Single-line of text
E-mail Address	Registration Details	E-mail
Company	Registration Details	Single-line of text
Title/Role	Registration Details	Single-line of text
data_Persona	Registration Details	Single-line of text
data_Topic	Registration Details	Single-line of text
Contact Me About	E-mail Preferences	Checkbox list
Contact Frequency	E-mail Preferences	Drop list

All of these fields are pretty self explanatory, with the exception of the data fields and the list types. In our example we want to create a CRM lead when the user submits the form. However, we want to load that lead with helpful information about the user. Obviously we want to send basic data, such and the name and e-mail address, but Sitecore has other helpful context that might benefit the sales associate when they make the call. Perhaps there is personalization information you want to pass along or a lead topic. We're going to use hidden `data-` fields simply as storage containers for our create lead save action. We can enter a default value into these `data-` fields by selecting the field and then entering a default value in the left pane that appears. Additionally, we can hide the field from the user by clicking the Rules/Edit button and adding the Hide Element rule to that field.

■ **Note**   At the time of writing this, the Hide Element rule unfortunately wasn't working. It apparently doesn't do anything! I wrote a blog post on how to get around this bug. Since it is a bit of a hack, and since I'd have to assume a fix is forthcoming, I didn't include the workaround in this chapter. Check it out here: http://sitecoreconfig.com/2015/08/21/sitecore-web-forms-for-marketers-hidden-fields/.

The other interesting fields in the example are the List Type fields. List Type fields populate values for drop-downs, radio buttons, and checkboxes. The cool thing about these lists is they can be static or dynamic. If you know the values you want for your drop-down you can simply enter them. Or, you can enter a query to query items in Sitecore to retrieve them dynamically.

Notice your options in Figure 6-13. When you set a field type to Drop List (drop-down), for example, you can click the ellipses button in the left pane to enter or select what the values should be. There are five options by default:

- *Manually entering names*—Use the +/- signs to add/remove item text manually (Figure 6-14).

- *Selecting Sitecore items*—Browse to a path in Sitecore whose children represent the items you want to appear in the drop-down.

- *Choosing from three query options (XPath/Sitecore/Fast)*—Advanced options for complex queries. This is the most dynamic option, as the results may be different each time a user views the form.
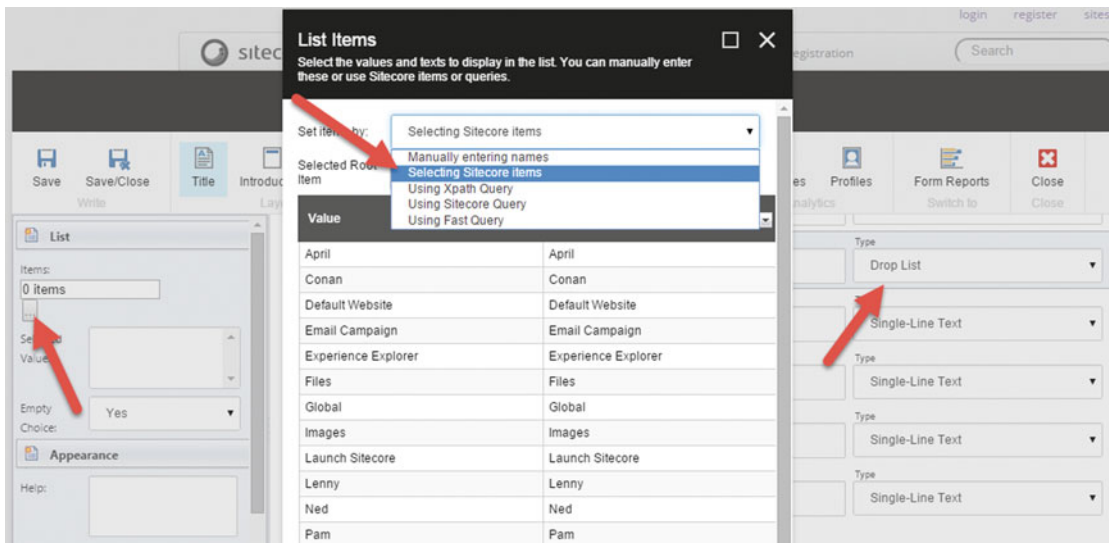
Figure 6-13. *A drop list needs values for the drop-down. These can be entered by hand or they can be dynamically queried from Sitecore*
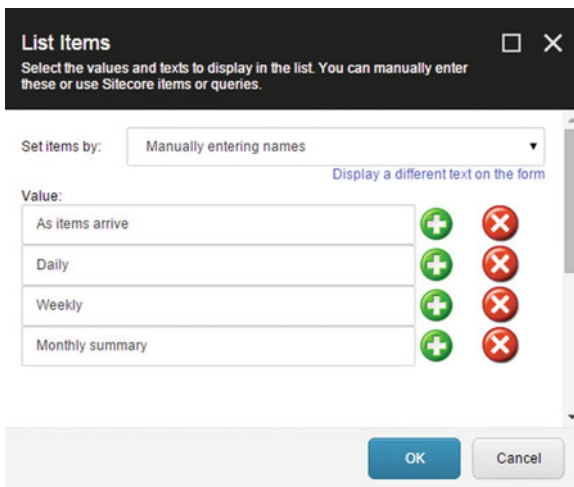
Figure 6-14. *Example of entering drop-down values by hand*

<div style="border:1px solid">

CONTROLLING FORM AND FIELD APPEARANCE WITH CSS

In the left pane, when a field or section is selected, you will also notice a section called Appearance. In this section, you can set a CSS class to control the form or field styling (Figure 6-15). Out-of-the-box these styles are empty and you'll need a developer to create styles against your requirements and/or create designs. Unfortunately, out-of-the-box, WFFM forms look pretty ugly. It is too bad there are not any actual out-of-the-box CSS styles and a "previewing" capability to toggle between them and see the style in action before applying it.
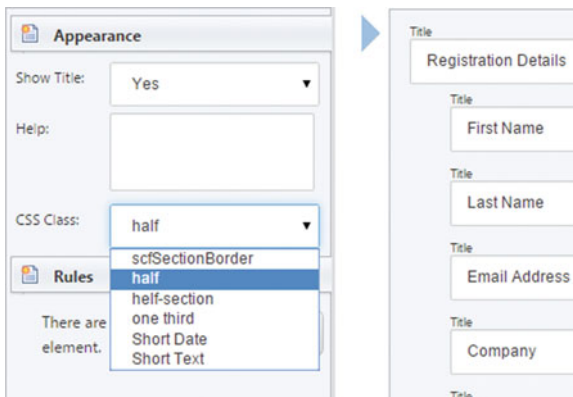
Figure 6-15. *A field/section can have a CSS class to control the styling. Get a developer to create the associated CSS to make your forms on-brand and looking pretty!*

In the meantime, a developer can create CSS classes for each of the CSS options in the drop-down. Thereafter, when you toggle between those (clicking Save and Close to preview) you will see the form reflect those changes. Until then, do not be surprised when you toggle the CSS and nothing happens!

</div>

Configuring Form and Field Validation

You will want to configure field validation in most of your forms. Validation might be as simple as marking a field as required or not. However, you can also add rules to validate the content of the field itself to ensure it matches a pattern you anticipate for that field. For example, you likely want to use a validator on a ZIP code field to ensure that only numbers are provided and those numbers match a particular pattern.

There are many out-of-the-box field validators. Most are not worth mentioning because they are tied behind the scenes to the field type. For example, there is an e-mail address validator for the E-mail field we are using in our example. Number fields only allow numbers. Telephone fields validate that the format follows a telephone number pattern.

Notice in Figure 6-16 that when you select a field you may or may not see a Validation section in the left panel. The Last Name field is a single line of text field that supports adding a validation. A Telephone field, for example, does not support adding a validation since a built-in validation is preconfigured. As you can see in the example, there are several to choose from: No validation, Numbers only, Letters only, Special characters must be included, Number and special character, E-mail address, and Custom. You will use Letters Only and Custom most often, since the other options tend to be built into field types, such as the Number, E-mail, and Password field types.

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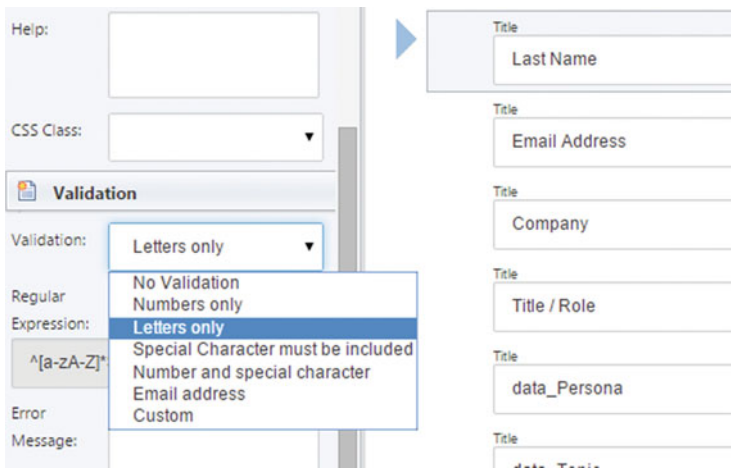
Figure 6-16. *Field validators keep junk data out of your lists*

For the sake of demonstration, I have toggled our E-mail Address field type to a single line of text instead of an e-mail. I've also added the E-mail validator to the field. Basically now my single line of text field type is behaving exactly like the E-mail field type.

But that is not the point. The point I want to make note of is the regular expression you see in Figure 6-17. All field validations are regular expressions that match text against an expected pattern. When you toggle the field validator to Custom, you can add your own custom regular expression into the Regular Expression text box for that field. Regular expressions can be very simple and get very complex. A great resource for you to use is `http://www.regexr.com`. This site has a lot of great example regular expressions and provides a free-form editor for you to test your expressions and ensure they work before you stick it in your form and test it the hard, long way.
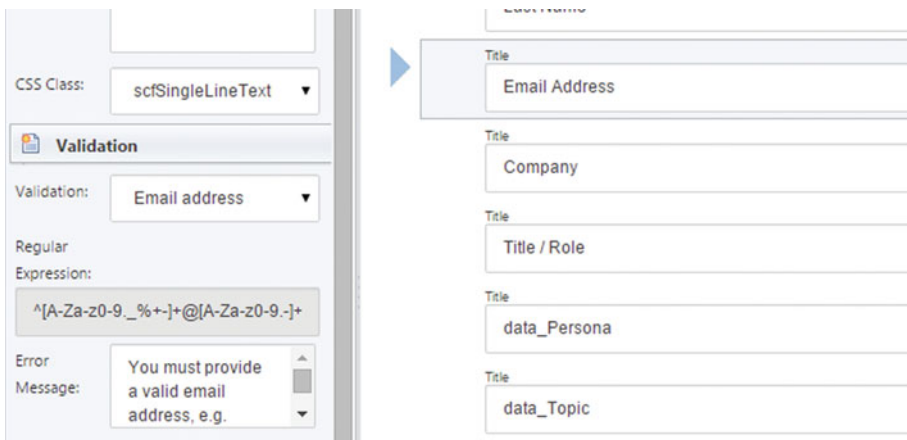
Figure 6-17. *If an out-of-the-box validator is not available you can create your own by entering an appropriate regular expression*

Note in Table 6-2 the field validation settings for this example.

Table 6-2. *Field Validation Settings*

Field Name	Validation	Required
First Name	Letters only	True
Last Name	Letters only	True
E-mail Address	E-mail address	True
Company	No validation	False
Title/Role	Letters only	False
data_Persona	Letters only	Not applicable
data_Topic	Letters only	Not applicable
Contact me about	Not applicable	False
Contact frequency	Not applicable	False

One field type worth calling out specifically is the CAPTCHA field type since it is very much related to validation; validation in the sense that you want to validate the current user isn't a malicious robot or hacker. The CAPTCHA field will prompt the user to enter the text they see in an image or hear on the audio in order to submit the form. This validation is impossible for a machine to do since it requires visual identification. The only problem with CAPTCHA is that it is a pain for your users; most people are annoyed by it and it may be a detractor from what could be more leads coming into your site. Fortunately, there are some settings to show CAPTCHA when malicious activity is detected, but hide it for normal use.

When you add a field and assign the type to CAPTCHA you will notice a new Security section on the left pane (Figure 6-18). There are two basic settings worth considering: 1) always show CAPTCHA, or 2) only show CAPTCHA if. Blog/news comments are a good place to select option 1 as they are prone to attach. Event registrations or lead capture pages are better candidates for number 2, where you only want to show the CAPTCHA validation prompt when malicious activity is detected.
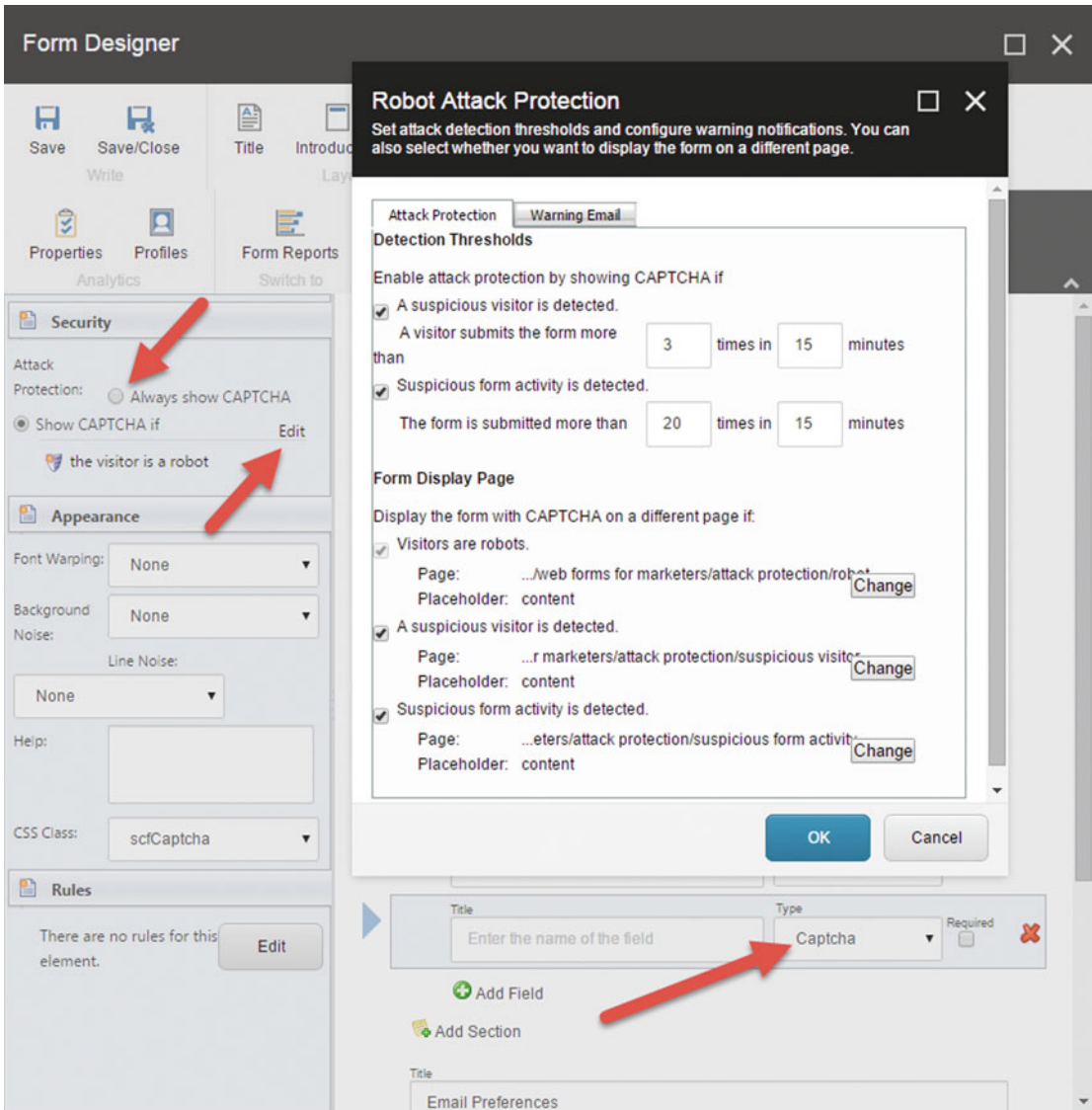
Figure 6-18. *Use a CAPTCHA field to keep the flying monkeys away. Optionally only show the CAPTCHA if a monkey is detected*

Notice in Figure 6-18 the settings for how a malicious user is detected. This screen is viewable when you click the Edit button next to the Show CAPTCHA if radio selection.

You can watch for how many submit attempts the current user has attempted (first checkbox) or you can watch for submit attempts in general (second checkbox). These values will be higher or lower depending on the type of form. A comment on a blog post probably should have a high number in case the customer is engaged in a discussion, but an event registration should probably have a very low number. The second option is for all users, not just the current user. It is more comment to have this setting disabled. If you recently opened registration for an expo you may expect a lot of traffic from different sources initially and CAPTCHA may not be appropriate.

The Form Display Page section is helpful if you want the capture form displayed on a separate page after the Form Submit button is clicked. This is helpful as it lessens the possibility of form dropouts due to users feeling overwhelmed with all the data you want them to submit, as they won't notice your request to submit the CAPTCHA until the next screen.

■ **Note** You can configure a warning e-mail to your admin if an attack is detected. Notice the Warning E-mail tab in Figure 6-18. From there you can configure the e-mail address, subject, and body of the e-mail to be sent to your admins during an attack.

You can see a sampling of the validators in action in Figure 6-19.

Figure 6-19. *Notice how the validation error messages appear above the form if bad data is entered*

Configuring Save Actions

The next step in the process is to configure what happens when the form is submitted. In the case of an event registration, we want to save the registration details and create a lead in our CRM for a sales associate to follow up on. We also want to configure what happens if the save was not a success. Additionally, we want to submit the registrant information into an e-mail campaign list for future correspondence, but also send them an immediate e-mail confirming their registration. Finally, we need to configure what happens after the form is submitted: either sending them to a success page or simply presenting a confirmation message.

Saving the Event Registration

We want to save the registration data when someone registers for an event. The most common way to do this is to create an item below the event item, such that all children represent registrations for that event. A similar pattern would be used for comments on a blog.

■ **Note** While common, storing registrations below an item isn't a best practice. The ideal way would be to store them in a custom database and have a developer build a custom SPEAK interface to allow moderating/reviewing to occur seamlessly within the existing Sitecore experience that marketers are familiar with. A database just does some things better than an item in Sitecore can.

Now, for strictly data capture purposes this isn't necessary. WFFM saves the data in its own database. As we discussed earlier, it is easy to export the submission data to Excel from the analytics, Actions drop-down. The trouble with this is it is a steeper learning curve for a developer to query that data (via the WFFM data provider), whereas querying item data is very easy. In our example we may want to capture the number of registrants against the max number of registrants, where we'd close the registration process automatically if the event gets filled up. With child items it is easy to simply do a search, get the count of the results, and render that count on the page. Likewise for news/blog commenting, for example, it is easy to simply query for comments and display the comment at the bottom of the post. Searchability is also an important factor, where in the case of comments you would want those comments searchable and therefore an item versus just sitting in the WFFM reporting database.

■ **Note** The `Sitecore.ContentSearch` development framework can also be leveraged to include WFFM data within native search results if that is a requirement.

Use the following steps to configure our item creation save action:

1. Select the Submit button in the Form Designer and then click Edit next to Save Actions in the left panel.

2. Select Create Item from the drop-down then click Add and then click Edit.

3. On the first edit screen you need to specify which template to use for the new item and where that item should be placed after it is created (Figure 6-20). Select your data template and the location and then click Next.

Figure 6-20. *The Create Item save action needs a template to know what to create and a lcoation to know where to create it*

4. After you click next, you need to map the fields in the data template to the fields in the form. Provide the mapping, similar to what you see in Figure 6-21, and then click Next.

Figure 6-21. *The left side contains the values coming from the template, and the right side shows the values coming out of the WFFM form*

5. The final screen notes any data you may have missed in the mapping (Figure 6-22). In our case, this is okay because these data elements will be handled in subsequent actions (with the exception of CAPTCHA data, which is never of any value).
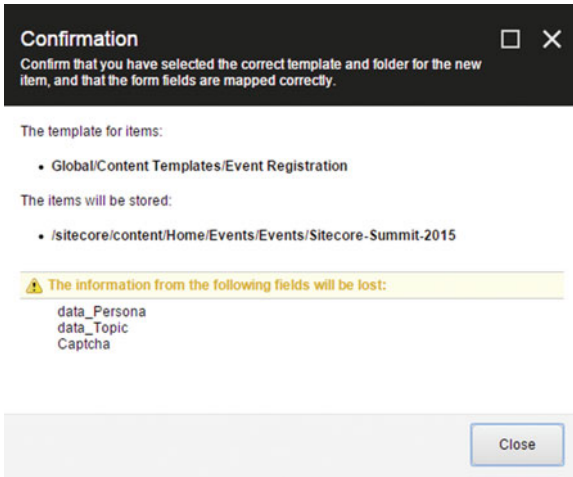
Figure 6-22. *Not all values need to be mapped, but you'll be warned!*

With this action in place, whenever a user submits the form all the form data will be saved into Sitecore as child items below the appropriate location. In our case, the registrations fall below their respective event items, as you can see in Figure 6-23.
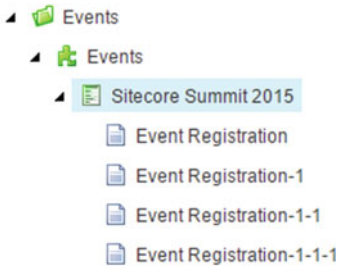
Figure 6-23. *After the form is submitted the new items will be created in the location you specified*

Creating a Lead in CRM

Next thing we want to do is create a lead in our CRM system for a sales associate to follow up on our event registration with a product offering and/or discount. There are two add-ins for Sitecore, one for Salesforce.com and one for Microsoft Dynamics CRM. Both behave similarly as far as the integration is concerned.

The Dynamics add-in includes an action called Create CRM Entity. From this action you can create 50+ different entities in CRM, including contacts, leads, activities, and accounts. They all behave similarly: the Create CRM Entity action identifies required fields in CRM and forces you to map your form fields to those required fields. Beyond that you can add optional fields. Fortunately all the queries are real time and

the drop-downs are populated from the CRM schema so you know your configuration will flow into CRM appropriately. There is very little you need to do on the Sitecore side besides what is called out in the module installation instructions.

■ **Note**   CRM add-ins for Sitecore can be found here: `http://bit.ly/1T8ULto` (Microsoft Dynamics), and here: `http://bit.ly/1KT4SNk` (Salesforce).

Use the following steps to configure the Create CRM Entity, Create Lead action:

1. Select the Submit button again from the Form Designer. Choose Edit Next to Save Actions in the left pane.

2. From the drop-down, select the Create CRM Entity action and click Add and then click Edit to edit the action properties (Figure 6-24).

Figure 6-24. *The Create CRM Entity has several required fields, but you can also pull in other/custom fields from CRM itself, making the possibilities endless*

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3. From the CRM Entity drop-down, select Lead to create a new CRM lead.

4. There will be several required fields. Associate those fields to equivalent form fields. Note how our data_Topic in this case is used to populate the required Topic CRM field. Since Topic isn't something a customer will provide, it is hard-coded into the form by setting a default value in the data_Topic field settings. This, again, is a helpful way to pass data behind the scenes to your CRM system.

5. Click OK when complete.

After you have done some testing you should see your leads being populated in your CRM system. In this case, we created a registration lead in dynamics (Figure 6-25).
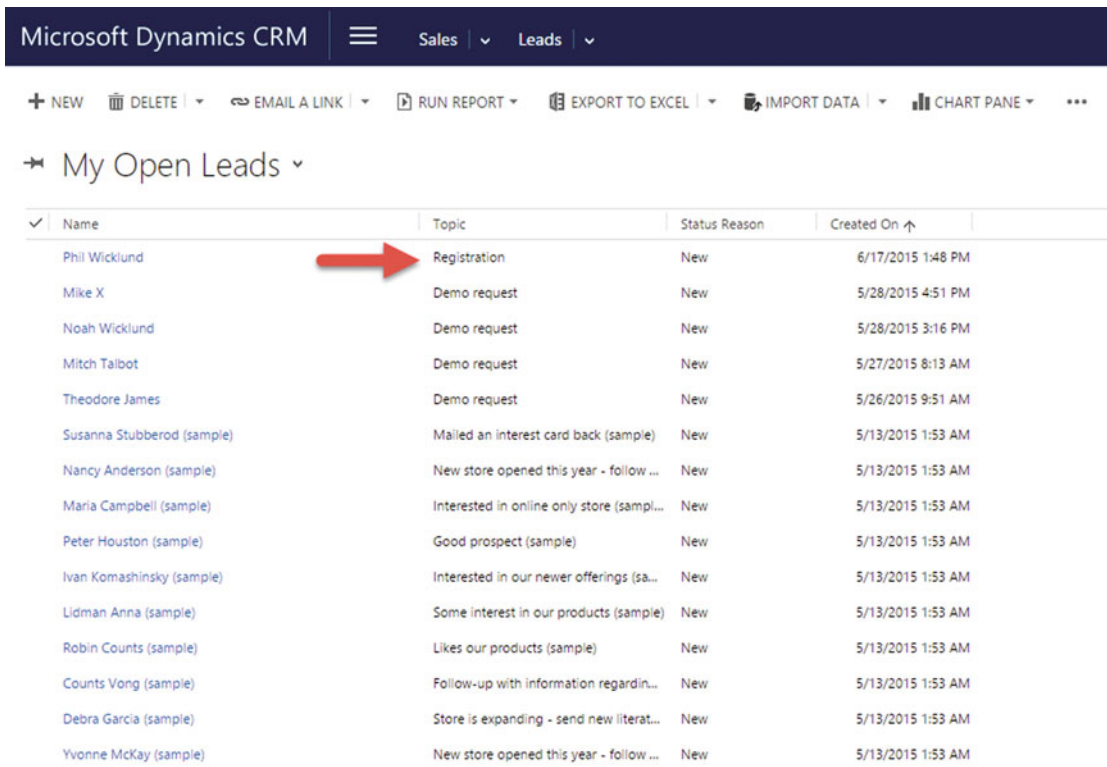
Figure 6-25. *A new lead in CRM!*

Subscribe the User to an EXM E-Mail Campaign

Our example WFFM form has several options at the bottom where the users can select which e-mail campaigns they want to be entered into and the frequency of which they want to receive e-mails. Unfortunately out-of-the-box we can't get that sophisticated. However, we can add the contact into a campaign list using the out-of-the-box "Add the contact to a contact list" action. This action takes the logged in user's contact details and adds them into the contact list of your choosing (Figure 6-26). Email Experience Manager uses these contact lists to drive which e-mail recipients should receive the e-mail. A developer could fairly easily extend this out-of-the-box action with if/then logic to determine if the user should be added or not.
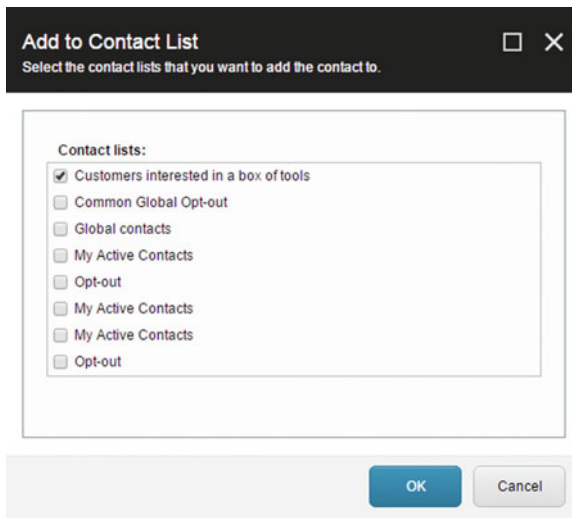
Figure 6-26. *When a user submits a WFFM it's a good time to subscribe them to a camaign by adding them to a list*

Sending a Confirmation e-mail

The "Send Email Message" action is probably the most widely used action of all the actions. Fortunately it is incredibly easy to configure. Figure 6-27 shows the action settings screen with all the fields you'd expect. Click the down arrow next to To, CC, etc. to add form fields. Also, you can click the Insert Field drop-down to add a form field into the body of the e-mail itself to add context. This is a great way to send a confirmation e-mail of the event and the user's form submission details.
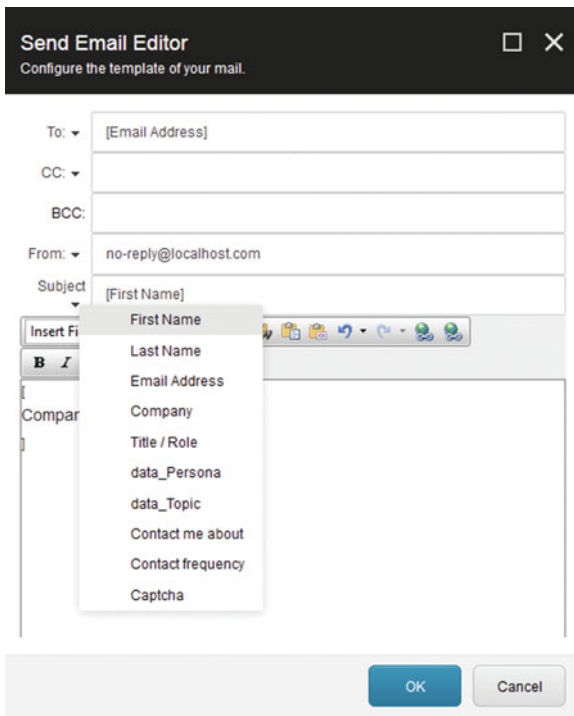
Figure 6-27. *E-mails are easy to configure; you supply a to, CC, subject, body, etc*

◾ **Note** There is a secondary e-mail action titled Send Email Campaign Message. The nice thing about this action is you can use e-mail messages already drafted in Email Experience Manager so you don't have to recreate the wheel. The downside is the user receiving the e-mail must be a contact/user, which isn't always the case.

If you don't see the drop-down to add form fields, you are not alone! At the time of this writing there is a bug with Chrome. Configuring this action works in Firefox and IE, but not Chrome. In general, Firefox seems to be the most stable browser for Sitecore administration.

Redirecting to a Confirmation or Download Page

One of the last things to configure in our form is what the users should see after they submit the form. Should they see a thank you message or will you redirect them to a confirmation page that has additional information, such as links to download materials only registered customers can see? This can easily be configured by selecting the Submit button and clicking Edit next to the Success section. From here you'll notice two basic configuration options: a page or a message (Figure 6-28). Select the page you want the user to be sent to, or select the message you want them to see (the form itself is simply replaced by this message).
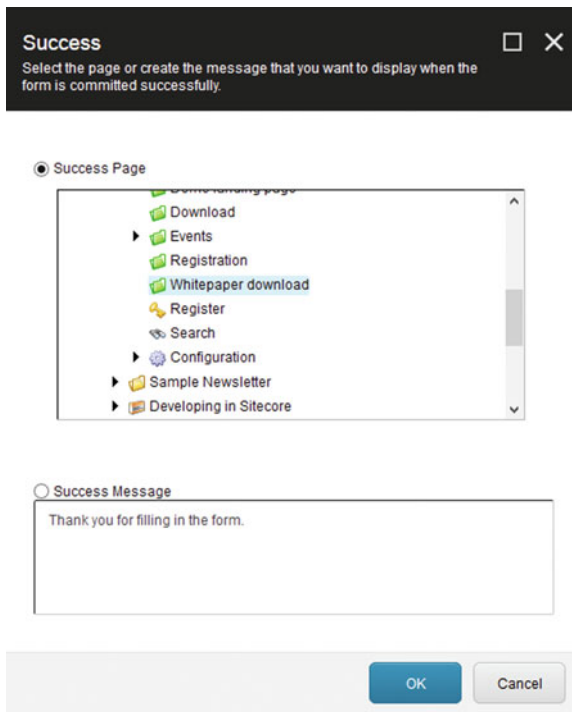
Figure 6-28. *When users submit the form you can simply show them a thank you message or redirect them to another page (such as a page where they can get the download they are looking for)*

■ **Note** Oftentimes you are having a customer send their contact information before allowing them to download a whitepaper. One way to do this with WFFM is to send them to a download confirmation page that has JavaScript on it that in turn redirects them to download the whitepaper itself (not ideal, however, because it's easier to pass around the URL to bypass the form). This is needed because in WFFM you cannot select to redirect them to an item in the Media Library, which is unfortunate. If you're a non-dev and want to give this a shot, use the code sample in Figure 6-29. Simply paste this code into an HTML field that gets rendered by a component on that page.
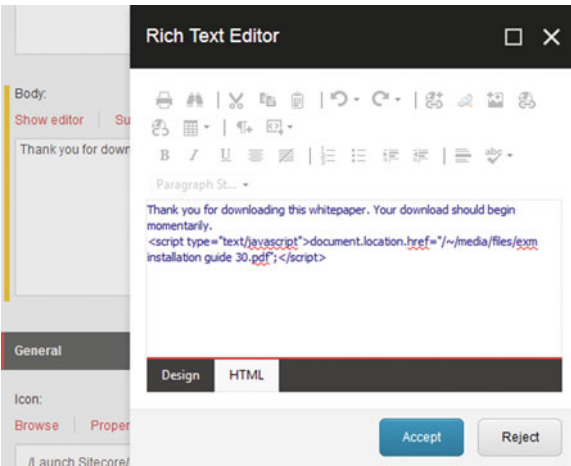
Figure 6-29. *Here's a way to kick off a download automatically*

Configure an Error Message for a Save Action

Things don't always go the way you intend them to go. Such is the case with WFFM form submissions. Sometimes a Save action fails to do what it intended to do, such as actually create the lead in CRM. Regardless, the data for the submission will be saved in WFFM and can be exported, but with some actions, such as sending the confirmation e-mail, the user may need to be notified. You can configure a failure message for each save action in the Error Messages tab (Figure 6-30). For some, such as the create CRM action, you may not have an error message at all since it isn't a blocking event. For others, such as a failure to send a confirmation e-mail, you may simply state that we have them confirmed but they should contact Sales for a confirmation. Keep this in mind as you gather requirements for your WFFM forms.
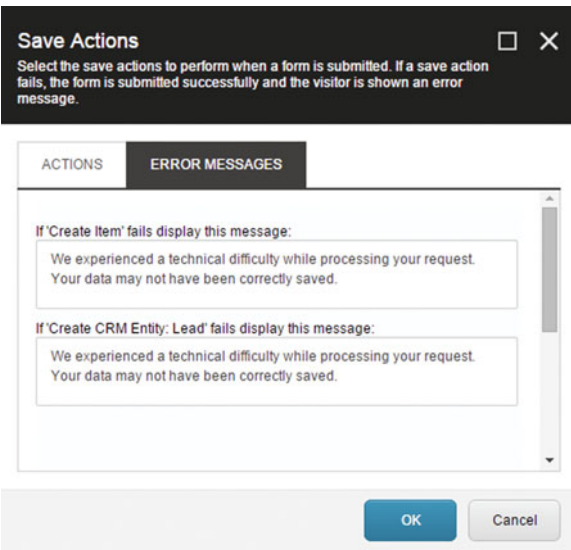
Figure 6-30. *If an action fails (such as creating a lead), you may or may not want to tell the customer through an error message*

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Localizing/Translating the Form

Like pretty much everything in Sitecore, WFFM can be localized so it can be translated into multiple languages and dialects. Those languages must be first configured, as is described in Chapter 2. But thereafter it is a simple enough process to toggle the Language drop-down in the Form Designer to that change and start translating. Some things you may want to translate:

- Field names

- Introduction, section names, and footer

- Field validation error messages

- Submit button text

- Success message when the form is submitted

- Error messages when a particular action fails

Notice the Language drop-down in Figure 6-31, as well as the field validation error text for the Last Name field, which is also translated. Sitecore will serve the appropriate form language based on language preferences of the current user.
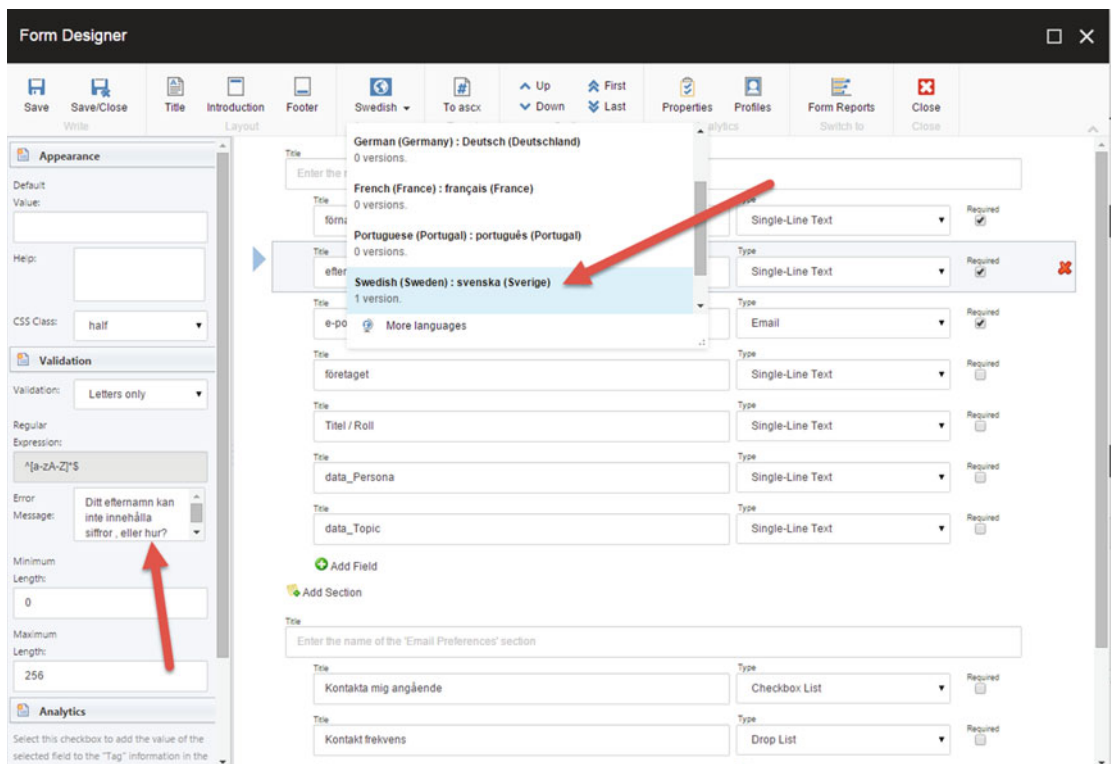
Figure 6-31. *Forms can be easily translated into other languages much in the same way as any other piece of content, which is described more thoroughly in Chapter 2*

Summary

As you can see, Web Forms for Marketers is a very visual, easy-to-use form creation tool. It is appropriately dubbed "for Marketers" as it shouldn't need any developer involvement to do basic things such as quick and dirty lead capture form, event registration form, and new user registration forms.

This chapter toured through the WFFM UI. We reviewed the Form Designer, how to set up field validations, and how to configure some of the more popular save actions. All in all it's been quite the trip, and we're all the closer to getting back to Kansas now that we know how to create a good ol' form!

CHAPTER 7

■ ■ ■

Experience Analytics

Marketers want to demonstrate return on investment (ROI). This has been an age-old dilemma for the marketer, tracing advertising costs to sales, for example. It's rarely a solid line from one to the other. Experience analytics within Sitecore, however, offers some serious promises to the marketer seeking to demonstrate ROI, performance, etc. How is this possible? Sitecore logs every interaction from everywhere and tapping into this vastness of data is your key to understanding how your digital experiences are doing.

For example, a customer profile shows every interaction that customer has had with your brand. You can see campaigns that customer entered into the experience through, goals that enabled conversion, and as a result, outcomes such as purchases. All of these interactions are plotted on a timeline enabling traceability to the campaign, the investment, and therefore your ROI. This is truly more than just "web analytics," my friends.

This chapter begins with a discussion on how to plan your measurement strategy when considering the uniqueness of the Sitecore platform. Industry standards/approaches around measurement still apply, but knowing what the platform can enable you to measure is helpful; it enables you to ask much more specific questions of the data and rely less on high-level abstracts.

We then will cover the out-of-the-box reports available from the Launchpad. There are at least 18 at this writing. These 18 reports offer tons of out-of-the-box value to the marketer in measuring the performance of their experiences, campaigns, and the like.

Lastly we discuss self-service BI. What if you're looking for that 19th report that doesn't exist? You could ask a developer to build it for you, or you could just get it yourself with the right tools. An empowered marketer with tools such as Excel PowerView and PowerBI enable all sorts of data discovery and dashboarding possibilities not available out-of-the-box.

■ **Note**   Federated Experience Manager enables you to capture all insights and customer interactions from digital experiences that aren't even on the Sitecore platform. You can capture every digital interaction with your brand if you incorporate FEM into those experience's architectures. The analytics are the same, but the configuration is quite different. Since the configuration is an advanced topic, you can find more about FEM in the appendix.

STRATEGY BITS: FIVE BENEFITS OF EXPERIENCE ANALYTICS

Not getting the customer insights you need by tracking aggregate visitor data with your web analytics platform? Seeing the data in CRM, but not able to tailor content on the fly? Experience analytics tracks behavior at the visit level, providing the insight needed to understand specific customers' behavior, the capability to personalize the digital experience with rule-based triggers and in turn build stronger relationships with your customers. Here are just five benefits of utilizing experience analytics on your web site:

1. *Track visit specific customer behavior*—With visit-level tracking, you can begin to see the paths visitors are taking throughout your site across multiple visits, whether they are identified or not. Get a view into the pages visited, content downloaded, how long they stayed on-site and how often they came back. Once an unidentified visitor submits their contact information through a sign up or form, all their prior visits will be connected to that unique profile. This level of detail will allow for a more intimate view of your customers' experience and engagement with your brand, allowing your team to target specific customer with offers that meet their needs.

2. *Automate content personalization for a highly relevant experience*—If experience analytics is incorporated with your CMS, set rule-based triggers to serve content as a visitor completes specific triggers, providing a more relevant experience that caters to the specific needs of your visitor. For example, if a visitor clicks on a piece of content regarding a specific brand line and is located in Asia, personalize their experience to ensure that the next page serves a detailed locator page for that product line in that geographic area (not just the generic product page).

3. *Arm your sales team with details to facilitate a more relevant conversation*—As soon as a visitor identifies themselves through voluntary submission of their contact information, your sales team can have instant insight into the prior interactions a visitor had with your site, giving them the power to tailor their conversation to the leads' specific experience with your site and their interest with your product or service. With experience analytics, you can see the content that the potential customer had interacted with, the steps they took (or haven't yet taken) to learn more about your business, the source that brought them to your site, and the number of times they visited.

4. *Focus your marketing efforts on your best bets*—Through profile scoring against your site's goals you can begin to build an engagement score for each independent visitor. As visitors accomplish previously identified goals within the site (such as viewing a specific page, signing up for a newsletter, or searching for a dealer), their score increases. This way, you can see which of your visitors is the most engaged and target them with personalized messages to bring them further down your marketing funnel.

5. *Increase visitor satisfaction and boost conversion*—By focusing on your most engaged visitors and providing personalized content that is tailored to their needs and interests, you can improve your customers' experience with your site, engaging them further and increasing the propensity to turn the visitor into a converting

lead. With the insight that experience analytics can provide, you can take action to develop the right content, serve it to the customer at that right time, and increase their affinity with your brand.

Experience analytics, in addition to a traditional web analytics platform and marketing automation software, will provide your team the relevant insight to take action targeted to each individual visitor. In today's digital landscape, you can't afford to have a poor digital experience. Delight your customers with the personalized and targeted experience that they have come to expect.

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Creating Your Measurement Strategy

In the next sections you'll learn about all the wonderful out-of-the-box reports that come with Sitecore 8. There is a ton of data that will help you understand how your experiences are performing. However, it's a bit challenging to know where to focus, to know if you're making progress, and to hold yourself accountable to the progress you are setting out to make. Because of all this, having a measurement strategy is critical.

A measurement strategy should discuss:

- What is being measured

- Why those things are being measured

- How we will measure them

- Who will measure them (for manual samplings)

- How often will we measure them

- What, specifically, are the measurements (the KPIs)

- Who needs to be aware of the measurements (communication plan, governance, etc.)

Chapter 9 discusses governance in general, but it's worth knowing that measurement strategy is a key component of governance. Since governance is all about ensuring a performing, healthy, well-maintained Sitecore deployment over time, measurement strategy is a key piece of knowing if you've been successful in doing so.

Start by creating a document or wiki page for this measurement strategy and follow along with those topics/questions. Next, begin through the following stages to flush out the details of the strategy:

1. *Business Objectives Workshop—*Start with the business objectives. What are they? How are they measured? Are there KPIs already available to measure them? The answers to these questions should be measured.

2. *Digital Strategy Workshop—*How does your digital strategy ladder up to your business objectives? Do you have measurable digital objectives? Are there digital KPIs that should be included in this measurement strategy? The answers to these questions should be measured.

3. *Sitecore Experience Measurement Workshop—*What are the objectives of the experiences you're creating? What purpose do these experiences serve the digital strategy or business objectives? How do you know you're successful? The answers to these questions should be measured.

4. *Behavior Measurement Workshop*—What are the personas for your experiences? What are their goals, and what goals do you have for them? What outcomes are you driving them toward? What things do they hate? The answers to these questions should be measured.

5. *Identify KPIs*—You have your list of things you want to measure. Next identify expectations and goals for those samplings. What is the normal/expected range for each KPI? Think stoplight KPIs; what value represents Red, Yellow, and Green?

6. *Measurement Governance*—Answer the questions stated earlier around who/how will measure, who needs to be made aware, how will we communicate/escalate issues and status, etc. (more on this in Chapter 9).

Now that you have a bunch of KPIs identified for your Sitecore/digital experiences, the next step is to create a dashboard and start measuring. There are a few ways you can do this. You can use the out-of-the-box dashboards as described in the next section. The benefit here is that there is no additional technical work you'll need to do. The con is that you might not be able to answer *all* your questions and provide values into your KPIs. Additionally, if you have a monthly executive status meeting where you're expected to present the KPIs, you'll likely be manually sampling all the data from these reports and manually plugging in values into a document of some sort and perhaps cutting PDF or something in preparation for your meeting. You might spend 8 or more hours assembling all this information.

Another approach is to build the dashboard along with all the KPIs, so that in your executive meeting you simply bring up the dashboard and walk through the results for the past month. This obviously can save a lot of time and is discussed later in this chapter as we discuss self-service business intelligence.

With that dashboard in place and your measurement strategy loaded into your governance plan, you're set to go. Everybody's KPIs will be different, because every company's objectives are different. However, Table 7-1 has a list of some common KPIs you may find yourself including in your Sitecore Measurement Strategy.

Table 7-1. *Example KPIs*

KPI	Category	Description
Revenue	Executive	For e-commerce sites, this one is obvious. However, through goal association and potentially a mashup with external system data (such as CRM), you could calculate how much revenue your digital experiences influenced. Influenced revenue is worth putting in as a KPI on your executive dashboard.
90-day revenue forecast	Executive	Similar to the revenue KPI. If you know that 100 engagement value points correspond to $10 of revenue 90 days from now, you could create a KPI that measures projected revenue. What CEO wouldn't want to see that?
Marketing qualified leads	Executive	Or otherwise called conversions, otherwise called goals, but that are routed into your CRM as a Marketing Qualified Lead. A VP of marketing loves telling the VP of sales how many leads she handed over the previous month, and this is a common KPI worth putting on your executive dashboard.
Campaign ROI	Executive	This one is a bit tricky but certainly a helpful KPI. If you do a lot of pay-per-click advertisement, and you track those back as campaigns and subsequently track through toward goal completion, you can calculate ROI assuming those goals have a revenue component (or that one can be calculated through association with data in a back-office system).

(*continued*)

Table 7-1. (*continued*)

KPI	Category	Description
Persona scorecard	Behavioral	Every persona could have a scorecard. How do you know if the persona is accurate? Are you certain that "Pam" likes the things you think she likes? Personas should have measurable goals, outcomes, events, and failure events (as described in Chapter 3) and these should be in your measurement strategy and perhaps represented as KPIs, especially persona goals (things you are trying to get that persona to do, like convert).
KPI for each goal	Behavioral	Goals in general might warrant a KPI, especially high-value goals.
Visit count (perhaps by visit, campaign, persona, etc.)	Operational	Visits are somewhat helpful to measure. Value is more important, but since visits are so easy to measure, why not? Their usefulness as a KPI, however, is rather low.
Value (perhaps by visit, campaign, persona, etc.)	Operational	This is almost certainly a KPI. The question is more around value granularity. Value all up, or value broken down by persona? Channel? Campaign category? Etc.
Average page counts (perhaps by visit, campaign, persona, etc.)	Operational	Perhaps, as part of your digital strategy, you want to increase engagement on your site. Page counts is one way to measure engagement. Someone who browses to eight pages is more engaged than someone who browses two pages. As such, this may be a worthwhile KPI on your dashboard.
Average time spent on site (perhaps by visit, campaign, persona, etc.)	Operational	Similar to page counts but another way to measure engagement.
Repeat visit %	Operational	Similar to the previous two but yet another way to measure engagement (if they come back for more later, they are more engaged then if they never come back).
% of indirect visits	Operational	A referral is always better than a cold call, they say. You may want to measure the percentage of your traffic that is not direct traffic, especially if a key digital strategy is driving more social, e-mail, or other sources of traffic to your site. This KPI will help you measure if you're successful at that.
Bounce rates % (perhaps by visit, campaign, persona, etc.)	Operational	If part of your digital strategy is to reduce bounce rates by delivering more relevant/personalized content, you may want bounce rates as a KPI.
Geographic or language visit % (perhaps by visit, campaign, persona, etc.)	Operational	Perhaps you have a business objective to expand in China. If so, you may want a KPI around value growth from visits originating in China. Likewise, language could be measured.
Average page response times	Operational	You may have strict goals around page responsiveness that could be captured as a KPI for monitoring purposes.

■ **Note**   Some of these KPIs are easier to create than others. Some you can create from data directly in the Sitecore analytics database, as described later in this chapter. Others need the analytics data augmented with other data from external systems or processed data, such as from financial systems for revenue or CRM systems for holistic campaign results. All of this can be accomplished, but with varying degrees of technical proficiency and/or integrate or use of external tools/systems. Self service BI is a great way to create these mashups of various data; see that section later in this chapter for more information.

Out-of-the-Box Analytics

Sitecore has more than 18 out-of-the-box analytics that you can use to get quick insights into how your digital experiences are performing. Most of the reports are very intuitive; the goal of this section is simply to help you understand what is out there and where these reports reside within the Sitecore admin interface.

■ **Note**   Experience Analytics depends on MongoDB and an xDB processing server to be appropriately configured to ensure data is getting aggregated in Sitecore's analytics database. If the following reports are broken it's likely that these dependencies have not been configured. See the appendix's architecture section for more details. Additionally, the list of out-of-the-box reports below was built off Sitecore 8.0 Update 5. Sitecore adds more all the time and this list is sure to grow with future releases.

Analytics Dashboard

The Analytics Dashboard has several of the most important reports. You can get to the Analytics Dashboard from the Launchpad by clicking Experience Analytics. If you don't see this button on the Launchpad you likely do not have access. See Chapter 8 for more information on setting up security.

Online Interactions by Visits by Value Per Visit

The first report you'll see shows online interactions by visits by value per visit. Basically, this shows hit counts and the value those hits are generating for your business, as shown in Figure 7-1.
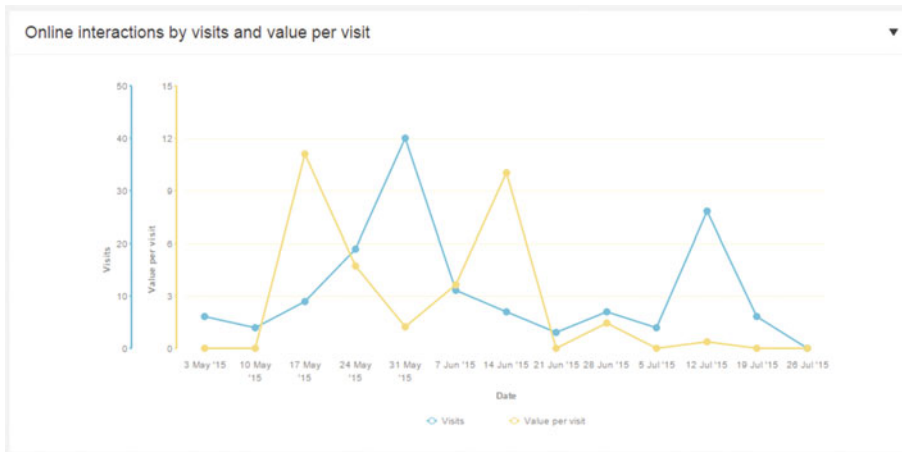
Figure 7-1. *Online interactions by visits and value per visit*

Channel Groups by Visits

Channel groups by visits is next on the dashboard. This report (Figure 7-2) shows you from where those visits are coming from. In my demo environment I only have one channel (web) set up. You likely will have many (social, e-mail, etc.), so this report will be more helpful for you.
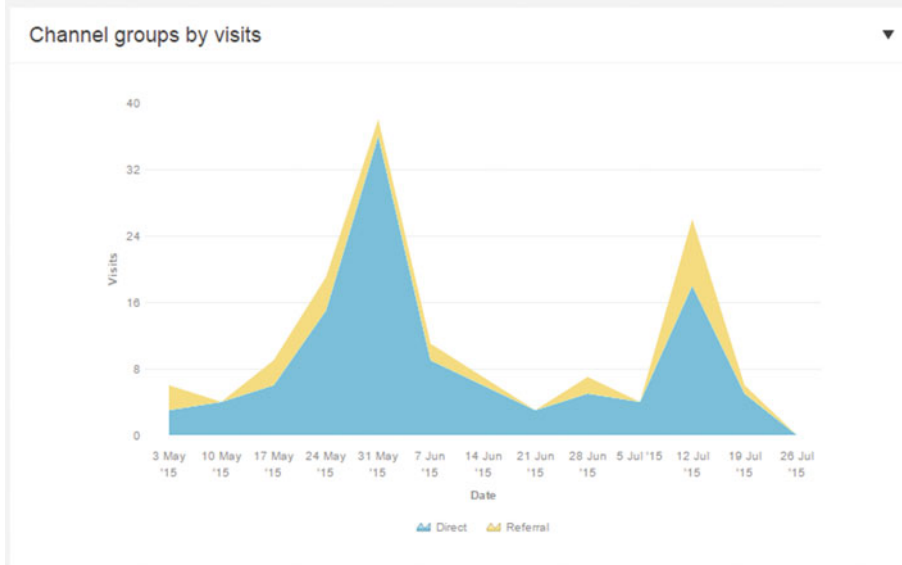
Figure 7-2. *Channel groups by visits*

Top Campaigns by Value

This report shows you the value points your campaigns are generating for you. You can quickly see which campaigns have been most effective. Notice the example in Figure 7-3.
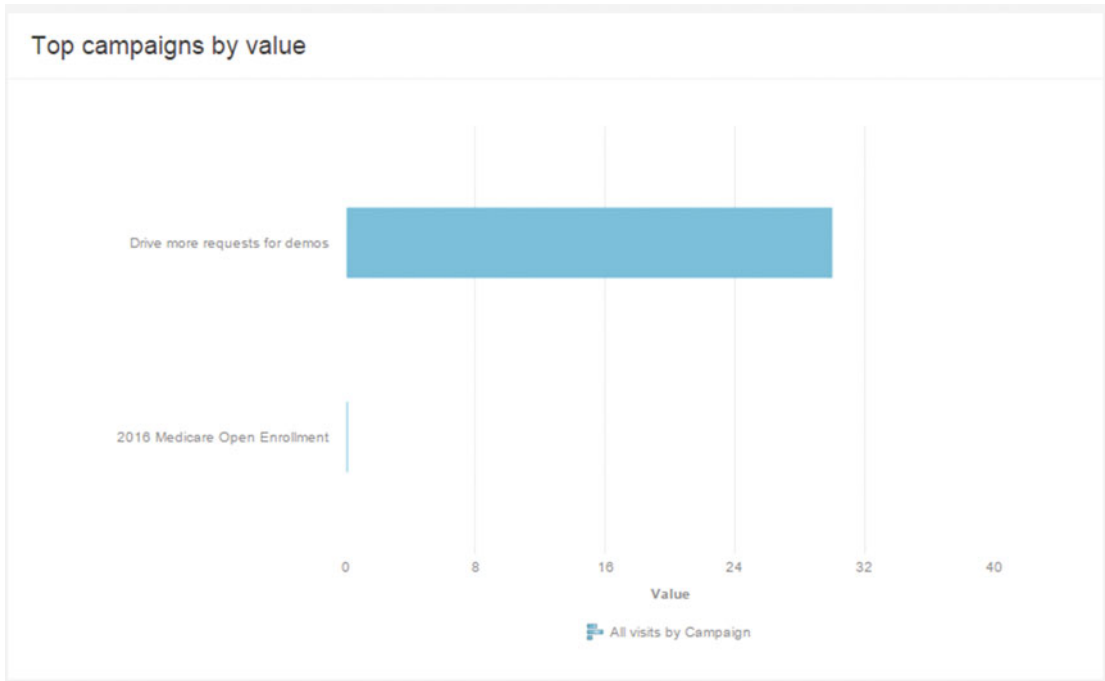
Figure 7-3. *Top campaigns by value*

Top Pattern Matches by Value Per Visit

The top pattern matches by value per visit report (Figure 7-4) shows you which personas (or more generically, your profile cards) are generating the most value. This can be very helpful when you're trying to get more value out of lower performing personas. You may notice their low performance and as a result update your personalization strategy to target more relevant calls-to-action, or perhaps you would spin up an e-mail campaign to target a particular persona.
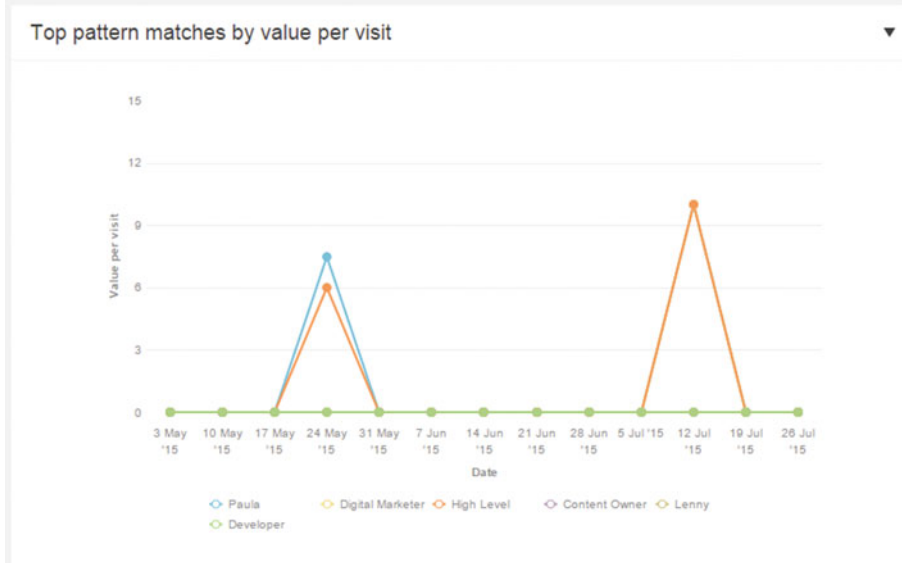
Figure 7-4. *Top pattern matches by value per visit*

Top Goals by Conversions

The top goals by conversions report is the last report shown on the dashboard. This report shows you how people are converting on your site. You can see in Figure 7-5 how "add a favorite" is the most common conversion, but it is likely a lower value than a "request a demo", in which case you may want to update your personalization strategy to better align to higher value conversions, for example.
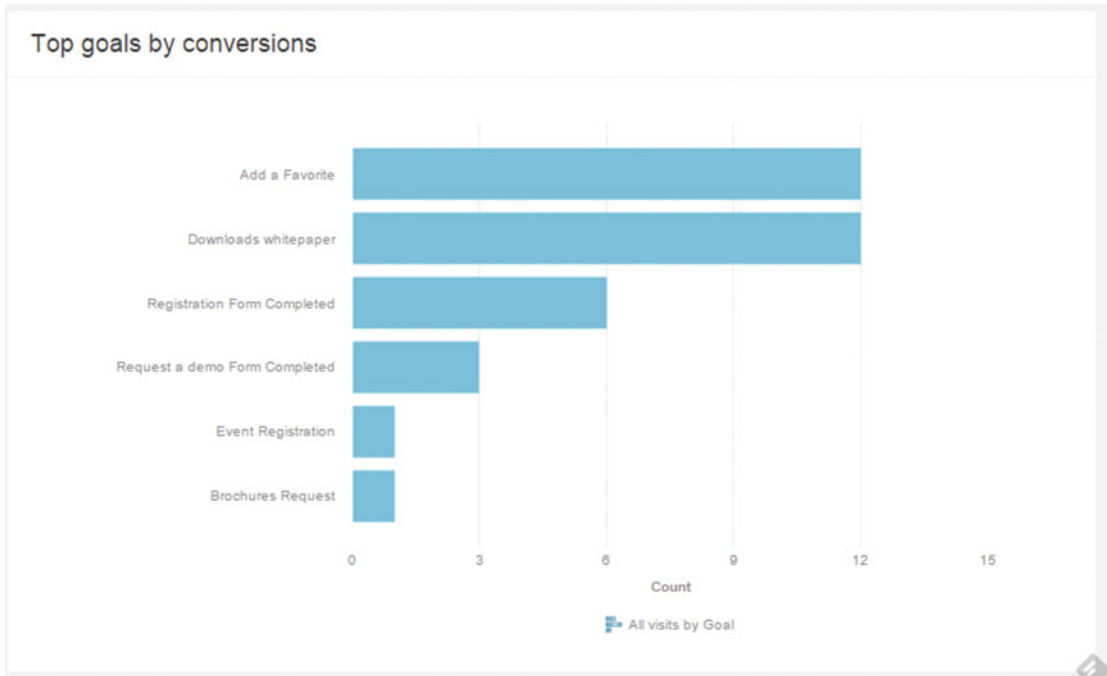
Figure 7-5. *Top goals by conversions*

Language and Location Analytics

The language analytics reports (below the Audience section, as seen in Figure 7-6) show you which languages are most common on your sites. In my case I had two languages set, Arabic and English, and you can see how many visits are allocated to each of those languages. There also is a language value report that shows you which languages are generating the most value for your site. This might be better as an average (see self-service BI section later in this chapter); otherwise, volume distorts the picture and makes the report less useful.
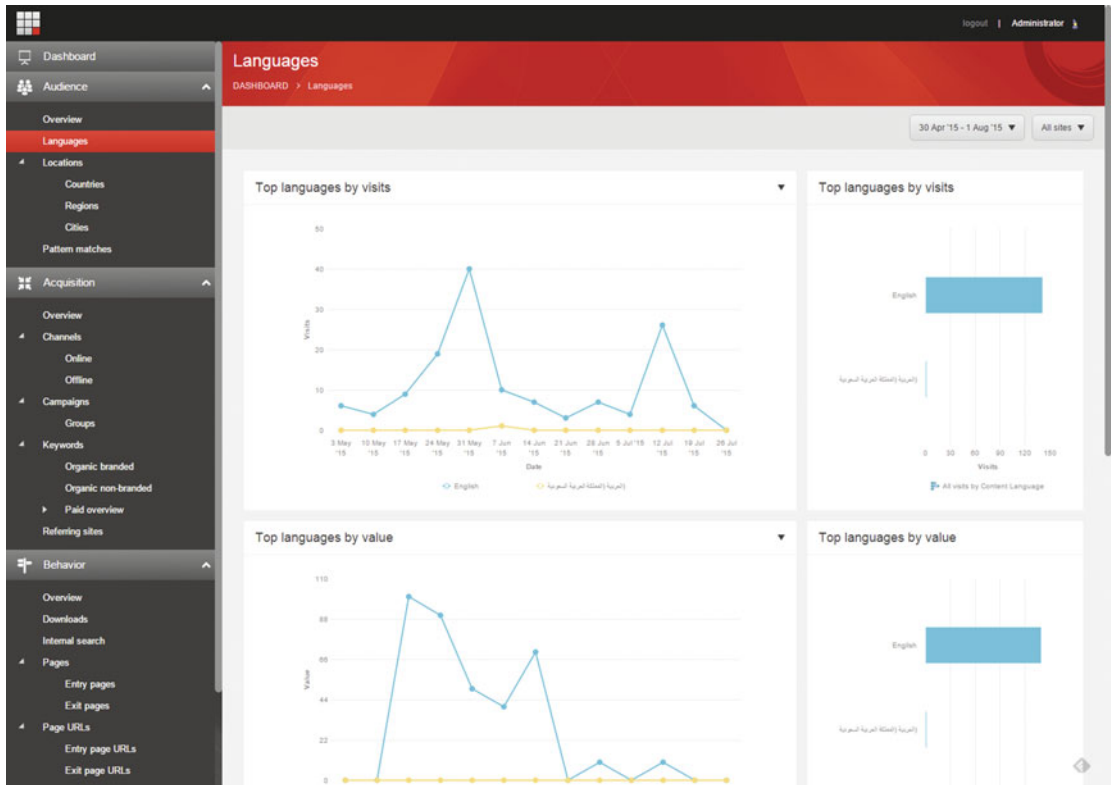
Figure 7-6. *Language analytics*

Location Analytics

The Location Analytics (next link in the Audience section) shows very similar reports as the Language section, except that instead of language it shows geographic data so you can get a sense of where your users are coming from. You can see an example of location analytics in Figure 7-7, but since this is from my demo PC the data is all coming from the same place, so you'll need to use your imagination a bit.
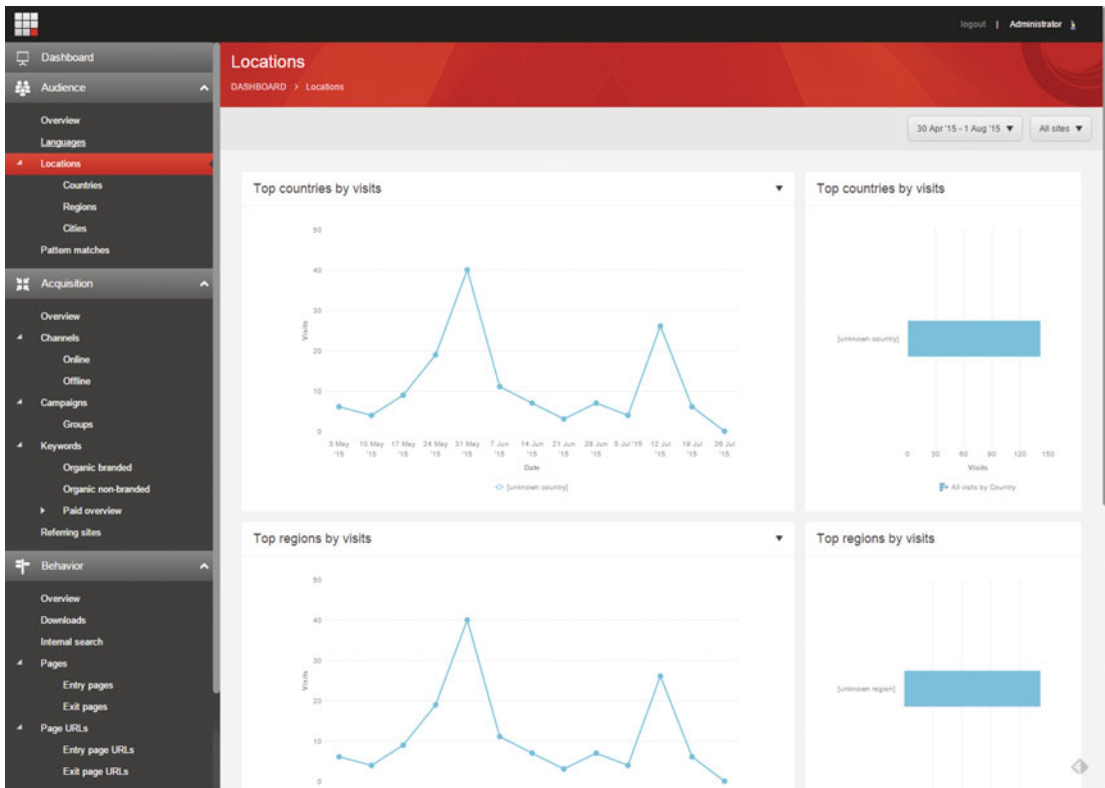
Figure 7-7. *Location analytics*

Pattern Matches

The top pattern matches dashboard (Figure 7-8) shows you how often users are getting matched up with your various personas (or more generically, your profile cards). This can help you understand which personas are more prevalent on your site. Additionally, you can see which personas are generating the most value. This can be very helpful when you're trying to get more value out of lower performing personas. You may notice their low value performance and/or low visit count and as a result update your personalization strategy to target more relevant calls-to-action, or perhaps you would spin up an e-mail campaign to target a particular persona. Or, if you notice your site hardly ever matches users to a particular high-value persona.
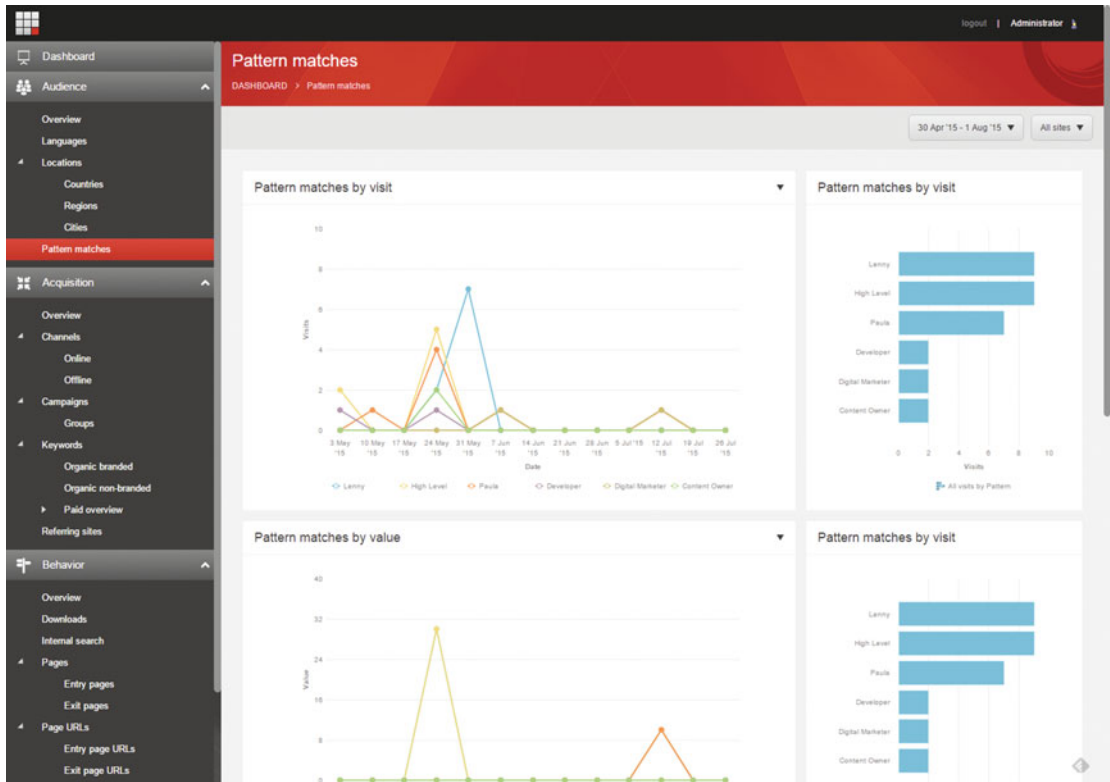
Figure 7-8. *Pattern matching analytics*

Acquisition Analytics

Acquisition analytics shows from which channel sources your users are entering, the value those channels are driving, as well as which goals are getting those users to convert from. This data can help you identify underperforming channels and how different behaviors lend themselves more or less to driving conversions. Notice the example in Figure 7-9.
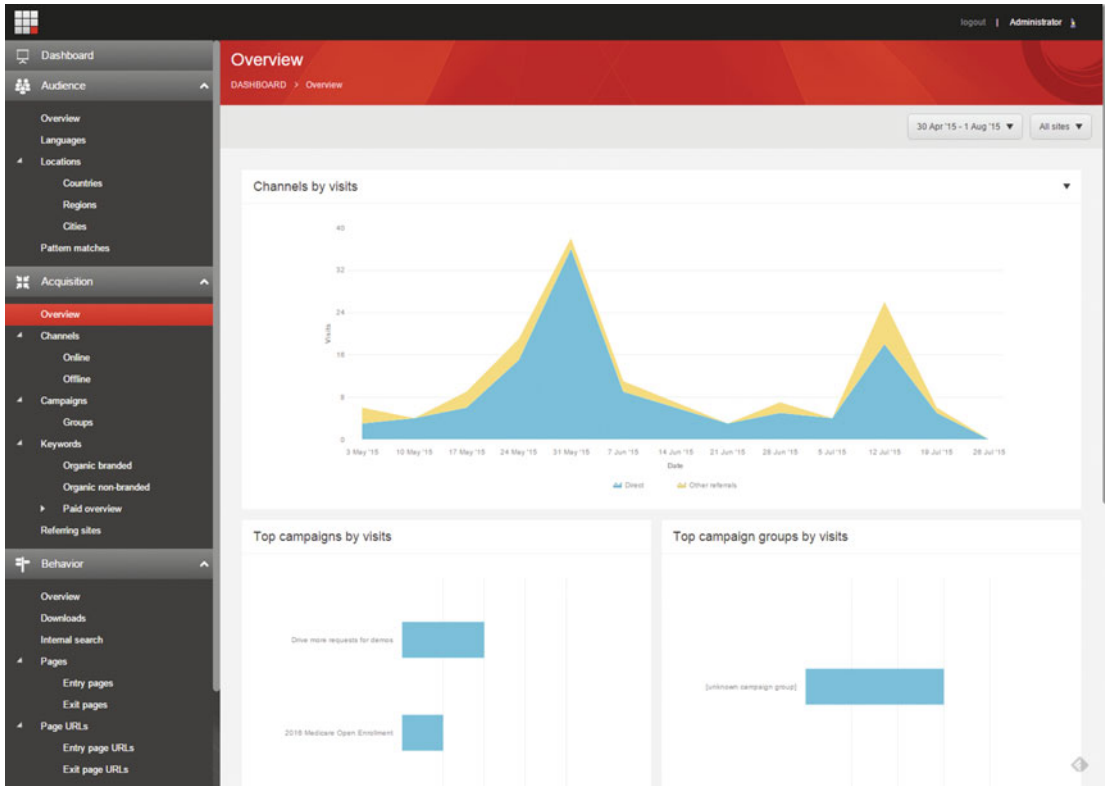
Figure 7-9. *Acquisition analytics*

Campaign Analytics

Campaign analytics show the performance of all your campaigns, as shown in Figure 7-10. It is common to group/categorize campaigns since you may have many running in parallel. The first report shows how those different categories are performing in aggregate, followed by specific, individual campaign performance.
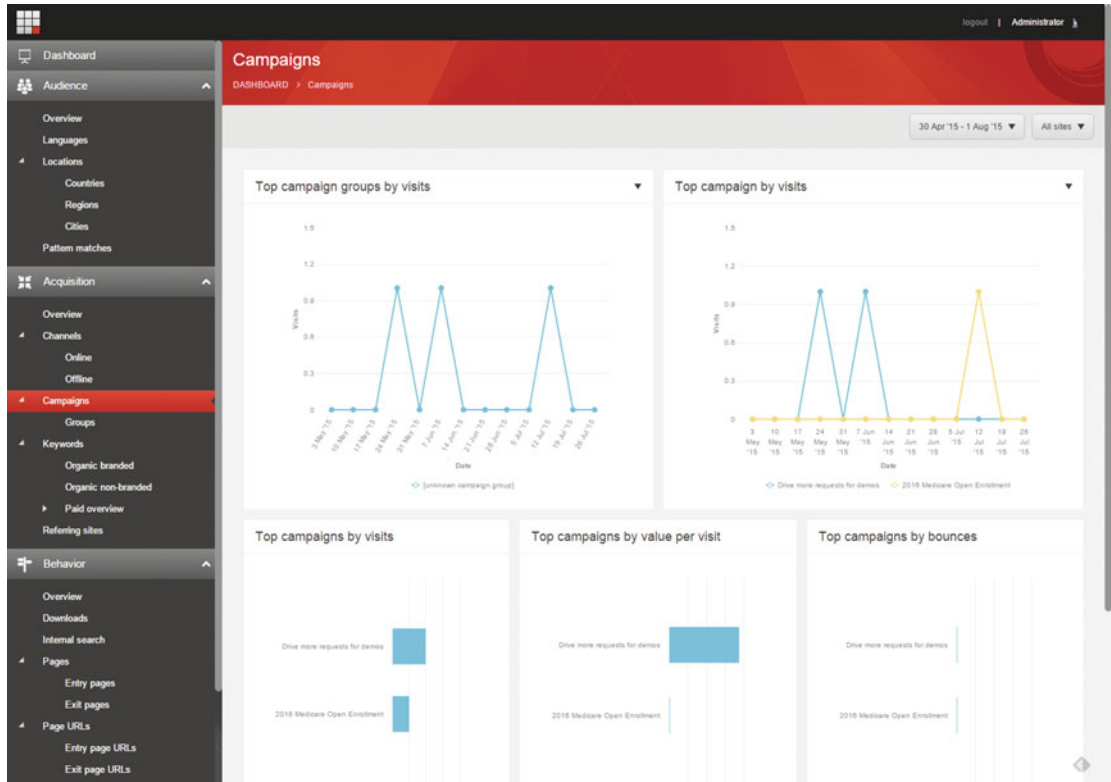
Figure 7-10. *Campaign analytics*

Keyword Analytics

Keyword analytics show from which keywords users are entering your site. This is driven from your configuration of search engine pay-per-click configurations, such as Google's AdWords. As people enter your site from an AdWords campaign, you can track those interactions here including keywords, assuming you have many campaigns each with different keywords. This is a helpful way to identify which keywords are driving the most traffic to your site.

Keyword Analytics can be vied from the Keywords link, below Acquisition.

Behavior Analytics

Behavior Analytics (Figure 7-11) show which pages are getting the most traffic. Additionally, you can see which pages users typically enter into as their first page, as well as which pages they tend to leave from (dead ends). In the top chart, you'll notice the total page visits, as well as the average number of page visits per visit. This can help you understand how much time your customers are spending on your site. Other reports such as site search behaviors and download activity can also be found under the Behavior section.
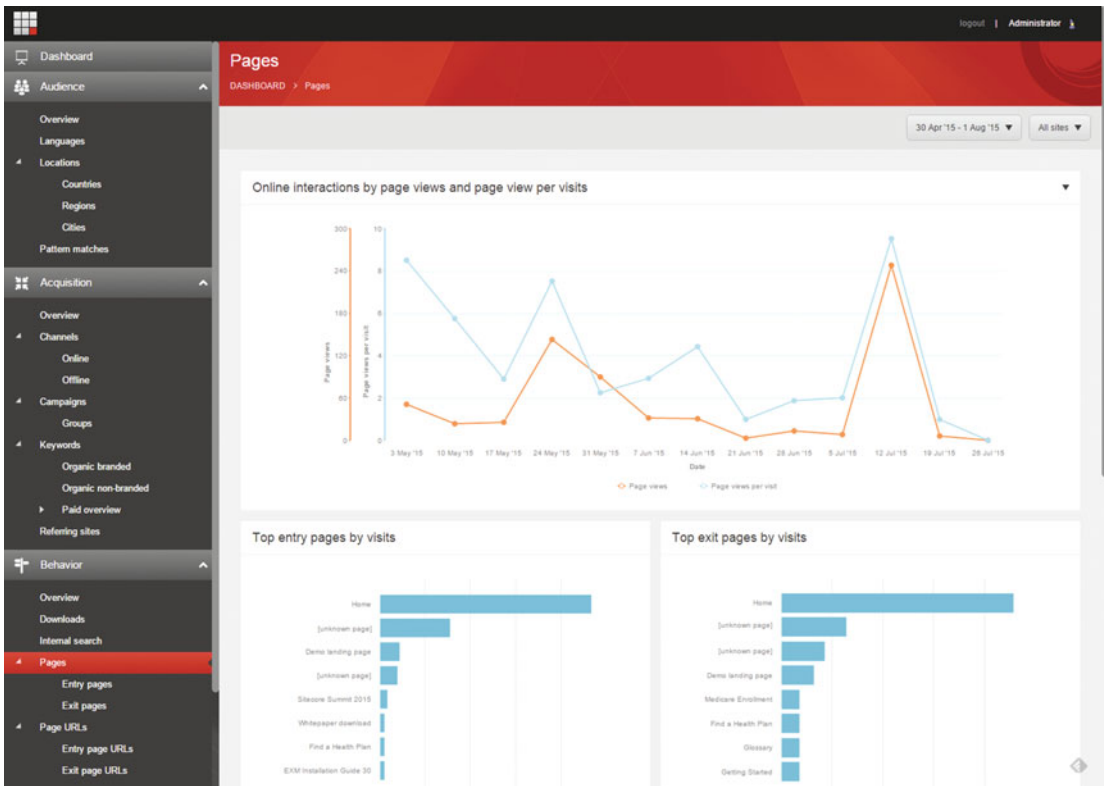
Figure 7-11. *Behavioral analytics*

Conversion Analytics

The conversion analytics are some of the more interesting reports. They show which behaviors are generating the most value (and as a result, leads) for your business. The overview page (Figure 7-12) shows a summary of the number of conversions, and which goals are converting. Then, there is a Conversions (Figure 7-13) page that highlights more details on conversions, such as the number of times a user converts on average. Lastly, the goals overview (Figure 7-14) highlights more details around your goal interactions.
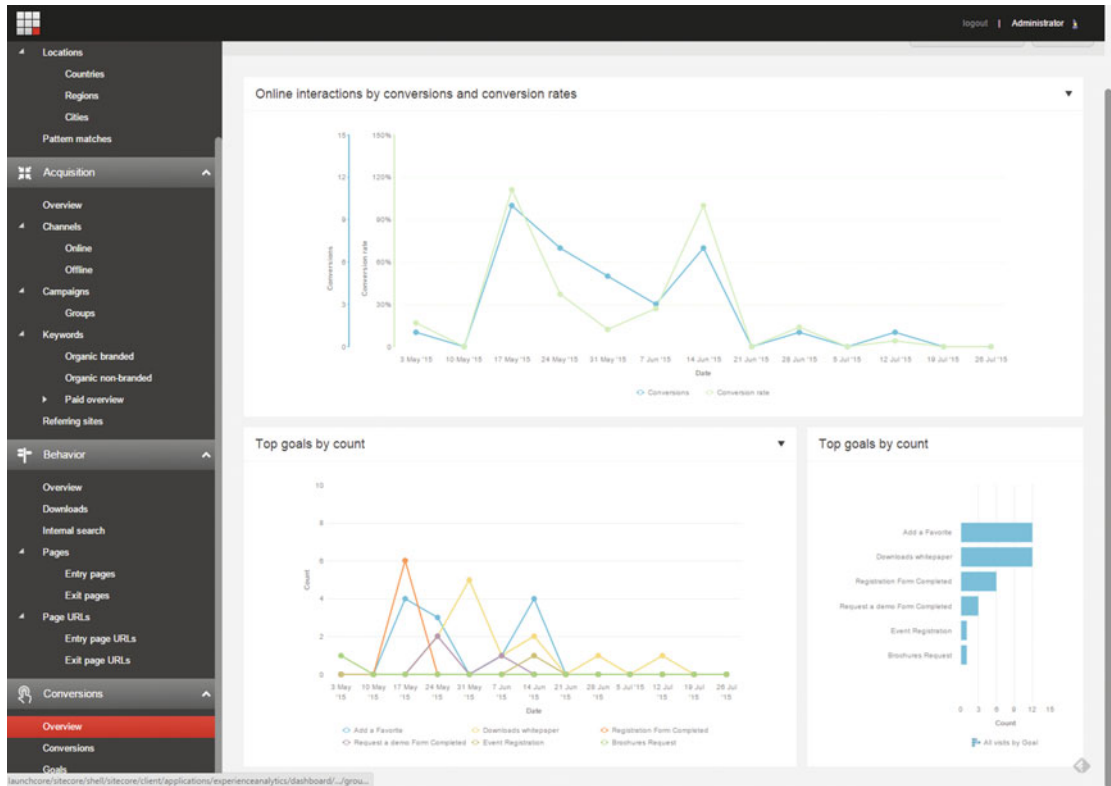
Figure 7-12. *Conversion analytics overview*
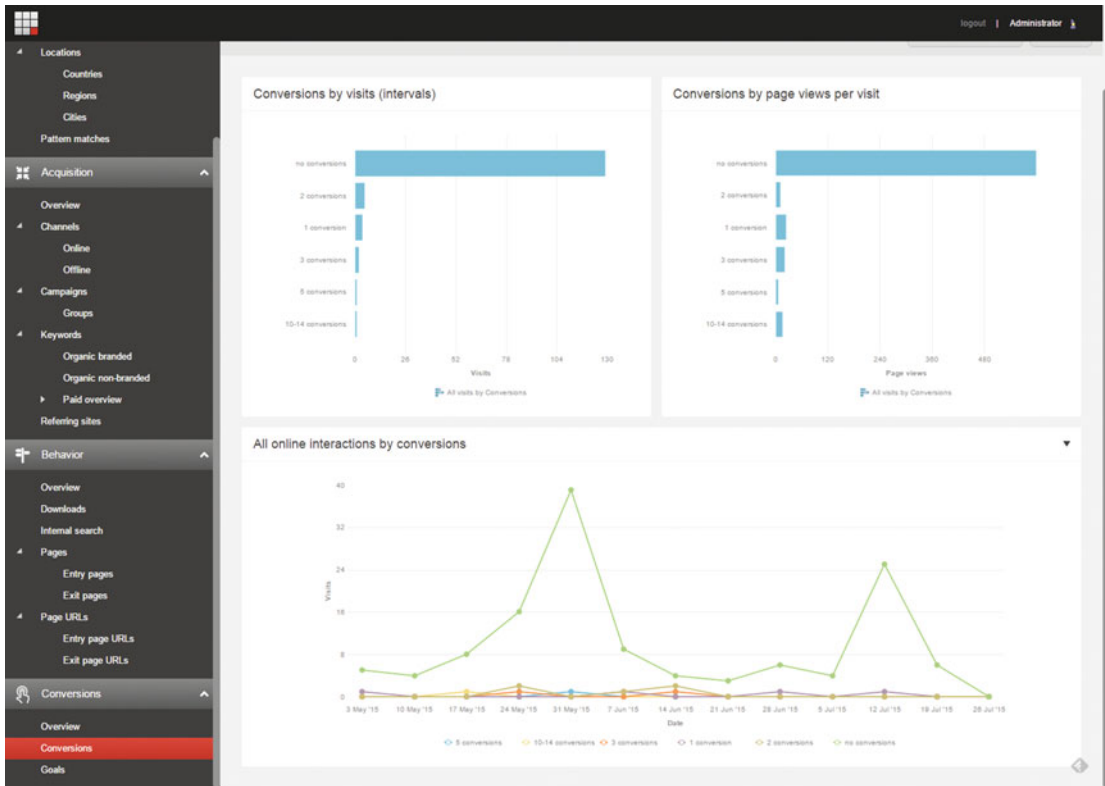
Figure 7-13. *Conversions dashboard*
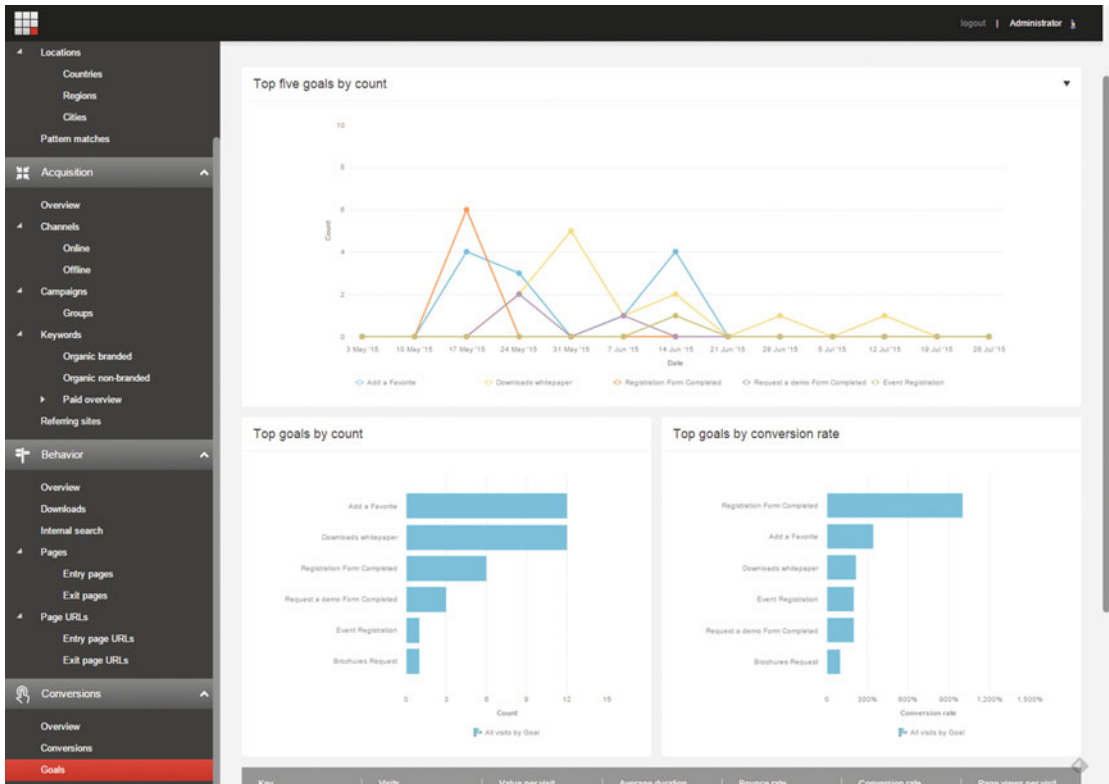
Figure 7-14. *Goals dashboard*

Experience Profile

Experience profiles are where you go when you want to see a "single view of the customer". You can get to your customer's experience profiles from the Launch Pad ➤ Experience Profiles.

Every interaction, everywhere, should be saved to the profile to enable this single view of the customer. Certainly every interaction within Sitecore is tracked here, but you can also use the Federated Experience Manager (discussed at the end of this chapter) to bring in data from non-Sitecore experiences. Additionally, you could build customizations that integrate CRM data, for example. In any case, when you want to understand how a customer is engaging with your brand, you go to their experience profile.

The interesting thing about experience profiles is they are not limited to known users. Anonymous users are also tracked. Notice the anonymous profile found in Figure 7-15. This user engaged the brand from a campaign named "Drive more requests for demos". After entering into the experience, we've learned that this user matches a persona named "Pam," a pattern card "Digital Marketer," and that they prefer "high-level" information. Depending on what these personas/cards signify for your business, this can be very valuable information to know further down in your digital pipeline, as you're trying to get this user to convert into a customer.

Notice also how this anonymous user has had three different interactions, the first on May 28th, the second on June 2th, and the last on June 4th. Anonymous behavior is even tracked across multiple sessions (ID stored via cookie). This is powerful, because when/if they do convert, all of those anonymous interactions come into that, now known, customer profile. So you see every interaction for that customer even before they became a customer! Additionally, past interaction data can help drive future personalization, making conversion easier to achieve.

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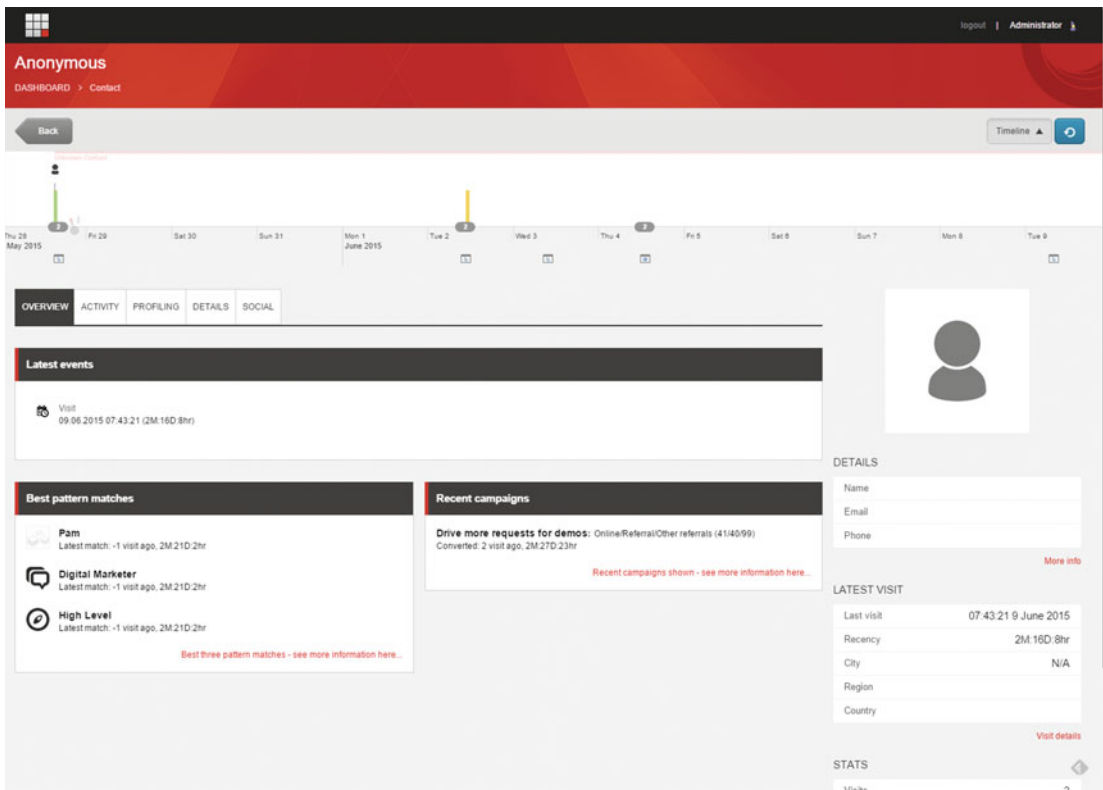
Figure 7-15. *Experience profiles help create a "single view of the customer"*

I mentioned three different interactions as seen in the timeline. You can click one of those interactions and everything below will update to show specifically what happened during that interaction. By default all pattern matches, campaigns, goals, etc. are aggregated across all interactions so you see the full lifecycle of that customer. However, it can be handy to see what that customer did last week, say if you're a sales rep and you want to follow up on a request for a demo or something like that. By finding your target's profile you can get the intel you need to have a very specific conversation with that customer (or drive personalization, etc.).

Path Analyzer

The Path Analyzer is a really helpful tool in Sitecore. Most of the other reports will show you the average user viewed eight pages, for example, but which eight? If they started on the home page, what are the most common paths to other pages? Where are the dead ends in the site and how are users getting to them? Which of those eight pages is generating the most value? Which page are they converting on the most? All these questions can be answered through the use of the Path Analyzer. You can access the Path Analyzer from the Launchpad.

Notice the following example of the Path Analyzer in Figure 7-16. It shows all the most common paths on the site. In this example, I clicked the home page, and thereafter I see some common second pages that people interact with after leaving the home page. And likewise I can keep clicking down the path to see what happens down the line.

Notice that by the fourth node in the path, whitepaper download, we can see the digital funnel on the upper left. It shows that 0.7% of users get to this node from the Downloads page, and that 1.7% of users get to downloads from the EXM Installation Guide page. Additionally, you can analyze value and visits at each node to see where the value is generated on your site, and potentially where users are finding no value at all.
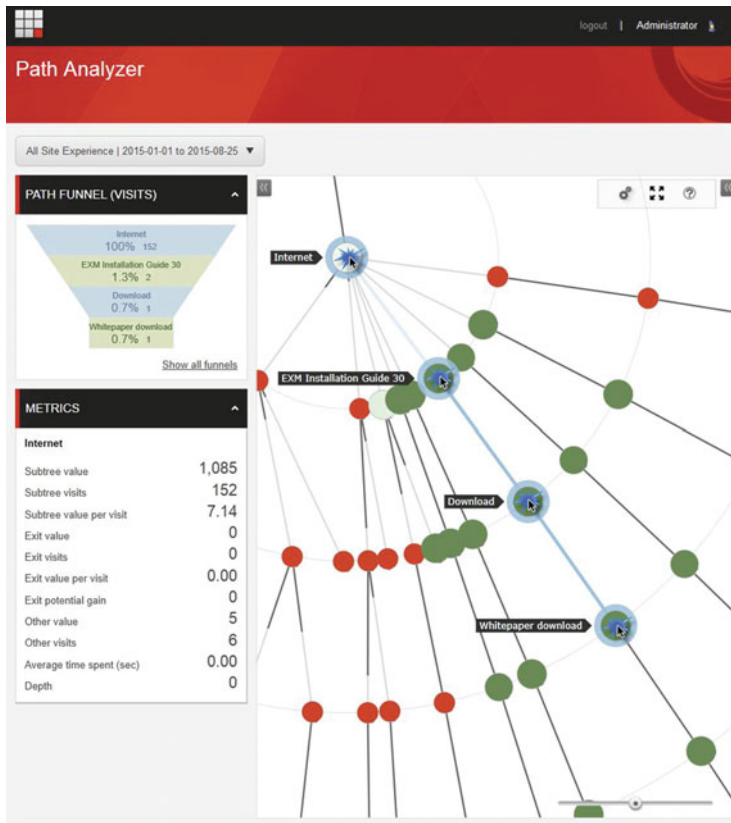
Figure 7-16. *The Path Analyzer helps you understand how your customers are navigating the digital experience*

Self-Service Sitecore Business Intelligence

As you just saw, there are at least 18 different out-of-the-box reports, so why would we need to extend this discussion any further? Are there other reports we don't get out-of-the-box? Well, yes! Really, the possibilities are infinite. Every business is going to care more or less about different things. Every Sitecore installation will have a different measurement strategy that measures digital success against benchmarks and business objectives. Since building custom reports is such a pain in the rear (see note in the chapter's introduction), we turn instead to self-service Business Intelligence (BI) to accommodate our custom analytic needs.

■ **Note**   Custom reports within Sitecore is an alternative, but you'll need a savvy Sitecore developer. The benefit is that you get an integrated reporting experience alongside all the out-of-the-box analytics. The downside is that it's akin to launching the space shuttle, when compared to the self-service techniques described in this section. Empower the marketer, or enforce consistency? That's a business decision you'll have to make. Since custom analytics are beyond the scope of the audience of this book, it is not covered here. For a good example of custom, integrated analytics, check out `http://bit.ly/1O44iOL`.

A few benefits of self-service BI for Sitecore are:

- *Mobile BI*—Sitecore admin interface is not mobile optimized. Get your analytics on the go with self-service BI.

- *Key Performance Indicators (KPIs)*—The out-of-the-box dashboard has great information, but it takes a while to interpret. Wouldn't it be great to have a KPI, so in three seconds you can understand how you're performing?

- *Cross-dimension relationships*—Would it be nice to see what goals a campaign generated and the value of those goals? Or, perhaps you want to understand which Personas trigger which goals the most across various campaigns? These relationships can be expressed either as three separate custom reports, or as one single report with filtering capabilities—something most self-service BI tools do natively.

- *Mashups with other datasources*—Perhaps you want to extend your web analytics data and mash it up with your CRM data. This would help you understand a customer's journey across campaigns managed across multiple systems.

- *The marketer can ask questions of the data that otherwise is not answerable in a static report.* PowerBI, for example, has a Q&A feature where you can free-form type your questions in a search box and PowerBI displays charts/graphs it thinks align to your question.

There are many tools you can use for self-service BI against Sitecore data. Microsoft Excel, a tool everybody is familiar with, is a great start. If you want to share your dashboards and KPIs with others on your team, you may want to consider PowerBI. PowerBI is configured very similarly to Excel, so it is a very easy-to-use product. You can publish your dashboards into and Office 365 PowerBI site to share with others in your organization. While there are many other tools (Tableau, for example), these two will be covered in this section.

■ **Note**   This isn't a BI book. You can buy entire books on Excel and PowerBI, and I recommend you get one if you're serious about leveraging these tools for your Sitecore BI needs. The goal of this section is simply to whet your appetite and provide a high-level understanding of what is possible, with minimal step-by-step procedures. Once you know the data model and once you know the tool, you have no need for step-by-step procedures. That's the promise of self-service BI, after all.

Excel PowerView Reporting

Excel spreadsheets, and specifically PowerView dashboards, provide an easy fast way to get your fingers in the data and start playing around. In 15 minutes you can create a dashboard similar to the one you see in Figure 7-17. Notice how we have many of the types of data you see in some of the out-of-the-box reports described in the previous section. You see visit counts, value for those visits, campaign data, etc. Since you're connecting Excel to the same datasource that Sitecore connects to, you have all the same data available at your fingertips. Simply check a value in the table that interested you (below PowerView Fields) such as Traffic Type ➤ Visits and you'll see a graph pop up on the left showing that data. It's that easy!
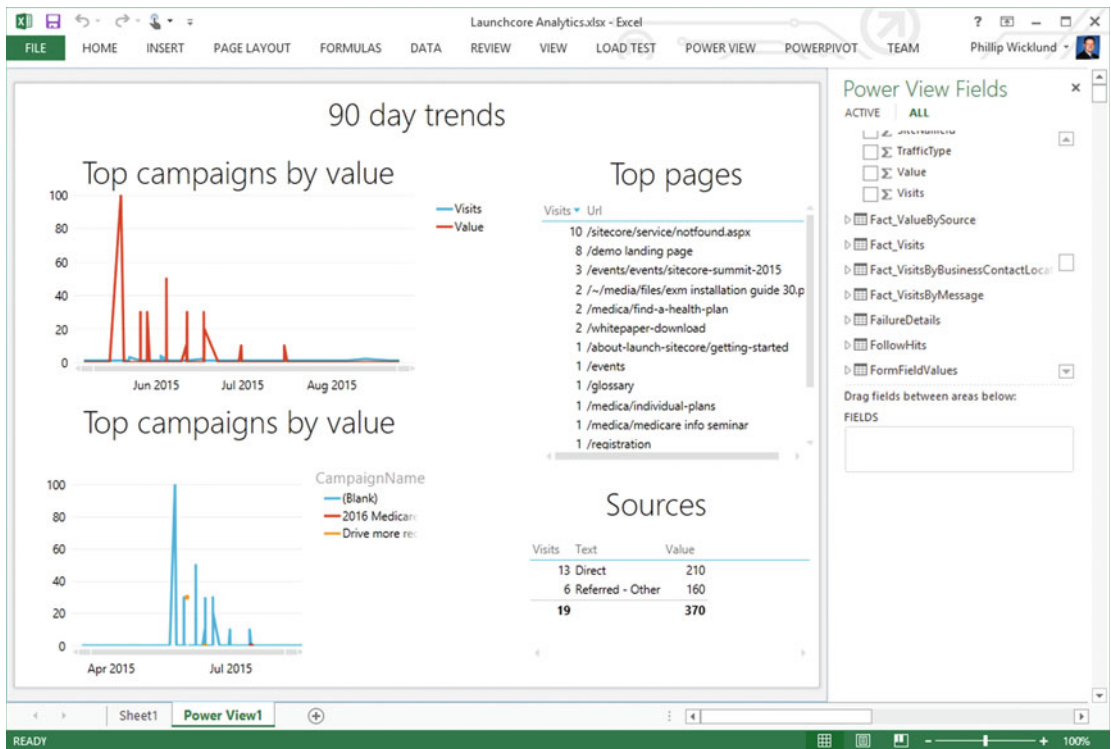
Figure 7-17. *PowerView is an excellent and easy way to create your own custom reports without needing a developer*

You could add other fields or create relationships between different types of data. Notice in Figure 7-18 how I clicked a campaign named Drive More Demos. When I clicked that campaign, PowerView is smart enough to update *all* the charts/graphs on that dashboard and check to see if they can filter their data by that item. Notice how the visits/value chart has updated to just show the visits/value for just that campaign. Likewise, the top pages value updated, as well as the traffic source on the lower right. Unfortunately with my limited dataset (demo environment), the charts in my figures don't look as cool as yours will look when you have production data you're reporting against.
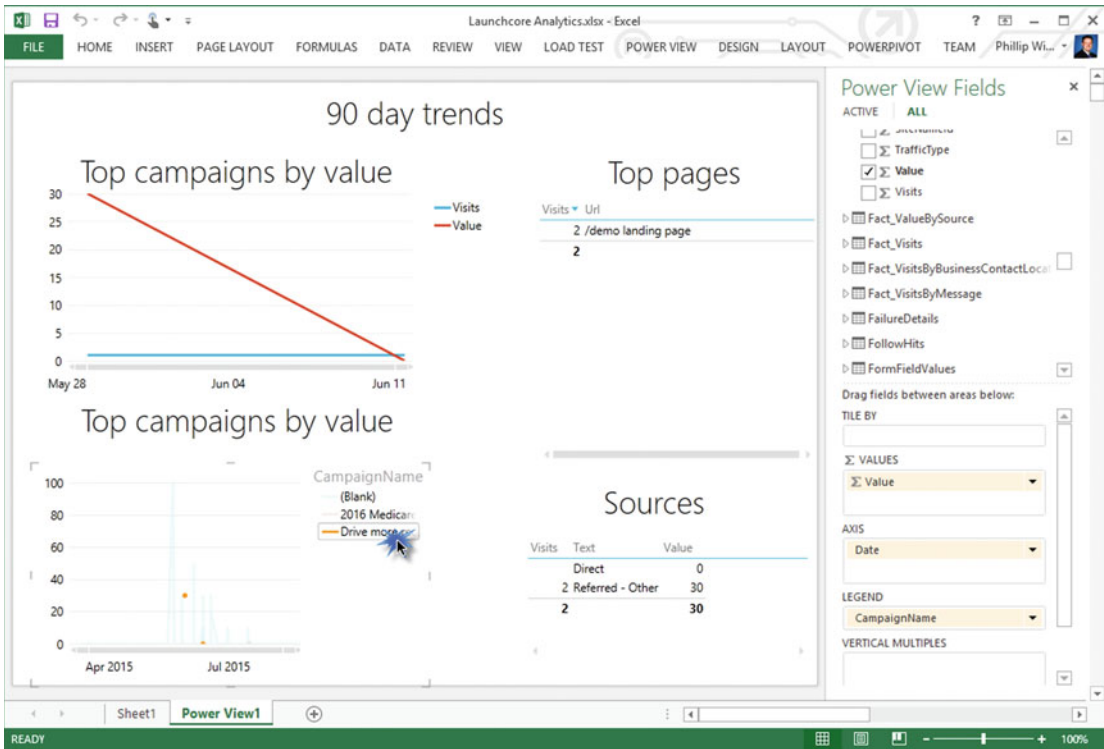
Figure 7-18. When you click an item in PowerView, all the other reports update to show the relationships between the data elements, which is not available in the out-of-the-box reports

Check out these high-level steps to create a PowerView dashboard similar to what you see in the previous two figures:

1. Open Excel 2013 ProPlus or later version.

■ **Note** You can install a module into Excel 2010 to support PowerView if you're not on Excel 2013, where it's installed by default.

2. On the Ribbon, click PowerPivot (last tab) and then click Manage.

■ **Note** If PowerPivot is not shown, click the Insert tab ➤ Power View button. Thereafter you'll be prompted to enable PowerPivot, and after which the PowerPivot tab should appear. Click PowerPivot ➤ Manage.

3.   Within the PowerPivot Manager, click Get External Data ➤ From Database ➤ From SQL Server, as can be seen in Figure 7-19.
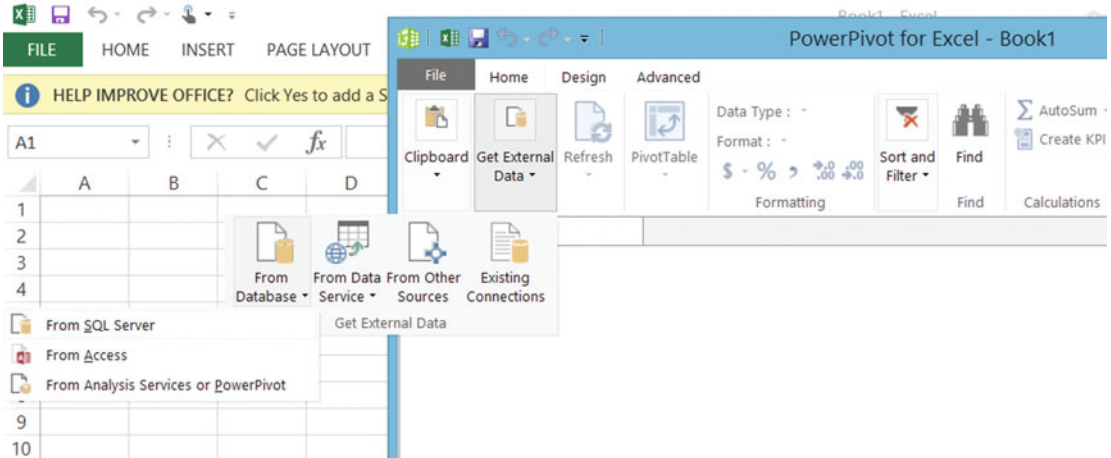
Figure 7-19. *In Excel, simply import the Sitecore Analytics database to start creating your custom reports*

4.   Enter the name of the SQL server that's hosting your Sitecore Analytics database. Thereafter, you should see the Analytics database show up in the drop-down of databases. Click Next.

■ **Note**   You may not have access to the analytics database. If not, ask your Sitecore administrator to grant your user ID read access to the Analytics database. A best practice here might be to have an Active Directory group that maps to your "Contoso Sitecore Marketing Analysts" Sitecore role (see Chapter 8) and this AD group also has read access to this database to enable self-service BI.

5.   Select "Select from a List OF Tables…" and click Next.

6.   Select all of the tables to import all the analytics data (Figure 7-20) and then click Finish. Excel will import all of the data, which might take a good long time. Click Close when it's complete.

■ **Note**   This may only be appropriate for smaller sites. The analytics database can get huge if you're getting millions of requests a day. If so, you should consider PowerBI (see the note in the next section), which can handle larger datasets and can refresh the data behind the scenes, or simply import the specific tables you need (but you'll limit the reporting you can do as a result).
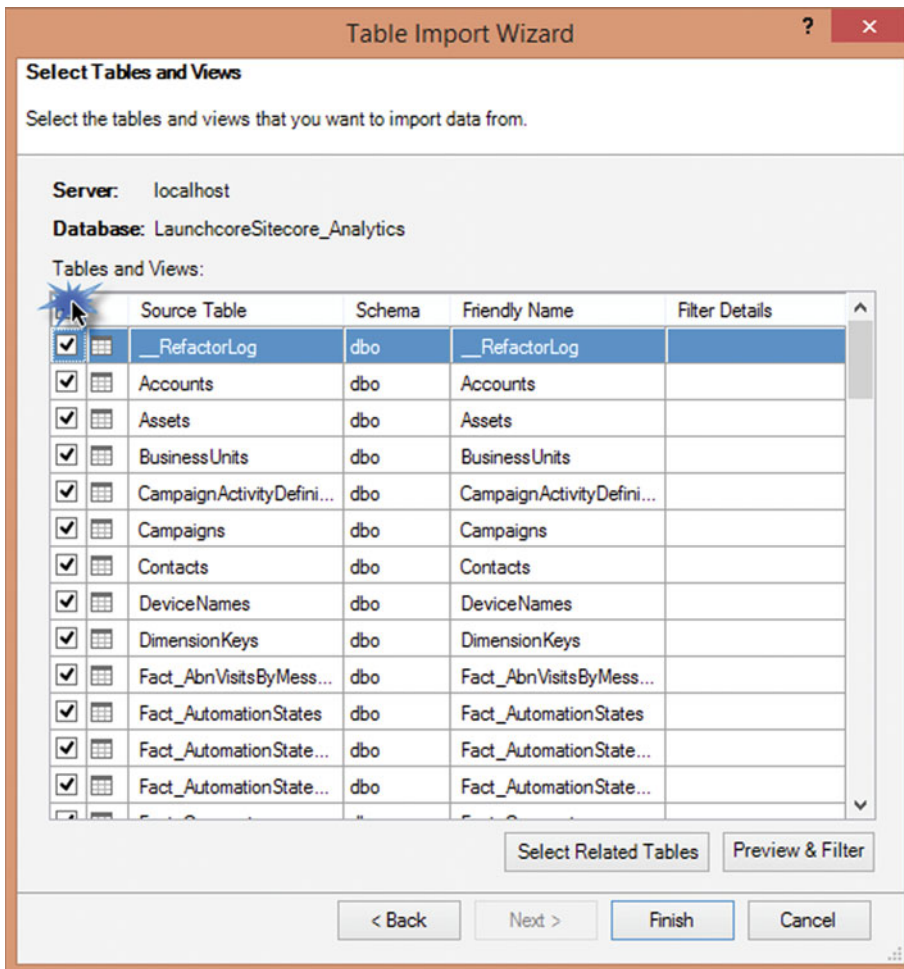
Figure 7-20. *Import all the tables and Excel with auto-generate all the needed relationships*

7. Back on the spreadsheet, click the Insert tab ➤ PowerView to add a PowerView report to the book.

8. You'll notice all PowerView Fields on the right. Most of the names are self-explanatory. For demonstration purposes, scroll down and expand Fact_Traffic and then check the Visits and Value checkboxes.

9. You'll notice the data added to the design surface but not in a chart format (Figure 7-21). To convert it, click the border around the data, and then click the Design tab ➤ Other Chart ➤ Line to convert it to a view that will look similar to Figure 7-17.
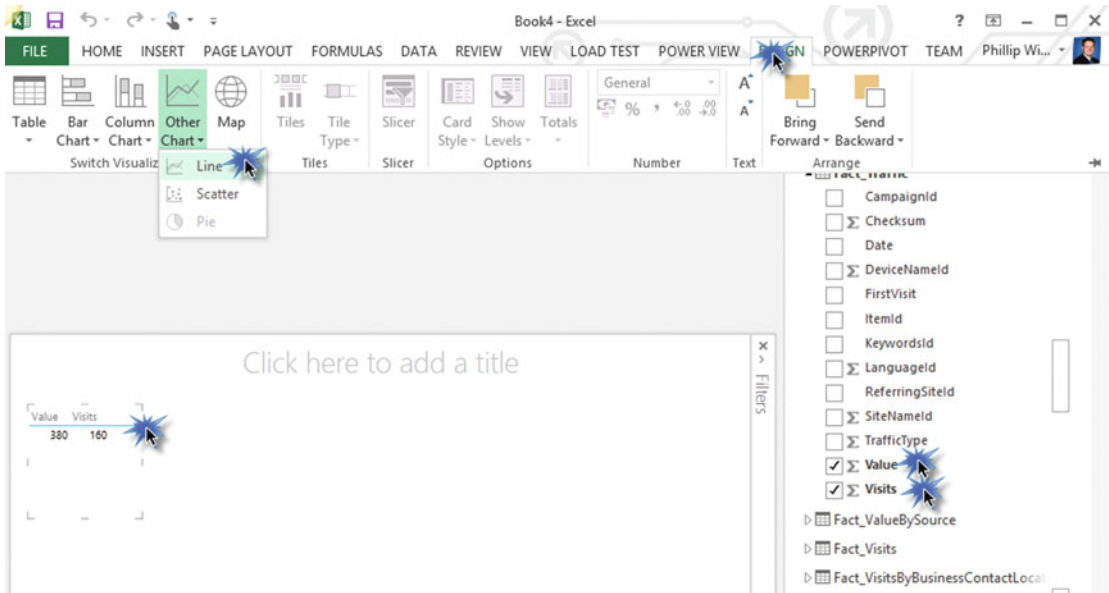
Figure 7-21. *Use the Switch Visualization options to choose what type of chart or graph you want*

10. Perform similar steps to add other types of data, such as Campaign performance, channels, or top pages that provide the decision support you need.

PowerBI for Teams

PowerBI is a feature of Microsoft's Office 365 cloud (www.Office365.com, www.PowerBI.com). Essentially, PowerBI is a cloud-based business intelligence platform. It is very easy to connect PowerBI to internal datasource (such as an on premise Sitecore Analytics database) or external datasources (such as a Sitecore Analytics database hosted in Microsoft Azure or Amazon AWS). PowerBI has very similar charting and graphing capabilities that you find in Excel.

However, PowerBI has certain advantages over PowerView in Excel. Those are:

- You can easily share your dashboards with others in your company (it's a pain to e-mail large files around, keep them in sync, etc.) because PowerBI uses a web browser for data visualization (Figure 7-22 shows a retail sample).

- PowerBI does a much better job with mobile insights. For example, there is a native iPhone/iPad app for PowerBI, whereas loading a spreadsheet on your iPhone is a bit more clunky, and depending on the size of the spreadsheet, likely impossible.

- PowerBI can refresh the data on a schedule of your choosing such as hourly, behind the scenes, so every time you go to PowerBI you know the data is fresh. This is very important for large datasets since you probably don't want to watch a spinny spin for 30 minutes before you get the decision support you need.

- PowerBI has free-form Q&A abilities to "ask questions of the data". This is very powerful for data discovery purposes, or when you're lazy and don't want to build pre-canned charts, etc. ☺.
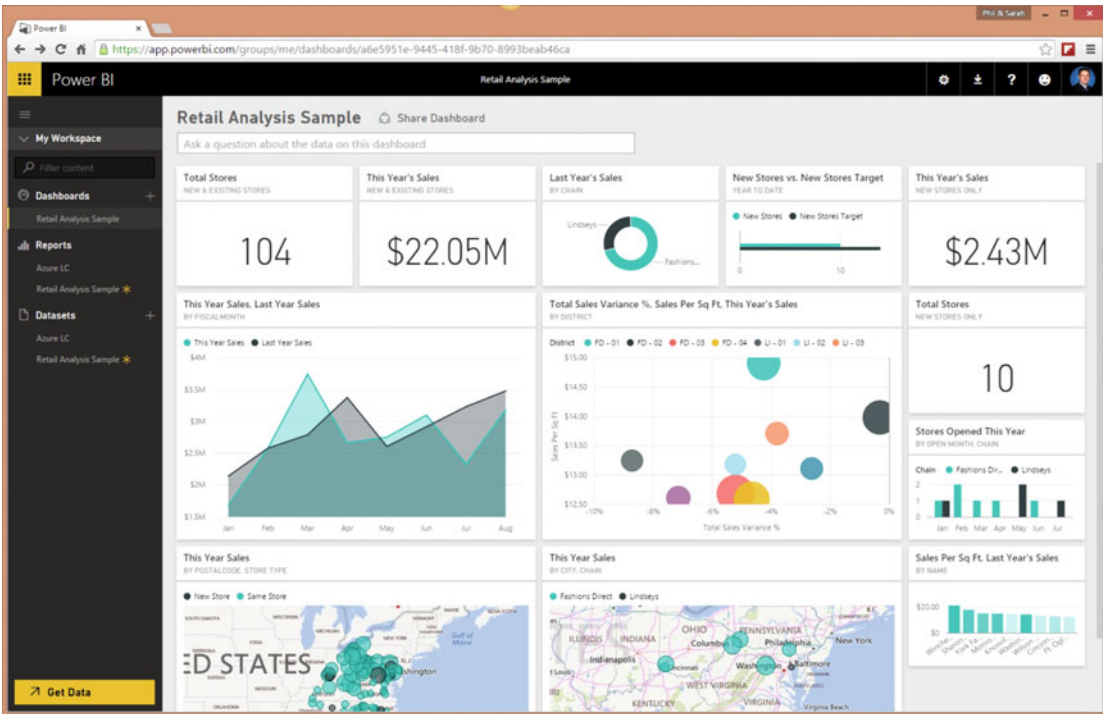
Figure 7-22. *PowerBI has rich visualization tools and offers Q&A features, as you can see in this retail example provided by Microsoft*

■ **Note**   PowerBI has maximum dataset sizes (currently set at 250MB of compressed data; you'll see about 50% compression of your Sitecore Analytics database). For true "enterprise grade" self-service BI you need to build an OLAP Cube or Tabular model on top of the Sitecore Analytics database that pre-aggregates information, from which you connect PowerBI to the cube or model through the Analysis Services Connector. In this case, live queries are issued, as opposed to caching all the data within PowerBI. OLAP cubes and Tabular models are far beyond the scope of this book, but they offer a solution for medium to large implementations, should that be your situation.

Use the following high-level steps to create a dashboard in PowerBI:

■ **Tip**   The PowerBI team is continually rolling out new "content packs" with preset reports/configurations for popular tools. They have already released packs for Google Analytics, Adobe Analytics, CRM, etc., so keep an eye out for a Sitecore pack in the future (Get Data ➤ Services link).

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1. Go to https://powerbi.microsoft.com/desktop to download the PowerBI designer desktop application used to design your dashboards (Figure 7-23).

2. You'll notice the PowerBI Desktop Designer has a very similar ribbon as the one you saw in Excel in the previous section. Repeat those steps here (they are identical).

■ **Tip** One nice feature of PowerBI is the ability to create KPIs, as you can see in Figure 7-23 (the gauge).

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3. When your dashboard is complete, click the Publish button. Browse to https://app.powerbi.com to view your dashboard and share it with your teammates.
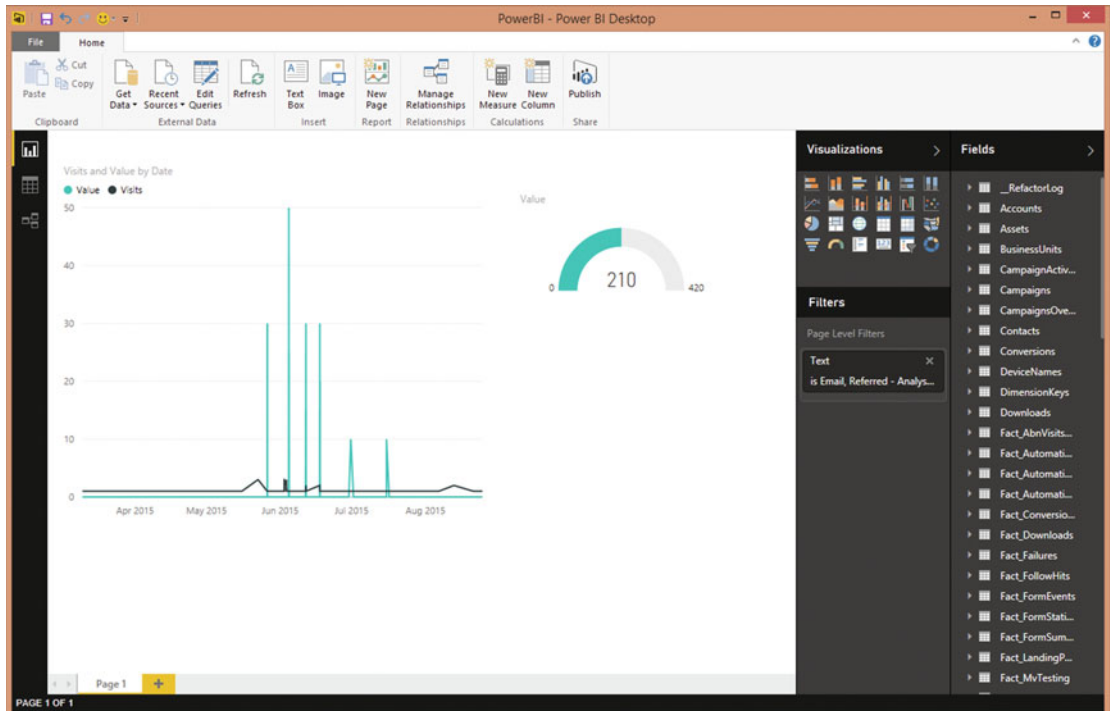
Figure 7-23. *You can use the PowerBI Desktop Designer to create a custom dashboard from the Sitecore Analytics database much the same way you can with Excel*

Summary

Experience Analytics enables you to measure success and drive performance and return on your investment. In the Sitecore world, Experience Analytics is driven from Sitecore's xDB platform, where every interaction, everywhere, is captured, enabling rich reporting and even self-service business intelligence with tools such as PowerBI.

It all starts, however, with your measurement strategy. Knowing what to measure is just as critical as knowing how to measure it. Measurement in Sitecore stems from all the previously discussed topics in this book, especially campaigns, outcomes, goals, and personas.

Measurement helps us understand if we configured those things correctly and if they are driving their anticipated value or not. This chapter covered all of these concepts, including self-service BI for extra credit.

All things considered, the potential is limitless; we've just seen the tip of the iceberg on what can be accomplished with Experience Analytics.

CHAPTER 8

■ ■ ■

Security

Oh, the dreaded "Access Denied" page. Security is table stakes for any configuration guide such as this one. However, security is a huge topic, so it's important to straight away align on what is covered in this chapter, and what is intentionally not covered.

Security tries to answer questions like "who are my users?," "how will they authenticate?," "what are they allowed to do once they're logged in?," and "is my configuration hardened against attack?"

In a book focused on end users, marketers, and power users, security has a narrower focus than say, administrators. Administrators are concerned with all of these aspects of security. Power users (technologists but not necessarily developers or admins) are concerned more with the application configuration and hence the questions "who are my users?" and "what are they allowed to do once they're logged in?". This, then, is the primary focus of this chapter. The appendix does a bit to elaborate on "how will they authenticate," but even that is a topic generally beyond the scope of the majority of those who will be purchasing this book.

To get started, we want to dig into user management and access management in Sitecore. This will allow power users to create users who can log in to the site, as well as configure what they are allowed to do once they get into the site. These features stem from the Launchpad (Figure 8-1), specifically the User Manager, Security Editor, Access Viewer, and Role Manager icons (the Domain Manager is discussed more in the appendix).

- *User Manager*—Where you can go to create new users, reset passwords, etc.

- *Security Editor*—Where you can go to grant access rights to users.

- *Access Viewer*—Where you go to see what access rights a user already has.

- *Domain Manager*—Where you can set up new user sources, such as "Extranet" vs. "Partners" or a link to CRM or an internal Active Director.

- *Role Manager*—Where you go to create roles (groups of users granted similar access rights).
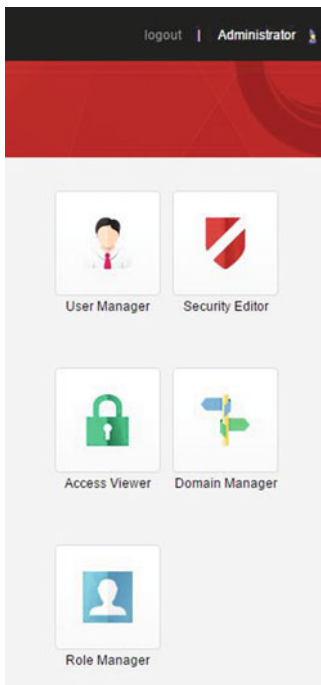
Figure 8-1. *Security configuration options are available on the Launchpad*

User Management

User management is a great place to start a security conversation. Security is applied to users; when someone logs in to Sitecore we need to configure what they are allowed to do and what they are prevented from doing. In order for users to log in, they must have an account. That account is managed from the User Manager utility, which can be launched from Launchpad (as seen in Figure 8-1).

The User Manager should look similar to Figure 8-2. There are four main sections of configurations to choose from:

- *Users*—This section features buttons that allow you to create new users or update existing users, such as editing the e-mail address or resetting the password. The list of existing users is below the ribbon.

- *Security*—This section has a link to the Role Manager, as well as a link to launch the Domain Manager.

- *Tools*—This section has a link to the Access Viewer, as well as a link to launch the Security Editor.

- *Serialization*—Serialization is a way for an administrator to essentially back up all your users/roles onto the server file system, often used for portability purposes.
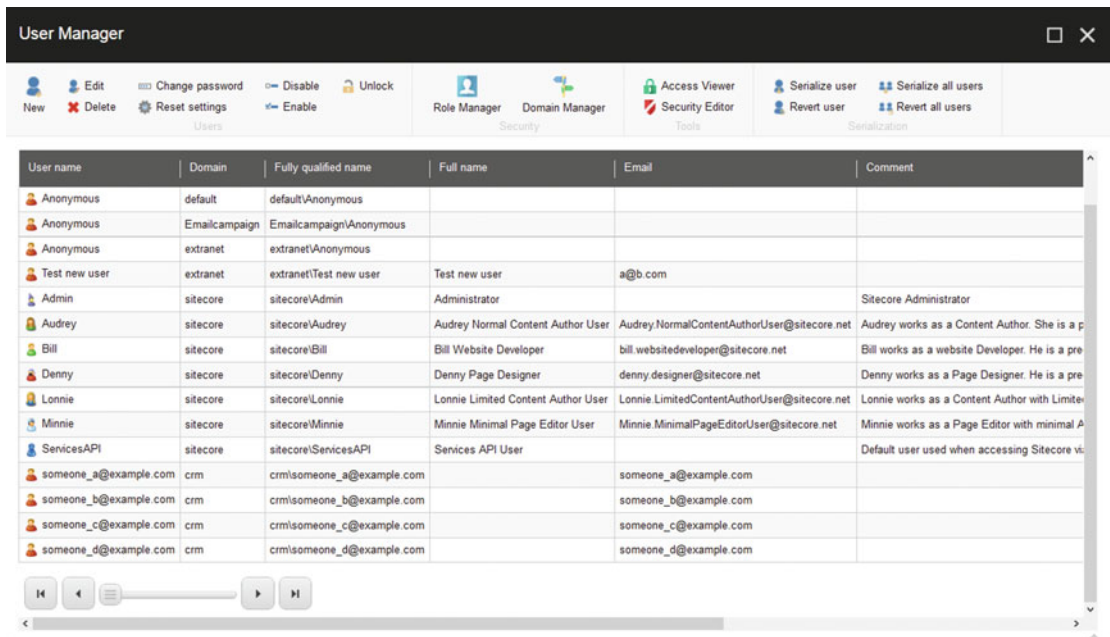
Figure 8-2. *You can create new users from the User Manager*

Users are tabbed, showing the first 16 by default. If you have hundreds of users (or more), you'll likely rely on the search box to find a user. Thereafter, you can select that row in the table and then click one of the ribbon buttons to take action on that user.

USER DOMAINS AND AUTHENTICATION SCENARIOS

You'll notice in Figure 8-2 the Domain column. Domains typically refer to categories of users. The Sitecore domain is an out-of-the-box domain that signifies that the user is wholly managed in Sitecore. Figure 8-2 shows a couple more domains: crm, default, and extranet. In and of themselves, these domains are nothing more than a categorization. However, they also help you understand the source of the user.

"Extranet" or custom domains can be a great place to categorize your external site users (users who log into your site—aka customers—but don't need access to Sitecore). For multisite scenarios you may have several custom domains, one for each.

Active Directory, CRM, and other sources can provide users to Sitecore, but where you may or may not want the user actually managed in Sitecore. CRM, for example, you might want managed in Sitecore, and by managed we mean things like password resets, or other profile data, such as a name and e-mail address. These data can be synced back to CRM via a two-way connection.

On the other hand you likely won't want Active Directory accounts managed in Sitecore, because of stricter rules for maintaining a single source of truth. For simple scenarios, such as extranet scenarios, you can create custom domains from within the Domain Manager (Figure 8-1) to start categorizing your users. Additionally, see the appendix for more details on user authentication scenarios, such as Active Directory, or social scenarios, such as using your Facebook account to log in to Sitecore.

Creating a New User

Creating a new user is as simple as clicking the New from the User Manager. You'll be prompted to fill out some user information, as can be seen in Figure 8-3. Beyond the obvious, there are a few settings that may warrant some additional elaboration:

- *Domain*—User categorization and source, see the sidebar entitled "User Domains and Authentication Scenarios" earlier in this chapter.

- *Roles*—Roles are used to assign security to a group of users of an item so the security can be managed in bulk. Select which roles you want the new users to be a member of.

- *User Profile*—A user can have one or more pieces of metadata about them that describes that user, such as name, e-mail address, company, and so forth. Different profiles offer different metadata possibilities, and you can even create custom profiles to select from.

Figure 8-3. *When creating a new user, you'll want to assign appropriate roles and an appropriate profile to manage metadata about that user*

After you click Next, you'll receive a confirmation prompt, notifying you the user was created successfully. Additionally, a checkbox will confirm whether you want to edit the new user in the user editor. Figure 8-4 shows what the General tab looks like in the user editor.
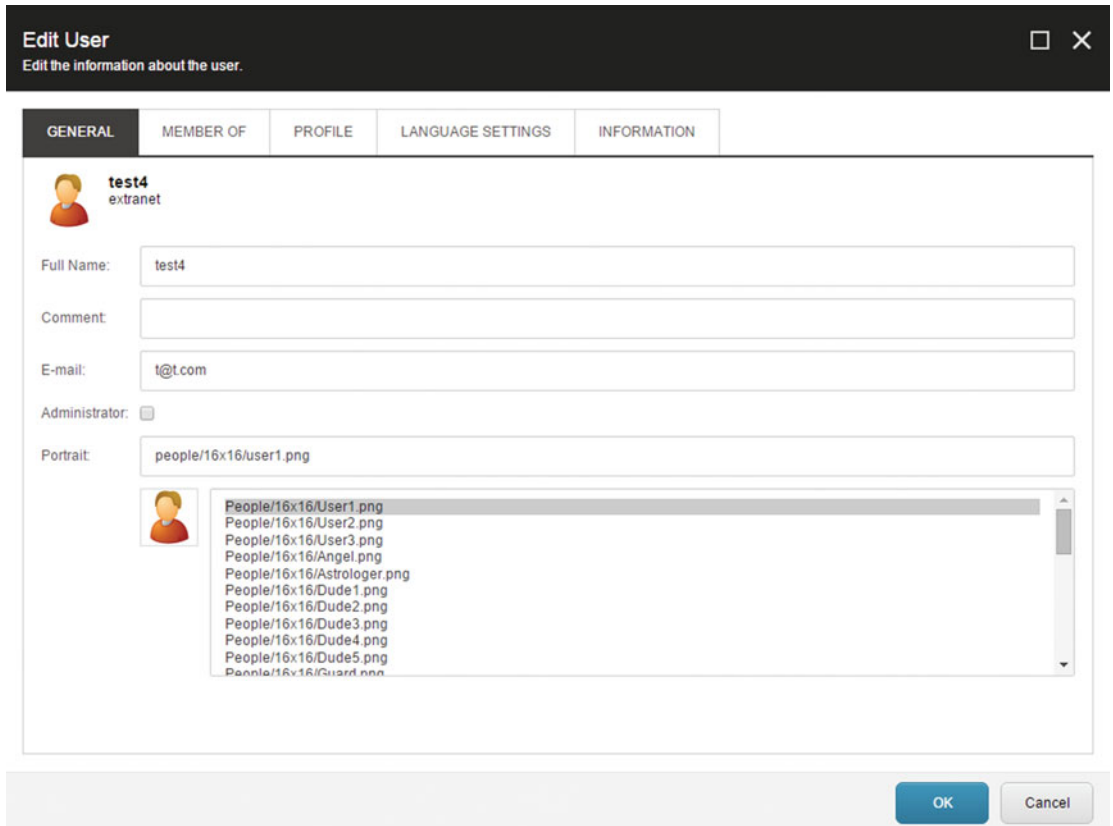
Figure 8-4. *Every user has a profile. Some fields are consistant across all users, but users can have a different profile template for different types of users*

- *General*—The General tab has basic information such as name and e-mail (as shown in Figure 8-4). Note the "Roles" section later in this chapter for more information on the "Administrator" checkbox. It is *not* a best practice to check this for anybody.

- *Member Of*—The Member Of tab shows which roles the user is a member of.

- *Profile*—The Profile tab has all the custom metadata assignable, leveraging the profile data template selected during user creation (Figure 8-5). Additionally, you can set the start page for a user. Content administrators rarely, if ever, work outside the Experience Editor, so setting their start page to Page Editor may help minimize some confusion.

- *Language Settings*—The Language Settings tab stores language preferences for that user, such as a "Default Content Language" setting that is a time saver for content editors.

- *Information*—The information has general non-editable information in it, such as if it is a locked account, and when they last logged in.

■ **Note**   New users will not be able to log in until you set and provide them with a temporary password. Select the user, click the Change Password button, and then choose Generate to generate a random password they can use when logging in to Sitecore.
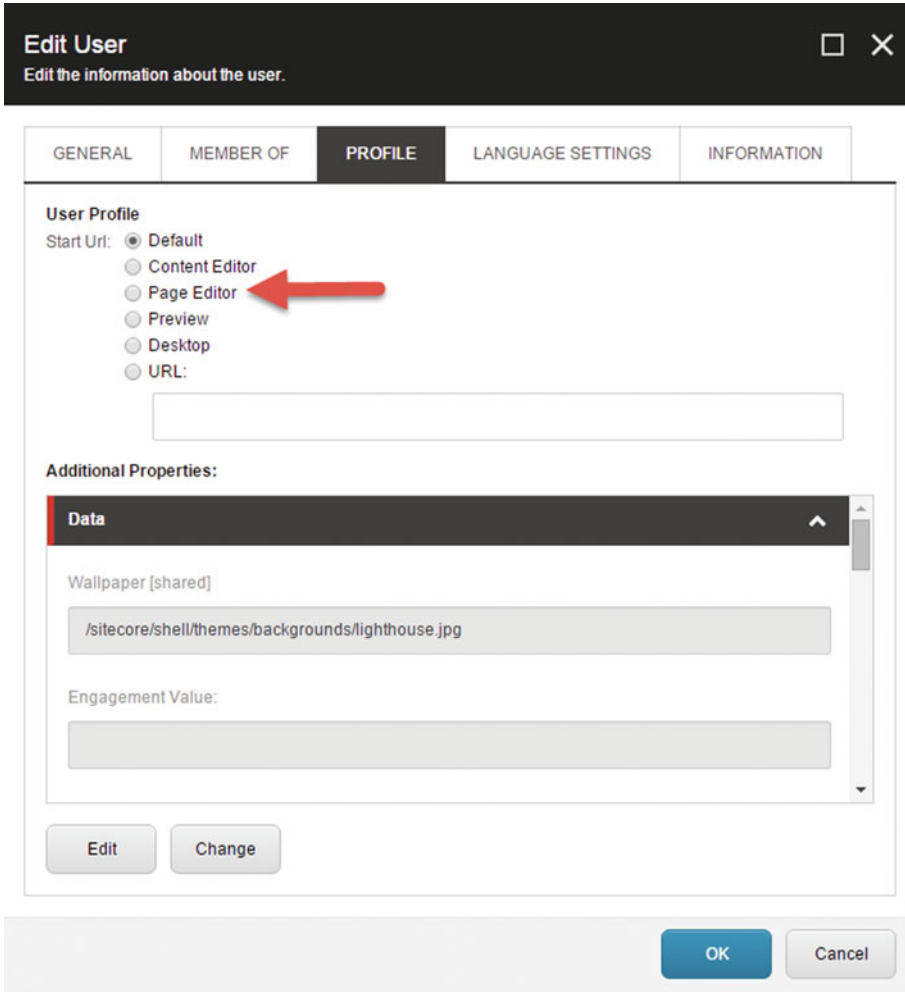
***Figure 8-5.** Sometimes it's handy to provide a start URL so that users go to the right place after they log in*

Creating New and Custom User Profiles

There are times when the out-of-the-box user profile templates may not best align to your users and what you want to track against them. The best example for when this is helpful is when managing customer users (users who log into the site but don't access Sitecore). A customer's profile might have different metadata than a partner or an employee. The best practice is to create a custom user profile with that custom metadata, extending the existing user profile template.

■ **Note**   This is definitely an administrator's task. Marketers beware; you probably don't have the needed access to create custom profile templates.

The profiles that show up in the new user form can be found in Core ➤ System ➤ Settings ➤ Security ➤ Profiles. Any item below this node will appear in the new user form. First, create a user template by extending the user template. Create this template in the Templates folder, as can be seen at the bottom of Figure 8-6 ("LS User"). Next, create an item from that template below the Security ➤ Profiles node. Thereafter, you can start creating new users from that template with your expanded profile metadata.
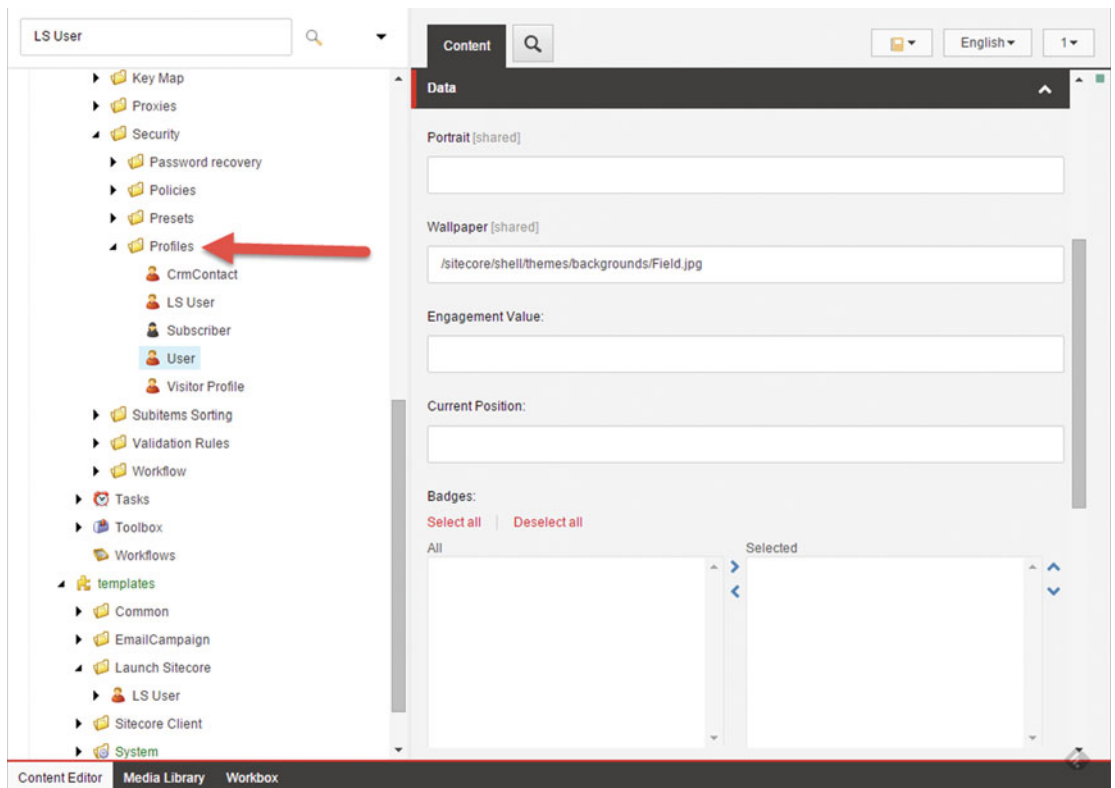
Figure 8-6. *There are several out-of-the-box profiles, but you can create your own as well*

Administering Users

There comes a time when you need to administer an existing user. When you select a user in the users list, you can then select from the buttons in Figure 8-7 to change that user's settings. These include editing, deleting, unlocking, enabling, disabling, and resetting a user's password.
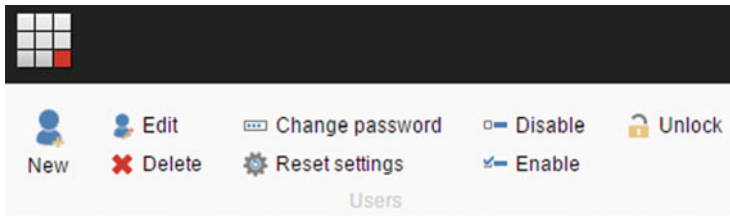
Figure 8-7. *Managing users involves reseting passwords and unlocking accounts if they type in the wrong password too many times*

Editing/Deleting a User

To edit a user, simply select the user in the table and then click Edit. This will bring up the user profile, as was discussed in Figure 8-4.

Deleting a user is a similar process. Select the user you want to delete, and then click the Delete button to permanently delete that user from Sitecore.

Unlocking a User

A user will become locked if they fail to enter their credentials incorrectly 256 times by default. If a user becomes locked, it requires an administrator to go in, select the user, and click the Unlock button. The obvious recommendation for the security sensitive is to lower the number of allowed attempts, down from 256 to perhaps 5. To accomplish this, ask an administrator to update the maxInvalidPasswordAttempts value of the membership provider in your site's web.config file.

Enabling/Disabling a User

There may come a time when you want to disable a user, thus preventing them from logging in to Sitecore temporarily. Examples might be when you are working with outside consulting companies going off-project, or perhaps employees taking a sabbatical. Simply select the user and click Enable or Disable as appropriate to either deny or grant them access.

Changing a User's Password

Users can retrieve a forgotten password by click the Forgot Password link. Through these means most of your password management will just be the exception. Forgot Password relies on an e-mail address. If one is not available an administrator will need to manually reset the password. To accomplish this, simply select the user, and then click Change Password. Since you don't know the old password, just click Generate to generate a random password, as shown in Figure 8-8. Send that auto-generated password to the user, who can then change it to a password that is easier to remember.
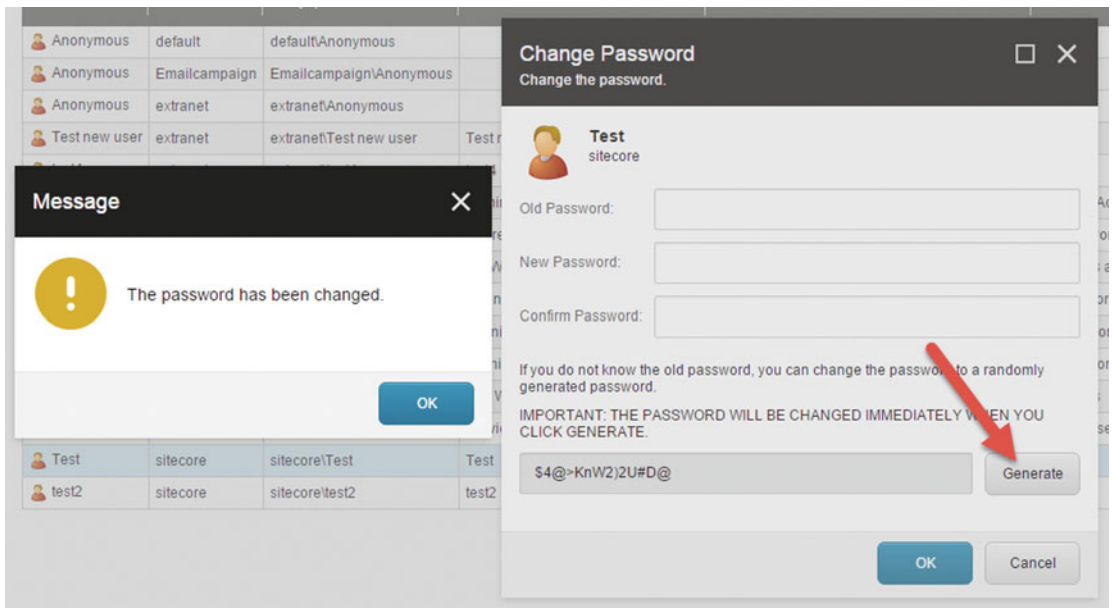
***Figure 8-8.** It is a very simply process to reset someone's password*

■ **Note**   The Forgot Password link is enabled by default. You can disable it via a `web.config` setting, performed by an administrator. Simply set the `Login.DisableChangePassword` and `Login.DisablePasswordRecovery` values to false. This may be helpful if all your users are Active Directory users and you prefer them using other means to accomplish this.

Serializing Users

Serializing users or roles (Figure 8-9) is an admin function great for backing up your user database or for porting users from one environment to another. When you serialize users or roles, those users and/or roles are saved onto the server's file system below the Data ➤ Serialization folder. You could revert those users and/or roles in a different environment by pointing to that location as your source. Again, this is not something commonly performed apart from having server access and even then in rare circumstances, such as backward environment compatibility (Dev, Test, and Prod).
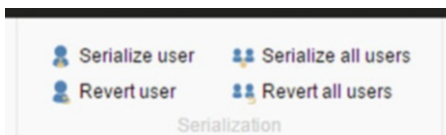
***Figure 8-9.** Serialization can be a handy way to back up users/roles or export/import them from one environment to another*

Access Rights

Access rights form the foundation of security and authorization in Sitecore. Access rights are concrete tasks a user is permitted to do. You can be granted read access, to view an item, but you may not have write access, to edit that item. Read and Write are two examples of the out-of-the-box access rights you can assign to users or roles. Access rights are applied to items, as you'll hear more about in the next section.

Out-of-the-Box Access Rights

Table 8-1 shows all of the out-of-the-box access rights. The Description column specifies how they can be used.

■ **Note**   It is possible for a developer to add custom access rights for your unique circumstances, if this list below limits you in some way. See this blog post for how: `http://bit.ly/1hkl5SG`.

Table 8-1. *Out-of-the-Box Access Rights*

Access Right	Description
Read	Read is the most basic access right. If you or a role you're in has this access right assigned with an item, you can view that entire item (all the data fields). Read is a prerequisite to all other access rights, with the exception of Delete (you can delete child nodes you can't read if you delete the parent node).
Field Read	Sometimes you may not want a user to be able to read an entire item (all the data fields). In this case, you can use Field Read to grant access to only the fields you want them to see. Field Read would be applied to the Data Template's fields themselves (Template name ➤ Field section name ➤ Field name).
Write	Write enables you to edit an item.
Field Write	Similar to Field Read, you may only want a user to be able to edit certain fields instead of all the item's fields. In this case use Field Write instead of Write. Field Write would be applied to the Data Template's fields themselves (Template name ➤ Field section name ➤ Field name).
Rename	Rename permits changing the item name.
Create	Create allows creating child item below the node you have Create access on.
Delete	Delete access permits deleting the item. Note: If you delete a parent node you will also be deleting all descendant items, even if you don't have the Delete access right to those descendant items.
Administer	Controls whether or not you can apply access rights to items.
Language Read	Controls whether or not a user can read certain language versions of an item. Similar to Field Read, but is applied to the language itself (/sitecore/system/languages/language).
Language Write	Similar to Language Read, except it controls which language versions that user can edit.

(*continued*)

Table 8-1. (*continued*)

Access Right	Description
Site Enter	Controls if a user can log in to a site (applied to home item of a managed site).
Show in Insert	Controls if users can see certain insert options when creating new items, applied to templates only (/Sitecore/templates).
Workflow State Delete	Controls if a user can delete items that are currently associated with a specific workflow state (see later section on workflow security).
Workflow State Write	Controls if a user can edit items that are currently associated with a specific workflow state (see later section on workflow security).
Workflow Command Execute	Controls if a user can execute a workflow command (see later section on workflow security).
Customer Profile Key Values	Grants access to apply values to profile key values.
Create Bucket	Permits converting an item to a bucket.
Revert Bucket	Permits reverting a bucket back to a normal item.

■ **Note**　Most of these access rights relate specifically to content management. However, Read is very important for content delivery. Anonymous users need to be granted Read access to items in your site that do not require authentication. If the Read access right is not allowed on an item, the anonymous user will get an "Access Denied" error if they try to browse to it.

Access Viewer

The Access Viewer is a very handy way to explore what access rights have been assigned to a user or role. The Access Viewer is found on the Launchpad; it's the green lock icon (Figure 8-1). Simply click an item and the roles and the users list will update to show those currently assigned to that item (Figure 8-10). If you select one of those users or roles, such as the "sitecore\Author" role, as seen in the figure, you will then see green checkmarks next to all the items that user or role has access to.

The right panel on the Access Viewer can help explain how a user or role has access to that item/access right. If you click a column and an item, such as the Rename column on the Team node, as seen in Figure 8-10, you'll then see how it came to be that sitecore\Author was granted that access right. This example shows us how sitecore\Author was granted the Rename access right on the Home items along with all descendant items. Knowing this can save you a lot of time if you ever want to update access rights. You should get very familiar with the Access Viewer before too long.
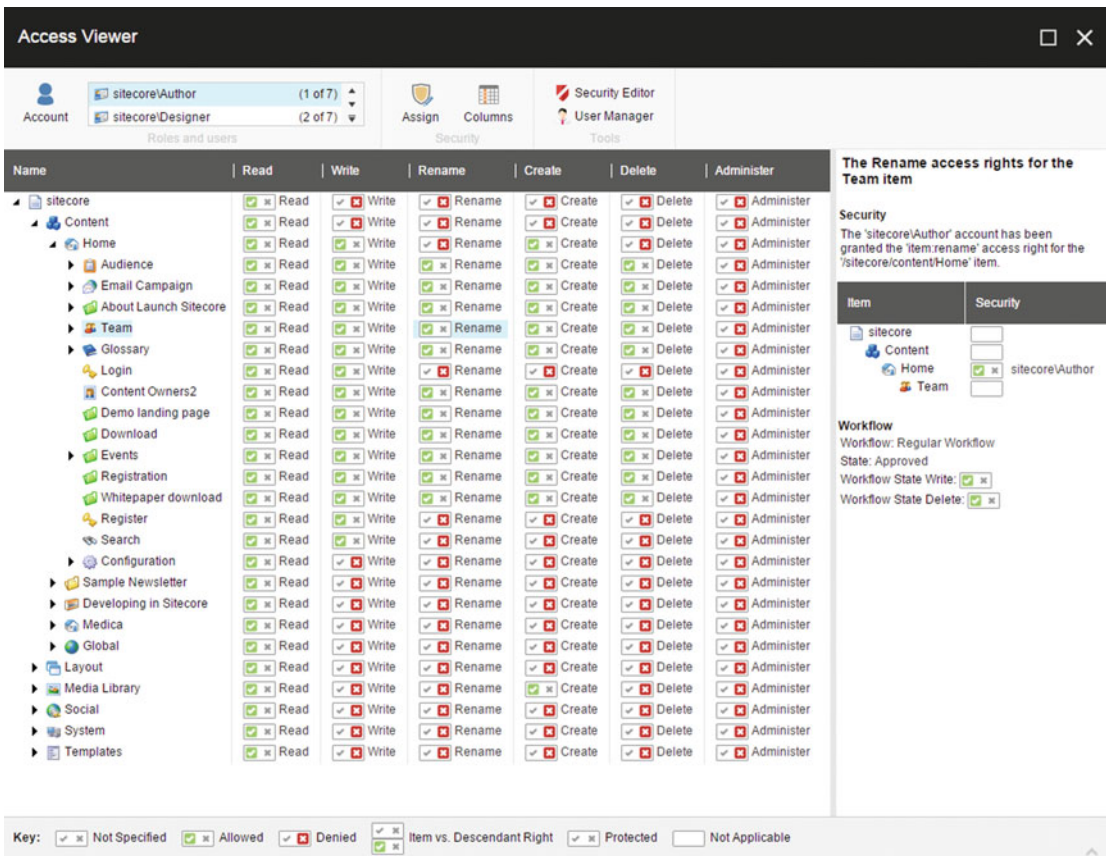
Figure 8-10. *The Access Viewer is a great way to see how security is currently configured and who has access to do what*

■ **Note**   The "Access Denied" page is not on brand. Most companies will not want users to inadvertently see the Sitecore branded error pages. For the case of access denied, it is a simple web.config change to specify a custom page to use instead (via the NoAccessUrl element).

Roles

Users are added to roles and roles are assigned access rights to items in Sitecore. Sure, you are able to assign access rights on items to an individual user, but there is no good reason to do so. If you do, you'll end up dying by a thousand cuts, and your security configuration will becoming increasingly more complex over time. Roles, then, are very important to understand.

Out-of-the-Box Roles and Role Inheritance

There are many out-of-the-box roles that you should familiarize yourself with. There are upward of 40 roles in fact. Of the 40, there is also a complex inheritance structure. Roles can be in other roles, so by adding a user into one parent role you may actually be adding them into 13 roles, such as the case with the Developer role. Table 8-2 attempts to describe each of the 40 roles, what their purpose, what they allow by default, and any applicable inheritance. The indentation (as denoted by ▶) signifies the inheritance. So, Developer is a member of Author, and Author is a member of Sitecore Client Authoring, and so on and so forth. You will find yourself commonly using the tier 1 and tier 2 roles in most cases. For very large teams, you may find yourself needing the extra granularity you get with tier 3 and tier 4 roles.

Table 8-2. *Out-of-the-Box Roles*

Anonymous	Anonymous isn't really a role, and yet it acts like one. Anyone who has not yet authenticated is a "member" of the anonymous "role" until they log in.
Everyone	Everyone is kind of the opposite of Anonymous, in that the Everyone role will represent every logged in user. There's an Everyone role for each domain, as well as a global Everyone to represent all logged in users across all domains.
Sitecore Client User	Sitecore Client User is a root role that every "Client" role below is either directly a member, or indirectly via some other role. This role provides access to the Sitecore (/sitecore) user interface. Note: They won't be able to do anything when they get to /sitecore if they are not a member of other roles.
Developer	A Developer has a broad set of permissions; they can author content, design pages, create layouts/components, and data templates.
▶ **Author**	An author can create, edit, and delete items in the content tree (/sitecore/content)
▶ ▶ **Sitecore Client Authoring**	This role enables settings in the Content Editor to make editing content possible.
▶ ▶ **Sitecore Client Social Authoring**	Gives the user access to post messages to social networks from Sitecore.
▶ ▶ **Analytics Testing**	Enables creating component and page tests. Also enables access to the Test Lab.
▶ ▶ **Analytics Personalization**	Enables creating personalization rules.
▶ **Designer**	This role enables settings to make designing pages possible, such as component configuration and switching layouts. It also permits changing design details on data template standard values.
▶ ▶ **Sitecore Client Designing**	Provides access to the Experience Editor design features.
▶ **Sitecore Client Developing**	Provides access to the Development Center and shortcuts required by developers.
▶ **Sitecore Client Maintaining**	Access to create and maintain data templates.
▶ **Sitecore Client Configuring**	Allow access to configuration of items, such as the icon.

(*continued*)

Table 8-2. (*continued*)

Sitecore Client Bucket Man.	Allows access to bucket settings in the ribbon, to enable converting items into buckets. This role is also a member of Sitecore Client Configuring and Sitecore Client Developing.
Sitecore Local Administrators	Can manage security and accounts.
▶ **Sitecore Client Securing**	Can manage item security through Content Editor or Security Editor.
▶ **Sitecore Client Account Managing**	Can manage accounts, roles, and domains.
Analytics Reporting	Provides access to the marketing control panel, engagement plan monitor, and the executive dashboard.
▶ **List Manager Editors**	Can manage contacts lists, primarily for those using Email Experience Manager. Note: List Manager Editors is also a member of Sitecore Client Authoring.
Experience Explorer	Grants access to use the Explore mode within the Experience Explorer, as well as manage presents within the Marketing Control Panel.
▶ **Analytics Maintaining**	Grants access to the Marketing Control Panel, and the ability to design engagement plans and supervise those plans.
Sitecore Client Publishing	Grants access to incremental, smart publish, and related items publishing. Without this role, users will not be able to publish content apart from a workflow set up to automatically publish after approval.
▶ **Sitecore Client Advanced Publishing**	Grants access to republish already published items.
Sitecore Client Translating	Enables translation features in the ribbon.
Analytics Advanced Testing	Enables extra functionality/tabs in the Marketing Control Panel around testing.
Analytics Management Reporting	Permits access to management reports around testing and optimization.
Analytics Content Profiling	Enables content profiling in the Experience Editor.
Sitecore Minimal Page Editor	Restricts functionality in the Experience Editor to an absolute minimum (no ribbon in the Editor).
Sitecore Limited Page Editor	Similar to Sitecore Minimal Page Editor, but shows a simplified version of the ribbon with only key editing buttons.
Sitecore Limited Content Editor	Similar to Sitecore Minimal Page Editor, but for the Content Editor.
Facebook Message Reviewer	Enables the editing of Facebook messages.
Social Marketer Message Reviewer	Enables read access to social marketing messages.
Social Message Author	Enables creating, editing, and deleting of social marketing messages.
Social Message Workflow Editor	Grants access to the Draft workflow state in the social marketing workflow.
Social Message Workflow Reviewer	Grants access to the Awaiting Approval, Awaiting Post Review, Post Accepted, and Post Removed workflow states in the social marketing workflow.
Twitter Message Reviewer	Enables access to edit Twitter messages.

You may also want to create your own custom roles. For example, your administrators may want Sitecore Local Administration privileges AND Sitecore Client Publishing, allowing for security management and the ability to publish content as a separation of duties from content editors. A custom role might be "Contoso Sitecore Admin," which includes both as members, where Contoso would be your company name. In general, these 40 roles can be confusing, and it is a best practice to consolidate these to align to your unique governance/role policies, prefixed by your company name to distinguish custom roles from their out-of-the-box counterparts. The following is an example of a potentially helpful role consolidation, aligning to your admins, content editors, developers, and marketers.

Contoso Global Sitecore Administrator

- All roles

■ **Note** This Global Sitecore Admin role is a bit redundant. You can simply check the Administrator box on a user to give them full control to everything. However, this is troublesome because they bypass workflows when making changes, and there's no out-of-the-box view to see who all your administrators are. Using a custom role addresses these issues.

Contoso Sitecore Environment Administrator

- Sitecore Local Administrators
- Sitecore Client Publishing

Contoso Sitecore Content Editor

- Author
- Designer
- Experience Explorer
- Sitecore Client Translating

Contoso Sitecore Developer

- Developer

Contoso Sitecore Marketing Analyst

- Analytics Reporting
- Analytics Advanced Testing
- Analytics Management Reporting
- Analytics Content Profiling
- Analytics Testing
- Analytics Personalization

Contoso Sitecore Marketing Administrator

- Contoso Sitecore Content Editor
- Contoso Sitecore Marketing Analyst

Assigning Roles to Items

Just by being added to a role doesn't mean you can do a whole lot yet. That role still needs to be assigned access rights to items before they'll become of much benefit. There are two main ways to grant a role access rights on an item: 1) through the Content Editor, as seen in Figure 8-16, or 2) through the access editor, as seen in Figure 8-11. The Content Editor is best if you know exactly which item you want to grant access to. The Security Editor is best when you need to apply access to multiple items and you want to do it all at once (versus opening each item individually).

The Security Editor will likely be where you spend most of your time; if you configure security once with proper inheritance, you shouldn't need to be configuring security on an item-by-item basis often. Notice in Figure 8-11 how the Security Editor aligns with the content tree; as you expend the tree you'll notice assignable access rights as columns across the top. If you click the checkbox next to an access right, it will turn green, signifying that the access right has been applied. If you click the X that access right is explicitly forbidden. Leaving neither checked/clicked allows room or potential inheritance.

■ **Caution**   The Security Editor is a "hot editor," meaning that changes you make immediately take effect; no publishing is necessary. This is where a separate test/stage environment can be helpful if you're not exactly sure what settings you need to make.

In most cases, you will want the configurations you make to propagate down into descendant items. You don't need to expand every node and make the same setting. Rather, simply click the Assign button on the item, as seen in Figure 8-11, and then check the Descendants checkbox to ensure that the access rights are inherited down. This Assign button is the same button you'd find in the Content Editor when applying security there, as can be seen in Figure 8-16.
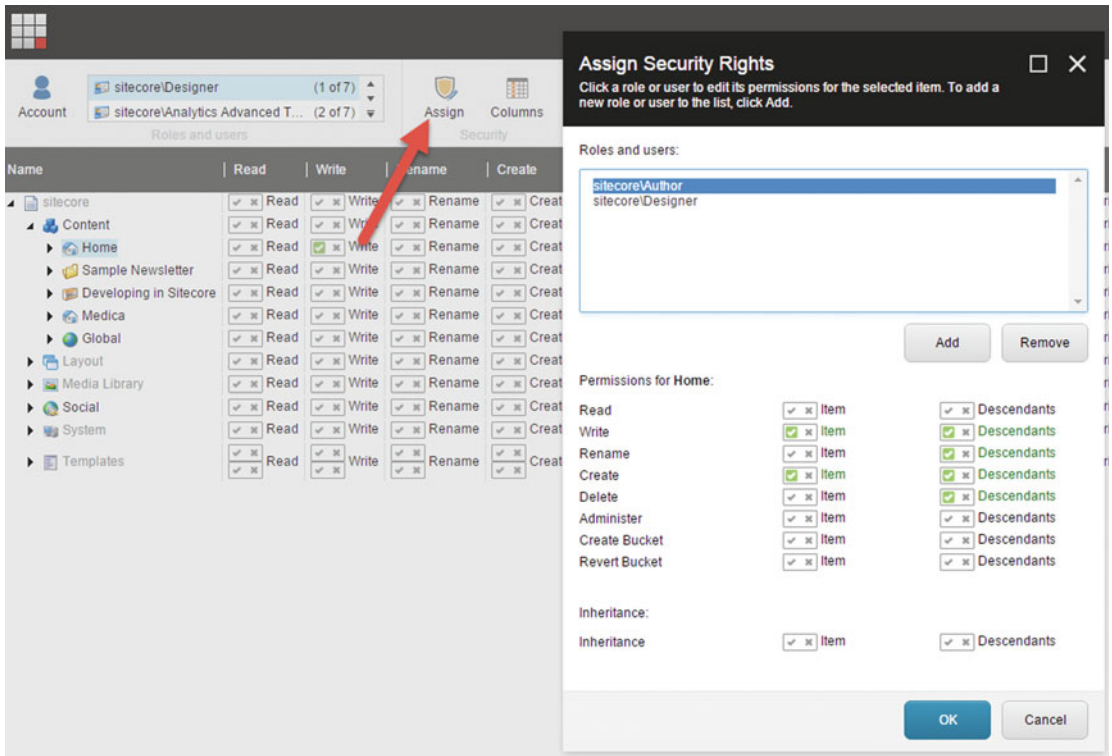
Figure 8-11. *The Security Editor allow you to browse the hierarchy and directly apply security on an item-by-item basis*

■ **Note**   Only administrators can see unassigned items.

You may have noticed that not all of the out-of-the-box columns are available in the Access Viewer. You can add more granular access rights as column into the Access Viewer by clicking the Columns button and then selecting which columns you want. Notice this in Figure 8-12.
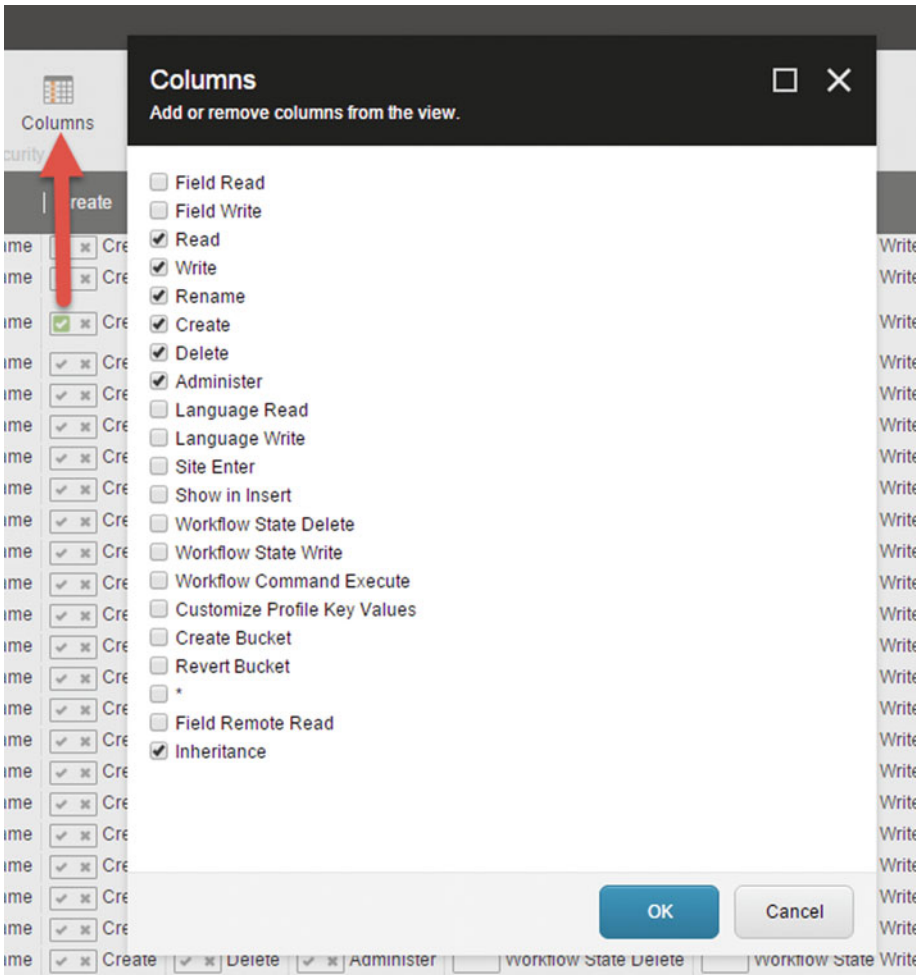
Figure 8-12. *Not all the access rights are displayed in the Security Editor, so you may need to add some more*

■ **Tip** When managing security in the Content Editor, there still may be times when you want to quickly apply access right settings across multiple items consistently. One way to do this is to copy the __Security raw values (ass seen in Figure 8-13) and paste them into the raw values across all the items you want to match. Security presets help you do the same thing, as is discussed in the next section.
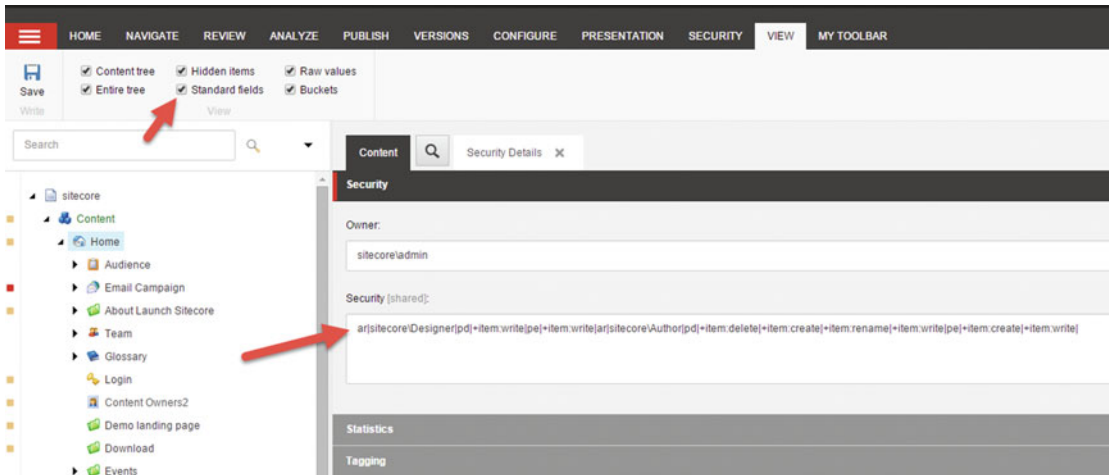
Figure 8-13. *Copying the raw values is another way to easily replicate the same access rights on one item to others*

■ **Caution**   If you ever delete a role, the access rights assignments on items for that role are not removed. Over time this can lead to a bunch of garbage. It is a best practice to remove these assignments when roles are deleted to keep your security configurations as clean as possible.

WORKFLOW SECURITY

Workflows deserve a bit of special attention. Technically speaking, security is applied to workflow in the exact same way as any other item. But, knowing what do apply is a bit of a trick.

In the Appendix we created a custom workflow called the "Standard Publishing Workflow," but didn't take that next step to apply security to it. Now with all the context found in this chapter, let's finish that workflow off with this important last step.

As discussed, we want editors to be able to start the workflow, but only reviewers can approve. A review can approve, but they shouldn't be allowed to publish to production. Administrators should handle publishing. To keep things consistent, let's use our "Contoso" best practice roles here as well, with the editor being the Contoso Sitecore Content Editor, the reviewer being the Contoso Sitecore Marketing Administrator, and the publisher being the Contoso Sitecore Environment Administrator.

The first step is to grant all three roles Read, Write, Workflow State Delete, Workflow State Write, and Workflow Command Execute on the workflow itself and all descendant items. This will allow all roles to start the workflow, advance states, and execute commands. Notice this configuration in Figure 8-14.
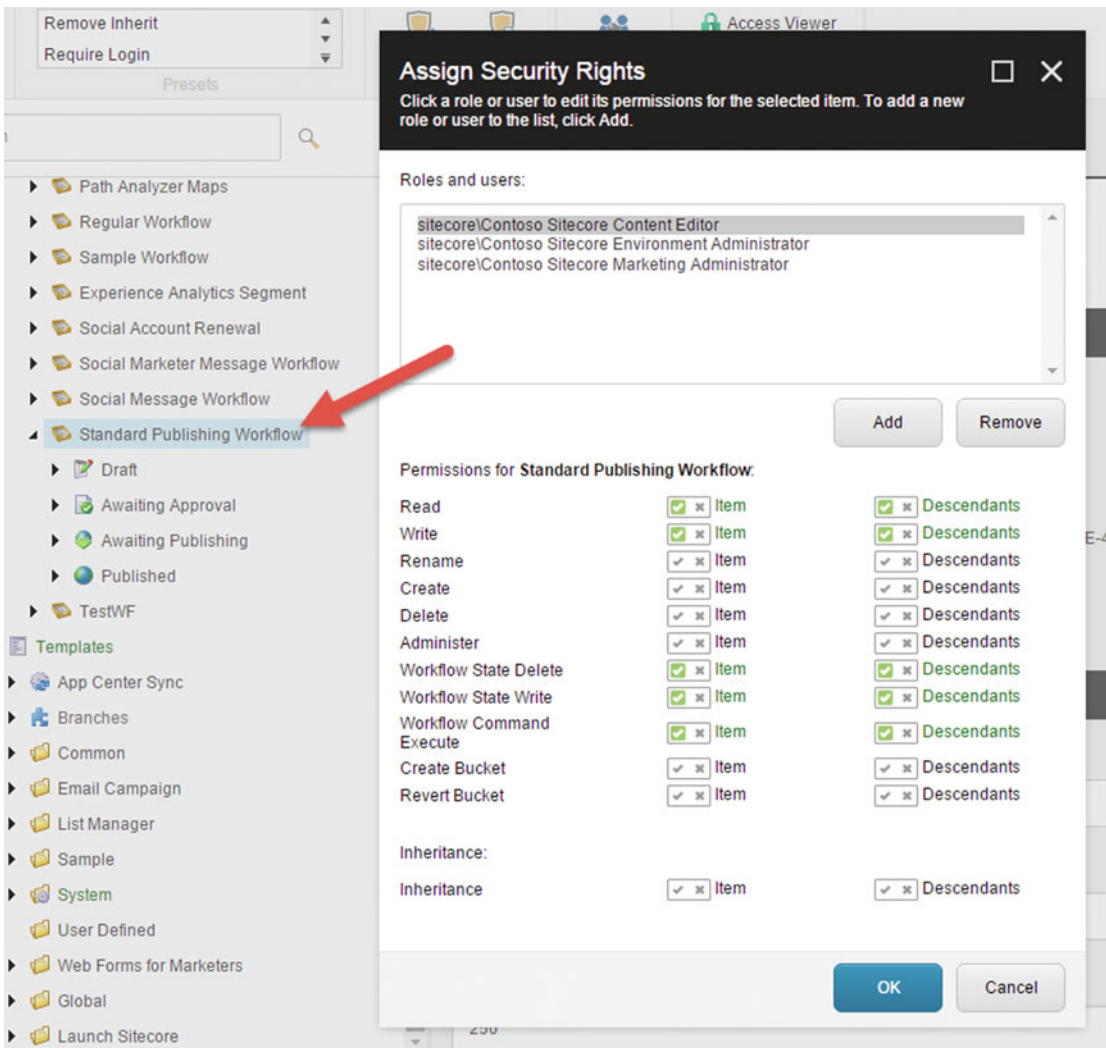
Figure 8-14. *Workflow security is configured in the same way as when you secure any other item, but there are a few considerations to take note of*

Obviously the three roles are not all alike. Only one should be able to start the workflow, only one should be able to approve, and only one should be able to publish. All three can currently do all three. The fix for this is to go on each state and add a deny rule where appropriate.

■ **Warning** There's an important best practice with Sitecore security worth mentioning, which is to deny access via breaking inheritance rather than explicitly denying access. This is because in the case of conflicting security definitions across different roles, "deny" will always win out. This may be overly heavy handed, where simply breaking inheritance and applying unique security is more appropriate.

For example, the Contoso Sitecore Editor needs a deny on the "Awaiting Approval" and "Awaiting Publishing" states, to keep the fox from guarding the hen house. Likewise, the Sitecore Marketing Administrator needs a deny rule on "Awaiting Publishing," because publishing should be the job of the Contoso Sitecore Environment Administrator. Note an example of a deny rule in Figure 8-15.
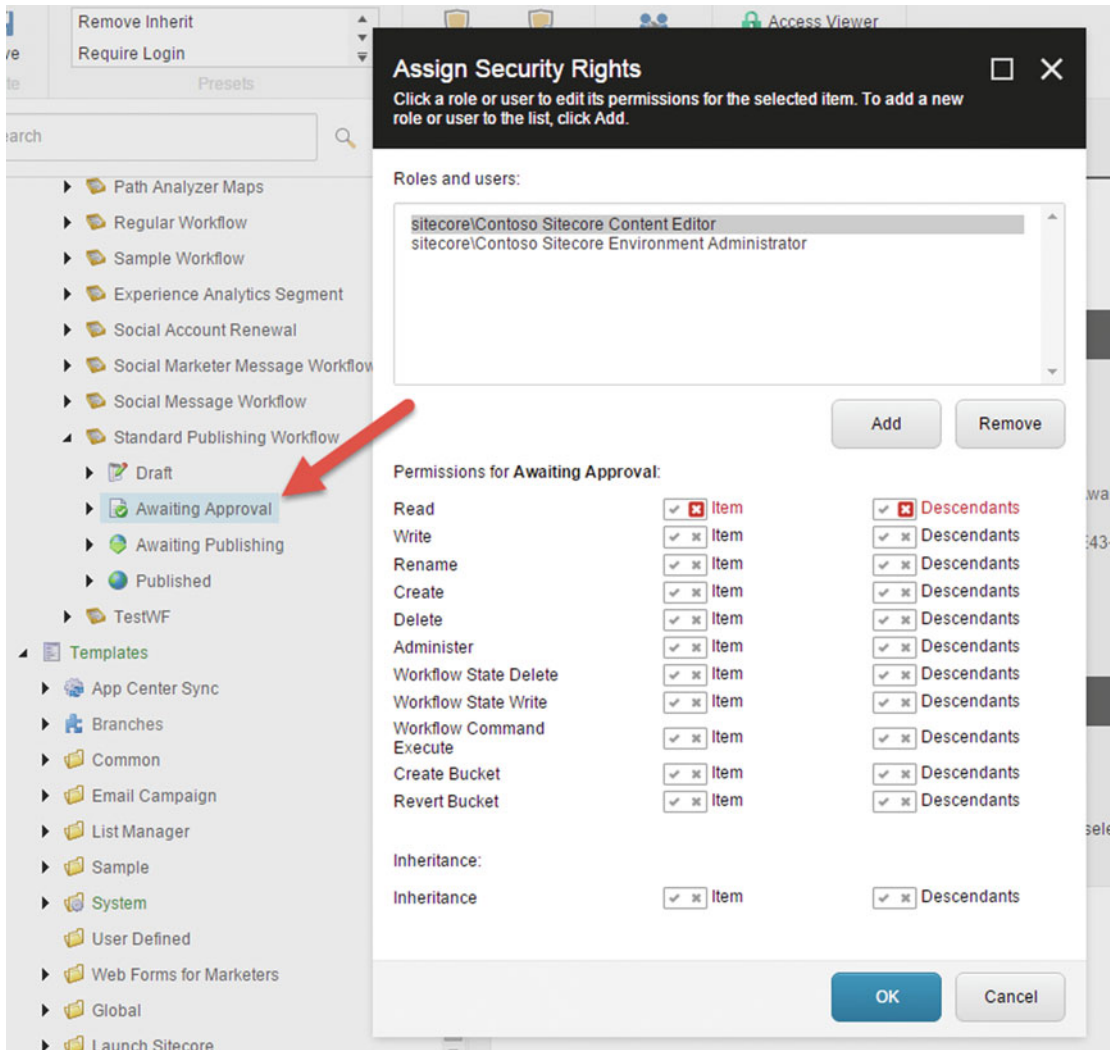
Figure 8-15. *Add a deny rule onto roles that shouldn't have the ability to advance the workflow state from one state to another*

With these security configurations in place, your custom workflow should be good to go!

Security Presets

Security presets are a helpful way to apply the same set of access rights to items over and over. There are two out-of-the-box presets found in the Content Editor within the Security tab, as seen in Figure 8-16.
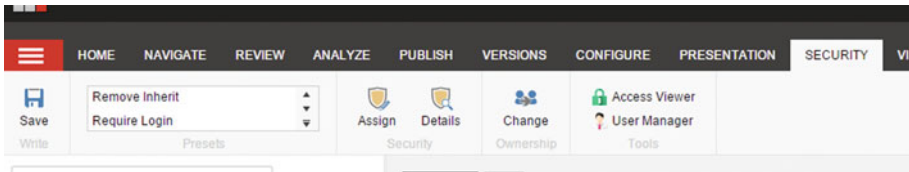
Figure 8-16. *Presets are another way to easily set the same set of access rights over and over*

The two out-of-the-box presets are 1) remove inherit, which breaks all inheritance and defines rights explicitly on the selected item, and 2) require login, which adds a deny read for anonymous users (as seen in Figure 8-17).
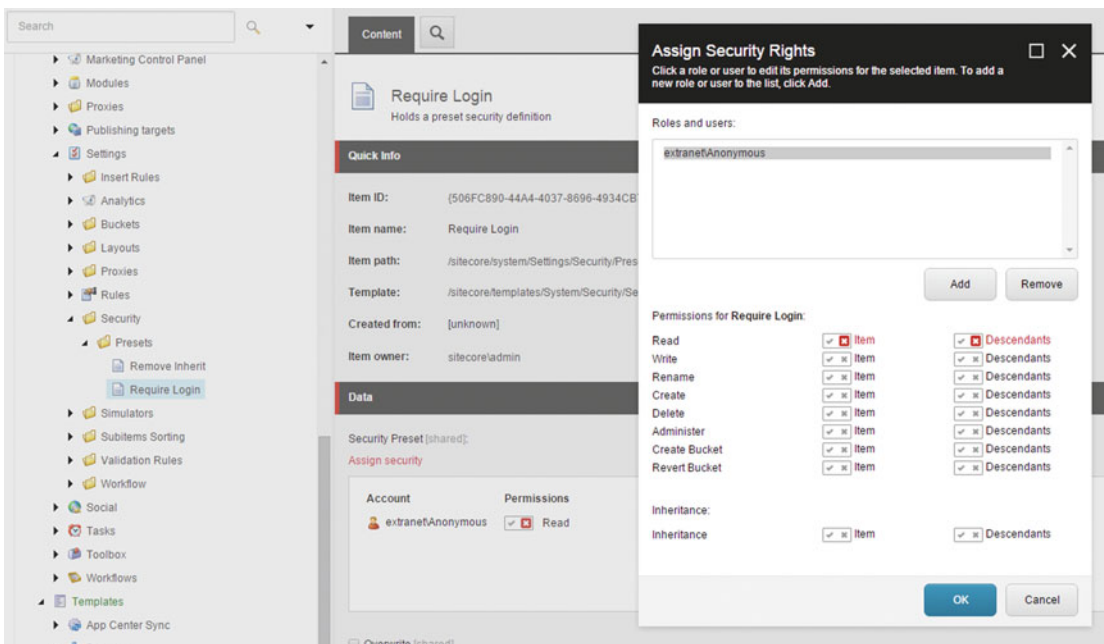
Figure 8-17. *The out-of-the-box Require Login basically removes annonymous users' ability to view an item by adding a Read deny rule*

To create your own presets, simply create a new Security Preset item below the Sitecore/Settings/Security/Presents item.

Adding Users to Roles

It's time to add users to your roles when all your roles are created and access rights are applied. Fortunately, this is super easy. Simply open the Role Manager from the Launchpad, select the role you want to add a user to, and then click Members where you can add your users. Click the Add button, and then search for either the users or roles you want to add. You can see this in action in Figure 8-18.

■ **Note**   When you add a user to a role, that user then is indirectly added as members into that role's other role memberships, thus inheriting those other role's access rights in addition to the role the user is directly a member of.
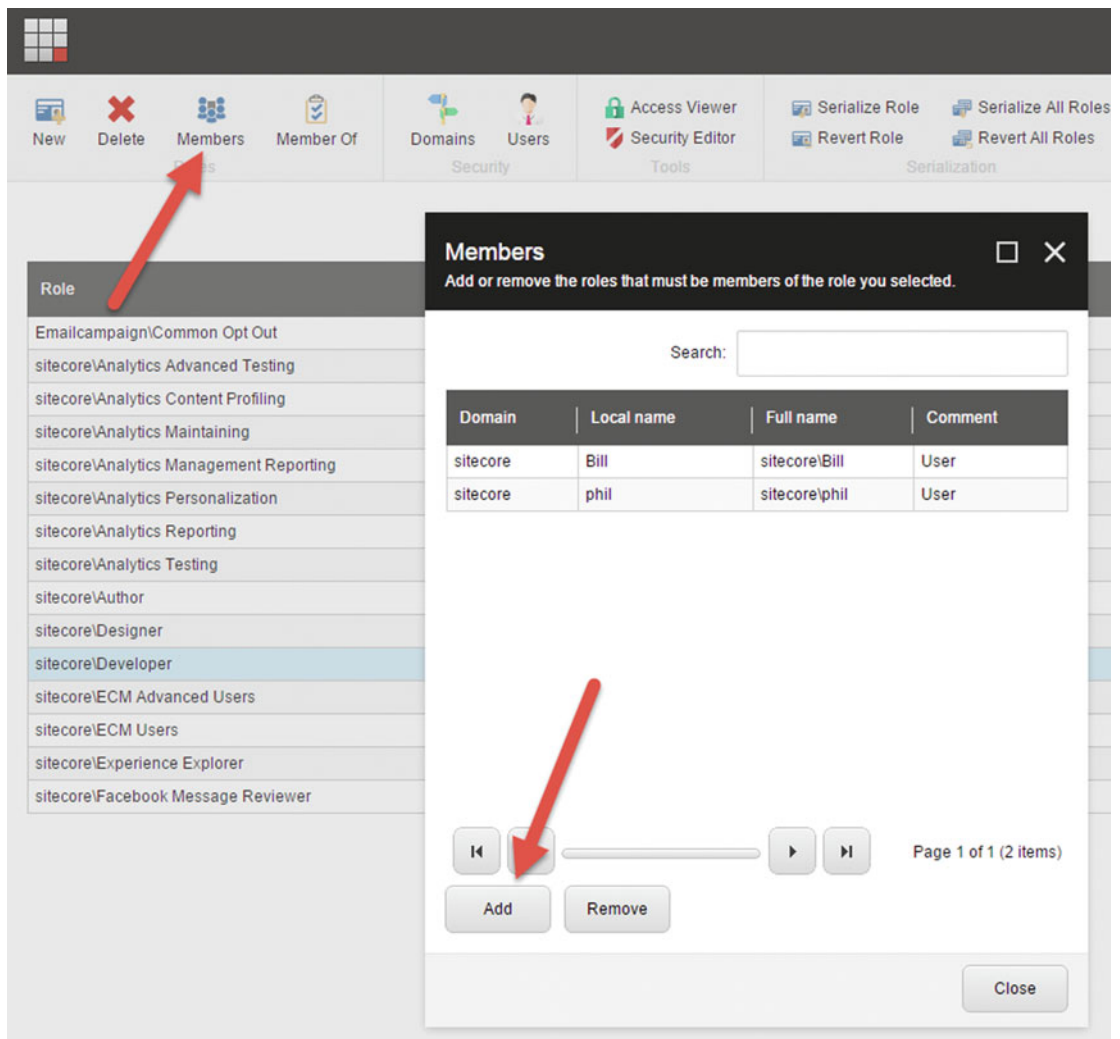
Figure 8-18. *The last step—adding users to your roles*

Summary

Security in Sitecore is all about users, roles, access rights, and items. Users are added to roles, and roles are assigned access rights onto items. That's how it's done, and setting up those four pieces is what was discussed in this chapter, besides a few more advanced topics, such as workflow security.

Beyond this basic principle, however, was a comparison of all the out-of-the-box access rights and roles. There are many! So many it can get confusing in a hurry. A key recommendation in this chapter is to consolidate into fewer roles that better align to your company's governance, terms, and nomenclature (as well as work closing closely with your administrators and developers in designing and implementing your Sitecore security). That is a sure way to making managing security in Sitecore easier for everyone.

■ ■ ■

Governance

One of the most troubling observations I've noticed over my many years is how web site redesigns are often treated as projects, rather than as products. A project has a defined beginning and end, a scope, a budget— but then it's over. A product might have a beginning, but most never think in terms of an end. Nobody is planning on the end of the iPhone. They just keep making more and more, making it better and better and continually aligning the iPhone roadmap to Apple's strategic business objectives. Should your Sitecore deployment be treated any differently?

Governance exists to ensure that as you plan for day 1, you also have a plan for day 2 and into infinity. Your goal is to ensure all your hard work building the site has a plan for continued success and value creation for your business. All too often sites are launched and neglected. All too often the great design in the beginning turns into a pile of cow dung two years later because you allowed it to become the Wild, Wild West.

Or, you end up shooting yourself in the foot. Consider the ill-timed Tweets. Off-message news articles can ruin your reputation, and untested data template updates can blow up your site. Or, you may be Canadian and have regulatory concerns around ensuring all content is perfectly translated into both French and English. Governance is how you avoid these scenarios.

What Is Governance?

First, governance is not a document. You need a governance plan to be sure, but really, governance is people, people creating rules and ensuring those rules are being followed. You're the legislature and the police. You need both. The first key to governance success, however, is pragmatism. If your governance plan is not pragmatic, it'll succumb to oblivion. If it's too abstract, it won't be understood. It needs to be clear, concise, objective, and measurable.

Figure 9-1 depicts the *Wicklund Framework for Sitecore Governance* you can consider using with your Sitecore installation. I'll be honest, if you ask 10 people what governance is, you'll get 10 answers. Based on my personal experience leading governance workshops and installing governance committees, this framework of mine has proven itself over and over, but I won't be so naïve as to not acknowledge many other ways to structure your Sitecore governance program. That's why I'm branding this framework with my name; not to be narcissistic, but rather to acknowledge there are many ways to shape/frame your governance strategy.

Most people start a governance conversation with roles and responsibilities. I think this is the place you should finish, not start. Rather, start with the work. Define what the policies are and how you'll enforce them. Discuss what your procedures are and who will perform them. Thereafter, you'll get a much better sense for what roles you actually need, and those individuals serving in those roles will understand what is expected of them.

The key concepts of the Wicklund Framework are:

- Policies define what the rules are, but they also need to be audited to ensure compliance.

- Procedures set expectations with all stakeholders on how you'll respond to events, but procedures also correspond to ongoing tasks that need to be performed by people or by automation.

- Those tasks can be estimated and resource leveling can help you understand what key roles you need and what resourcing gaps you may have.

- The Product Owner is the most important role (the role who owns the long-term vision for the product's strategic direction, the one who is primarily accountable to the entire products success or failure); the Product Owner is in the business, not the IT dept.

- Committees need to be installed to hold the various roles accountable, including the product owner.

Figure 9-1. *The Wicklund Framework for Sitecore Governance can be applied to your Sitecore installations to help ensure continued success over time*

Policies

Policies form the heart and soul of any governance plan. In the simplest of terms, they describe what is and is not permitted. Governance is all about maintaining a healthy environment, but how will you define what constitutes healthy? Policies offer that definition.

When you set up Sitecore you likely spent a lot of time and money defining data templates, an information architecture, a content strategy, style guidelines, security rules, etc. All those details shouldn't be forgotten on day 2. Day 1 is about launch. Day 2 is about governance.

The first area of policy consideration are content policies. Who owns the content? What types of content are there? Are there different editing, approval, and publishing rules depending on the type? These, and many other questions, can be found in Table 9-1.

Table 9-1. *Content Policies*

Topic	Description
New/update content policy	What are your policies around content strategy? Should content be "on message"? Do you need multiple content policies for different areas of your site because there are different content messaging expectations?
	Will you allow new/update content requests from the business, partners, or vendors? When will you reject a request for new/updated content?
Content approval policy	When will you reject a request for content approval? Will you have different workflows for different content areas within the installation? Will some areas of the site have a more streamlined approval process (less risk) and others have a more thorough approval process (more risk)? Should all content be "approved with test" to ensure it's optimized? When should you test and when shouldn't you? Will you require content to be tested for cross-browser ascetics before you approve, or will you assume it'll look fine (consider HTML editors)?
Content publishing policy	When will content be published? At any time of the day, bulk nightly publishes, weekend publishes? What types of content can be published on varying frequencies? Do certain types of content require no approval and the ability to bypass publishing (e.g. blog post comments)?
Media	How and where will you manage media? Consider all the previous content policy questions, but this time for media. The answers will likely be different.
Global/multilingual/regional content	Consider all the previous policy questions and ask them again, but with a global perspective. What is your translation policy? Does any new content need to be translated into X languages before being released? Are there certain acceptable agencies for external translation? Do you allow machine translation?
Content expiration, archiving, and deletion	Should certain types of content expire? If they expire, should they be archived or deleted? If deleted, when should the Recycle Bin be emptied? Never, or on some rolling basis?
Versions	How many versions of an item should be maintained? By default all versions are maintained indefinitely but that can be a waste of storage and can slow down editing performance over time.
SEO policies	Which URL conventions, keyword best practices, or other SEO rules do you expect your content editors to be taking into consideration?

STRATEGY BITS: HOW TO HARNESS THE POWER OF CONTENT

The "How": Content Governance Continued from Chapter 2

This is the area that is often most difficult to get people excited about but ironically, can be the most impactful thing you can do with content strategy in your organization. You may have followed all the steps and created world-class content for launch, but if you don't have a plan for how you're going to manage that content— either as an individual or a highly-matrixed global organization, then ultimately you won't see the success you hope for.

Before your experience goes live, make sure you have agreement and documentation on the following areas:

How Decisions Are Made

Does Jimmy in Sales or Natalie in Product get to put their content in the upper-right corner? Who has the final say on the homepage image? Can a manager decide to change a form on the web site? Content governance can help with these very common scenarios.

Governance can often be a tricky undertaking if you're in a complex organization (because often it can refer to people's roles and ownership), but at the least, make sure you outline:

- The roles and responsibilities of the people involved in making decisions about content (it helps to separate out the day-to-day tasks from the higher level strategic decisions here, as you'll find different people may need to approve different things.) If you're in a highly regulated industry (such as financial services or healthcare), you'll find that many steps are needed before you can push something live. Document those steps, the roles, and the expectations around format and timing and get commitment from people on those items before you launch. If you do, you'll be a step ahead.

- The guidelines people should follow if they're being empowered to manage content (these can include assets such as editorial or creative style guides, which can help create consistency).

How People Will Work Together

The most successful content strategy efforts are collaborative and involve of partnership with the user experience, search engine optimization, or technology teams during and after launch. Talk as an organization about how your efforts should combine early and vet solutions as one team as often as you can. Post-launch, formalize that process as much as you can with inclusive planning conversations with the core team that will help carry forward the strategic intent of your experience.

How Content Will Be Managed

There are a plethora of tools available to help you manage content beyond launch, from tools that auto-publish your social posts while you're on vacation to analytics and editorial platforms that help you create performance and efficiencies.

Think ahead to what you or your team will need to be successful after launch. Sometimes teams find that the simplest Google Document can help a team collaborate on editorial ideation. Other times, organizations find they actually do need to invest budget into a technology platform that for example, helps them monitor social conversations, so that they can anticipate customer content needs or issues. If you're working with a specific content management solution, you may already have these tools at your fingertips, but just need to look closely at how they can help you.

Last but not least, don't forget to outline how you will archive your content.

- Start with your organizational needs. Highly regulated industries will need to store documentation for 7+ years. Others may not. Consult your legal department to check what type of content should be stored, what level of detail is needed and how it should be kept. Some organizations have sophisticated document management systems (DAMs), but most still rely on e-mail or shared drives. Choose the one that will provide the best protection for your content.

- Think about what you want your "source of truth" for your content to be. If you created an inventory as part of your planning process, consider treating it as an evolving tool to help you keep a clear view not only of your content but the information associated with it (such as metadata or analytics code).

Content strategy is a wonderful mix of planning, imagination, and governance. Executed with passion, it can make or break digital experiences and has the ability to truly empower and lift up the teams who create them.

Laura Best
President, Best + Co
http://www.bestdigitalstrategy.com

Information Architecture (IA) is another area worth governing. A good IA helps improve usability, helps users find information faster, and improves consistency. IA can be enforced with things like Insert Options and Allowed Components, but admins can go around these barriers so it's important to keep tabs on how your configuration is evolving over time. Check out Table 9-2 for some IA policy questions worth discussing.

Table 9-2. *Information Architecture Policies*

Topic	Description
Insert Options and Allowed Components	You will want policies that determine which types of content items can be created where, as well as which components can be added into which placeholders. Sure, this is a configuration in Sitecore, but your governance plan should be the source of truth, not how it's actually configured (hopefully they're in sync, however).
Clone, copies, and versions, oh my!	As you learned in Chapter 2, there are several unique ways to manage copies of content, but each with certain plusses and minuses. You may want to have policies on when to use which.
Buckets	Policies on bucket use—when to use them, when not to.
Navigation	How will you manage navigation? Who can update navigation links, search filters, etc.? For global/multilingual/regional site variations, this concept of navigation maintenance can be contentious, especially when navigation or content is centrally managed and distributed.
Site IA User Experience polices	What are your standards around information finding approaches for your customers (browsing vs search vs faceted search) and use of UI elements (tabs vs accordions vs whatever else)? These policies are especially important when your Sitecore implementation is very open-ended (components on an open grid vs preset page layouts).

Data quality is an important consideration for every company. You can put a lot of data in Sitecore—or around it—managed or viewable in Sitecore. Therefore, you may want policies specific to data usage to control how it's used, where it comes from, and so forth. See some example considerations in Table 9-3.

Table 9-3. *Data Policies*

Topic	Description
Field type policies (field validation)	Describe the field types and how they are being used. Data types such as phone numbers should have specific policies as to what the content editor should enter, or better yet, what the validator is validating.
Third-party data integration/validation	You may be integrating with external systems and you may need policies that stipulate the rules for those integration points, such as dependencies on data being in a particular format, etc.

Having a consistent look and feel across your digital property is paramount (unless the brand is intentionally different). Your governance plan is a great place to denote policies on look and feel. See some example policy considerations around style in Table 9-4.

Table 9-4. *Style Policies*

Topic	Description
HTML editors	Will you permit HTML editors to enable content editor flexibility, but at the risk of stylistic variance? Note: The HTML editor in Sitecore can be customized on a field-by-field basis to explicitly grant/deny certain HTML elements. This is a great way to enforce your policy.
HTML compliance	Are you requiring all HTML to meet strict W3C compliance standards? What level of compliance are you requiring? What validators are in place to automate validation of compliance?
Accessibility compliance	Do you need to meet Section 508 or WCAG accessibility standards? These policies are especially important for government sites in the United States and most public sites in the EU.
Brand guidelines	Your company likely has brand guidelines (colors, fonts, and imagery) that are required to be used on your digital properties. Noting these requirements in your governance plan is essential. You likely may have hundreds of policies regarding your brand usage. Oftentimes these are represented in a "digital style guide," but your governance plan should denote expectations around the importance of aligning to the guide. See the following site for some great real-world examples of digital style guides: http://saijogeorge.com/brand-style-guide-examples/.
Style guidelines	You likely spent a lot of money with a creative agency to design your digital experiences and create a style guide, denoting font usage, sizes, rotator specifications, etc. The Content Editor will likely need to abide by these specifications and they should be noted in your policies.
Layout guidelines	Different types of pages or various places in your sites may have different layout policies. Designers can put content anywhere, unless it's locked down with allowed controls or through stylistic policies in your governance plan. What are your guidelines for what should be above/below the fold? What calls to action should be prominent, versus other less prominent ones?

Security is an interesting one. This is a place where you actually tend to not want to rely on policy. Rather, you want to rely on configuration to guarantee that policy isn't breached, and you want to rely on procedures to ensure the configuration is maintained (such as adding users into the right roles). Still, you need a source of truth, for how Sitecore should be configured. Shortcuts, laziness, forgetfulness, and other human error happen; your security configuration itself shouldn't be the source of truth. As such, you should document all your roles, their purpose, and other security policies in your governance plan (more thoughts in Table 9-5).

Table 9-5. Security Policies

Topic	Description
Roles	Describe your roles (see Chapter 8) and how they are to be used, those who should and should not be in them, etc. Security is one thing you don't want to govern, per se. Security should be systematically enforced through proper configuration. If you have very broad, generic security roles you will rely more on policy to enforce compliance, but with Sitecore's robust security configuration options it's easy enough to rule out this risk. Other things to consider: - Authentication sources (where are users coming from, what can different types of users do or not do, etc.) - Security hardening policies (IIS configuration, firewall rules, least privileged service account configuration, etc.) - Partners/vendors/customers (data sensitivity and/or compliance concerns)

Many industries care a great deal about regulatory concerns. Some content, after it's deleted, still needs to hang around for seven years or more. Patient data or cardholder data might find its way in your xDB analytics (goals, events, etc.), which may have a HIPPA or PCI implication. See Table 9-6 for some regulatory policy considerations.

Table 9-6. Regulatory Policies

Topic	Description
Sensitive data in xDB	Be careful what you're tracking. xDB is fantastic at tracking every bit and byte about customers and their interactions (personally identifiable information). Those interactions, however, can be personal. Do you have healthcare content and calls to action that could signal personal information? You will want policies on types of goals, events, failure events, campaign interactions, and outcomes that you don't want to be tracking because of regulatory or compliance concerns.
Auditability	Describe any regulatory concerns around the auditability of who published what and when. In some cases, you may need to prove content was or wasn't available at some point in time. Backups can be a way to do this, but at considerable storage costs. Perhaps a custom audit table might be worth considering.

Much can be governed from a technical perspective. What are your policy on cache size? Do you have policies on placeholder arrangements and layout usage? Will you use Team Development for Sitecore (TDS - http://bit.ly/1iIvusp) for developer collaboration? The list could go on and on, but considering most are beyond the audience of this book, Table 9-7 focuses more on general policies that concern most stakeholders.

Table 9-7. *Infrastructure and Environment Policies*

Topic	Description
Product change control	What types of production changes are permissible and by whom? Can all content changes be published whenever the business wants, or are there types of content that should be published at specific intervals? What about layouts, components, and data template updates—when can they be published? What expectations will you set with the business around code and bug fix change windows? Once per month for server-side code changes is common, but will that be too limiting for a fast-paced marketing department? What are your requirements around backout steps and backups in case of a failed deployment? Will you permit the environment to be taken offline during a change window, or must you maintain constant availability?
Uptime and performance service level agreements	Are you making commitments to the availability of Sitecore? 99.9% allows 8 hours, 45 minutes of downtime per year. 99.999% ("three nines") only allows about five minutes per year. You likely need granular SLAs for each service supporting Sitecore because various outages may or may not be acceptable (e.g. content delivery vs. content management, MongoDB vs. xDB processing, and core infrastructure components such as SQL Server, server hosts, and networking).
	From a performance perspective, how responsive should the site be? All pages should return in <1 second?
	Each has dramatic infrastructural implications. Three nines will have a much larger server footprint than one nine. A guarantee of responsiveness typically requires cloud-based auto-scaling and stringent load testing before changes can get through the change control.
Recovery time objective (RTO)	If the site goes down, will you provide a guarantee of when it will be brought back up again? 4 hours? 1 hour? 24 hours? This can have dramatic infrastructural implications.
Recovery point objective (RPO)	If the side goes down, how much data loss is acceptable? 4 hours of data loss? 1 hour? None? This can have dramatic infrastructural implications.

Procedures

Defined procedures help you align on how you and your team will respond to certain events or requests. You can also set good expectations with your stakeholders along the lines of who to contact, how to submit a request, what their expected response time should be, and so forth. Documented procedures are an integral part of a governance plan. They spell out "how" that work will be done.

Tables 9-8, 9-9, and 9-10 have several example procedures you may want to consider for your governance plan. These lists are not meant to be exhaustive, but it should give you a good example of the types of requests and procedures you should be planning for. There are three main categories of procedures: support procedures, content procedures, and environment procedures.

Table 9-8. *Support/Requests Procedures*

Topic	Description
New user setup	How will you set up new users? Will you have a registration for self-registration or will you require a manual setup? How will you know what security settings are appropriate for different types of new user requests? How will you send password information for manual setup?
	These policies may be different for Sitecore users vs. customer users, etc.
Password reset request	If a user locked his password, who will he contact to get it unlocked?
New module from marketplace or third-party add-in request	Will you allow the business or others to request modules/add-ins? What is your process for vetting these requests? What if they send you some code they want you to add into the solution? Will you support that code once it's in the solution?
Request for new feature/component	How will the business or other stakeholders request development time to implement new feature requests? Will you manage a backlog of requests? How are requests approved and prioritized? Where does the budget come from for minor, non-project related enhancements?
General content editor support request	Sitecore isn't the easiest technology to learn. Who will users reach out to when they have questions?
New campaign landing page request	Marketing loves spinning up landing pages for their campaigns. Who will create them? How are they requested? What features/functionality are you offering or limiting them to? How will custom/advanced landing page requests be handled?

Table 9-9. *Approvals and Publishing Procedures*

Topic	Description
Content update request	How will you respond to content update requests from your business or partners? Who will they contact? Will you have a ticketing system? What is your service level agreement (response time) for low-priority, high-priority, and emergency content requests?
Content approval request	How will you respond to content approval requests from your content editor team? Who will they contact? Will you use a workflow or manual process? What is your service level agreement (response time) for low-priority, high-priority, and emergency approval requests?
Content publishing request	Who handles publishing requests? Are they automated into a nightly batch publish, or do you want a human actually looking at and vetting requests? What is your service level agreement (response time) for low-priority, high-priority, and emergency publishing requests? What's your procedure for "emergency" requests?

Table 9-10. *Environment Procedures*

Topic	Description
Non-emergency issue resolution request	What will happen if someone finds a bug?
Emergency break-fix/outage response	What will happen if something is broken?
Production environment/infrastructure change request	What will happen if a change requires server-side changes? These are high-risk changes as compared to general content updates. How are they handled? How often will you allow these types of changes? Once per month? What if there's an emergency?
Disaster recovery procedures	You may want to identify all your disaster scenarios and have recovery procedures for each to offer guidance and sanity during an emergency. This is crisis planning and prevention, when you consider how the planning will identify gaps you may end up filling (such as adding redundancy, etc.).
Windows and/or Sitecore updates/ upgrades	What are your procedures to install/test a windows update? What are your procedures to install/test a Sitecore update?
Proactive administration	Will you have procedures around proactive administration of the environment that must take place (e.g., checking SQL maintenance plans, checking logs, checking free disk space, disposing the Recycle Bin, etc.)?

Ongoing Tasks and Audits

Each policy discussed in the previous section should have a corresponding audit task to ensure compliance over time. If you don't plan on enforcing the policy, the policy shouldn't exist. Again, you want your governance plan to be pragmatic. Individuals should be assigned granular, specific, and measurable tasks that ladder up to policies and procedures that form the core of what you want to govern. High-level abstract tasks are unenforceable and shouldn't exist in your governance plan.

Procedures, too, should have corresponding tasks. A "new user request" procedure may result in an actual person doing some work. That work should be defined, assigned, and estimated for resource leveling purposes.

Use the format found in Table 9-11 to capture all the tasks coming out of your defined policies and procedures. You want to capture the topic/category, the task detail (specific and measurable), the owner/role (who is assigned to the task), the frequency in which the task will be performed (five times per week, weekly, monthly, etc.) and the estimated hours per week that will be spent performing the task. If the task is a monthly task, divide by four to come up with an average hourly estimate, for example.

■ **Note**   It would be redundant to restate all of the policies and procedures in described in the previous sections, so the focus in Table 9-11 is more to demonstrate the concept, not to be exhaustive. That, and every company is going to identify different policies and procedures, so every company's audit/tasks will be different, making an exhaustive list impossible. Rather, consider this a framework you can follow and extend.

Table 9-11. *Example Tasks List*

Topic	Task	Owner	Frequency	Effort (hrs / wk)
Analytics	Monitor path analyzer and compare current month's top paths to previous baselines. Summarize findings.	Marketing analyst	Monthly	1
Analytics	Review testing/optimization results. Summarize findings and trends. Identify top opportunities for future tests.	Marketing analyst	Monthly	1
Personalization	Review events, failure events, and goals accrued for each persona over the past month. Compare trends over previous samples. Identify trends. Determine if original expectations for the personas are actually correct. Summarize findings and identify updates needed to personalization strategy plan, if applicable.	Marketing analyst	Monthly	4
Information Architecture	Ensure no item templates have been created below items from which there is no Insert Option. Ensure Insert Options align to the Information Architecture (IA) as defined in the IA governance ➤ allowed Insert Options section.	Technical lead	2x Yearly	1
Content	View keywords in Google Webmaster Tools. Ensure alignment to keywords strategy. Summarize findings; identify recommendations for content editors.	Content approver	Monthly	1
Content	Run versions script to identify items with more than 10 versions. Trim versions >10 where appropriate to reduce storage footprint and increase content administration performance.	Environment administrator	Monthly	1
Content	Run archive script to identify expired content. Archive all items. Summarize what was archived.	Environment administrator	Monthly	.5
Content	Approve content if it meets approval guidelines.	Marketing administrator	Daily	2.5
Content	Publish content according to publishing guidelines.	Environment administrator	Bi-Weekly	2.5
Campaigns	Summarize status across all engagement plans (number of new customers entered into engagement plans, current numbers across all states, drop out counts). Identify bottlenecks and strategies to improve progress. Summarize findings.	Marketing analyst	Weekly	2

(*continued*)

Table 9-11. (*continued*)

Topic	Task	Owner	Frequency	Effort (hrs / wk)
Campaigns	Summarize campaign interactions, number of conversions, and path analyzer results to determine drop off points. Summarize findings, identify recommendations to improve conversion.	Marketing analyst	Weekly	2
Environment	Run security penetration testing tool against web site. Summarize findings.	Environment administrator	Monthly	.5
Environment	Run a DR simulation on the SQL server. Remove node A from the availability group. Ensure DR site stays online.	Environment administrator	Quarterly	.25
Performance	Run load simulations against DR environment in preparation for Black Friday. Ensure performance benchmarks are met. Summarize findings.	Environment administrator	Yearly	-

Roles and Responsibilities

It is all too common to *start* with roles, and then figure out what they are responsible for. The good thing for you, is in previous sections, you saw how we started with the *work*, from which you can extrapolate the roles. Never identity/create a role if you don't know what the work is and what they are accountable for. Never identity high-level, abstract responsibilities. Rather, identify granular, measurable responsibilities to ensure the resource really understands their duties. You saw these examples in the previous section. With those understood, you can start planning your roles and do some resource leveling.

By way of generalization, there are some common Sitecore roles you may end up identifying. They may fall along the lines of the following roles:

- Product owner/manager

- Technical lead/architect

- Content editors

- Content approvers

- Content publishers

- Marketing analysts

- Marketing administrators

- Developers

- Infrastructure administrators

- Business analysts

■ **Note**   The product owner is the only role worth defining at this point, because it's the most important role and a role that far too often doesn't exist. The product owner's main objective is to ensure Sitecore's (really the digital experiences—it doesn't have to be technology specific) ongoing alignment to the business' objectives. This person owns the product roadmap. She sets the overall direction for other roles and holds other roles accountable to her tasks. She is the one held accountable to ensure governance is actually happening. This person should be in the business, usually the marketing department, who often has acumen of a digital marketing technologist when owning a product on the Sitecore platform.

The names of the roles really aren't the point. The point is, who is doing what tasks? If you're assigned the marketing analyst, do you understand what that means? Do you know what you're responsible and accountable for? Do you have enough capacity to perform the duties assigned? These are the more important conversations than simply getting a list of roles defined. Every list of roles at every company will vary, since nobody will have the same list of tasks and priorities needed to governance their Sitecore instances. Therefore, focus on the work, not the role, and you'll be better off because of it. People understand tasks; roles can become ambiguous over time.

Table 9-12 shows an example resource allocation by role by the accumulated hourly allocation of tasks. This is a great way to understand how the work is distributed. This is also where "roles" can break down. Maybe the marketing analyst has 28 hours per week of assigned tasks, but only 20 hours per week of capacity. There may be tasks the product owner could take off the analyst's plate to balance the scales. After all your tasks are defined in a matrix like Table 9-11, summarize them in a format similar to Table 9-12 and see how the dust settles. Update Table 9-11 if there are over allocations and where it makes sense to move tasks onto other, perhaps less obvious choices. Or, this can be a great way to justify adding additional head count onto the team to handle the workload.

Table 9-12. *Example Governance Resource Allocation Worksheet*

Role	Hours/Wk of Assigned Tasks	Meeting Hours/Wk	Total Hours/Wk	Current Capacity	Variance
Marketing Analyst	26	2	28	20	-8
Content Approver	8	2	10	10	0
Architect	12	1	13	10	-3
Product Owner	6	4	10	16	6

Governance Committees

So, you have tasks, you have roles, you have assigned resources, but how do you hold those individuals accountable to getting the work done? Unfortunately, it is all too common to establish a governance plan, but it peters out over time as people get busy, distracted, reassigned to new priorities, etc. Don't establish a governance plan unless you're willing to put structure in place to make it long-lasting.

A great way to enforce governance accountability is through the use of a committee. Everybody assigned a task needs to report back at each committee. This provides awareness, transparency, and accountability to getting the work done. It also achieves peer accountability, which is a more reliable way to ensure the right things get done (versus a top-down approach).

There are three main committees you should consider. You may tailor this to be more or less depending on the size of your organization, inherit risk, and/or frequency of change. Again, the product owner and technical lead are the two core team members driving governance adoption, in this case, by facilitating these committees.

Table 9-13. *Example Governance Committess You May Want to Establish*

Committee Name	Description	Frequency	Members
Product Steering Committee	This committee provides the overarching strategic leadership of the product. Over time, the objectives of the company may deviate from the original goals of the product and the core goal of this committee is to maintain strategic alignment. Committee agenda: • Review progress of product roadmap • Review monthly KPIs • Discuss any changes in direction that may be necessary	Monthly or quarterly, depending on availability	Product owner (facilitator) Key business stakeholders (e.g., CMO, CIO, etc.)
Content Marketing Committee	Don't think of this committee as your "digital marketing operations" team. It will be hard for you to keep the day-to-day out of the discussion. Instead, this committee's goal is to ensure alignment to content- and marketing-related policies as defined in the governance plan, as well as a forum to review findings coming out of the ongoing tasks (such as analytics trends). Committee agenda: • Task/audit owners report back on findings • Review progress of content and marketing campaign roadmap(s) • Discuss needed roadmap updates based on observed trends	Monthly	Product owner (facilitator) Technical lead (passive participant) Anyone else assigned content- or marketing-related tasks/audits
Technology Committee	The goal of this committee is to ensure overall health of the product's underlying infrastructure and performance, as well as to oversee production changes to mitigate change risk. Committee agenda: • Task/audit owners report back on findings • Review progress of technical roadmap • Change Approval Board (CAB) reviews change requests, allocates to change windows, etc.	Biweekly or monthly, depending on frequency of change	Technical lead (facilitator) Product owner Infrastructure administrators Other technology stakeholders

Summary

Governance is how you ensure lasting success and value creation of your digital and Sitecore experiences. *The Wicklund Framework for Sitecore Governance* attempts to be as pragmatic as possible to make governance as achievable long term as possible. The framework starts with the rules and defines the work to ensure those rules are enforced. That work is then laddered up into roles, whereas most start with abstract, poorly understood roles that create an accountability challenge. Roles, then, are held accountable through the use of committees. Each role has a duty to summarize their finding since the previous committee meeting. The product owner keeps the gears turning, ensuring that the committees meet regularly, and has primary accountability of the overall success/failure of the Sitecore installation over time.

This is the last chapter in this book, and governance is a fitting place to end. It's a great place to end because, in a very real sense, governance is really the just the beginning of a much larger journey.

As a signoff, I want to encourage you to look me up on LinkedIn, check out the book's web site for updates/errata, or drop me a line for help or consulting opportunities. Good luck, and I look forward to continuing the discussion with you!

Sincerely,

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Appendix

This appendix covers topics that go a bit beyond the core audience of this book, but which still are applicable for those who want to go a bit deeper. These more advanced topics are:

- *Data templates*—Learn how to create the foundational data structures from which all content in Sitecore is create (this section provides some foundational concepts introduced in chapter 2)

- *Standard values*—Learn how to set default values for fields, default presentation and layout settings, and apply workflows to content items through their standard value settings

- *Custom workflows*—Learn how to build custom workflows

- *Architecture*—Learn about server roles, deployment models, authentication options, e-commerce solution providers, and CRM integration

- *Federated Experience Manager*—Learn how to extend your content and analytics into experiences not built on the Sitecore platform

Data Templates

Data templates are the foundation of your Sitecore deployment. They specify the data fields and many other settings that can be applied to content upon creation. For example, you might want to feature a promotion of a given product. Both of these items represent content that a marketer will create, test, and perhaps personalize based on who the users are and their preferences. Before developers can get started, however, they need to configure the data templates that represent these content items, and thereafter they must create the components to render the promotions. Let's get started with creating the data templates.

Creating Data Templates

We will need two data templates for our promotions example (as discussed in chapter 2). The first data template will be the definition for a featured product. The second data template will define the fields and settings for the promotion itself.

For the purposes of demonstration, our Featured Product data template will have the following fields:

- Product Name
- Product Description
- Product Images
- Related Products
- MRSP

Our Promotion data template will have the following fields, several of which are inherited from an out-of-the-box data template in Launch Sitecore called Promo Spot:

- Title [from Promo Spot]
- Text [from Promo Spot]
- Link To [from Promo Spot]
- Link Text [from Promo Spot]
- Image [from Promo Spot]
- Related Products
- Discount Percentage
- Target Persona

Since a featured product is rather generic and be used for many purposes, that data template is separate from the promotion itself to maximize reusability. This is an important point.

When considering your site's information architecture, you must pay careful consideration to opportunities for data reusability. Data duplication is never a good idea, Sitecore included. Notice in this example how a promotion has a selection of one or more related products. A marketer can, therefore, create a new promotion and select which products it relates to.

■ **Tip**   Plan your site's information architecture accordingly to allow for maximum reusability of data templates. If you have a very large data template with many fields, you likely are ripe for refactoring.

PRACTICAL TIPS: SET UP YOUR TREEVIEW FOR MULTISITE SUPPORT

Before we create these data templates we must start by validating the structure of our treeview. Below Templates, it is a best practice to have at least two custom folders: Global and another, one for each site. Notice in Figure 10-1 the Global folder. This folder can store all generic templates that do not pertain to any particular Sitecore site. Oftentimes in multisite situations you will want to reuse templates and this is a perfect way to do this.
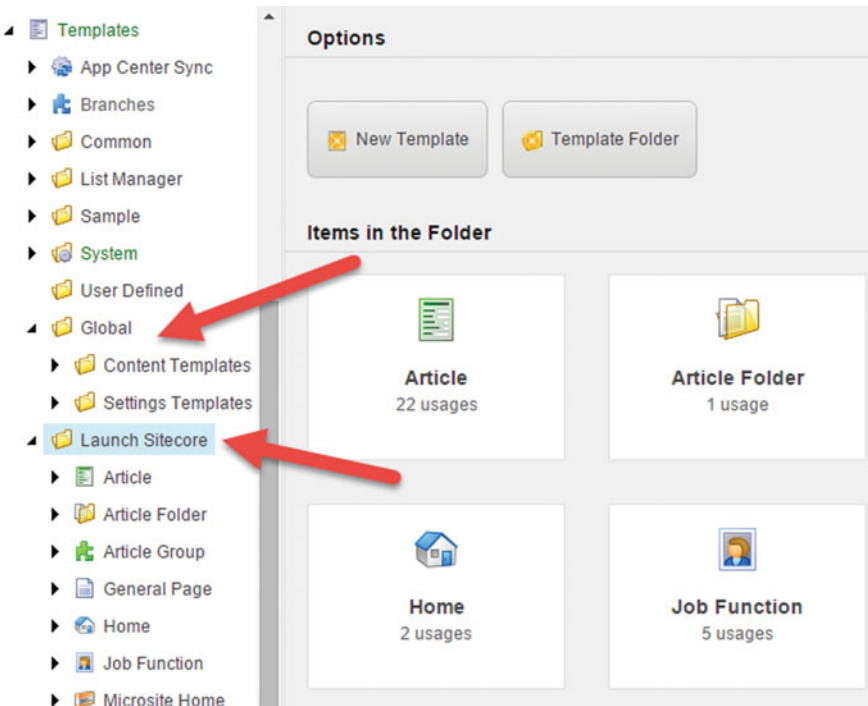
Figure 10-1. *When you use global folders, it is easier to share resources should you decide to use Sitecore to manage multiple sites*

By putting them into a Global folder, you can configure permissions on that folder such that marketers in the different sites can only see their site and the Global folder for their templates. The alternative is a giant mess. Start using the Global folder pattern from the start, regardless if you think you will never need multiple instances. If you change your mind down the road, this pattern will save you a ton of rework!

Notice also the Launch Sitecore folder. This folder is for the site instance and its name will be a name your marketers will easily recognize when differentiating the sites.

■ **Note**   In general, you will not be putting anything in any of the other folders below Templates besides the ones you create. If you didn't create it, don't touch it!

To follow best practice, I will be creating both data templates in the Global folder, and the appropriately named, Content Templates folder, as both are highly reusable in the future should we expand into a multisite scenario. Use the following steps to configure the two data templates:

1. From the Sitecore Launchpad, click Content Editor.

Select the Templates node in the treeview. If a Global folder or site instance folders do not exist, create two new folders by clicking the Template Folder item in the Insert Options picker within the ribbon (Figure 10-2). Type an appropriate name and click OK.
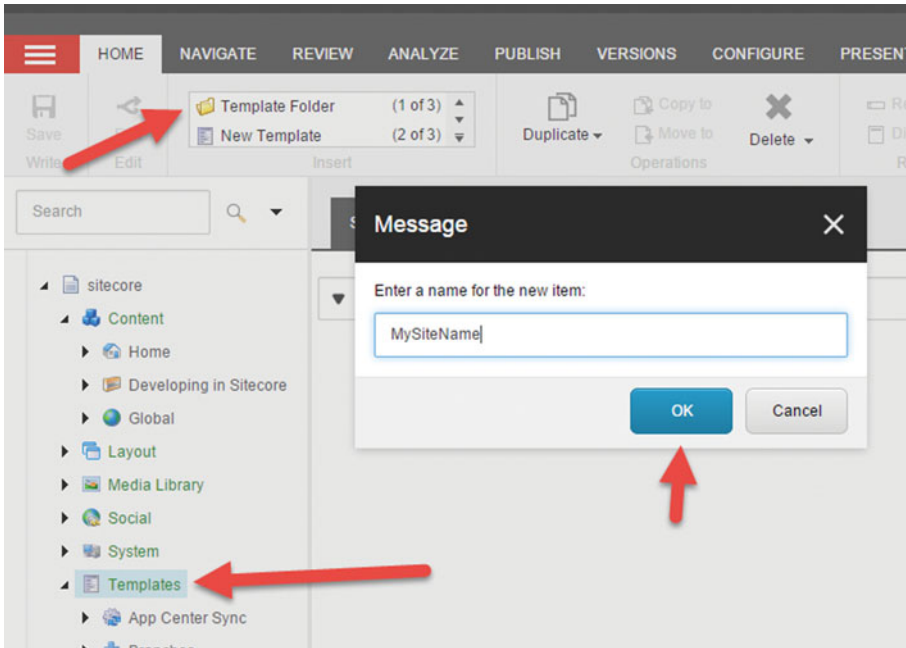
Figure 10-2. *You want to create custom folders below the main nodes, rather than add your items to the root of nodes directly*

2. Similarly, create a Content Templates folder below Global.

3. Right-click the Content Templates folder you just created and select Insert ➤ New Template from the drop-down.

4. Provide Featured Product as the template name and leave the base template set to Standard Template (more on inheritance later).

5. Click Next and confirm the location is Content Templates. Click Close.

6. Lastly, we need to set an icon for the node. Within the Ribbon, click the Configure tab. In the Appearance ribbon section, you'll notice an Icon drop-down. Select an icon of your choosing.

■ **Tip**   Icons are important! It is very easy to get lost in the Sitecore treeview. Using custom icons with commonly used nodes helps increase usability and speed of administration.

Repeat these steps for the Promotion data template. The only difference with Promotion is that it will *not* inherit from standard template but rather from Promo Spot. This template has some standard properties and will allow us to tie it into the out-of-the-box promo component that comes with Launchcore. Inheritance will be discussed in greater detail in a later section. Afterward you'll have two empty data templates ready for configuration!

■ **Note**   These steps are continued in the "Completing Our Templates" section later in this appendix.

Data Template Fields

We know what fields we need for our Featured Products and Promotions data templates, but before we go off the deep end and start creating them, there is some more requirements gathering we need to do. Much will be said of the myriad of settings that can be applied to data templates throughout this section, but fundamentally you must consider Sections, the field's Type, its Source, and Versioning requirements (ideally) before building (Figure 10-3).

Figure 10-3. *Fields have five common properties, including their Name, Type, Source, and versioning requirements, either Unversioned and/or Shared*

Field Sections

Field sections are a great way to organize your fields by categories. From a Content Editor's perspective, the field sections will appear as an expandable/collapsible accordion. Figure 10-4 demonstrates this, where Home, Menu Item, and Site Root (among others) are that item's field sections.
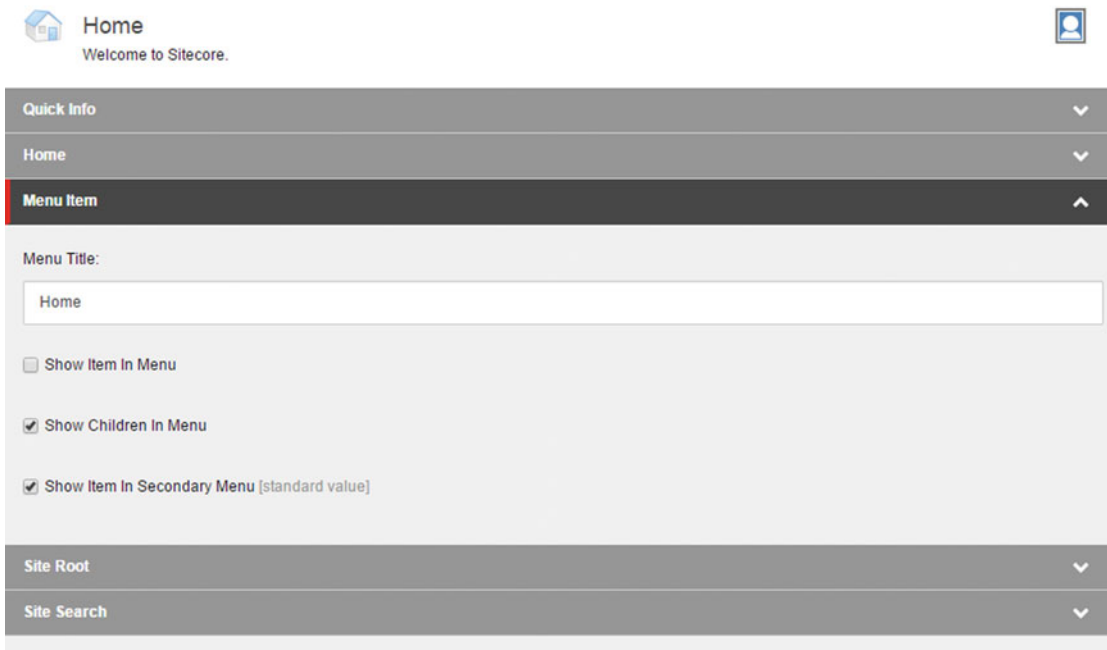
Figure 10-4. *Field sections allow you to categorize your fields. This makes content administration easier when you have a lot of fields*

Field Types

There are *many* field types to choose from! A field type establishes the format the data will be stored in. For example, a Number column requires a number value, whereas a Single-line text column can take any set of characters, letters, numbers, or otherwise. Table 10-1 shows the various field types explains what they are and how they work.

Table 10-1. *Field Type Descriptions*

Category	Field Type	Description
Analytics	Profile Card Value	This field type allows the marketer to select a profile/persona that can be associated to the piece of content. You will almost never need to use this field as it's already in the standard template.
Analytics	Profile cards	Similar to Profile Value, but more robust, accommodating other settings such as user segment, information type, and score.
Analytics	Tracking	This is an important field, allowing marketers to associate campaigns, goals, events, and other settings to a piece of content.
Simple Types	Checkbox	Stores a simple Boolean, Yes/No value.
Simple Types	Date	Stores a date. You can use the $date token in the standard values for the replacement of the current date upon a new item creation.
Simple Types	Datetime	Stores a date and a time. You can use the $date and $time tokens in the standard values for the replacement of the current date upon a new item creation.
Simple Types	File	The File field allows users to "attach" files to the content. The user can select files from the Media Library to attach, or upload new ones.
Simple Types	Image	Similar to File but specific for images. Images rendered with FieldRenderer can have a MaxWidth applied. When applied, Sitecore will cache a resized image according to that width, thus speeding up download times. This offers a significant advantage over the File field when working with images.
Simple Types	Integer	Only takes a number with zero decimal places.
Simple Types	Multi-Line Text	Allows for multiple lines of text.
Simple Types	Number	Takes any number, with or without decimal places.
Simple Types	Password	Offers the user a text box but blurs the text so onlookers cannot see the value.
Simple Types	Rich Text	Similar to multiline text, except that it offers a rich text editor to aid content editing. The text is stored as XHTML rather than straight text.
Simple Types	Single-Line Text	Straight text line with no rich text and no carriage returns.
Simple Types	Word Document	Allows for a Word document to be attached to the item, with links for Edit and Download. Inline editing of the document is only supported on IE.
Social	Accounts Multilist	Internal—you probably won't use this.
Social	Campaign Tree	Internal—you probably won't use this.
Social	Countable Edit	Internal—you probably won't use this.
List Types	Checklist	Allows the user to check multiple checkboxes. The datasource can be set to an item in the tree, and items below that parent item will appear as selectable options.

(*continued*)

Table 10-1. (*continued*)

Category	Field Type	Description
List Types	Droplist	Similar to Checklist except it renders a drop-down instead of selectable checkboxes. The disadvantage is you can only select one option in this case. Note: Only the item name is stored, not an actual link to the item in the database. Therefore, use this sparingly if at all to avoid broken links. As an alternative use Droplink whenever possible.
List Types	Grouped Droplink	Similar to Droplist except that the grandparent is set to the datasource. In this case, the child items are the "groups" in the drop-down and their children then become the options. Note: Droplink stores the ID of the item selected and is a better option than Droplist.
List Types	Grouped Droplist	Similar to Grouped Droplink except only the value is stored. Use sparingly if at all.
List Types	Multilist	Shows the left/right selector to select multiple items with left/right arrows. Also allows sorting on the selected items, perhaps making it preferable to Checklist.
List Types	Multilist with Search	Similar to Multilist but with the addition of a search box to allow users the ability to search for items instead of trying to find them in a list. This is helpful for large lists.
List Types	Name Lookup Value List	Similar to Name Value List in that this field lets you store key/value pairs, but it also lets you set a datasource from where to allow the user to pick the key/values from.
List Types	Name Value List	This field type helps you store a collection of key/value pairs.
List Types	Treelist	Similar to the Multilist but rendered via a treeview versus a flat list. There are also many configurations you can set to include/exclude what shows up in the treeview.
List Types	TreelistEx	Similar to the Treelist but the tree is collapsed on load, making load time faster as items are fetched only upon the user expanding that item.
Link Types	Droplink	One of the best, most commonly used types for storing drop-down values, as it links directly to the item in the database and thus the solution is safer from broken links.
Link Types	Droptree	Similar to Droplink but renders a treeview instead of a normal drop-down.
Link Types	General Link	Standard linking ability, commonly used for linking to external sites or if the user needs to add link settings, such as targeting a new window or calling JavaScript upon click.
Link Types	General Link with Search	Similar to General Link except it also provides the user a search box to search for items.
Link Types	Version Link	Clones use this field to track an item's ID, language, and version number when cloning.

Table 10-1. (*continued*)

Category	Field Type	Description
Developer Types	AccountSelector	Internal—you probably won't use this.
Developer Types	Icon	This field gives the user the ability to select an icon out of the icon library.
Developer Types	iFrame	Lets the user specify the path to another application.
Developer Types	Tristate	Lets the user select between Yes and No, but also Undefined.
Developer Types	Sitecore User	Lets the user select a user stored in the Sitecore database, such as a customer who has a login configured.
System Types	Attachment	Internal—you probably won't use this.
System Types	Custom	Internal—you probably won't use this.
System Types	Datasource	Internal—you probably won't use this.
System Types	File Drop Area	Internal—you probably won't use this.
System Types	Internal Link	Internal—you probably won't use this.
System Types	Layout	Internal—you probably won't use this.
System Types	Page Preview	Internal—you probably won't use this.
System Types	Query Builder	If you need a search query to be the datasource of a control, you can use this field to help build that query versus having to type it in manually (error prone).
System Types	Query Datasource	Internal—you probably won't use this.
System Types	Rendering Datasource	Internal—you probably won't use this.
System Types	Rules	Internal—you probably won't use this.
System Types	Security	Internal—you probably won't use this.
System Types	Template Field Source	Internal—you probably won't use this.
System Types	Thumbnail	Internal—you probably won't use this. Instead set a MaxWidth on the ImageField.
Deprecated Types	N/A	Deprecated types are in Sitecore for the purposes of backward compatibility with previous versions of Sitecore only and should not be used for new data templates.

■ **Note** There are *many* very helpful (and free) custom field types you can download and install. Some examples are a Google Maps location picker, a color picker, and a multiple image selector. See the following blog post, which summarizes all the cool stuff out there: `http://bit.ly/1DxntPv`.

Field Sources

Field sources help you determine where content should be coming from. For example, when you want to associate an image to a news article you'd expect to be able to browse for images. However, what if you have hundreds or thousands of images? The source on a field helps you set a destination from where to select images (really any content; image are just an example). Perhaps there is a specific folder within the Media Library that you want all news articles to draw from. By putting that folder's path into the source field, you are limiting marketers to select just that folder's items and its descendants. Notice in Figure 10-5 the carousel item's images are limited to the Carousel Backgrounds path.
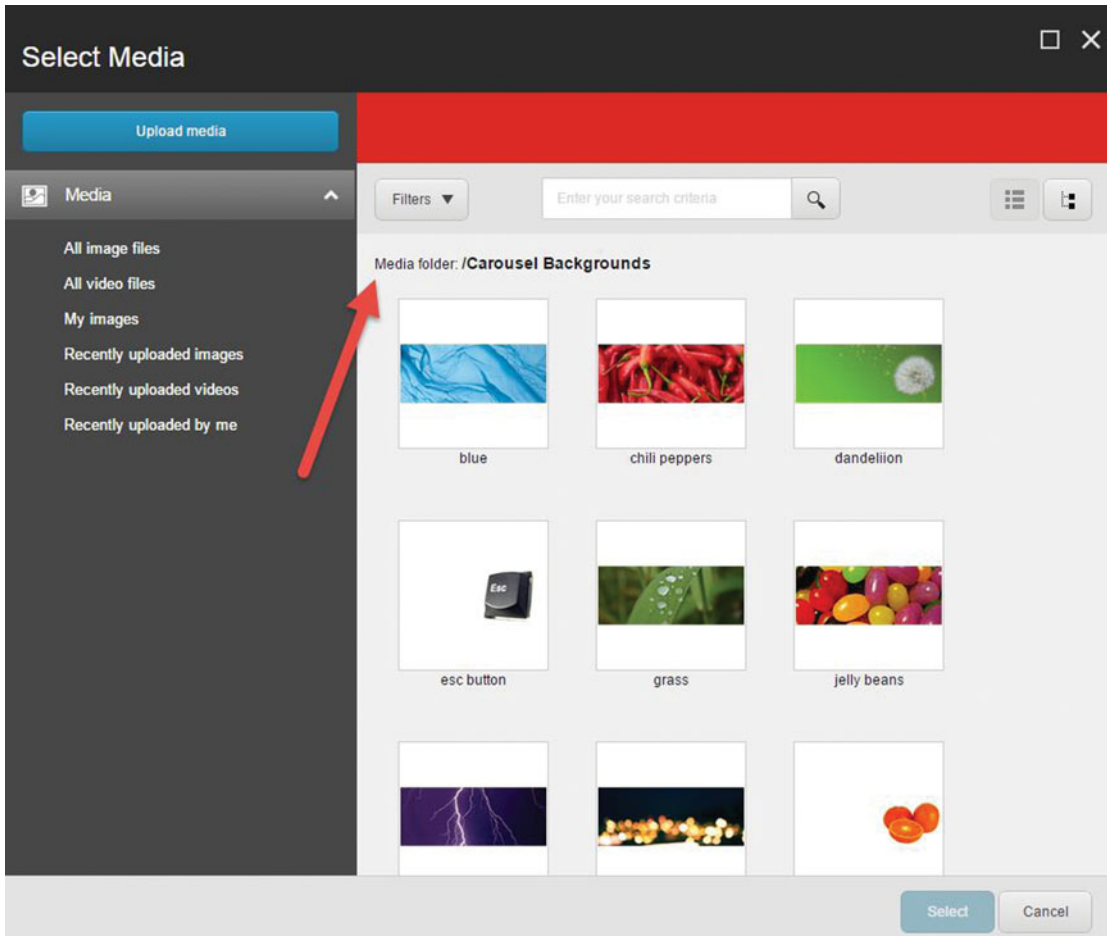
Figure 10-5. *Selecting from thousands of items can be impossible. Use the Source column to limit the selector to specific locations to make it easier to find the right assets*

■ **Note** The field source format can vary. Sometimes a GUID is needed, sometimes an URL. Most of the time, a developer sets up the fields and you'll want to confirm the technical requirements/limitations of their configuration.

Field Versioning

An item in Sitecore can have multiple versions. These versions might be for languages, or perhaps you're doing some A/B testing and want to test a few options before making a final decision. Some fields you may want all versions to share the data. Other fields you might want each version to specify its own value. Language translation would be a good example that, where each field shown to users must be translated, but other fields used to control logic, such as numeric values or images, you might want shared.

There are two checkboxes on each field: Unversioned and Shared. Shared specifies that this field is likely numeric or an image, or possible an internal field used for rules and each version across all languages should share the value when checked. You check unversioned when you want all versions within a specific language to share a value. In this case, all English versions would share the value, but all Spanish versions would have a different value. The default is that neither Unversioned nor Shared are checked. In this case, all values across all versions across all languages will have unique values. Say that five times! For all practical purposes, however, unversioned is rarely used.

■ **Note** You can check both Shared and Unversioned; the two are actually mutually exclusive, and the default would be Shared in this scenario. Using Unversioned or Shared also means that the field is not subject to workflow, which is an important consideration.

Field Validation

You can add field validators to enforce data integrity in your solution. For example, you may want to require all images to have an ALT tag set to get the most out of your search engine optimization. It is simple to add the Image Has Alt Text field validator to each of your image fields has an ALT tag. There are a few dozen validators such as this one that comes out of the box. You can also have your developers build custom validators for unique scenarios.

To add validators to a field, expand the data template's field section in the treeview that contains the field you want to modify. Select the field in the treeview. With the field selected you will notice a Validation Rules section below the Quick Info and Data sections. The Validation Rules section has four fields you can configure.

- *Quick Action Bar*—Used to add the red/yellow notifications in the gutter in the treeview (Figure 10-6). These can help you spot validation errors even when you are not actively editing an item.
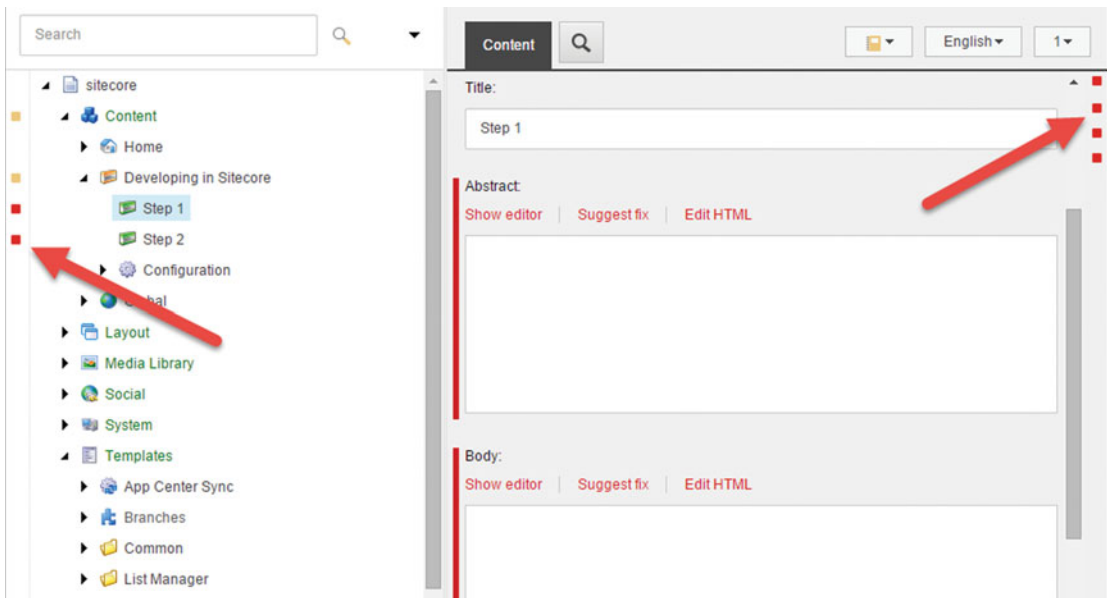
Figure 10-6. *Validators can help you enforce data integrity. There are several places where you are notified when an item fails its validation: in the gutter (left), in the validation bar (right), and in the validation pop-up when you try to save it*

- *Validate button*—Used to add the validation feedback in the validation results pop-up when the Validation button is manually clicked in the ribbon (Review tab, Proofing section, Validation button).

- *Validation bar*—When you're on an item, you will notice little red icons to the right of the item showing how many fields are failing validation (Figure 10-12 shows four fields failing validation).

- *Workflow*—This section can be used to enforce validation rules before a workflow is allowed to progress from one state to another.

It is simple enough to add the validations to these sections. Simply find the validator you want to enforce and double-click it to move it to the right. Save the field item and the validator is now in effect for all item instances created from this template.

Completing the Templates

With a more robust understanding of how data templates works, you can now complete the build-out of the Featured Product and Promotion data templates. Run the following steps to complete the configuration:

1. Click inside the Add a New Section text box and add a section called Product Details or Promotion Details.

2. Add the fields for the Featured product data template (Product name: single-line text, Product description: multi-line text, Product image: image, Related Products: multilist with search, MRSP: number) and the Promotion data template (Related Products: multilist with search, Discount Percentage: integer, Target Persona: profile cards).

3. The Source field properties were set in Chapter 2.

4. Set the Image field as Shared, since we want all versions across all languages to share the same image.

5. Set Related Products and MRSP to Unversioned, as we want to share the value across all versions within a given language. For example, China/Mandarin will have a different MRSP than France/French, but Mandarin variations should maintain the same MRSP.

■ **Note**   These steps are continued later in this appendix.

Data Template Inheritance

Data template inheritance is a great way to create a hierarchy of information and maximize reusability of templates. It is a best practice to break your experience's information architectures down into reusable pieces and extend from there. Our customer Promotion data template inherits from Promo Spot. This allows us you use a wider variety of components. A developer can build components for Promo Spot and the marketer can use those for product promotions, whitepaper promotions, e-mail promotions, and so forth. Inheritance is what enables this reusability, and in turn, significant cost savings for development time and maintainability.

■ **Tip**   Make your inheritance broad, not deep. Breadth tends to beget reusability, whereas depth tends to beget hierarchy and rigidity. Two to three layers of hierarchy is about all you should allow yourself or you risk losing the benefits of reusable templates and components.

There are some gotchas to be aware of. For example, you might have a base template that has a Title field, and then unknowingly you create a Title field in one of the child templates. In this case when the marketers go to edit that content, they see two separate title fields and are left unsure which one to use. Developers, likewise, are confused as how to programmatically retrieve what seems like duplicate data, when in reality the marketer could enter two separate values.

This behavior is also true with section names. The sections of a data template always collapse into their parentage and appear at the same level as parent sections. It will confuse your end users if your section's names are the same as the parent's names. The best practice for both is to prefix names with the template name if you are worried about duplicates.

■ **Tip**   Never duplicate field or section names. If you have a child template, use the same field name as defined in a parent. You can't be sure which field will be rendered. It is safest to prefix the field name with the template name to differentiate fields.

A Data template can inherit more than one item. In this case, the combined fields from all the templates that the template inherits from will be consolidated in the Content Editor. Template inheritance can also be circular. For example, a product promotion can inherit from a Promo Spot and a callout. A callout can inherit from a Promo Spot, too. In this case, again, all the fields are consolidated rather than showing duplicates.

It is also important to note that data templates can only inherit one set of presentation details. If a template inherits from two templates and both have presentation details, only the first template's presentation details in the inheritance list will be used. This can oftentimes be confusing for marketers who are unsure as to why their content isn't displaying as they had assumed it would. A personal best practice I have come to appreciate here is to have three types of data templates: those containing fields, those containing presentation details, and those containing a combination. This way you can have the third type become a compilation of fields and one set of presentation details. A good naming convention can help distinguish between the two and make it easier to understand what is driving the presentation. Additionally, this is another way to create a broader, more reusable set of templates, as you may find yourself wanting to inherit some fields from a parent but not its presentation details.

■ **Tip**   Use three types of data templates to keep your information architecture broad and reusable: 1) templates containing fields, 2) templates containing presentation details, and 3) templates combining the two. The first two should never inherit from each other, and the third should never inherit from other combination templates, if possible.

One way to structure your Templates folder according to this best practice can be seen in Figure 10-7 (using a Hero Image Rotator as an example, such as you'd commonly find on a home page):
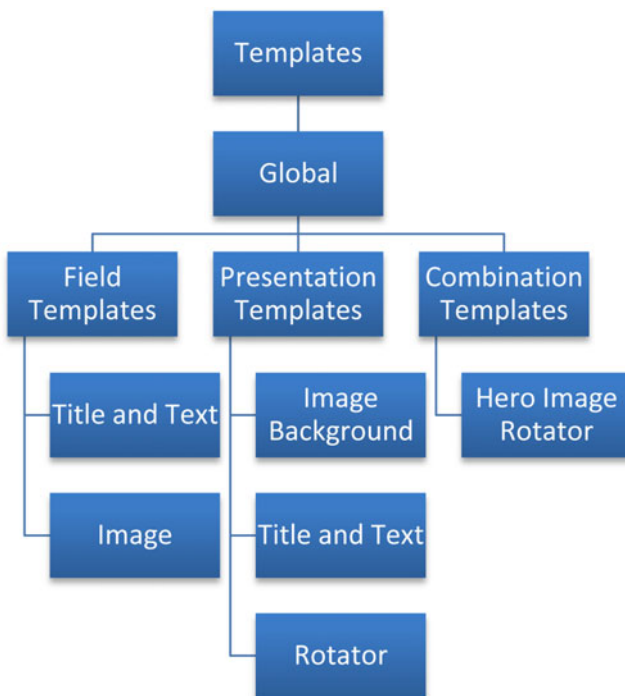
Figure 10-7. *Structure your data templates in three categories: 1) field templates, 2) presentation templates, and 3) combination templates*

Field Templates

- Title and Text Template (contains a Title and Text fields, plus perhaps other fields to control formatting)

- Image Template (contains an Image field, plus perhaps other fields to control formatting)

Presentation Templates

- Image Background Template (contains components to render a generic image)

- Title and Text Template (contains components to render a generic text and title)

- Rotator Template (contains components to swap out a DIV with new data)

Combination Templates

- Hero Image Rotator Template (inherits from Title and Text field template, Image field template, Image Background presentation template, Title and Text presentation template, and Rotator presentation template)

PRACTICAL TIPS: COPYING, MOVING, AND SORTING, OH MY!

It's easy enough to copy, move, and duplicate data templates and content (really anything within the Content Editor). However, there are a few gotchas. You don't want to be in a position of explaining to your boss why your actions resulted in data loss!

First, when you change a piece of content's template to a different template, Sitecore will attempt to transfer the data stored in the old template to the new template. It does this first by attempting to match field ID, where the data is moved when there's a match. Secondly, it attempts this based on field Name, and likewise moves the data when there is a match. Beware that when a match is not found the data is permanently lost as a result of the change template action! You should carefully plan the source to destination mapping before taking these sorts of actions or you risk data loss. In cases where data loss in anticipated but not acceptable, you will need to perform this administrative action via a PowerShell script.

It should also be noted that the Rich Text Editor does not handle copying content well. If you have a node in the treeview that needs to be copied, any copied content with links to other copied content below that node will maintain their link back to the original content, not the copy. One would expect links in the descendants of the copied content to be updated to point to the newly copied content. Again, PowerShell might be a way to search for and fix the broken links, or you could tap into the pipeline and watch for copy or duplication events to handle them accordingly.

Developers often refer to content items or templates by their internal IDs. Be advised that copy operations result in a new ID, which may result in existing code not working with the newly copied content or templates. Again, a more reusable option is to extend and flatten your information architecture.

Working with Standard Values

Standard values is an important concept in Sitecore. Some might argue that a better name for it is "default values" because it's a way to assign default values to items upon their creation. However, standard values do a lot more than that, so perhaps that's why they have a more generic definition.

■ **Tip** As a best practice, each data template should have standard values assigned. Standard values are typically configured by developers.

Standard values can have the following types of defaults:

- Default field values
- Insert options
- Presentation details
- Workflow

The rest of this section will cover each of these four types of values that can be applied to data templates.

PRACTICAL TIPS: RESETTING TO STANDARD VALUES

There may be times when you want to revert an item's settings back to standard values of the template it was created from. You can revert field values, presentation settings, and insert options back to the template's standard values. The following shows where in the ribbon you can find each of these buttons:

Field values—Versions tab ➤ Reset button in the Fields section

Presentation—Presentation tab ➤ Reset button in the Layout section

Insert options—Configure tab ➤ Reset button in the Insert Options section

After you click these Reset buttons, the content items values/settings will again reflect the standard values of their templates.

Configuring Default Values

A new data template does not have the ability to assign standard values. You first need to add a standard values item to the data template. One of the most confusing things about standard values is that the data template item and the standard values item for that data template look identical. It is common to apply settings to the data template thinking you are applying standard values and you are not.

You can tell if you have a standard values item or not by looking below the data template. Notice in Figure 10-8 how the Product Promotion data template has a __Standard Values item below it. This child item is where you will assign your standard values.
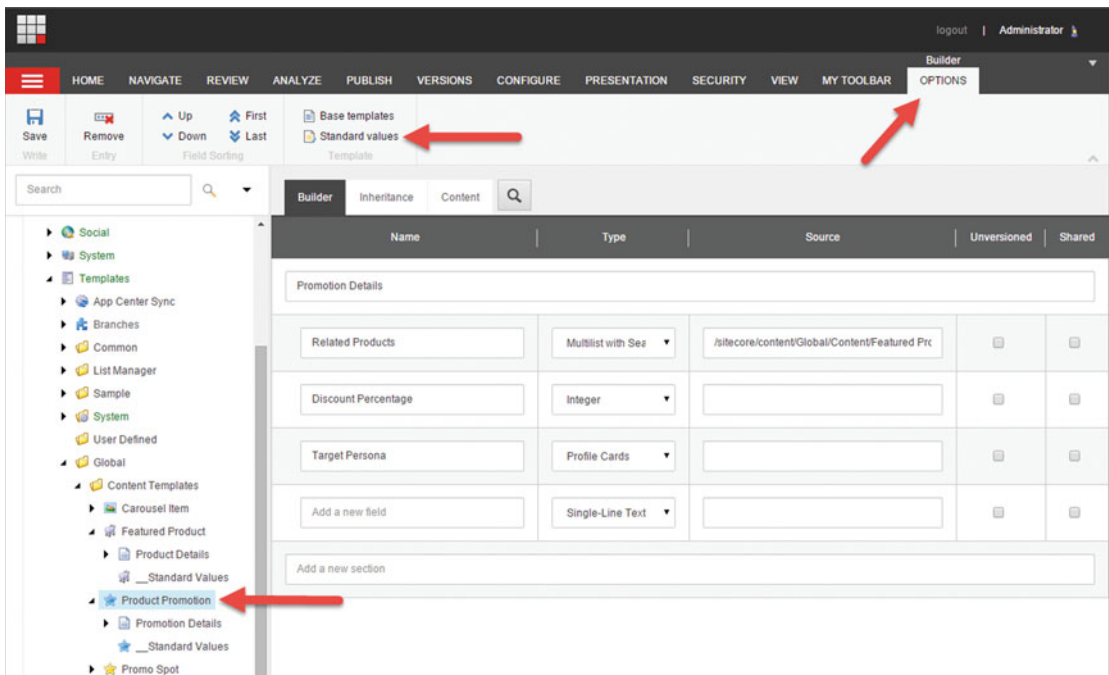
Figure 10-8. *You set up default values within a data template's __Standard Values item*

To create this standard values item, select the data template and then click the Builder Options tab. Click Standard Values below the Builder Options tab and you will notice the new standard values item appear.

You can start assigning default field values when you click the standard values item. Notice how Figure 10-9 shows the standard values item selected with the fields showing. You can set default values by entering data into those fields and thereafter saving the item. Then, when users create new items from that data template, those values will be present in the new item by default.

Notice also the $tokens in Figure 10-9. Tokens are replaced during item creation with dynamic values. For example, $name is replaced with the item name during creation. In Figure 10-10, you'll notice an item created with the name "Phil test" and the $name token was replaced as expected. The following are the supported tokens:

- $name: The name of the item
- $id: The ID of the item
- $parentid: The ID of the item's parent
- $parentname: The name of the item's parent
- $date: The system date (yyyyMMdd)
- $time: The system time (HHmmss)
- $now: The date and time (yyyyMMddTHHmmss)

■ **Note** Developers can create custom tokens. Check out the following blog post: http://bit.ly/1zflAW8
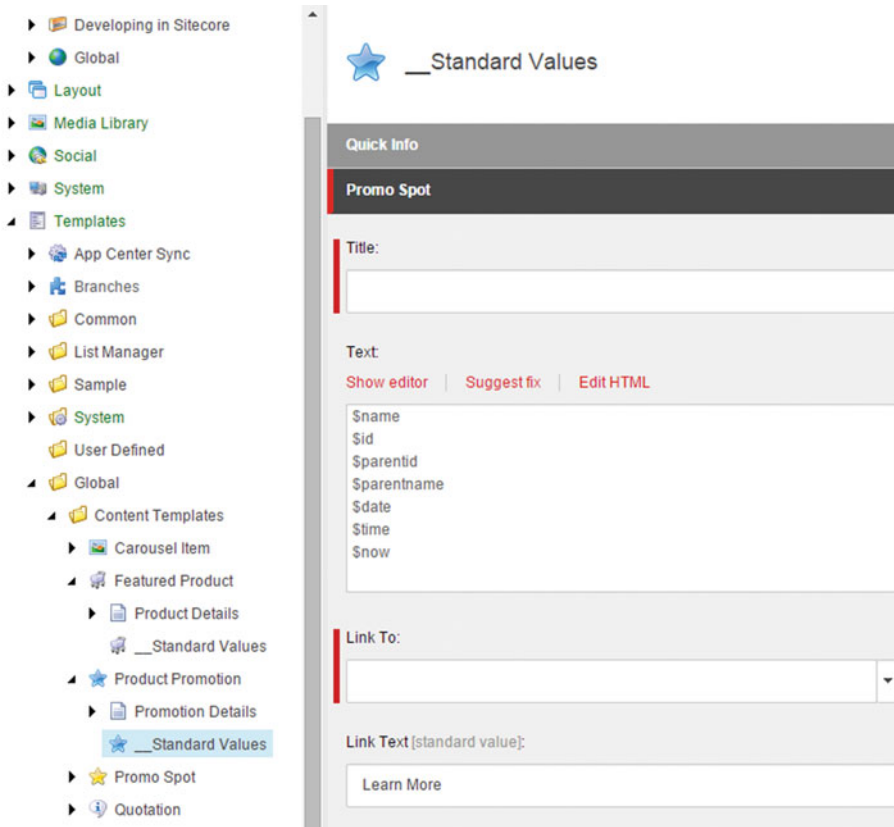
Figure 10-9. *Tokens allow your default field values to be somewhat dynamic, such as replacing $name with the name of the item*
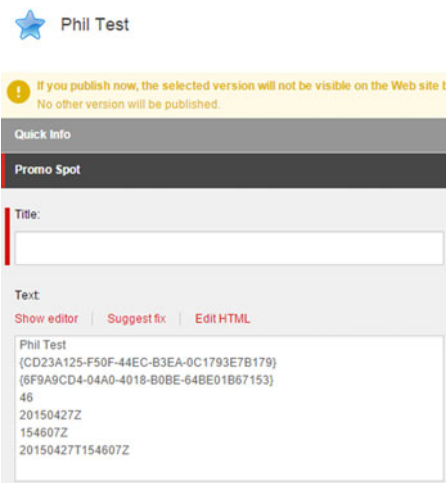
Figure 10-10. *Notice how each of the tokens was replaced with its dynamic value at creation time*

■ **Note** Layout deltas are an important concept in template inheritance. When an item receives its values from its template's standard values and those values are changed, the link back to the standard values is not broken. Rather, a "layout delta" is created to track just the delta from the standard values. If the standard values are updated later, all item field instances will be updated where there is no delta.

Configuring Insert Options

Only administrators can add content or folders in the content tree, unless you specify insert options that allow non-admins to create content specifically permitted within that folder. The Insert From Template option allows an admin to select from all data templates that exist, but that option is only available to admins. It is important, then, to specify insert options, since marketers can't create content if you don't. Additionally, you want to control what content goes where. Insert options become your way to enforce an information architecture and prevent the "wild, wild, west" where users are adding content in places they shouldn't or simply wouldn't make sense.

It is very simple to set up Insert options on a data template's standard values. Simply click the __Standard Values item below the data template and click the Assign button in the Configure tab below the Insert Options section. You can then use the selector to select which data templates should appear as insert options when users are creating new items.

When complete, the Insert drop-down menu should look something like Figure 10-11 (note again that only admins will see the Insert from Template option).
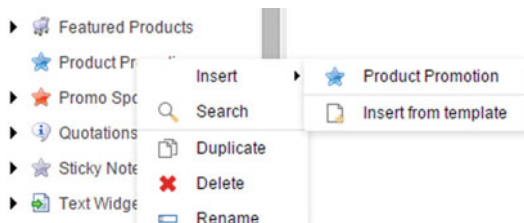
Figure 10-11. *Insert options allow you to control your information architecture by limiting which types of items can be created where*

Presentation and Applying Layouts

It was previously mentioned that everything below the Home node within the Content tree is URL accessible. It is important to note, therefore, that everything below the Home node needs a layout assigned that will tell Sitecore how that piece of content (such as a page) should be rendered when a user navigates to it. A layout has placeholders where users can add/remove/configure components. Components render content. Figure 10-12 shows this hierarchy.
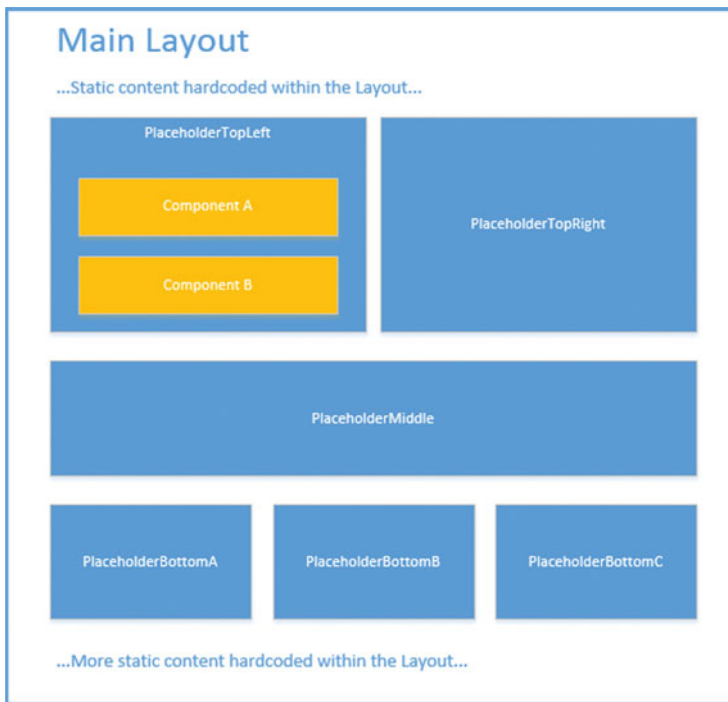
Figure 10-12. *Layouts contain placeholders with components that render content items*

■ **Note**   This section is where the target audience for this book is stretched a bit. Creating layouts and applying placeholders in the code is a development topic covered elsewhere, most notably Sitecore official developer training. The goal of this section is to give marketers and admins a basic understanding of layouts and placeholders so they can be empowered to do basic administration of them, as well as provide better instruction to developers regarding their requirements for their layout and placeholder needs.

For those who want a primer into Sitecore development, to build layouts, components, etc. as described next, check out this helpful video tutorial on YouTube: http://bit.ly/1IjI1LI

Notice how this layout example has some hard-coded content at the top and bottom. A layout is basically an HTML file with HTML code in it and placeholders for marketers to administer components. You may opt to hard-code basic things, such as the company logo or the footer. However, it is a best practice to build as much as possible as components within placeholders to give marketers as much freedom as possible to control the presentation of the site.

Below the static content there are several placeholders. A developer can put as many placeholders on the page as they want or you ask them to. They can orient those placeholders in any configuration you may want, such as one column, two column, or whatever. An empty placeholder will collapse, so there's not worry about having more than necessary. However, some prefer the simplicity of many layouts with different configurations to, say one single layout with endless possibilities. A marketer may understand what "Layout with 2 Columns" versus, say a layout named "Main" with 15 columns/row combinations.

Notice also in Figure 10-12 how each placeholder has a unique key. End users and marketers will not need to know this key if they are administering the page through the Experience Editor. However, they will need to know the key if they administer the page through the Content Editor. So, it helps to have placeholder key names that make sense. Notice in Figure 10-13 a real-world example (Launchcore example) of a slew of placeholder orientations, each with common sense names.
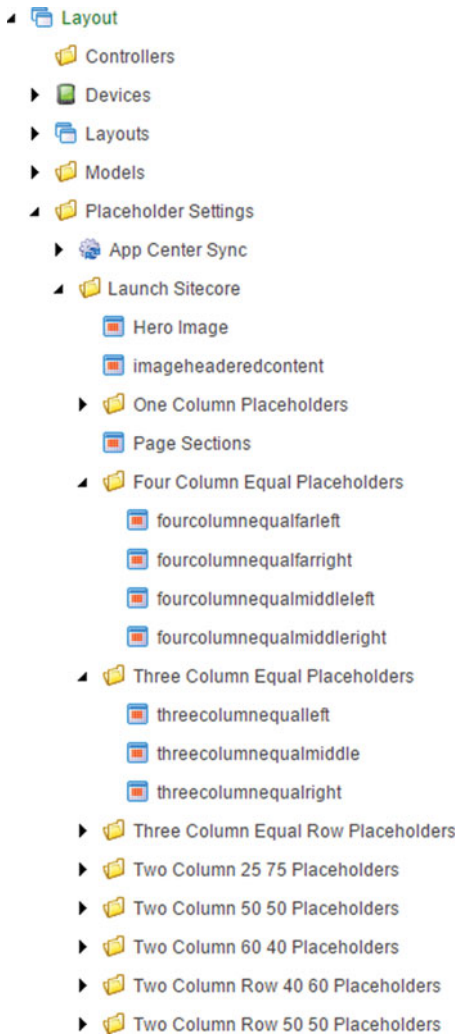
Figure 10-13. *Your placeholder design is very important. You want to empower marketers with flexibility to meet changing presentation demands*

You can create new placeholders by simply right-clicking the folder below Layout ➤ Placeholder Settings, and choosing the new Placeholder insert option. However, it will require a developer to add that placeholder either onto a layout or within a component (see sidebar "Use Nested Placeholders") before a user or marketer can add components into it on a page. Additionally, you can configure allowed controls on a placeholder from the Content Editor, as can be seen in Figure 10-14. It was previously shown how you

can configure allowed controls (components) from the Experience Editor. Here is an alternative location to perform the same configuration. As a reminder, the allowed controls setting controls which components can be added to a placeholder. You can use this to enforce an information architecture on your site, such as keeping wide controls out of the right rail, or keeping tall controls out of the footer.
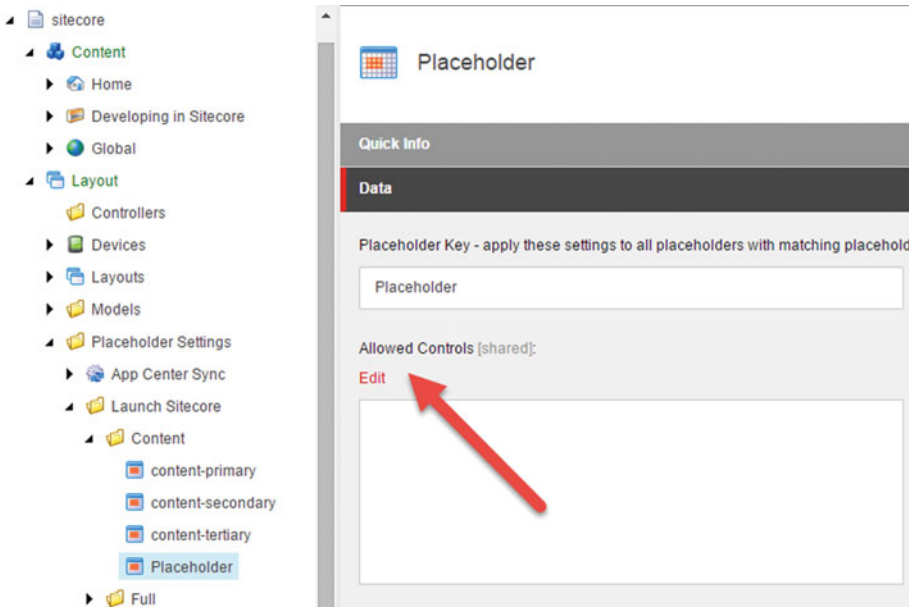
Figure 10-14. *Placeholder allowed controls lets you configure which components are permitted to be added to which placeholders. Yet another way to enforce your information architecture*

PRACTICAL TIPS: USE NESTED PLACEHOLDERS TO ENABLE ULTIMATE LAYOUT FLEXIBILITY

Imagine a moment that Component A as seen in Figure 10-12 has placeholders in it. Can a component render placeholders? Yes! Let your imagination run wild for a minute—this enables infinite flexibility for marketers!

Instead of creating 12 layouts, each with different patterns for placeholder orientation, you should create one single layout with one single placeholder: A "Main" layout with a "Main" placeholder.

Sounds limiting? Not if you have components that render placeholders. Perhaps you had three components called "Two Column," "Single Column," and "Three Column". You could simply add these three components to the "Main" placeholder within the layout. Then, within those components you have child placeholders you could then add your child components to.

This pattern gives unlimited freedom to marketers to design a page however they might wish. They can add as many "placeholder components" as they like, without needing to go back to a developer to ask for yet another one-off layout design to meet the needs of a specific use case.

While this seems like dream land, it does come with a cost. The cost is that the marketer will only be able to design these pages in the Experience Editor. The reason is the placeholder keys need to be dynamic (GUIDs). Imagine you have two of the same components on the page each rendering the same placeholders. Since a layout cannot have more than one of the same placeholder key, the code needs to create a dynamic key name using a GUID. A market won't know what this value is and therefore cannot administer the layout in the Content Editor. This is likely not a problem since most users will opt for the Experience Editor anyway.

It's a bit of a trick to setup dynamic placeholders. Check out this popular blog post for more details: `http://bit.ly/1jUMo2P`. Alternatively, the SCORE framework from Brainjocks also enables this. See `http://brainjocks.com/company/score`.

Layouts, like placeholders, can also be created in the Content Editor. Again, however, you will need a developers help before they can be used. You can create layouts below the Layout ➤ Layouts folder by right-clicking and adding the new layout (preferably below a custom folder). Notice the Path property, as seen in Figure 10-15. This needs to be set to the relative path of a HTML file on the server, in the `inetpub\wwwroot\[site]` folder specifically. A developer can create and publish this HTML file, with placeholders, etc. coded therein.
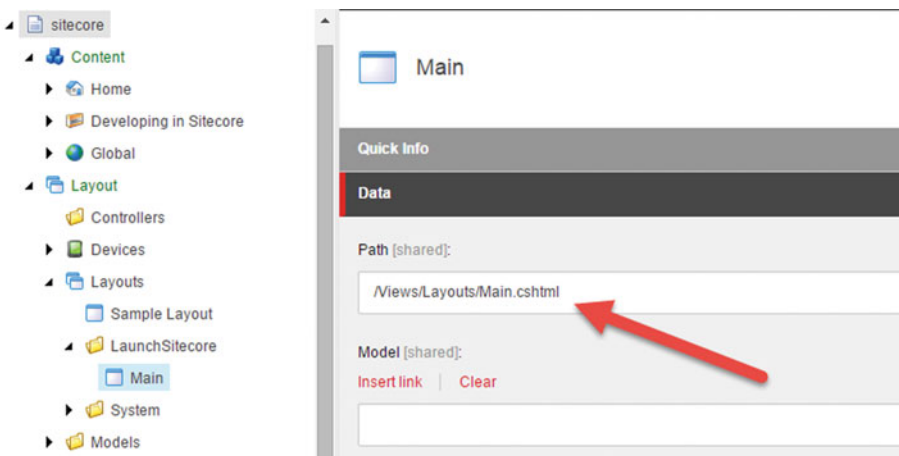
Figure 10-15. *A Layout within Sitecore is a pointer to a file on the file system that controls where placeholders are rendered*

The Experience Editor can be used to add/remove/configure components on a page. However, that page first needs a layout or you won't even be able to browse it to launch the Experience Editor in the first place. Notice in Figure 10-16 how the Glossary page was assigned to use the Main layout to control its rendering behavior. You can check which layout a page is assigned by clicking the content item (page), and then selecting Details from the Presentation tab's Layout section. The Layout Details settings box is often called the PLD (pronounced plyd). Within the PLD you can also notice which controls are added onto the page, as well as what placeholders on the layout. You can click on a control to change its placeholder. You can also click the placeholder to update its settings, such as the placeholder ID.
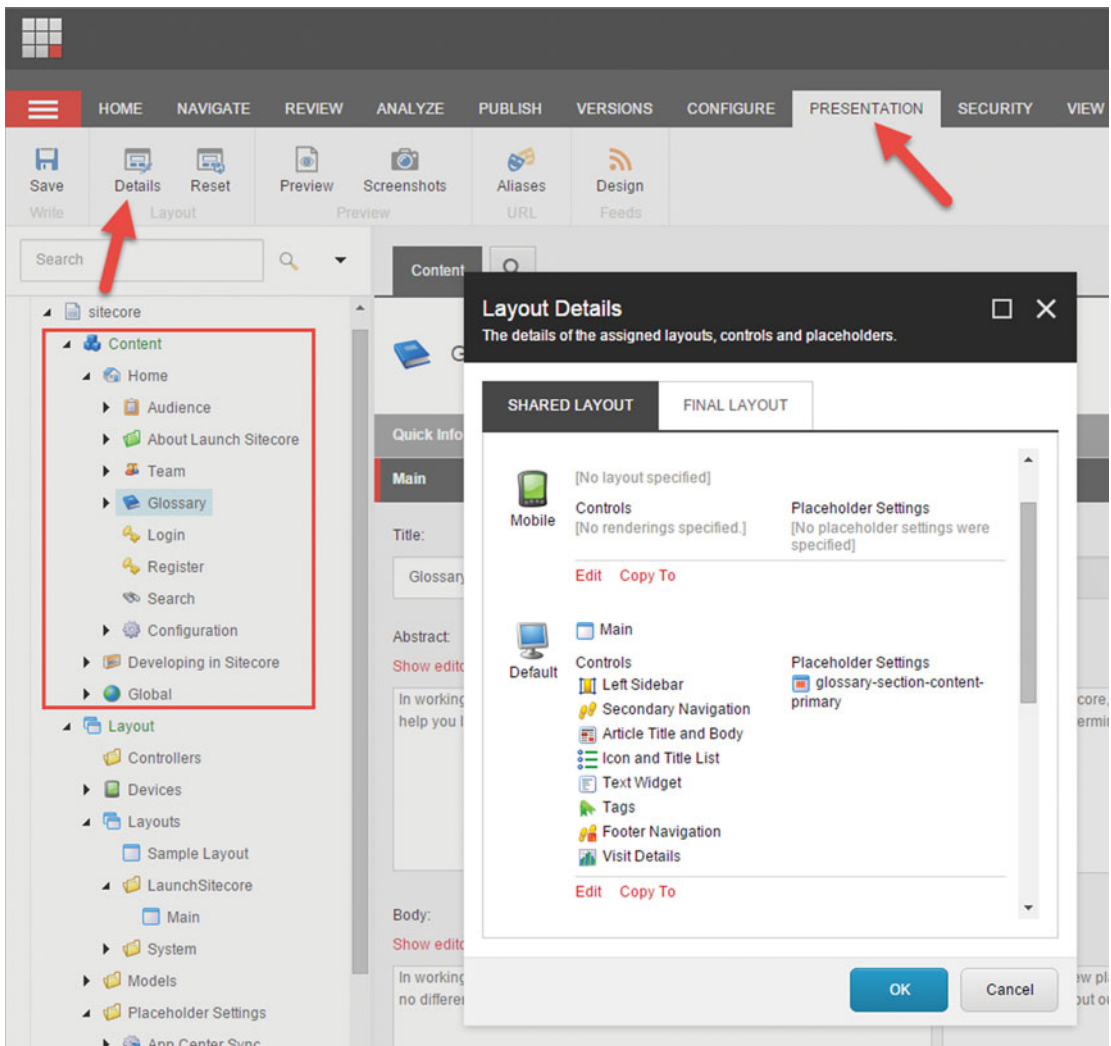
Figure 10-16. *You can still manage a page's settings from the content tree if you don't want to use the Experience Explorer*

You can similarly add/remove/configure components in this setting pop-up (Figure 10-17) much like you can in the Experience Editor. By clicking Edit below the device, such as the default device, you can select which components you want on that page, as well as assign a layout to that device. Notice the Layout, Controls, and Placeholder Settings tabs in the Edit pop-up (Figure 10-17). The Layout tab shows a drop-down from which you can select the layout for the device. The options are selected from the items below the Layout ➤ Layouts path in the content tree.
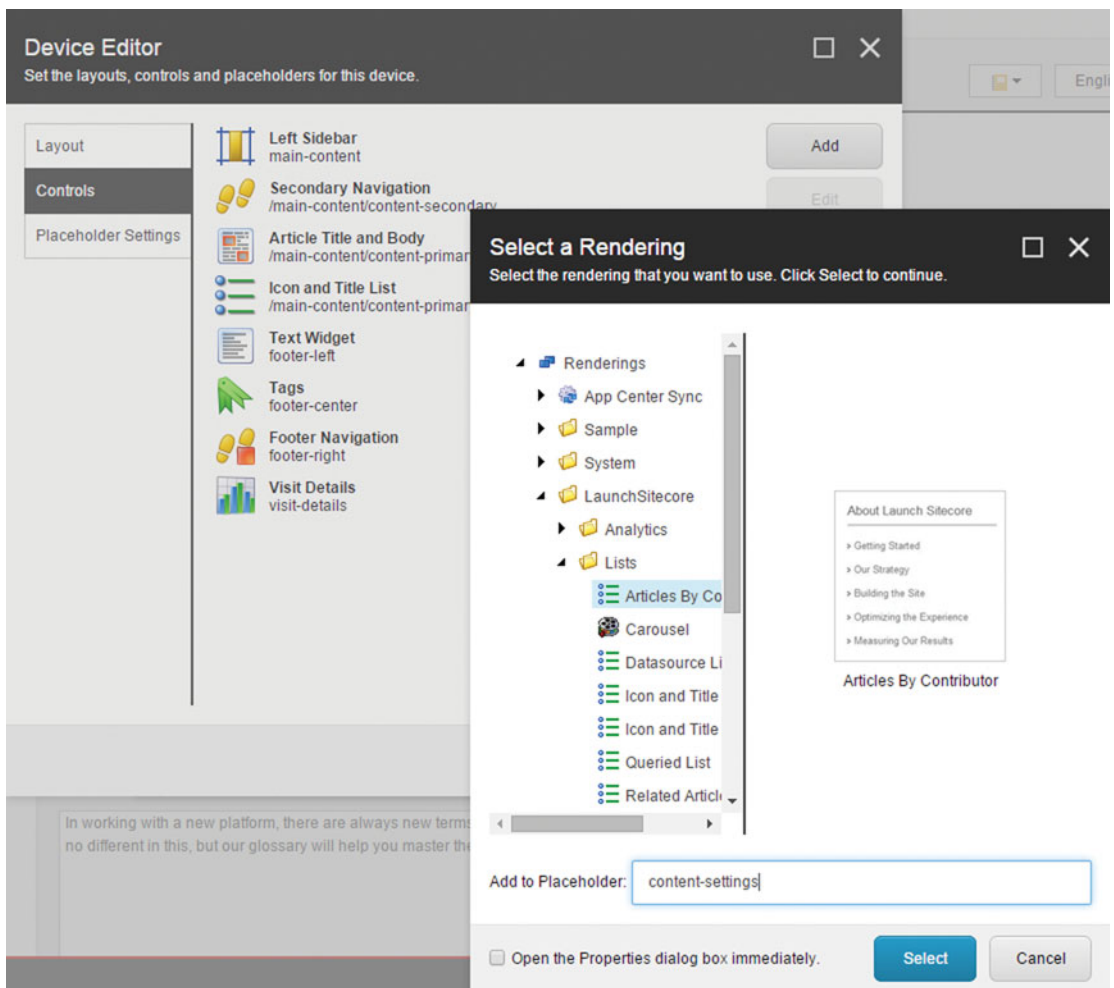
Figure 10-17. *You can edit which components are in which placeholder on which layout from the content tree*

Figure 10-17 shows the Controls tab, allowing you to select which controls you want on the layout and which placeholders they will slide into. Here is where you need to know the placeholder key, whereas in the Experience Editor knowing the key is unnecessary. When you click a component you can edit its settings, much the same as from the Experience Editor.

The Placeholder Settings tab shows all the placeholders assigned to the layout. You can add/remove/configure placeholders. By clicking Edit on the placeholder you are essentially loading the same settings menu that would appear if you can selected it from the content tree. This essentially is just a shortcut as well, but it is also how you can override global placeholder settings in a particular item or its Standard values.

One thing you may have noticed in Figure 10-16 are the two tabs at the top of the PLD settings pop-up: Shared Layout and Final Layout. This is when we start to segue back into the standard values conversation. The Shared Layout tab shows the settings for that page, which are shared across all versions, likely deriving their settings from the page's data template's standard values if they hadn't yet been changed. The Final Layout reflects the selected version's modifications. For example, the China/Mandarin version might have additional components than the US/English version. Likewise, if you have a weekend promotion, the page

version that will be published just Friday through Saturday may have a delta from its standard values. The Final Layout tab shows what that version's unique configuration is apart from the default configuration. If you need a refresher on versioning, refer back to an earlier part of this appendix: Data Templates ➤ Field Versioning. The concept of field versioning likewise applies to the PLD.

Now that we have a bit of an overview of layouts and placeholders under our belt, let's configure some settings on our data template's standard values so that all new instances not only receive default field values, but also default presentation settings. You configure the PLD on a data template's standard values much in the same way as it's configured on a content item. Simply click the Data Template, and expand it to show the __Standard Values item. With the standard values selected, click Details from the Presentation tab's Layout section (hence again the plyd). From there you can configure all the aforementioned settings, and upon new item creation the new items will take these settings as their defaults. Once again, as with standard values, if the standard values are updated later all instances will receive those updates. It's a great way to get reusability out of your PLD settings.

Creating a Custom Workflow

The out-of-the-box regular workflow has three states, but the custom workflow created in this section will have four. Our goal is to add a fourth state allowing for a gated publish, so that a publisher is notified when new items are awaiting publishing. They at that time may opt to publish immediately, or perhaps bulk up a series of items that are all published at once. The publisher will benefit from having a workbox full of items waiting for publishing, versus a "Publish Site" bucket where they are not quite sure what will be going to production (content delivery servers). The following steps configure this workflow. The steps are continued in Chapter 8 where we apply security for the editor, approver, and publisher roles.

1. Start by creating a new workflow. Within the Content Editor, expand the System node and right-click Workflow ➤ Insert Workflow.

2. Name the workflow Standard Publishing Workflow.

3. Next let's add our four states. Right-click Standard Publishing Workflow and choose Insert ➤ State. Do this four times, naming the states Draft, Awaiting Approval, Awaiting Publishing, and Published. Set a helpful icon for each state.

4. If you select the Standard Publishing Workflow node you'll notice it requires an Initial State value. Set the initial state to Draft and click Save. Additionally, the workflow needs to be aware of which state is the final state. Select the Published state and ensure the Final checkbox is selected.

5. Next add some commands to the states. Below Draft create a new command called "Submit for Approval" with the Next state value set to the Awaiting Approval state. Below Awaiting Approval, create two states: "Approve and Submit for Publishing" and "Reject and Return to Editor," with the Next State values being set to Awaiting Publishing and Draft respectively. Below the Awaiting Publishing state, add a command called Publish with the Next State set to the Published state. Set helpful icons for each command.

6. On the Publish command, select the Suppress Comment checkbox. This way, the approvers don't have to enter a comment when they click the command. Since the Publish command is publishing approved content there shouldn't be a reason to enter more comments.

7. Next add some actions into the workflow commands. Before a piece of content is submitted for approval we want to ensure it passes all of our validation tests. Below Submit for Approval, select Insert from Template. Browse to System ➤ Workflow ➤ Validation Action and provide Validation as the name. Fill out the field values as seen in Figure 10-18.

■ **Note** The Validation action will simply execute any field validators you have configured on the data template. See the "Field Validation" section in this appendix for a refresher. The point here is simply that an item shouldn't progress in the workflow if it doesn't satisfy our validation rules.

Figure 10-18. *Workflow validators are helpful when you don't want a workflow to advance to the next state when the content doesn't meet your standards or policies*

■ **Note** Max Result Allowed lets you set when the workflow will permit the item being sent for approval to move forward. Other value options are Unknown, Valid, Suggestion, Warning, Error, CriticalError, and FatalError. Perhaps you only want errors to prevent the workflow from progressing, or perhaps suggestions are not suggestions at all, but requirements. By changing this value, you can control how strict the validation is.

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8. You now need to go to your data template's fields and specify which validators you want to enforce within the workflow. With Standard Fields selected under the view tab, expand the Validation Rules section and edit the rules for each field you want validators for. Select which rules you want to apply. There are many helpful out-of-the-box rules, and you can create your own. The example in Figure 10-19 shows us adding a required field validator on the product image, as well as requiring ALT text for SEO purposes.
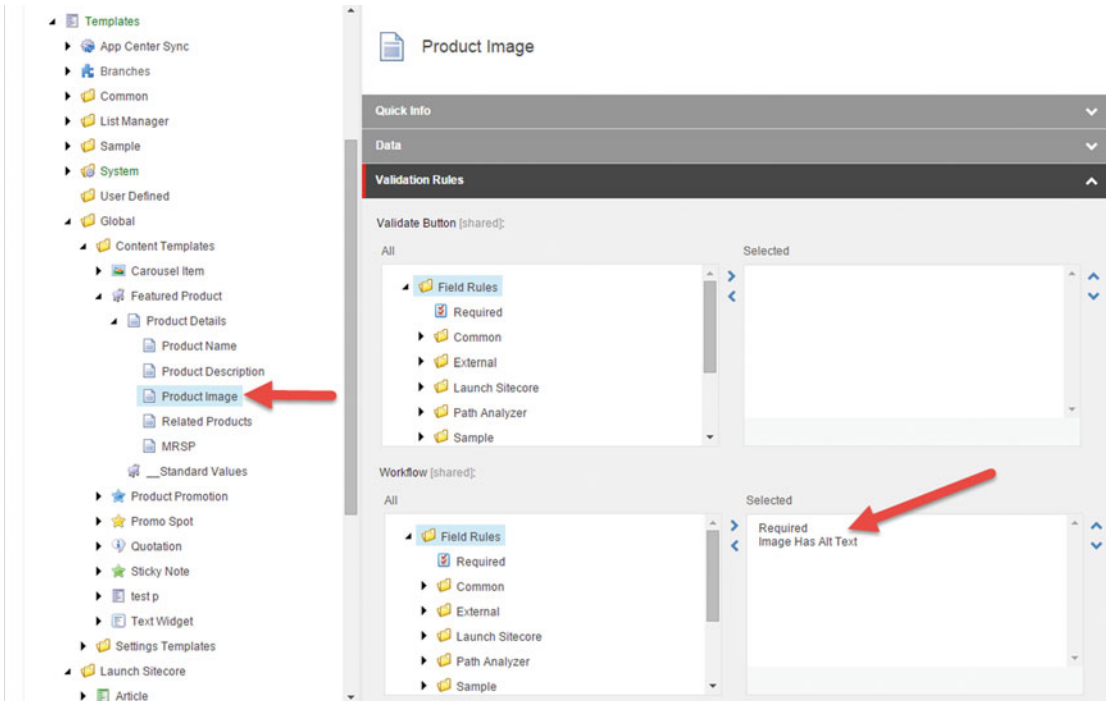
Figure 10-19. *Workflow validation rules need to be configured on the data template's fields to tell the Validator which validations you want the workflow to concern itself with*

9. Next we want to send an e-mail to notify the approvers that a new piece of content was submitted for their approval. Insert a new action from template below Submit for Approval again, but this time select the E-mail action and name it "Notify Approvers". Fill out the values and click Save. By default this E-mail action is placed above the Validation action; this means the e-mail will be sent before validation occurs, which is bad! Click the Notify Approvers action and drag it above the Validation action so it won't send the e-mail if the validation doesn't pass.

■ **Note** A best practice here would be to use a custom action that points to users in an Approvers role in Sitecore and/or Active Directory. The out-of-the-box action requires you to enter an e-mail address for the To/From lines (such as a distribution list for an approvers group) and it would be preferred to have these as centralized configuration values in case they change over time.

You can add tokens into the e-mail text to help those notified find the item in question. Supported tokens are `$itemPath`, `$itemLanguage`, and `$item` Version. These tokens are limited in their helpfulness as they don't provide the author's name, their comments, or a link to preview the item (the path isn't that helpful). An enhanced e-mail action module exists that is easy to install and configure (`http://bit.ly/1GC2UwV`). Using this module will greatly increase the helpfulness of e-mails sent by Sitecore's workflow engine.

CONFIGURE INTERNAL PUBLISHING TARGET FOR BROADER REVIEWS

The previous note mentioned the fact that you can use tokens in a workflow e-mail to help approvers quickly get access to the item to review it. However, what if the approvers are not Sitecore users? There are times when you do not want people in Sitecore. Just because someone needs to approve something doesn't mean you want them in there poking around and possibly breaking things (take your CMO for example, who may need to approve the new home page, but won't want to learn Sitecore).

One option is to create a multitude of roles to accommodate every possible security scenario. But that is not always palatable. A second option is to create an internal publishing target so non-Sitecore users can see items in a draft state before they are published, but yet without needing to know how to navigate around within Sitecore.

Dan Cruickshank has a very helpful blog post on how to configure a read-only internal publishing target to accommodate scenarios just like this. For larger organization with more complex approval/governance policies, this pattern may be exactly what you need.

Read more at: `http://bit.ly/1zjULjn`

10. Let's add an auto publish action below the Published state, so that when the publisher clicks the Publish command and the state is changed to Published, the item is automatically sent to the Web database and published. Below the Publish command, insert from template and choose generic Action. Enter `Sitecore.Workflows.Simple.PublishAction, Sitecore.Kernel` for the Type, and `deep=1` for the Parameters.

■ **Note** A generic action is how you can create custom actions for your workflows. Simply add a generic action to the workflow and specify the assembly and class name for your action. See the following for more details on creating custom actions: `http://bit.ly/1EVwVgu`.

`deep=1` tells the publish action to publish all child items as well. If you don't want children to be published, change this to `deep=0`. Additional parameters include `related`, `targets`, `alllanguages`, and `itemlanguage`. Go here for more information on these parameters: `http://bit.ly/1KzUOEO`.

11. Lastly we need to accommodate when a user edits an item while the workflow is running. Typically when the item is edited we want the workflow to restart, or unapproved changes may inadvertently get published. Notice in Figure 10-20 the __OnSave command. This auto-magical command runs whenever an item is edited (versus requiring the user to click the command manually) and is hidden. Add a new command under each Draft, Awaiting Approval, and Awaiting Publishing states to reset the workflow when edited. For each "__OnSave" commands, you need to create an action using the Auto Submit Action template, setting that action's Next state value to Draft. The Type for this action is `Sitecore.Workflows.Simple.AutoSubmitAction,Sitecore.Kernel`. The role field can be used to limit who can perform this action. Leave it blank since the action should reset the workflow regardless of who edits the item.

■ **Note**   if you would prefer people *not* be able to update an item while in an Awaiting Approval or Awaiting Publishing states, you can remove the "Workflow State Write" and "Workflow State Delete" roles on those states. This tends to slow progress down however, if, for example, an approver is not accessible to reject the item, so it's really up to your process and governance policies.

That's it for now. Actually there's nothing stopping you from using this workflow immediately, but it won't be that helpful without the proper security applied. Since security in and of itself is a massive topic with a lot of context needed, these steps will be continued after that context can be established in Chapter 8. All said and done, your workflow may look something like Figure 10-20.
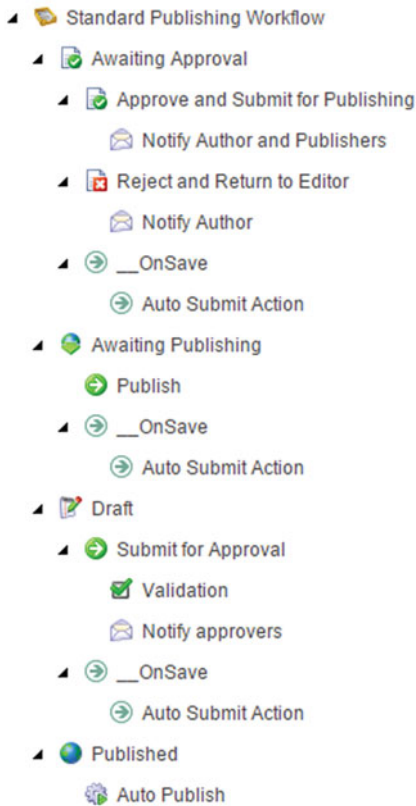
Figure 10-20. *A custom workflow* ☺

Sitecore Architecture

In this section, we discuss a topic that's more geared toward the administrator or developer, but that still has some relevance to the marketer or the power user.

Infrastructure and Services Architecture Options

The goal of this section is to give the marketer a high-level understanding of Sitecore's infrastructure services and deployment options. There are innumerable options when considering a deployment and each company should go through an exercise to determine what architecture best meets their needs; however, there are a few core concepts that apply to everyone or are common points to extend into your unique needs. First we'll discuss the five types of services/roles that Sitecore requires, and then we'll discuss three common deployment options worth considering.

- *Content Management Server*—This server is where authors and marketers go to edit content and view the Launchpad. It is common to put this server out of rotation (even behind a firewall) to ensure that external users can never get to Sitecore administrative interface.

- *Content Delivery Server*—This server serves up approved and published content to your customers.

- *SQL Server Database Server*—You need one or more SQL Servers for the web, master, core, and analytics databases.

- *MongoDB Database Server*—Every interaction is dumped into a MongoDB database to be reported on later. Given the high velocity of data, MongoDB is used for performance and scalability needs.

- *xDB Processing Server*—This server pulls data out of the MongoDB database and stores the data in a relational database optimized for reporting.

■ **Note**   There are many other infrastructure considerations, such as cloud vs. on premise, physical vs. virtual, IaaS vs. PaaS, capacity needs, networking and security, etc. that should be considered but they are far beyond the scope of this book.

Basic Deployment

Figure 10-21 shows a common deployment for small to medium sized Sitecore installation. It features two content delivery servers and a SQL cluster to ensure high availability of the web site, one content management server for authors that doubles as the xDB processor, and a MongoDB server for the database.

■ **Note**   new with Sitecore 8.1 is the ability to deploy Sitecore without MongoDB. It simplifies this architecture, but at the cost of analytics and most of the cool marketing features.
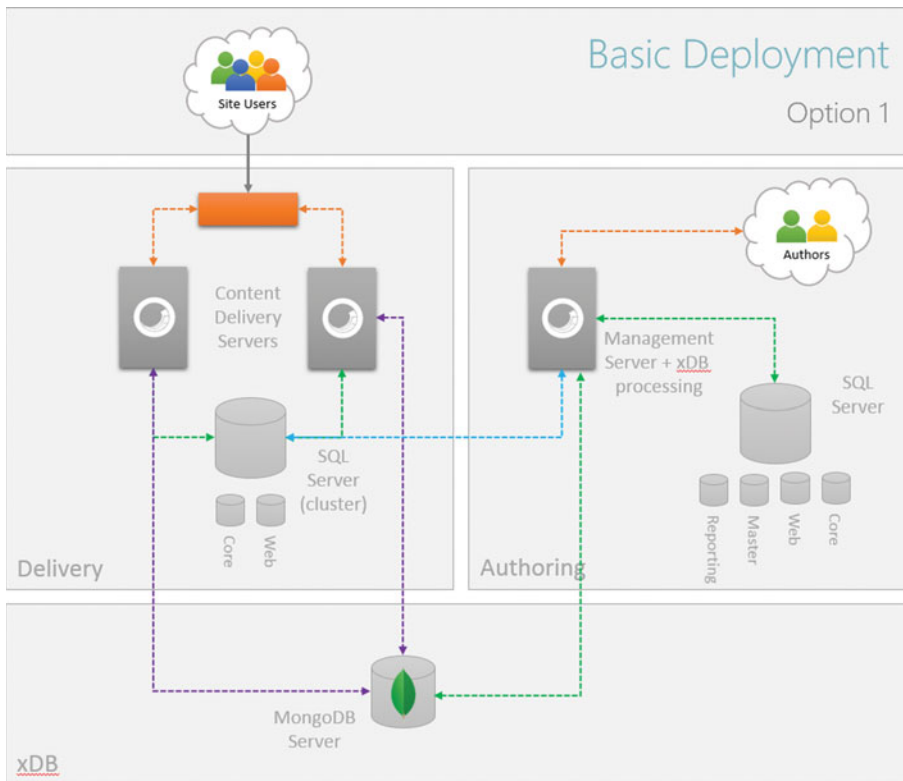
Figure 10-21. *A basic deployment minimizes licensing costs but doesn't sacrifice high availability for the more critical services*

Pros:

- Minimal licensing needs but still achieving high availability for web traffic (assumes low traffic volumes)

- Isolated content authoring experience, security best practice

Cons:

- No high availability for MongoDB (could take the site down if the log piles up)

- No high availability for xDB processing (analytics would be delayed during an outage, possibly impacting the customer experience, such as personalization, testing, etc., if it's using old data)

- No high availability for content management (you won't be able to make web site updates, view reports, etc. while the CM server is down)

- The CM server will need to be a pretty big box to ensure that marketers can do their job

■ **Note** SQL won't need a cluster if you're using a PaaS cloud model, otherwise a cluster and/or mirror or SQL availability group is strongly recommended.

Highly Available Deployment

This option (Figure 10-22) extends the previous option by adding some high-availability for the backend systems. Front-end services such as content delivery and SQL Server are table stakes; hardly anyone would be willing to risk the site going down, but there may be more room to discuss tolerance for some of the backend MongoDB and xDB processing to go down. If you don't want to risk it at all spinning up an MongoDB replica set and a pair of xDB processing servers will create the confidence you're looking for (again, not taking capacity into account—you may need more).
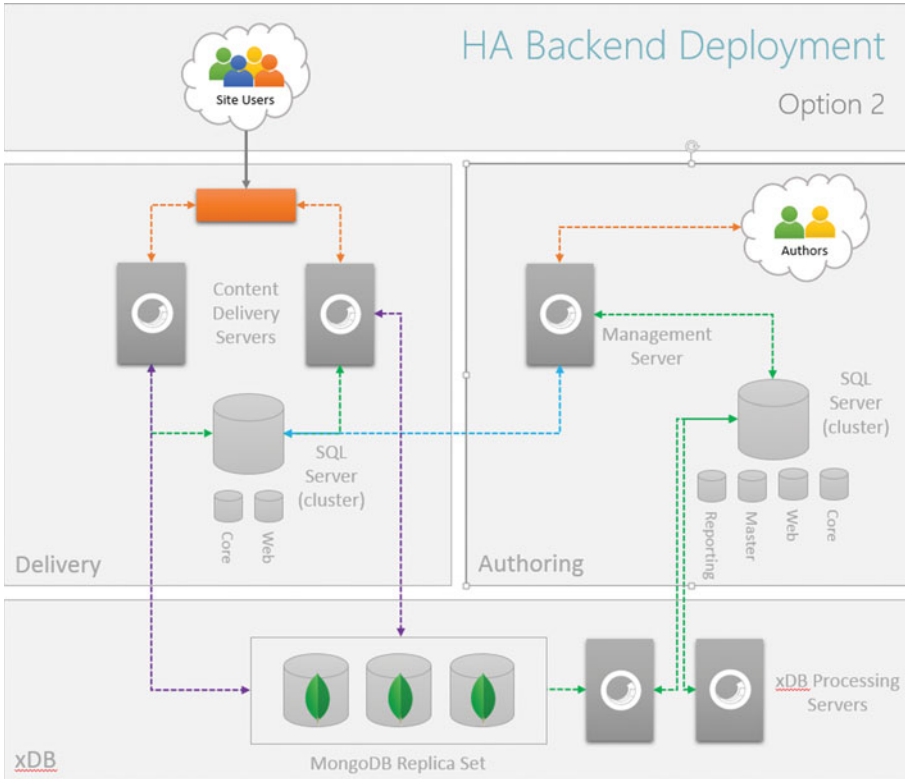
Figure 10-22. *Option 2 features high availability through the solution except for the management server*

Pros:

- Isolated content authoring experience, security best practice

- High availability for MongoDB

- High availability for xDB processing

- No concern that xDB processing will negatively impact a marketer's need to update content, etc.

Cons:

- Spending more on Sitecore licensing for the separate xDB processing servers and server costs to support a MongoDB replica set

- No high availability for content management

Cloud-Based xDB Deployment

This third option (Figure 10-23) is similar to the previous two but with the exception that you're using Sitecore's xDB cloud server. The main benefit is you've outsourced all xDB/MongoDB processing to Sitecore's cloud. This can be significant for companies that don't want to learn/support MongoDB, a rather new technology. The content delivery and content management servers are configured just as the previous deployment options, but they point to Sitecore's cloud rather than to your instances of Mongo or xDB processing.
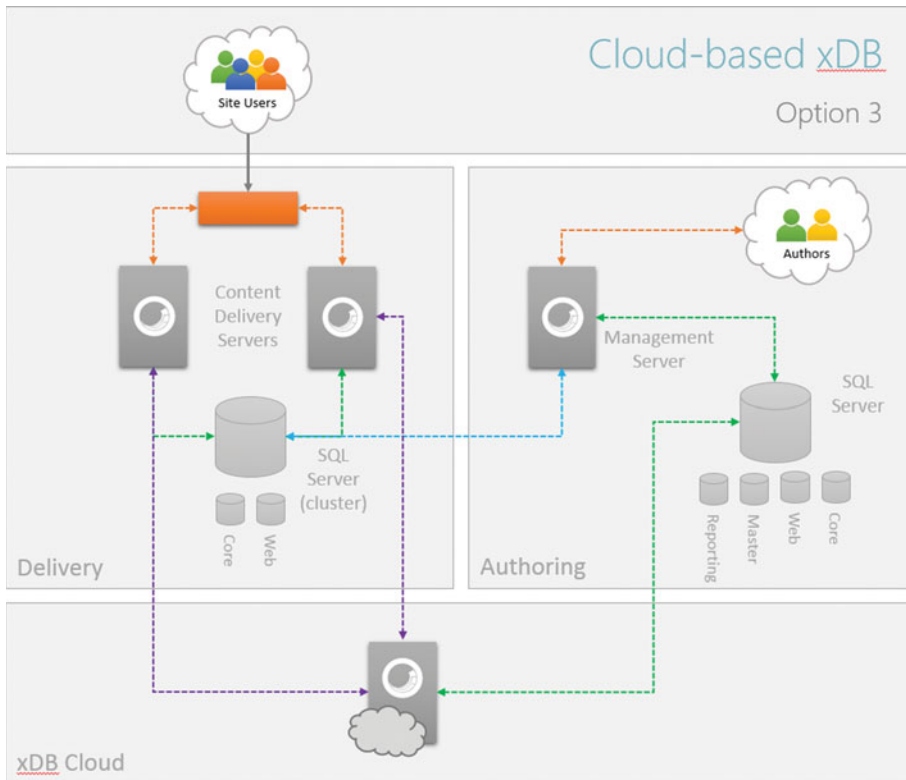
Figure 10-23. *This option removes the worry about xDB and MongoDB altogether by outsourcing to Sitecore's cloud*

Pros:

- Same as previous

- You literally never have to worry or think about MongoDB or xDB; it just works!

Cons:

- xDB cloud annual licensing costs are significant especially for B2C deployments (if you have >2.5 million contacts this option doesn't make any sense financially)

Authentication Options

It is common for web sites to require users to log in. You might have an e-commerce site, a customer portal, or premium content that requires secure access. There are five main ways you can authenticate your customers securely to Sitecore:

- *Sitecore User Management/User Profiles*—One of the easiest ways is to simply use Sitecore to manage your users. Each user setup in the user manager can be given a password. You'll want to set up different "domains" for your customers and your employees to help ensure you don't get your wires crossed.

- *CRM users*—Sitecore's crm integration modules support two-way contact synchronization. These CRM contacts can also be given a password that Sitecore manages, thus allowing their authentication.

- *Identity Federation, such as Sitecore Social Connected*—Federating with Facebook or Twitter, for example, is supported through Sitecore's Social Connected module. Additionally, since Sitecore is just another ASP.NET site at its core, you can easily set up Sitecore to authenticate with SAML providers (like ADFS or Siteminder) for single-sign or for identity federation with partners.

- *Active Directory (AD), Active Directory 1.2 for AD integration*—If you use Active Directory to authenticate your employees, you'll likely want to configure Sitecore to accept AD credentials so you don't have to maintain two users for your employees.

- *Custom providers*—You can always write a custom ASP.NET membership provider should the previous options not meet your requirements.

■ **Tip**   You can specify a custom, on-brand login page by updating the loginPage setting in web.config (configuration/Sitecore/sites/site).

Sitecore Commerce Solutions

Sitecore supports commerce integration through its Commerce Connect interface. You can write your own connector, or more likely, you'll purchase a third-party commerce solution that uses the connector to integrate the two platforms. There are many reputable e-commerce solutions, but for Sitecore there are three standouts:

- *Sitecore Commerce 8* provided by Sitecore and Microsoft leverages Microsoft Dynamics AX or Commerce Server as a backend. Sitecore + AX is most common for large, enterprise-scale B2C retailers.

- *Active Commerce* is an e-commerce solution built right on top of Sitecore itself. Active Commerce is common for B2C scenarios but also has a strong B2B customer base as well.

- *Insite* provided by Insite Software is a common B2B solution, but also supports B2C scenarios.

■ **Note**   Sitecore has a commerce connector called Sitecore Commerce Connect. This connector enables integration with any compliant 3rd party that implements the interface, allowing for a fully integrated commerce/Sitecore user experience. Insite, for example, integrates through the connector.

CRM Integration

Sitecore and CRM are better together. There are three core business reasons to consider integrating your CRM with Sitecore:

- *Better Sales/Marketing Alignment*—Let's face it, sales and marketing are rarely in lock step. Marketing has their campaigns, and sales has their relationships. Marketing uses Sitecore, and sales uses their CRM. Unfortunately, there is often a chasm between these two products. With Sitecore's ability to track every interaction, it is very easy to keep a score and send hot leads over to CRM when certain criteria is met.

- *Better Personalization*—CRM is typically the source of truth about a customer. However, what good is all that data if it can't be used to influence your digital experiences? You can segment your lists for an e-mail blast, but should your home page also look different based on data in your CRM? Don't let your CRM data sit on an island; let it enhance every customer's experience with your digital properties.

- *360 view of your customer*—With Sitecore's experience profile there is a strong case to be made to make Sitecore the center for everything about a customer (whereas CRM typically has this role). In an integrated scenario, both CRM and Sitecore share insights so there doesn't need to be a tit for tat; let marketers use Sitecore and let sales use CRM but both will have the same data.

Fortunately for us, Sitecore has written free modules to help integrate Sitecore and your CRM. There is an integrator for Microsoft Dynamics CRM as well as one for Salesforce. These modules are help get you started, but you still may find yourself writing a bit of custom code to create the end-to-end integration you're looking for. There are three main ways to integrate CRM into site, as is seen in Figure 10-24:

1. The modules support two-way contact synchronization. Contacts in CRM are pulled into Sitecore along with any CRM fields you deem appropriate. You can even pull in custom fields. For example, maybe you want a contact field for "Persona" so your sales team can understand what behaviors this contact exhibits on your digital experiences. These insights might help them create a more personalize message. The opposite is also true; data in CRM can drive personalization in Sitecore.

2. Code in CRM can call back into Sitecore through Sitecore's API. Perhaps you create a campaign in CRM and you want a corresponding campaign automatically set up in Sitecore to ensure both tools are working in tandem.

3. Chapter 6 described custom actions you can add to your Web Forms for Marketers forms. These actions can create CRM records, such as leads, contacts, or activities.
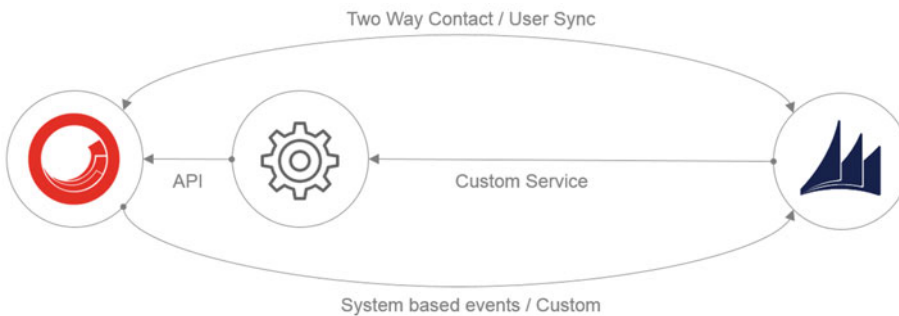
Figure 10-24. *There are three main ways to integrate a CRM: 1) user sync, 2) return service call, and 3) CRM API calls or through WFFM*

Federated Experience Manager

Sitecore's Federated Experience Manager (FXM) has been heralded as a game-changer in the Sitecore world. FXM enables a marketer to see customer behavioral data and share Sitecore content across all their experience properties regardless of whether they are on the Sitecore platform or not. This enables you to maintain a single view of the customer and a single source of content no matter if you've upgraded/migrated all your digital properties to Sitecore, or if you plan to take a more gradual approach to your migration. Examples include Sitecore sites, non-Sitecore sites, and native mobile apps.

Additionally, FXM enables better collaboration with partners. You and your partners may want to collaborate on customer data. You can ask your partners to deploy the necessary page scripts on their properties to send a feed of customer data back to your xDB instance to create a consolidated view. Here are a few more examples where FXM can create value for your marketers:

- A company hosts sites that cannot be managed by Sitecore (e.g. non-.NET sites or apps, such as WordPress or PHP sites)

- A company wants to better collaborate with their partners

- A company is in the process of migrating their properties; however, they don't want to wait until they are all migrated before taking advantage of xDB's capabilities

- You may be in acquisition mode and need to take control of new properties and quickly integrate them into your overall marketing objectives

To get started using FXM, open FXM from the Launchpad ➤ Federated Experience Manager tile. The page by default looks pretty empty. Click on Add External Website to get started.

Figure 10-25 shows the new site form. There are basically two pieces of information you need to add: 1) the site name and 2) the URL to the site. They name is just a token and can be anything that make sense and is descriptive. The URL needs to be the root path to your site. Fill in this data and click Save.

Figure 10-25. *You can add a site to FXM from the FXM button on the Launchpad*

After you click Save you'll notice the Save button is updated and now shows Publish. Before you publish, however, there are a couple more steps to take. First, you need to paste the `script` tag into the head of your remote site (found in the Generated Script text box). Second, you need to enable cross-site scripting for your remote site.

Figure 10-26 shows an example of pasting in the `script` tag into a WordPress site. Simply paste it in directly before the `</head>` tag, wherever that might be in your remote site's solution.
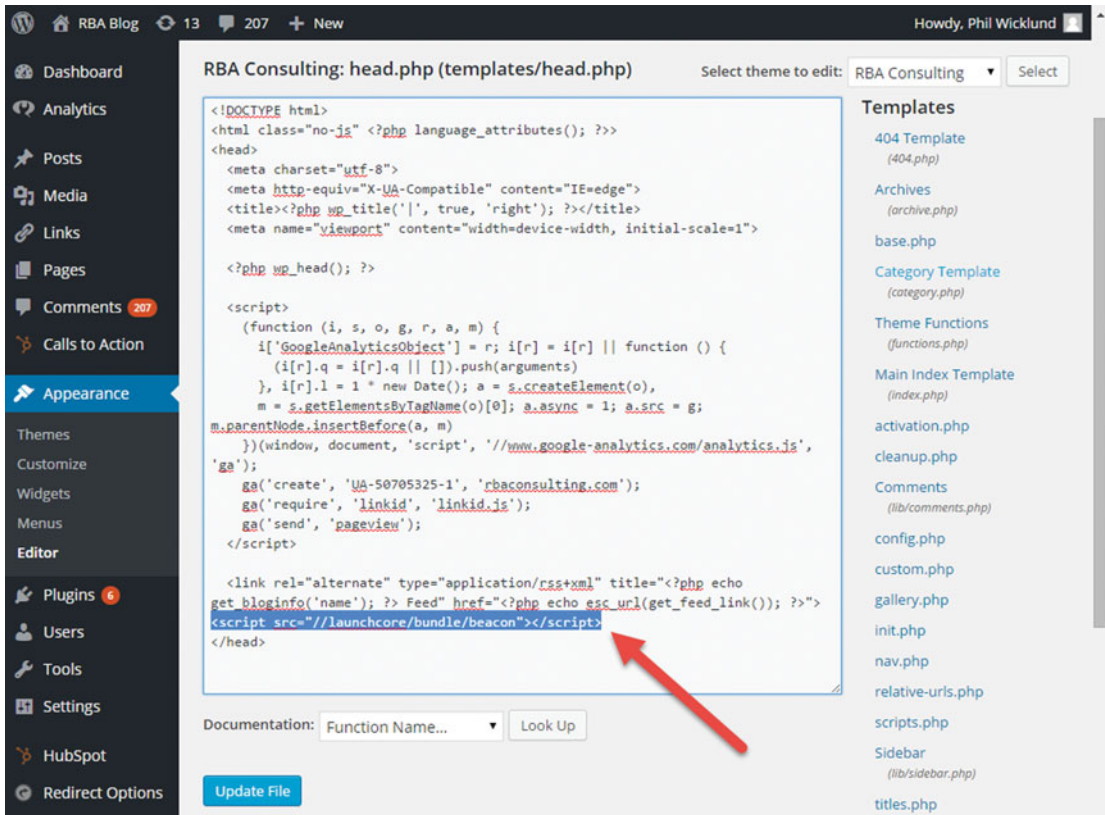
Figure 10-26. *After you add a new FXM site you'll need to publish the script tag into the head of the remote site*

Secondly, you need to enable cross-site scripting for the remote site; otherwise, all the JavaScript callbacks will be prevented and FXM won't work. Navigate to the site's node in the Marketing Control Panel ➤ Federated Experience Manager. Add a rule similar to what you see in Figure 10-27 by clicking Edit Rule below Matching Rule. When this is complete you can go back to the site in FXM and click the Publish button.
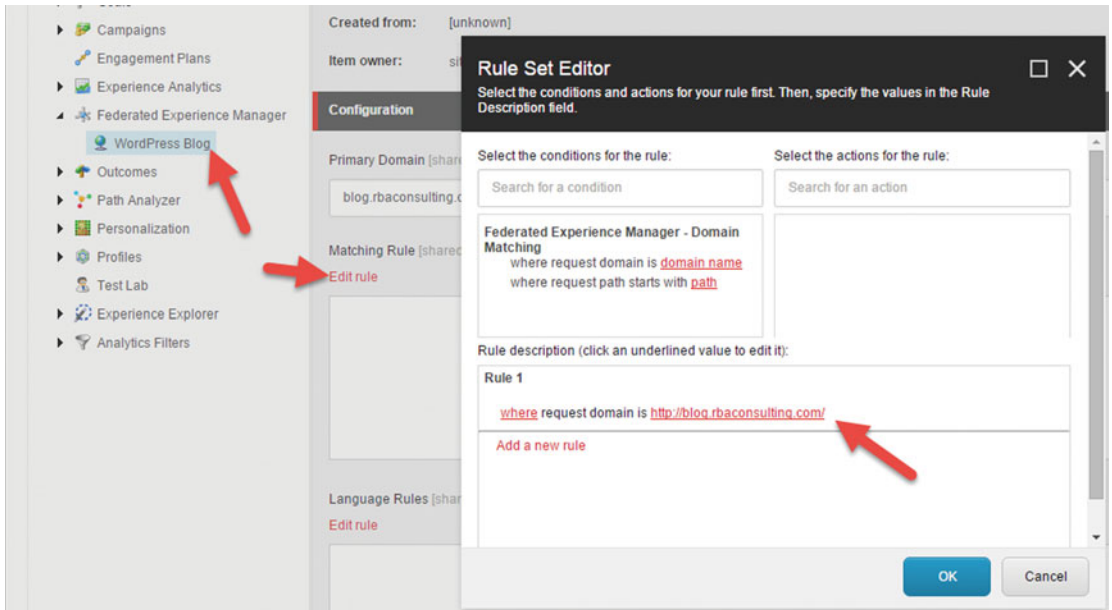
Figure 10-27. *Because of cross-site scripting rules, you'll need to explicitly grant access to allow scripts from the remote site*

All remote sites hosted in FXM are managed very similar to other Sitecore sites. Namely, they are managed through the Experience Editor. This is nice because it provides a familiar look and feel for marketers, thus minimizing a lot of training. However, you need to launch the Experience Editor from FXM. Notice the Open in Experience Editor button found in Figure 10-28. Simply select the site you want to launch and then click the button.
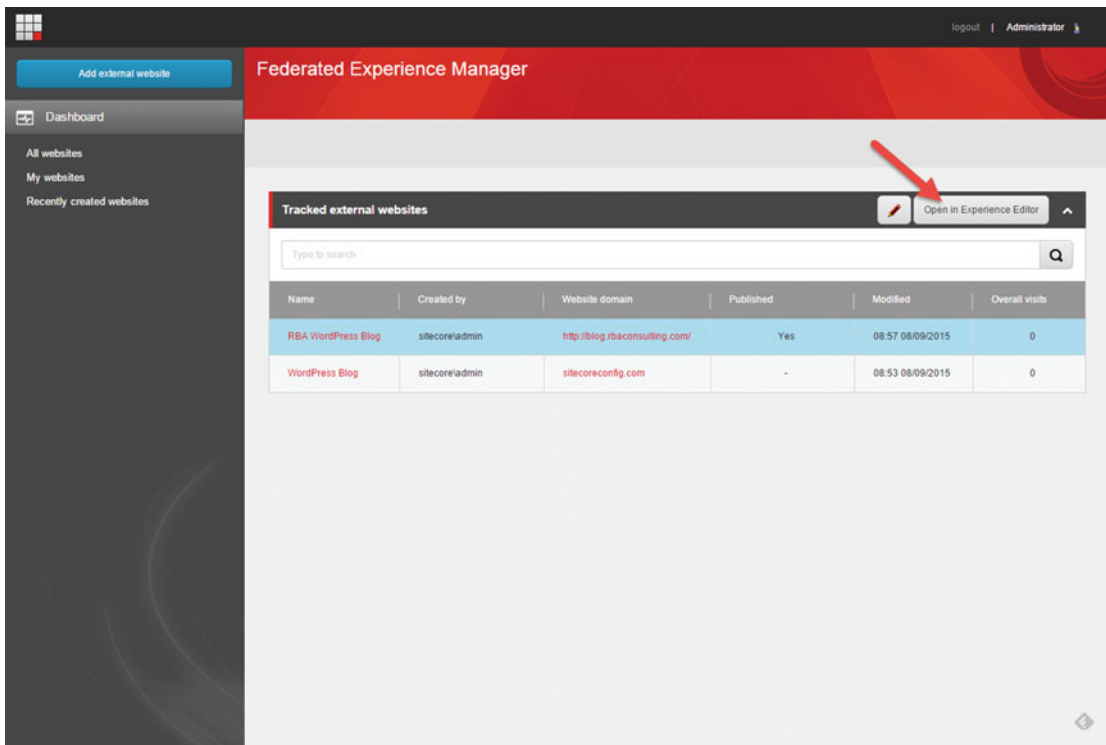
Figure 10-28. *With all the plumbing complete, you can launch the Experience Editor on the remote site*

There are several unique ribbon actions in the FXM Experience Editor you should be aware of. Here is the list of new buttons:

- *Assign Marketing Attribute*—By clicking this button you'll see a view of the page with all the FXM-aware elements highlighted, such as click actions and placeholders. It just helps you see what you've already configured.

- *Manage FXM Functions*—This pop-up provides a way to manage configurations for all the elements you've added to the page, such as placeholders or actions (Figure 10-32).

- *Add Page Filter*—A page filter is a way to add personas, goals, or events at a page-level and/or all of a page's descendants.

- *Capture Click Action*—You can register a click action on any element on the page you want Sitecore analytics to be notified of when clicked.

- *Add Placeholder*—You can add placeholders to the page and then add Sitecore content to those placeholders.

I'm going to walk you through creating a click action and a placeholder to demonstrate some of the coolest FXM capabilities. This example shows integration with a Sitecore site and a WordPress blog. The marketing director wants to see an integrated view of analytics across both platforms, as well as enable shared "calls to action" promotions between the two. By default, any page with the script tag in the head will send basic visit data to Sitecore, so our basic analytics are covered. However, what about more granular actions? For example, the director wants to record a blog search as 5 value points. To do this, you simply click the Capture Click Action button and select the search box, search button, as can be seen in Figure 10-29. Thereafter you'll be prompted to enter an ID for the action and its parent (Figure 10-30).

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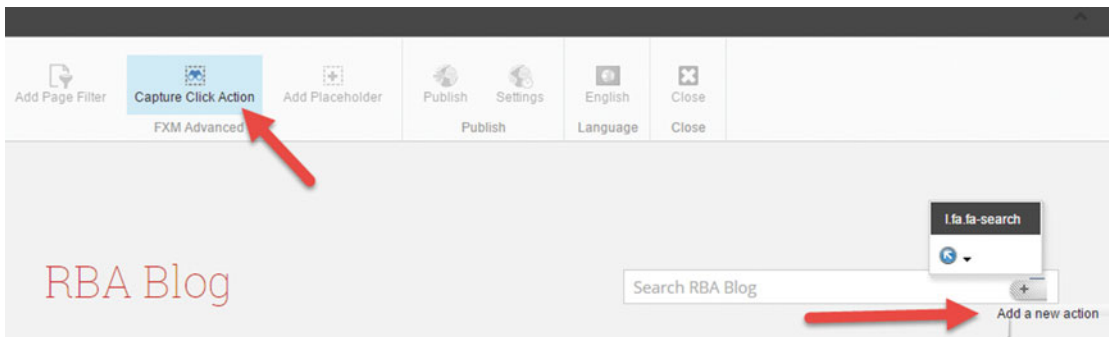
Figure 10-29. *You can register different page elements as "actions"*
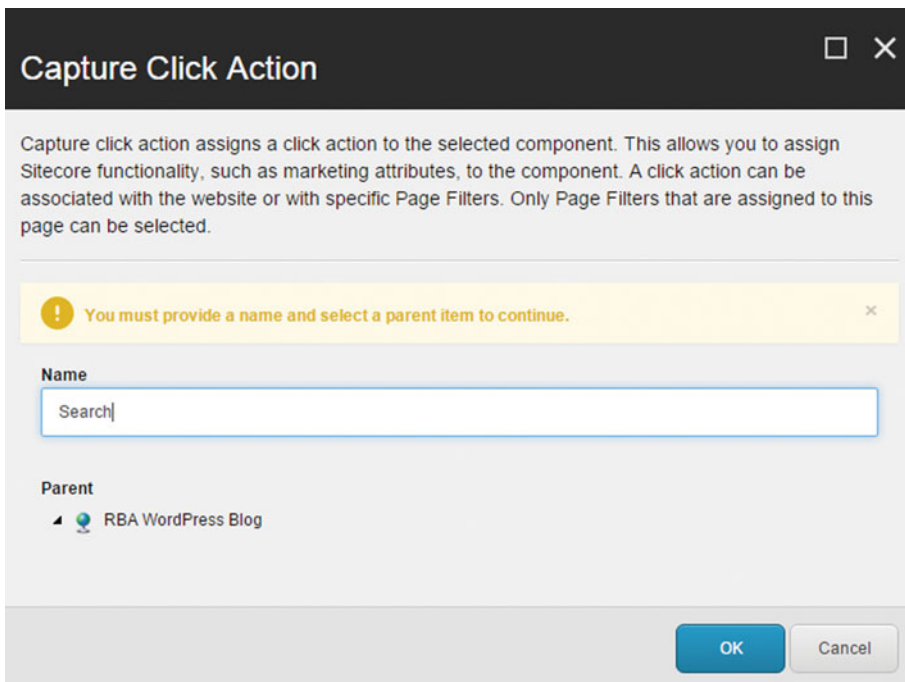
Figure 10-30. *Register the page click action*

After the search button is made into a click action, you can wire up that click action to a Sitecore goal (Figure 10-31). Each time there's a search, that goal will be triggered and the associated engagement value will be tallied. At this point you'll also see the search click action appear in the Manage FXM Functions dialog (Figure 10-32).
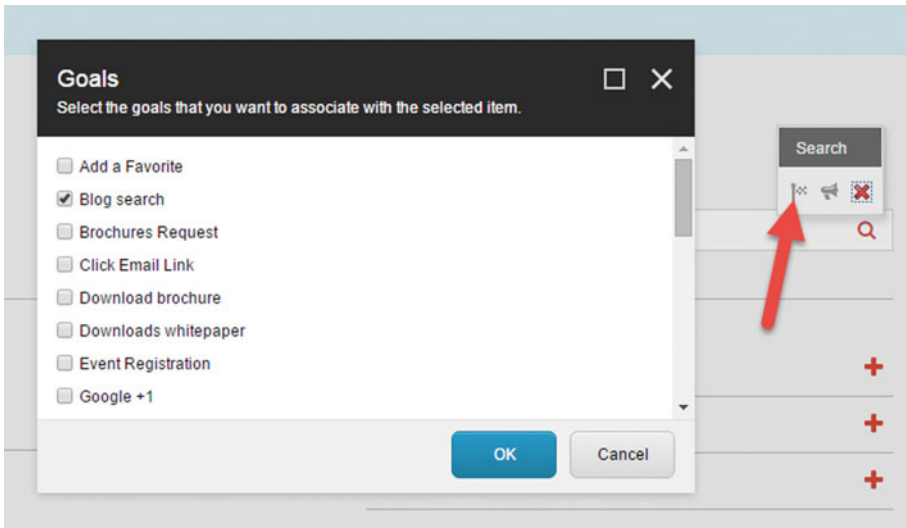
Figure 10-31. *Page actions can be tracked back to goals set up in Sitecore*
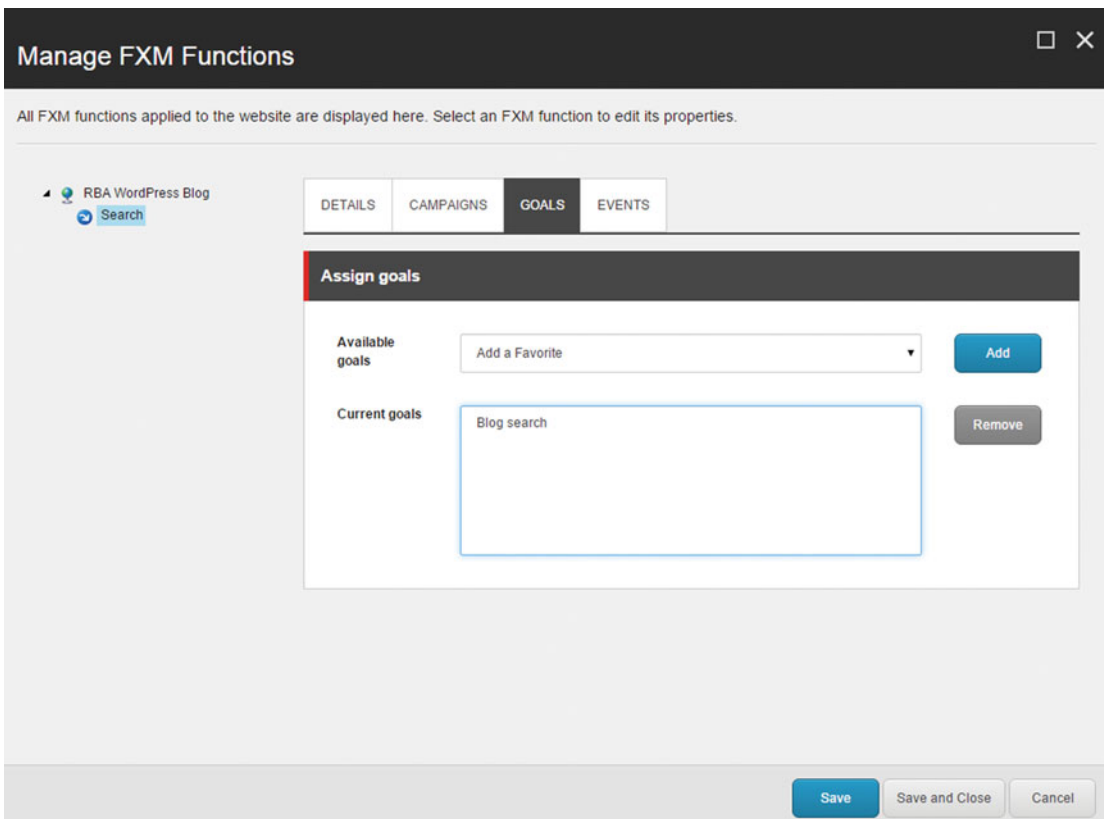
Figure 10-32. *The Manage FXM Function menu shows all the actions set up on the remote site, such as the goal we registered earlier*

Adding placeholders is a similar process to adding click actions. Simply click the Add Placeholder ribbon button and then click somewhere on the page. Thereafter you'll notice different places you can add a placeholder. Notice how in Figure 10-33 I clicked on the right navigation pane. FXM recognized a DIV element that I clicked on. FXM can either replace that DIV with a placeholder or add a placeholder above or below it. In my example I want to add a call to action stored in Sitecore above the archives content that is part of WordPress, so I clicked Add Before. Like before, I need to add a placeholder ID (Figure 10-34).
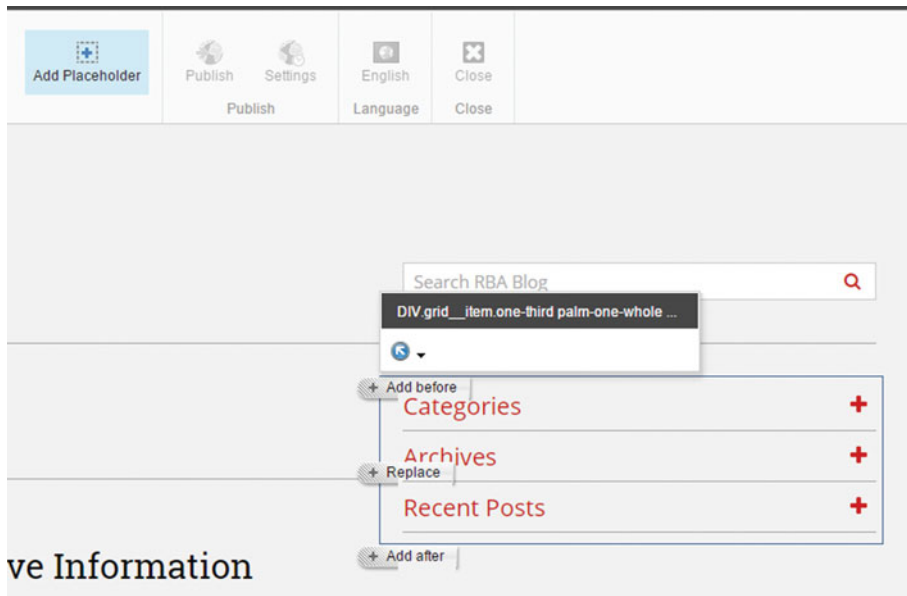
Figure 10-33. *You can also add placeholders to a remote site. Simply click Add Placeholder and then click on the page where you want the placeholder to go*
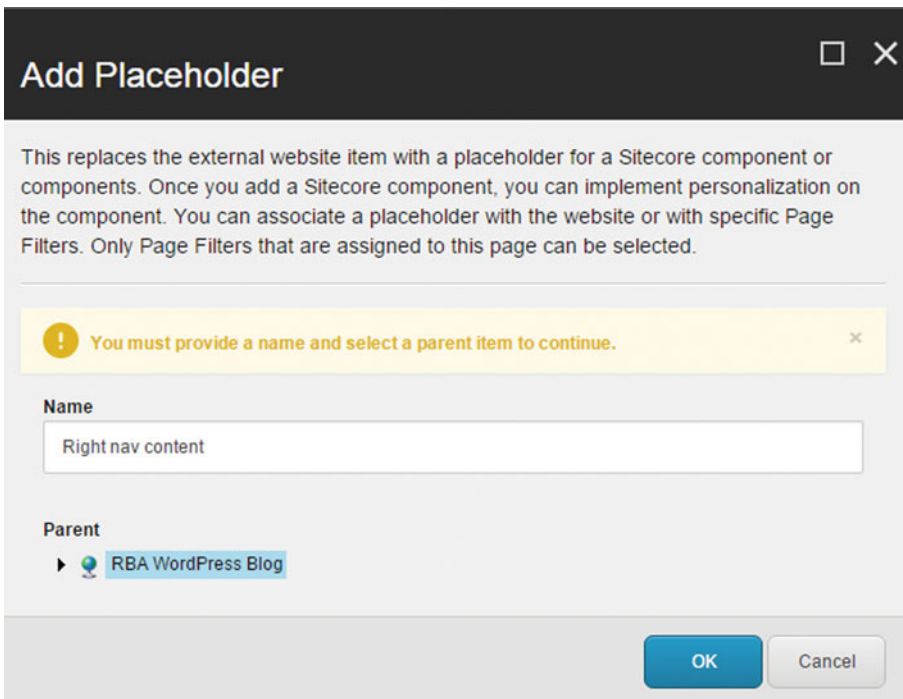
Figure 10-34. *Similar to a click action, placeholders also need an ID and must be registered with Sitecore*

After the placeholder is registered with FXM, you can add components into the placeholder much like you would on any other ordinary Sitecore page. Simply click Add Here (Figure 10-35) and then click the component you want to add. After you've added a component, you'll need to select the content that component is associated with, much, again, like you would on any Sitecore page. Figure 10-36 shows a placeholder with Launchcore's Promo Spot component added to a WordPress blog page.
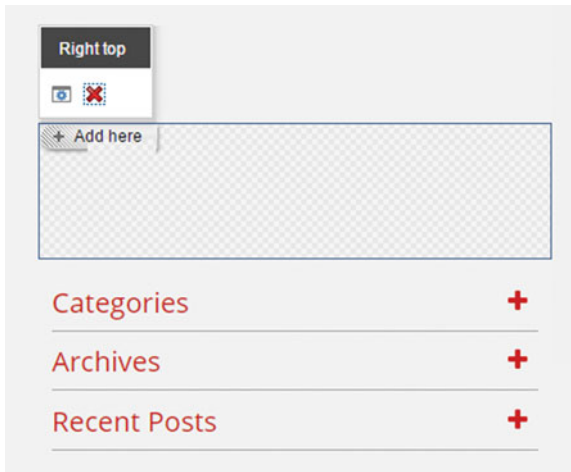
Figure 10-35. After the placeholder is registered, it should look very familiar, just like your other Sitecore sites—but in this case it isn't Sitecore!
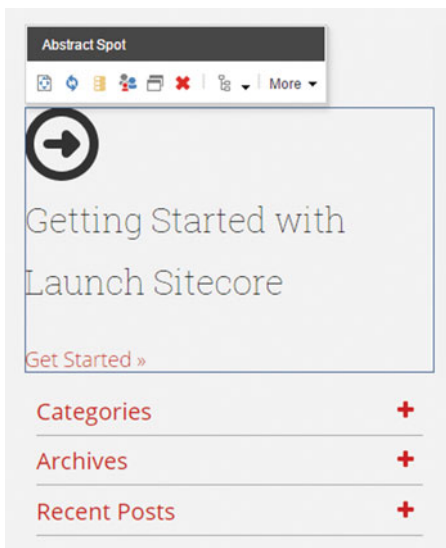
Figure 10-36. FXM enables you to browse to your Sitecore content and add it to your remote experiences

When you've completed your changes in FXM and the Experience Editor, simply publish those changes like you would any other Sitecore page. Thereafter, your changes will be live on the site and all analytics data, such as visits and goals, will be sent to Sitecore just as if it were a Sitecore native site!

Summary

If you're reading this, I applaud you. You're definitely an overachiever!

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