

SharePoint's New Swiss Army Knife



The Content Search Web Part (CSWP)



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Microsoft MVP (Office Development, Office Servers and Services)
Chief Technology Officer
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My background



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My background

- Developing software since mid '90s
- Working with SharePoint since 2004
- Many roles: developer, administrator, product manager, evangelist, and more
- Community focus: free solutions, writing, speaking, and mentoring

custom

the C-



This Session

- Introduce the Content Search Web Part (CSWP)
- Discuss how it works and what you need to use it
- Demonstrate common and not-so-common uses
- Investigate configuration and display options
- Identify strengths and weaknesses
- **Demos with Q&A throughout!**

- the CSWP is extremely versatile
- usable by novices and experts alike
- largely future-proof and cloud-ready
- a viable replacement for custom development in a number of scenarios



Why I'm Talking

About

the CSWP

- Introduction
- Dis





Display basic
search results



Perform
content
rollups

Expose content
dynamically and
interactively



- the CSWP is extremely versatile
- usable by novices and experts alike
- largely future-proof and cloud-ready
- a viable replacement for custom development in a number of scenarios



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On-premises

SharePoint 2013+

Enterprise

and

On-premises
SharePoint 2013+
Enterprise

and

Office 365 Enterprise E3+ Plans
Office 365 Education A3+ Plans
Office 365 Government G3+ Plans
SharePoint Online Plan 2

- the CSWP is extremely versatile
- usable by novices and experts alike
- largely future-proof and cloud-ready
- a viable replacement for custom development in a number of scenarios



Why I'm Talking

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I'm not making any assumptions about your development skills

This presentation is largely introductory ...



... with occasional dives into different areas of interest based on your role:

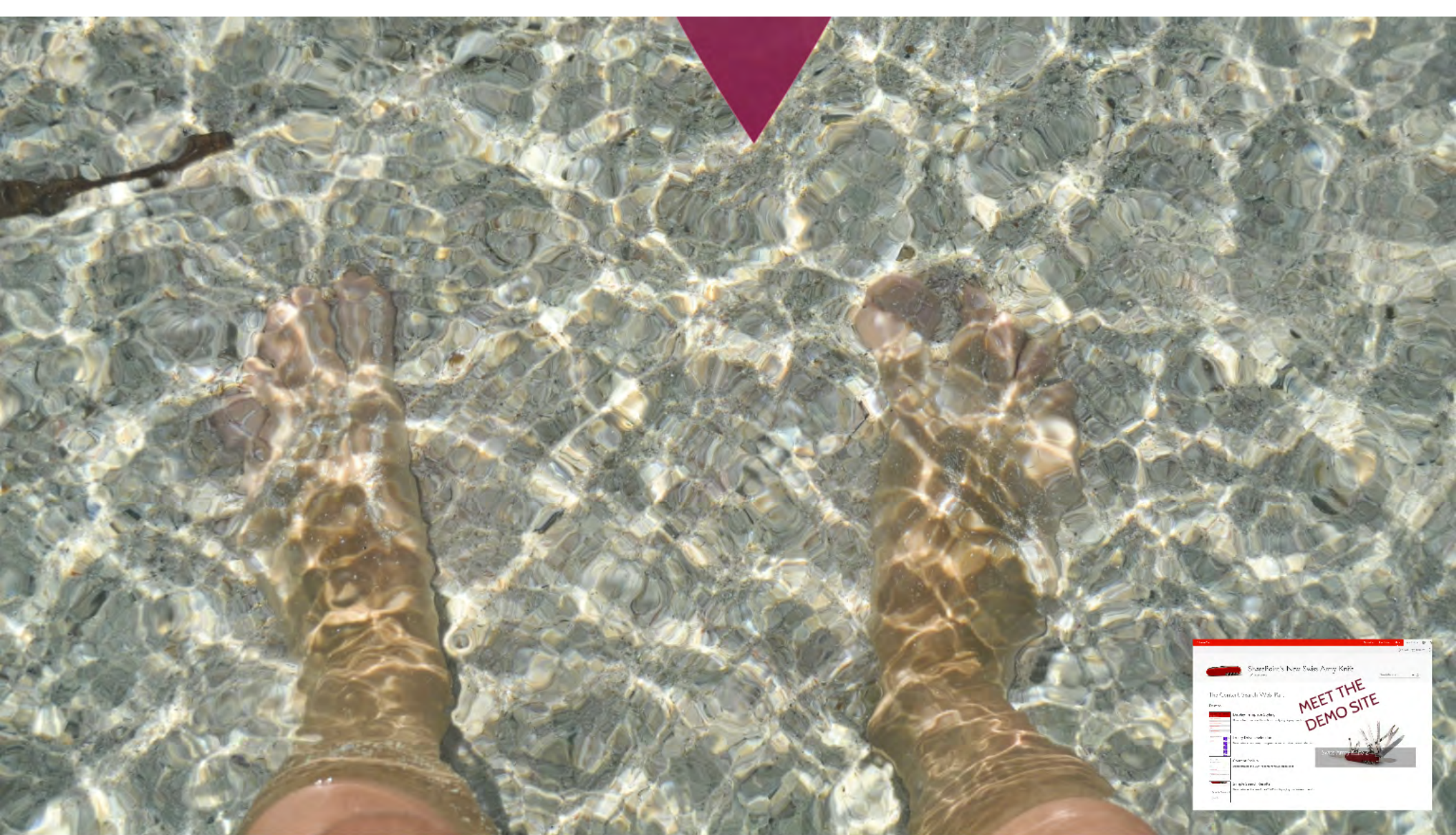
- **developers**
- **designers**
- **power users**





so, without further ado ...






Let's get our feet wet with some basics

- The CSWP is a web part ... obviously?



SharePoint's New Swiss Army Knife

 EDIT LINKS

The Content Search Web Part

Demos



Display Template Styling

Demonstrates some of the options for styling display templates



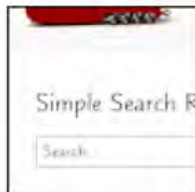
Query Driven Selection

Demonstrate how querystring parameters can drive content selection



Content Rollup

Demonstrates the CSWP's content rollup capabilities



Simple Search Results

Demonstrates the use of the CSWP for displaying simple search results.

MEET THE DEMO SITE



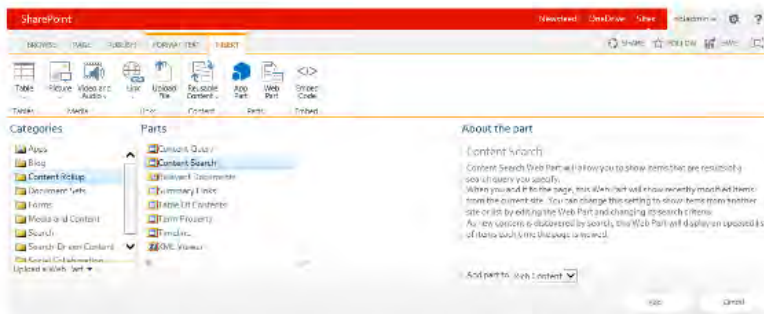


Let's get our feet wet with some basics

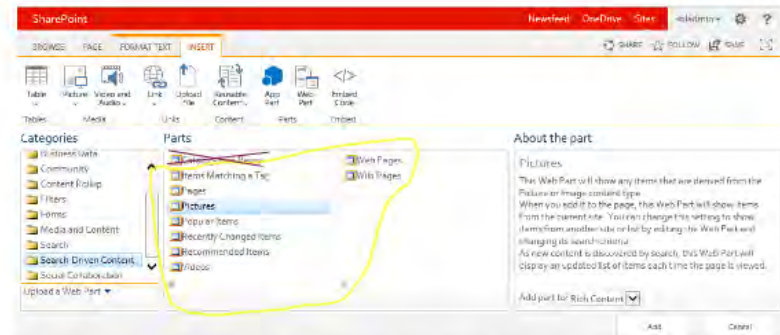


- The CSWP is a web part ... obviously?
- The content that it displays comes from a query that is run against the search index
- There are a multitude of levers and dials to control the content selected for display
- The manner in which content is displayed is highly configurable and styled easily

Actually, it's a family of web parts



It's hard to miss this one



But these are CSWPs, too

The image shows a screenshot of the SharePoint user interface. At the top, the 'SharePoint' logo is on the left, and 'Newsfeed OneDrive Sites' along with a user profile 'soladmin' and settings icons are on the right. Below this is a ribbon with tabs for 'BROWSE', 'PAGE', 'PUBLISH', 'FORMAT TEXT', and 'INSERT'. The 'INSERT' tab is active, showing a group of icons for 'Tables', 'Media', 'Links', 'Content', 'Parts', and 'Embed'. Under the 'Parts' group, the 'Content Search' icon is highlighted. Below the ribbon, there are three panels: 'Categories' on the left with a tree view showing 'Content Rollup' selected; 'Parts' in the middle with a list of web parts including 'Content Search' which is highlighted; and 'About the part' on the right, which contains a description of the 'Content Search' web part and an 'Add part to:' dropdown menu set to 'Rich Content'. At the bottom right of the 'About the part' panel are 'Add' and 'Cancel' buttons.

It's hard to miss this one

The screenshot shows the SharePoint interface with the 'INSERT' tab selected. The ribbon includes options for Table, Picture, Video and Audio, Link, Upload File, Reusable Content, App Part, Web Part, and Embed Code. Below the ribbon, the 'Parts' section is expanded, showing a list of web parts. A yellow circle highlights the 'Pictures' web part. The 'About the part' section on the right provides details about the 'Pictures' web part, including its description and the 'Add part to' dropdown menu.

SharePoint Newsfeed OneDrive Sites soladmin ?

BROWSE PAGE FORMAT TEXT INSERT

SHARE FOLLOW SAVE

Table Picture Video and Audio Link Upload File Reusable Content App Part Web Part Embed Code

Tables Media Links Content Parts Embed

Categories

- Business Data
- Community
- Content Rollup
- Filters
- Forms
- Media and Content
- Search
- Search-Driven Content
- Social Collaboration

Upload a Web Part

Parts

- ~~Catalogs from Review~~
- Items Matching a Tag
- Pages
- Pictures**
- Popular Items
- Recently Changed Items
- Recommended Items
- Videos
- Web Pages
- Wiki Pages

About the part

Pictures

This Web Part will show any items that are derived from the Picture or Image content type. When you add it to the page, this Web Part will show items from the current site. You can change this setting to show items from another site or list by editing the Web Part and changing its search criteria. As new content is discovered by search, this Web Part will display an updated list of items each time the page is viewed.

Add part to: Rich Content

Add Cancel

But these are CSWPs, too



BlogArchives.dwp NEW



BlogNotifications.webpart NEW



CatalogItemReuse.webpart NEW



CBS_Articles.webpart NEW



CBS_Pictures.webpart NEW



CBS_PopularItems.webpart NEW



CBS_RecentChanged.webpart NEW



CBS_RecommendedItems.webpart NEW



CBS_Tag.webpart NEW

Web Part Gallery

Name * x .webpart

Title

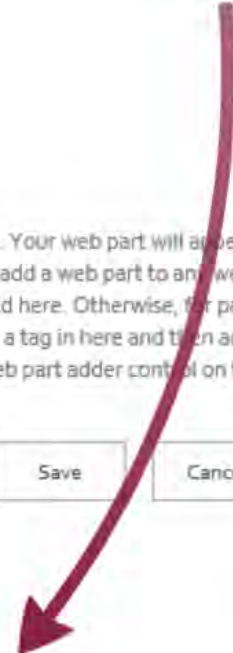
Description

Group Default Web Parts
 Specify your own value:

Recommendation Settings Specify your own value:

Please specify site template names separated by ";#". Your web part will appear in "Recommended Items" category when a user tries to add a web part to any web part pages within sites using site templates mentioned here. Otherwise, for page level recommendations of web parts, you can include a tag in here and then add that same tag to "Recommended" property on the web part adder control on the page in question.

Created at 5/26/2014 11:51 AM by System Account
Last modified at 5/26/2014 11:51 AM by System Account



BROWSE

EDIT

Default

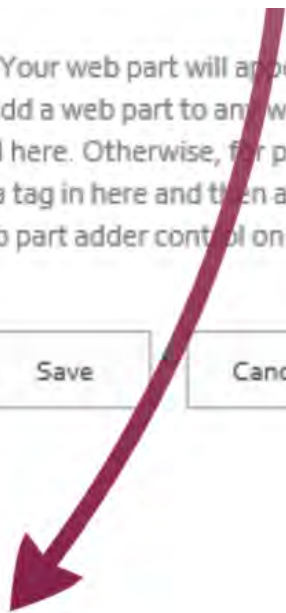
Please specify site template names separated by ";#". Your web part will appear in "Recommended Items" category when a user tries to add a web part to any web part pages within sites using site templates mentioned here. Otherwise, for page level recommendations of web parts, you can include a tag in here and then add that same tag to "Recommended" property on the web part adder control on the page in question.

Created at 5/26/2014 11:51 AM by System Account

Last modified at 5/26/2014 11:51 AM by System Account

Save

Cancel



BROWSE EDIT

Save Cancel Paste Copy Delete Item Export View Xml Shared With

Commit Clipboard Actions




```
<?xml version="1.0" encoding="utf-8" ?>
```

```
<WebParts>
```

```
<WebPart xmlns="http://schemas.microsoft.com/WebPart/v3">
```




```
1 <?xml version="1.0" encoding="utf-8"?>
2 <webParts>
3   <webPart xmlns="http://schemas.microsoft.com/WebPart/v3">
4     <metaData>
5       <type name=
6         "Microsoft.Office.Server.Search.WebControls.ContentBySearchWebPart, Microsoft.Office.Server.Search, Version=15.0.0.0, Culture
7         =neutral, PublicKeyToken=71e9bce11e9429c" />
8       <importErrorMessage>$Resources:core, ImportErrorMessage:</importErrorMessage>
9     </metaData>
10    <data>
11      <properties>
12        <property name="Title" type="string">$Resources:Microsoft.Office.Server.Search,CBS_Pictures_Title;</property>
13        <property name="Description" type="string">$Resources:Microsoft.Office.Server.Search,CBS_Pictures_Description;
14        </property>
15        <property name="ChromeType">None</property>
16        <property name="AllowMinimize" type="bool">>true</property>
17        <property name="AllowClose" type="bool">>true</property>
18        <property name="Hidden" type="bool">>false</property>
19        <property name="UseSimplifiedQueryBuilder" type="bool">>true</property>
20        <property name="DataProviderJSON" type="string">
21          {"Properties":{"TryCache":true,"Scope":{"Site.URL"},"PropertiesJson":{"TryCache":true,"Scope":{"Site.URL"},"SourceId":"38403C8C-3975-41A8-826E-717F2D41568A"}}</property>
22        <property name="ItemTemplateId" type="string">~sitecollection/_catalogs/masterpage/Display Templates/Content Web
23        Parts/Item_LargePicture.js</property>
24        <property name="RenderTemplateId" type="string">~sitecollection/_catalogs/masterpage/Display Templates/Content Web
25        Parts/Control_Slideshow.js</property>
26        <property name="NumberOfItems" type="int">10</property>
27        <property name="ResultsPerPage" type="int">10</property>
28      </properties>
29    </data>
30  </webPart>
31 </webParts>
```



```
tf-8" ?>
```

```
s.microsoft.com/WebPart/v3">
```

```
Search.WebControls.ContentBySearchWebPart, Microsoft.Office.S  
1e9bce111e9429c" />
```





































































```
ources:core, ImportErrorMessage; </importErrorMessage>
```

```
type="string">$Resources:Microsoft.Office.Server.Search,CBS_  
tion" type="string">$Resources:Microsoft.Office.Server.Search
```

```
type">None</property>
```

```
imize" type="bool">>true</property>
```

Web Part Gallery

<input type="checkbox"/>	Type	Web Part	Edit	Modified	Modified By	Recommendation Settings
		BlogAdmin.dwp 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		BlogArchives.dwp 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		BlogNotifications.webpart 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		CatalogItemReuse.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Search
		CBS_Articles.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_Pictures.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_PopularItems.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_RecentChanged.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_RecommendedItems.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_Tag.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_Videos.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_WebPages.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		CBS_WikiPages.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		ContentBySearch.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		ContentQuery.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		DocumentSetContents.dwp 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	
		DocumentSetProperties.dwp 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	
		GettingStarted.webpart 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		Media.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Default
		Microsoft.Office.InfoPath.Server.BrowserForm.webpart 		5/26/2014 11:51 AM	<input type="checkbox"/> System Account	Dashboard
		MSContentEditor.dwp 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		MSImage.dwp 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	
		MSMembers.dwp 		5/26/2014 11:50 AM	<input type="checkbox"/> System Account	

DEMO



Let's get our feet wet with some basics



- The CSWP is a web part ... obviously?
- The content that it displays comes from a query that is run against the search index
- There are a multitude of levers and dials to control the content selected for display
- The manner in which content is displayed is highly configurable and styled easily



Some implications

- If Search can reach the content (in or outside the farm), the CSWP can display it!
- Since Search is *FAST*, your results will come back fast, too (pardon the pun)
- Results are security trimmed for you

In case you were wondering ...



Yes, the CSWP can display "plain old search results"

So what's the difference between the CSWP



Yes, the CSWP can display "plain old search results"

So what's the difference between the CSWP and the Search Results Web Part (SRWP)?



- They are actually very similar in terms of capabilities

Yes, the CSWP can display "plain old search results"

So what's the difference between the CSWP and the Search Results Web Part (SRWP)?



- They are actually very similar in terms of capabilities
- CSWP has a few additional bells and whistles
- Most important: CSWP is end-user configurable



Let's get our feet wet with some basics



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Build Your Query

BASICS REFINERS SETTINGS TEST

[Learn how to build your query](#)

[Switch to Advanced Mode](#)

Select a query
Choose what content you want to search by selecting a [result source](#).

Recently changed items (System) [v]

Restrict by app
You can scope the search results to a specific site, library, list or URL.

Current site [v]

Restrict by tag
You can limit results to content tagged with specific terms, including site navigation terms.

Don't restrict by any tag
 Restrict by navigation term of current page
 Restrict by current and child navigation terms
 Restrict on this tag: []

SEARCH RESULT PREVIEW

RelevantResults (126)

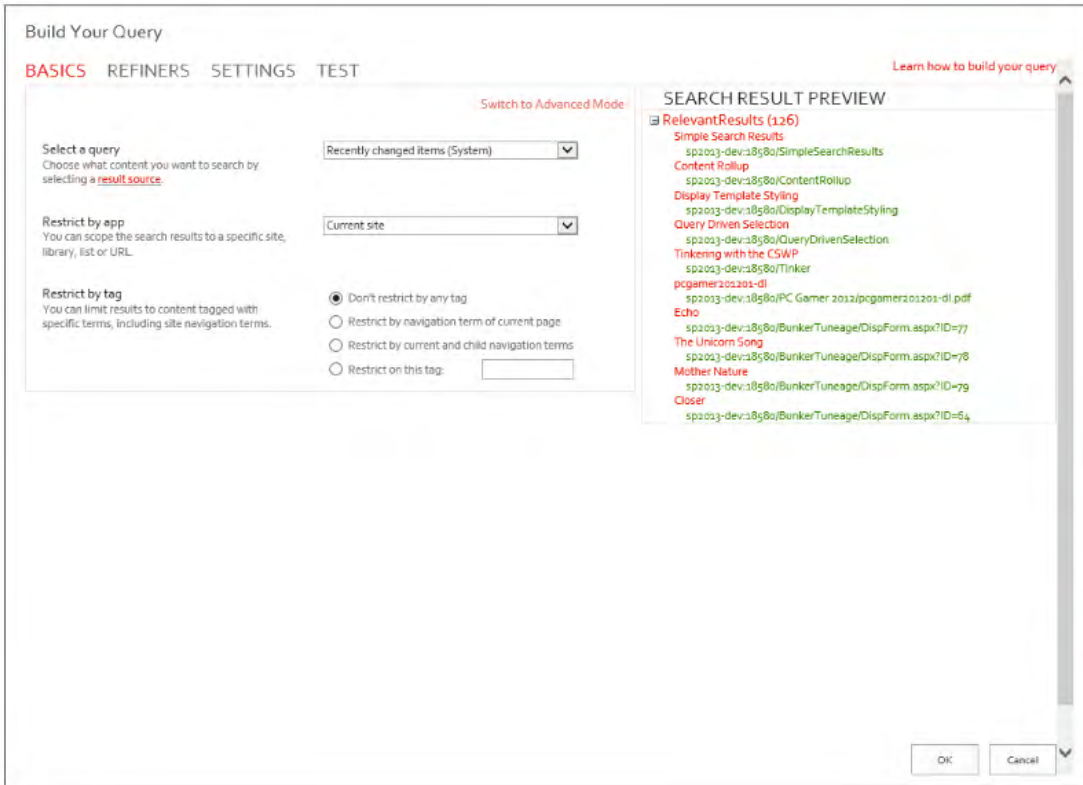
- Simple Search Results
 - sp2013-dev.18580/SimpleSearchResults
- Content Rollup
 - sp2013-dev.18580/ContentRollup
- Display Template Styling
 - sp2013-dev.18580/DisplayTemplateStyling
- Query Driven Selection
 - sp2013-dev.18580/QueryDrivenSelection
- Tinkering with the CSWP
 - sp2013-dev.18580/Tinker
- pcgamer201201-dl
 - sp2013-dev.18580/PC Gamer 2012/pcgamer201201-dl.pdf
- Echo
 - sp2013-dev.18580/BunkerTuneage/DispForm.aspx?ID=77
- The Unicorn Song
 - sp2013-dev.18580/BunkerTuneage/DispForm.aspx?ID=78
- Mother Nature
 - sp2013-dev.18580/BunkerTuneage/DispForm.aspx?ID=79
- Closer
 - sp2013-dev.18580/BunkerTuneage/DispForm.aspx?ID=64

OK Cancel

The Query Builder



aka, "the greatest thing



The Query Builder



aka, "the greatest thing since sliced bread"





Let's get our feet wet with some basics



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Display Templates "simplify" the process of modifying look and feel as well as behavior



Content Search

Properties

Search Criteria [Help](#)

Change query

Number of items to show

3

Display Templates [Help](#)

Control

List

Item

Picture on left, 3 lines on right

Don't show anything when there are no results.

Property Mappings

Settings

Appearance

Layout

Advanced

OK Cancel Apply



Let's get our feet wet with some basics

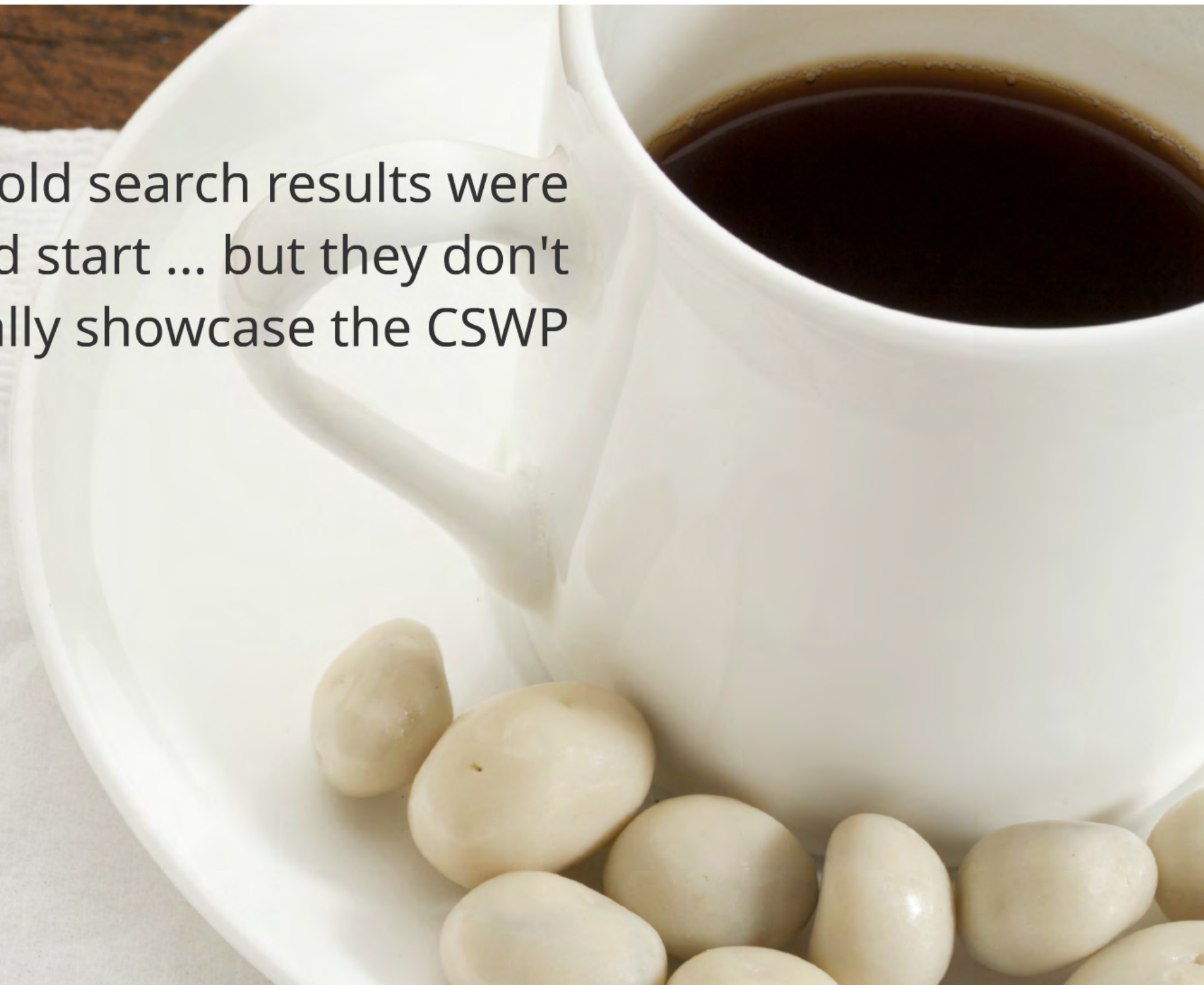


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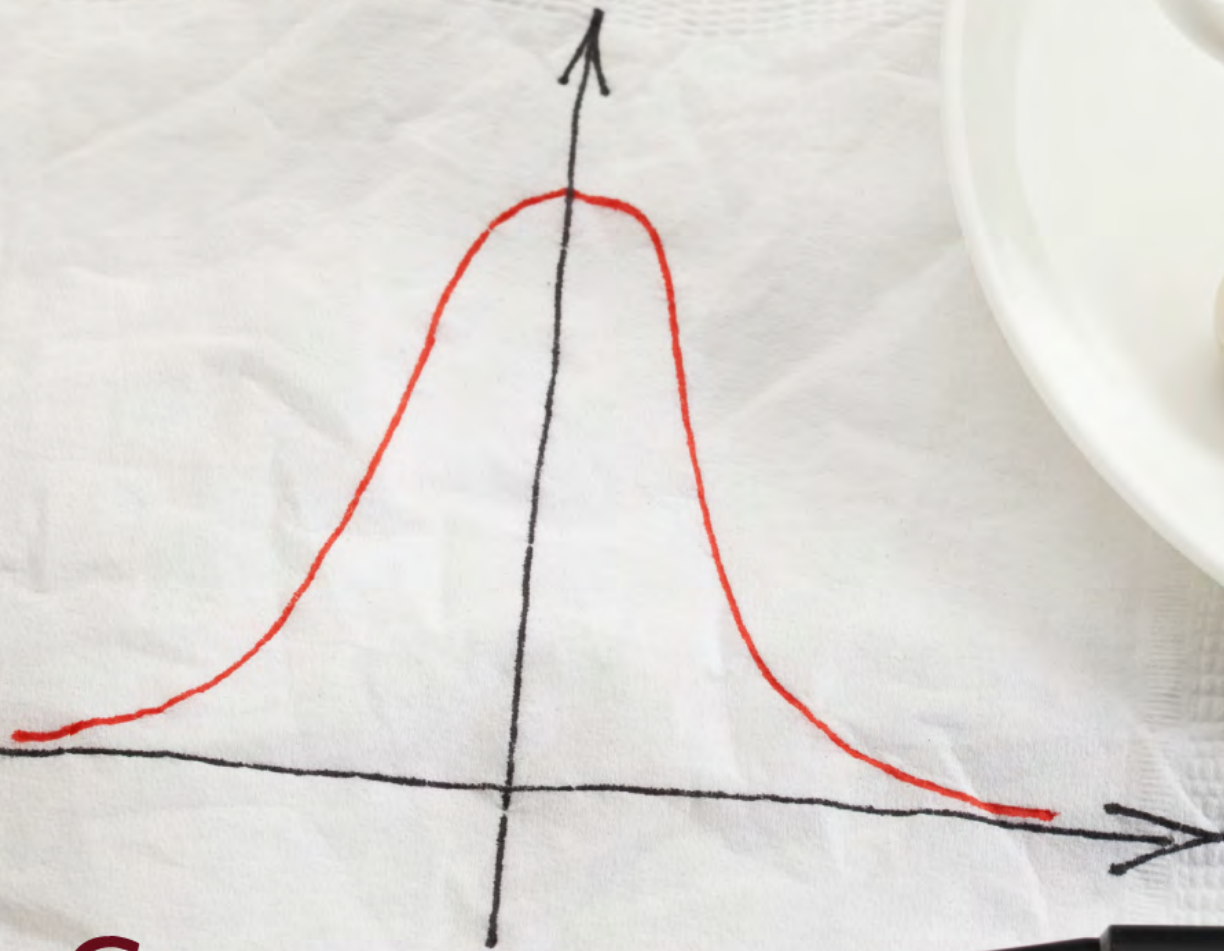


Plain old search results were
a good start ... but they don't
really showcase the CSWP

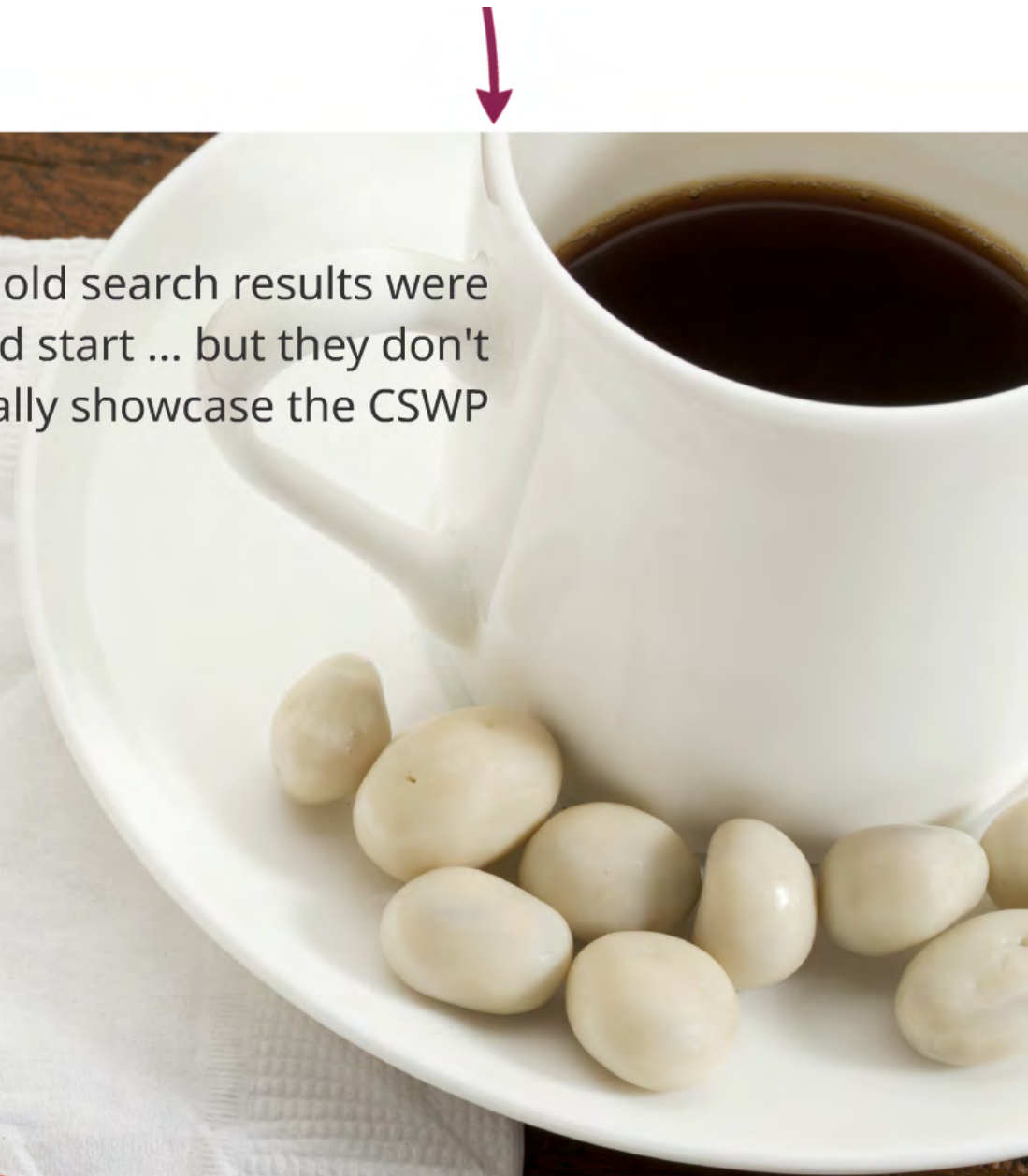


So, what's a more common use case for the CSWP?

Plain old search results were a good start ... but they don't really showcase the CSWP

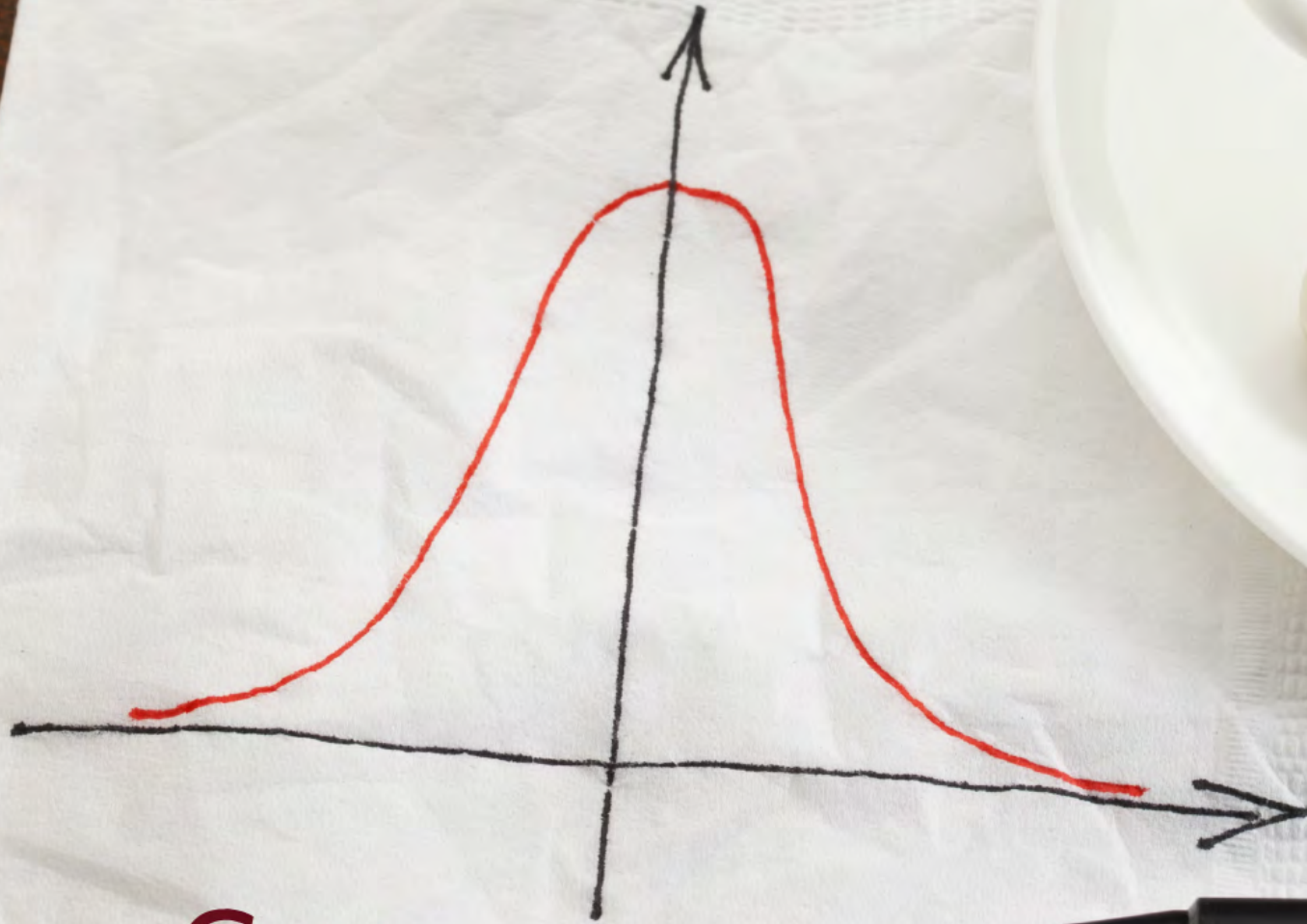


Content rollups



So, what's a more common use case for the CSWP?

Plain old search results were a good start ... but they don't really showcase the CSWP



Content rollups





So what exactly do we mean
by saying "content rollup?"

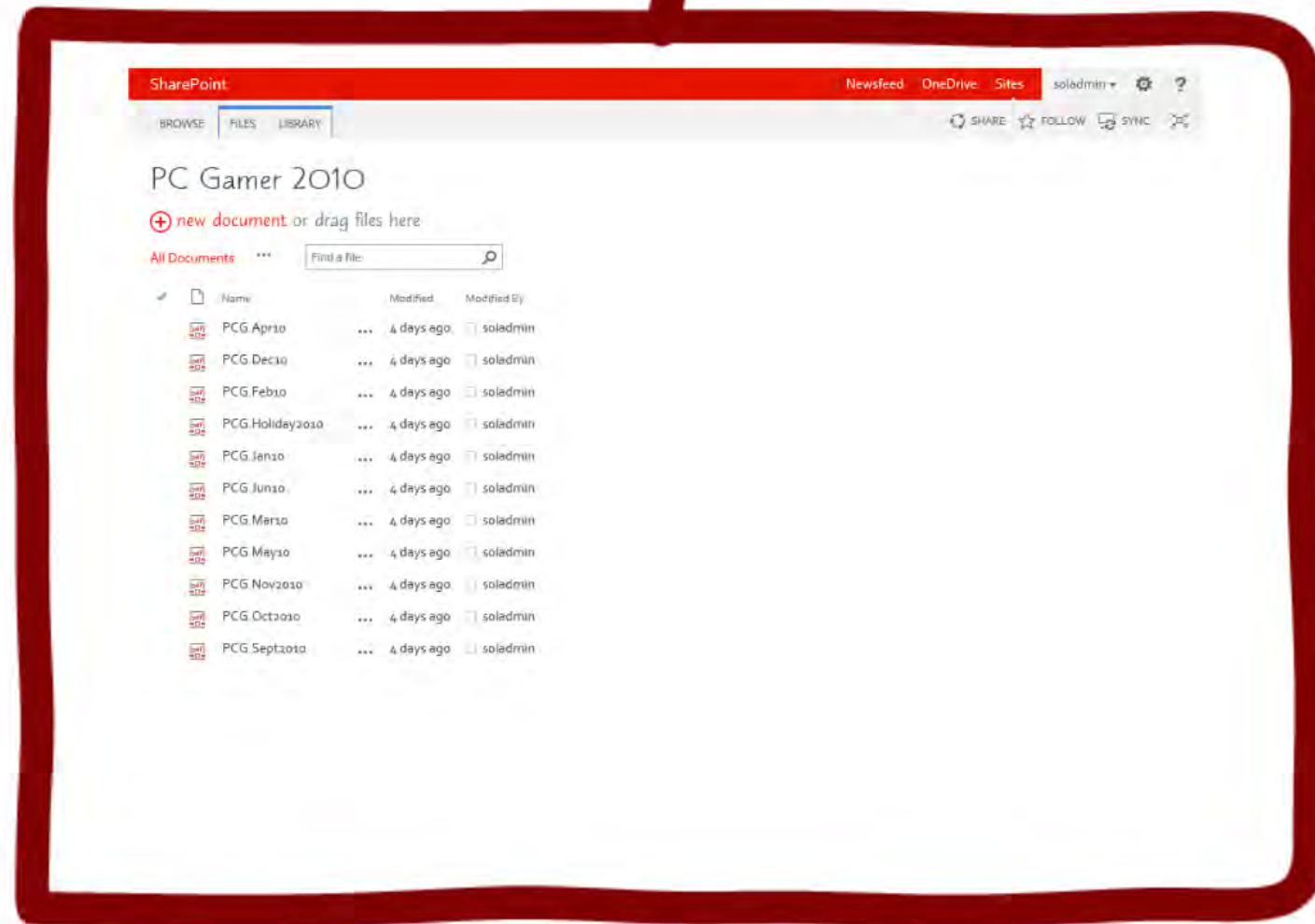


So what exactly do we mean
by saying "content rollup?"

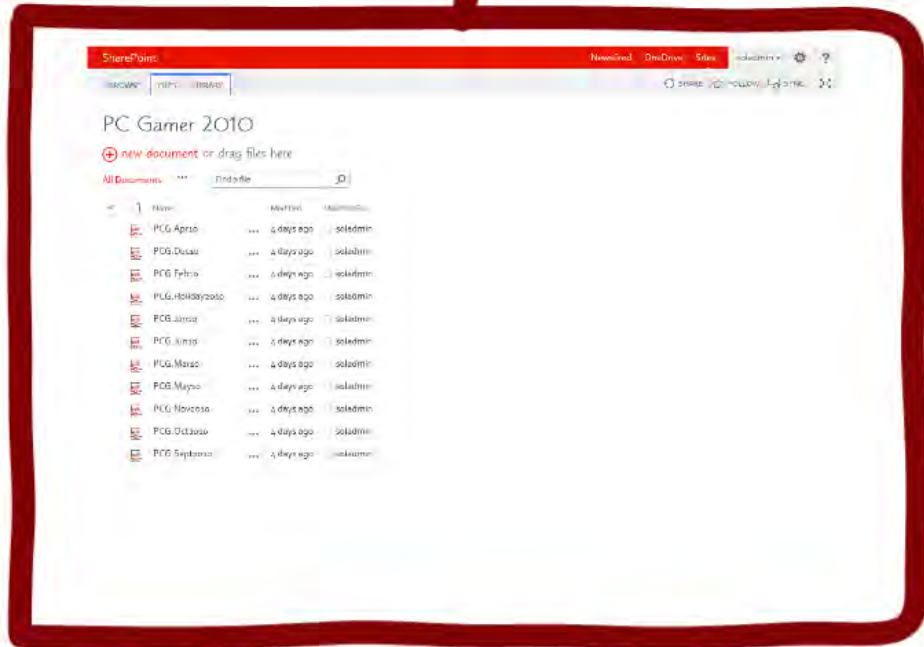
We're talking about content aggregation

Consider a lone document library

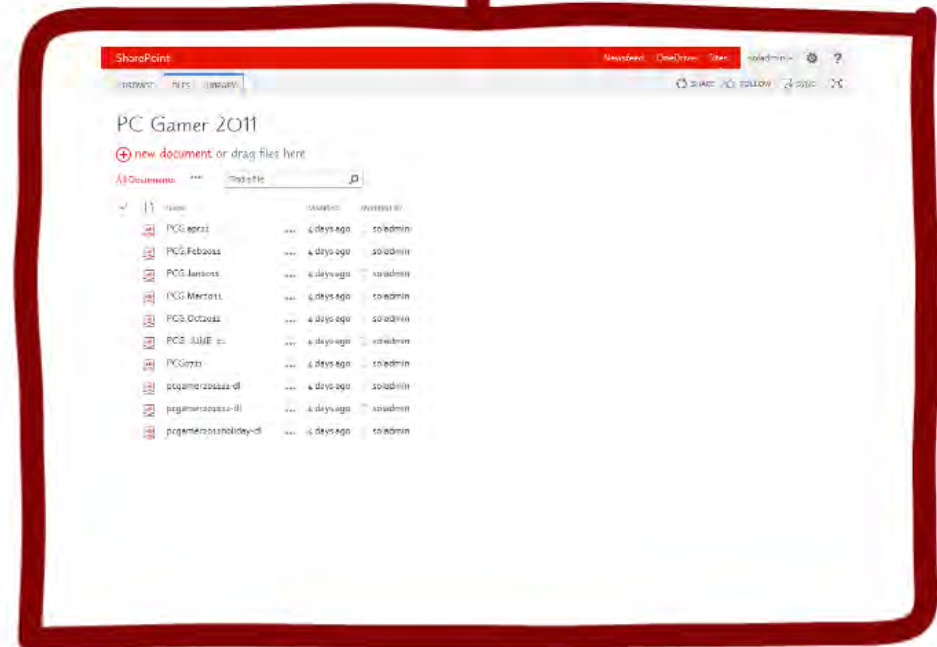
We can display content using (custom) views



Document Library



Document Library



Document Library

If we want to combine two or more libraries, views aren't an option

Collection?

Site collection

Content Rollup

Within a site collection, we have a couple of options for aggregating and rolling-up content

CQWP

CSWP

Content Query Web Part

Content Search Web Part



Document Library

Document Library

Document Library

If we want to combine two or more libraries, views aren't an option

Wha

cont

Within a site collection, we have a couple of options for aggregating and rolling-up content

CQWP

Content Query Web Part

CSWP

Content Search Web Part



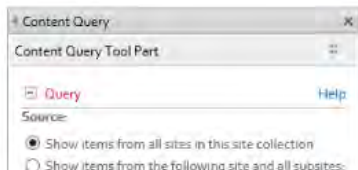
• Aggregate, filter, and display contents from a list/library, site, or site collection via cross-list and cross-site queries

CSWP

Content Search Web Part

COQWP

Content Query Web Part

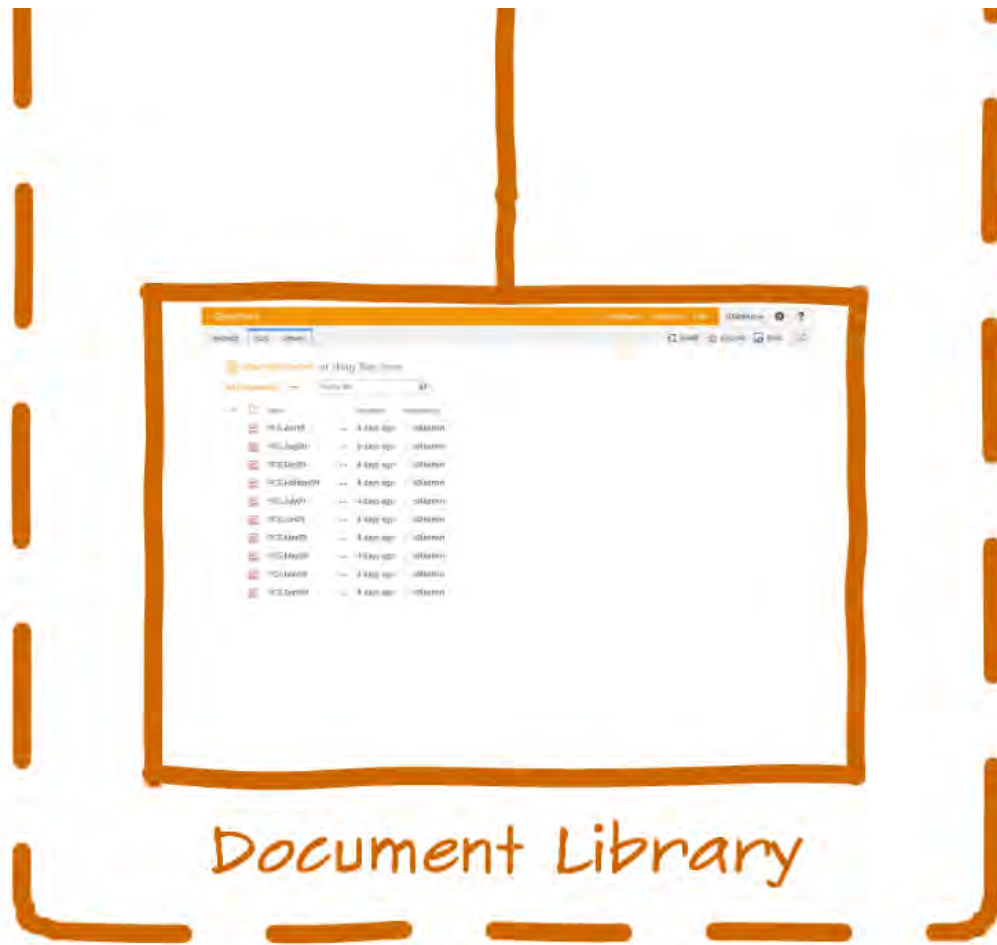


- Aggregate, filter, and display contents from a list/library, site, or site collection via cross-list and cross-site queries

Content Query Web Part



- Aggregate, filter, and display contents from a list/library, site, or site collection via cross-list and cross-site queries
- Part of SharePoint prior to 2013 and 2016 releases
- Supports audiences and audience-based filtering
- **Styling is challenging (you need to know XSLT)**
- **Support for dynamic behavior is very limited**
- **Queries can generate load and take time**



What happens when we have content in other site collections?

Site Collection

Content Rollup

Document Library



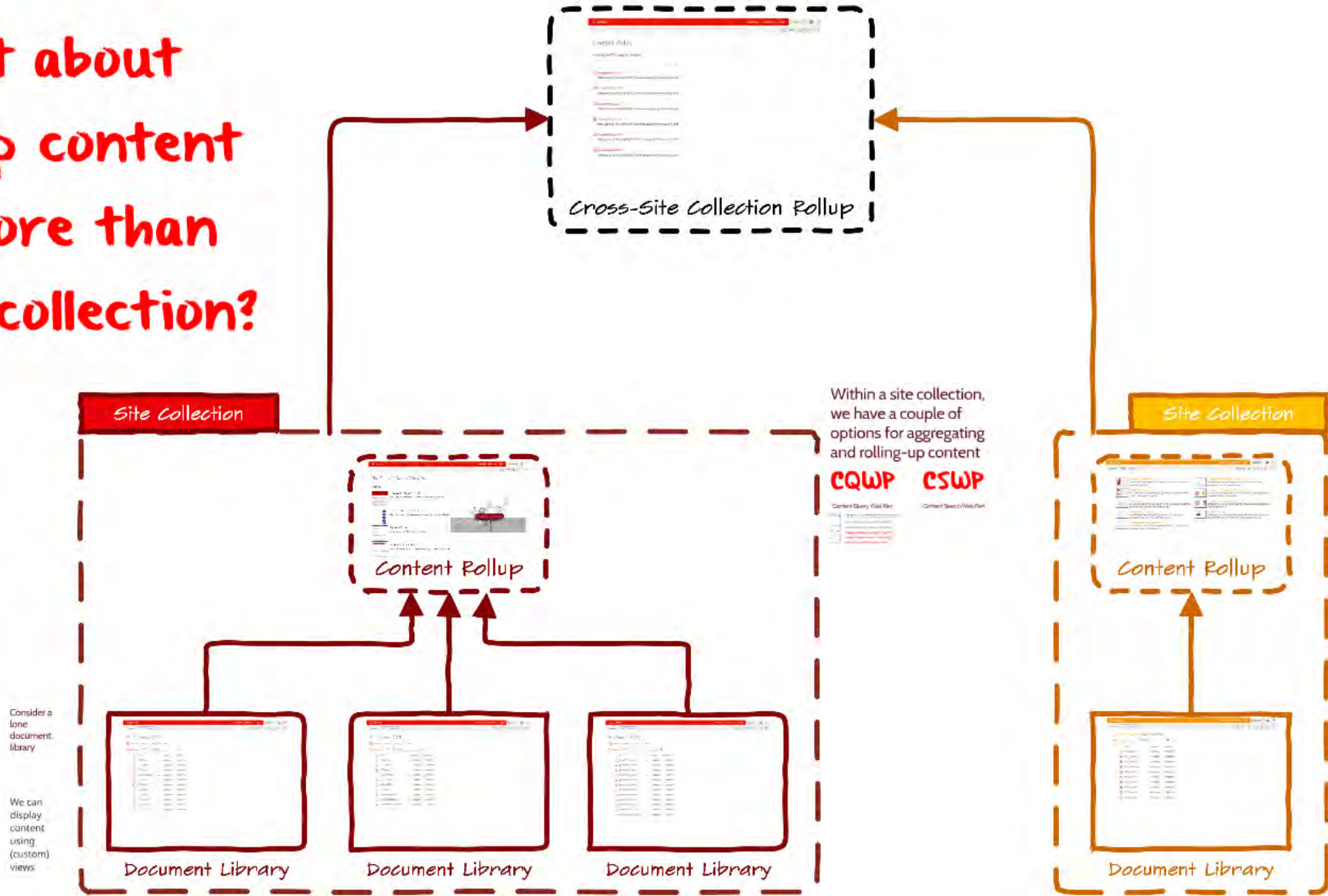
As mentioned, we can roll that content up within the site collection using a CQWP ...

happens when we have
not in other site collections?

DEMO

Don't panic, though - these are things you need to be mindful of as you work

But what about rolling-up content across more than one site collection?



If we want to combine two or more libraries, views aren't an option

What happens when we have content in other site collect

I believe in presenting a balanced view

DEMO

The screenshot shows a SharePoint 'Content Rollup' page titled 'Available PC Gamer Issues'. It lists six items, each with a document icon, a red title, and a URL. A red arrow points from the left towards the list, and an orange arrow points from the right towards the list. The entire screenshot is enclosed in a dashed black border.

Document Icon	Title	URL
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf
	acqemera1221-el	http://sp2013-dev-01960/PC_Gamer/1012/acqemera1221-el.pdf

Cross-Site Collection Rollup

strengths and weaknesses ...



I believe in presenting a balanced view

DEMO

Like anything else, the CSWP has its strengths and weaknesses ...



I believe in presenting a balanced view

... and it's fair to say that the CSWP has
its own "kryptonite"



its own "kryptonite"



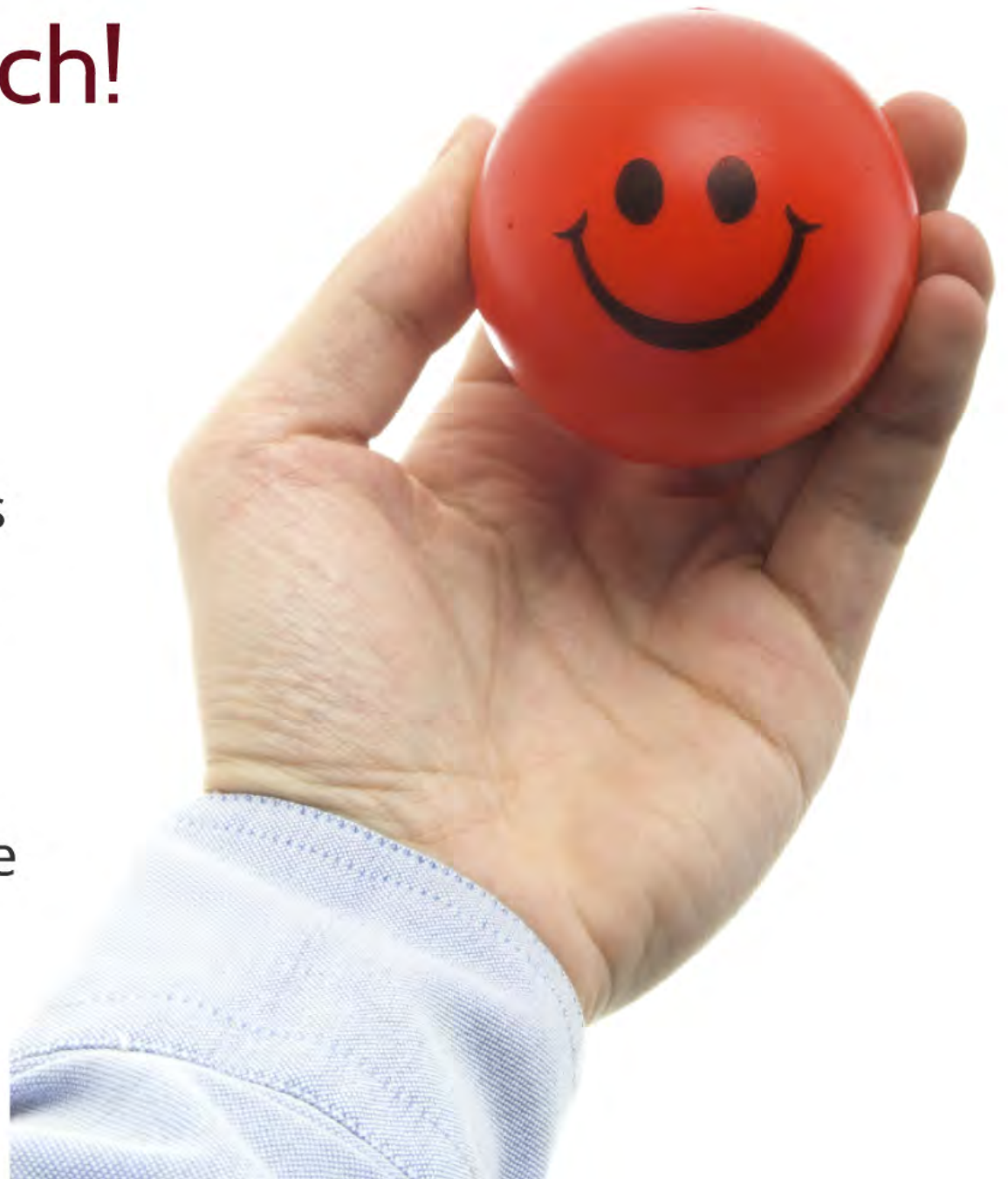
Don't panic, though - these are just constraints to be mindful of as you work with the CSWP



But it goes

We're using Search!

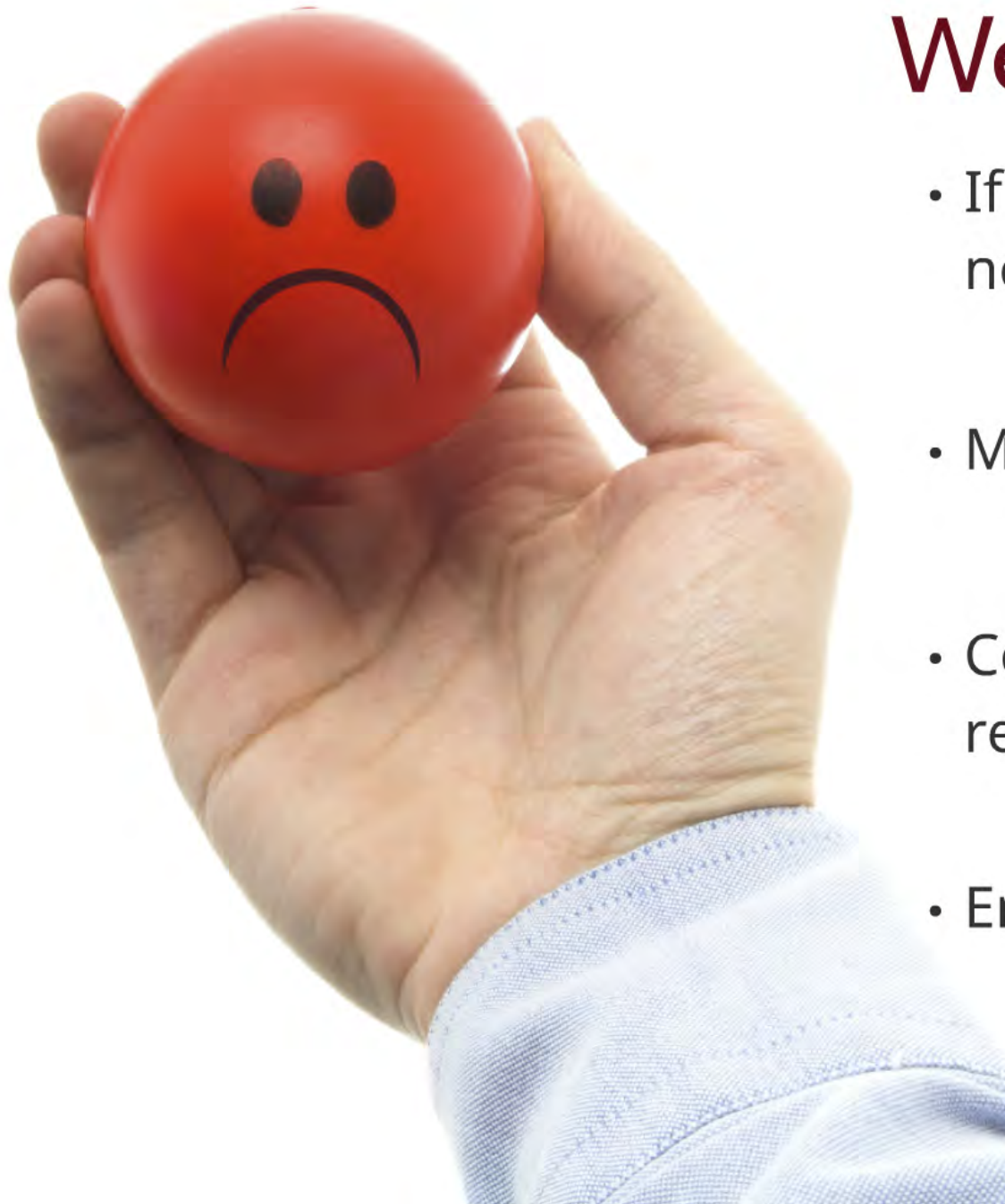
- Fast
- Works beyond the boundaries of our farm
- Works with result sources and query rules we build
- Security trimmed
- Works on-prem and in the cloud



But it goes both ways ...



both ways ...



We're using Search!

- If it hasn't been crawled, it's not available for display
- Major vs. minor versions*
- Content can be hidden and removed from indexes
- Enterprise features required!

- If it hasn't been crawled, it's not available for display
- Major vs. minor versions*
- Content can be hidden and removed from indexes
- Enterprise features required!



DEMO

We've covered the CSWP at a relatively high-level



A pair of hands wearing plaid sleeves and gloves holds a pickaxe over a large pile of dark brown soil. The pickaxe has a wooden handle and a metal head with two sharp points. The soil is piled up in a conical shape, and some soil has spilled onto the white background to the right of the pile. The background is plain white.

Let's dig a little deeper
in two key areas

1. The Query Builder
2. Display Templates

When working with

in two key areas

1. The Query Builder
2. Display Templates



When working with the CSWP, this is where you'll spend most of your time

The Query Builder

#1



Build Your Query

BASICS REFINERS SETTINGS TEST

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[Switch to Advanced Mode](#)

Select a query

Choose what content you want to search by selecting a [result source](#).

Recently changed items (System) ▼

Restrict by app

You can scope the search results to a specific site, library, list or URL.

Current site ▼

Restrict by tag

You can limit results to content tagged with specific terms, including site navigation terms.

- Don't restrict by any tag
- Restrict by navigation term of current page
- Restrict by current and child navigation terms
- Restrict on this tag:

SEARCH RESULT PREVIEW

RelevantResults (126)

Simple Search Results

sp2013-dev:18580/SimpleSearchResults

Content Rollup

sp2013-dev:18580/ContentRollup

Display Template Styling

sp2013-dev:18580/DisplayTemplateStyling

Query Driven Selection

sp2013-dev:18580/QueryDrivenSelection

Tinkering with the CSWP

sp2013-dev:18580/Tinker

pcgamer201201-dl

sp2013-dev:18580/PC Gamer 2012/pcgamer201201-dl.pdf

Echo

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=77

The Unicorn Song

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=78

Mother Nature

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=79

Closer

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=64

OK

Cancel

Build Your Query

BASICS REFINERS SORTING SETTINGS TEST

[Learn how to build your query](#)

[Switch to Quick Mode](#)

Select a query

Choose what content you want to search by selecting a [result source](#).

Local SharePoint Results (System) ▼

Keyword filter

Query from the search box ▼

Add keyword filter

Property filter

Select property ▼

Contains ▼

Select value ▼

Add property filter

Query text

path:"http://sp2013-dev:18580" (IsDocument:"True" OR contentclass:"STS_ListItem")

Test query

SEARCH RESULT PREVIEW

RelevantResults (126)

pcgamer201202-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201202-dl.pdf
pcgamer201203-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201203-dl.pdf
pcgamer201204-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201204-dl.pdf
pcgamer201205-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201205-dl.pdf
pcgamer201206-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201206-dl.pdf
pcgamer201208-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201208-dl.pdf
pcgamer201209-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201209-dl.pdf
pcgamer201210-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201210-dl.pdf
pcgamer201211-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201211-dl.pdf
pcgamer201212_opt-dl
sp2013-dev:18580/pcgamer201212_opt-dl.pdf

OK

Cancel

Build Your Query

BASICS **REFINERS** SETTINGS TEST

[Learn how to build your query](#)

Choose your refiners

contentclass
STS_ListItem_851
STS_ListItem_DocumentLibrary
STS_ListItem_PictureLibrary
STS_ListItem_850
ContentType
Audio
application/pdf Document
Picture
Article Page
Document
Page
ContentTyped
0x0101009148F5A04DDD49CBA71:
0x01010090A3E31D1BBC8C41ADA
0x010100395F1CBF3F4EA042A7B8:
0x010100A4994291DoCF494898FE
0x010102006ED64128F2F6AA4692
0x010100C568DB52D9DoA14D9B2
0x0101020040D408E9FD27364D8A

Add

Remove

[Show more](#)

SEARCH RESULT PREVIEW

RelevantResults (126)

Simple Search Results

sp2013-dev:18580/SimpleSearchResults

Content Rollup

sp2013-dev:18580/ContentRollup

Display Template Styling

sp2013-dev:18580/DisplayTemplateStyling

Query Driven Selection

sp2013-dev:18580/QueryDrivenSelection

Tinkering with the CSWP

sp2013-dev:18580/Tinker

pcgamer201201-dl

sp2013-dev:18580/PC Gamer 2012/pcgamer201201-dl.pdf

Echo

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=77

The Unicorn Song

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=78

Mother Nature

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=79

Closer

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=64

OK

Cancel

Build Your Query

BASICS REFINERS **SORTING** SETTINGS TEST

[Learn how to build your query](#)

Sort results

You can have several levels of sorting for your results based on their managed properties.

Sort by:

Rank

[Add sort level](#)

Ranking Model

Choose a way of ranking results.

Select model

Dynamic ordering

On top of the ranking model, dynamic ordering allows you to promote or demote items in the search results.

[Add dynamic ordering rule](#)

SEARCH RESULT PREVIEW

RelevantResults (126)

pcgamer201202-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201202-dl.pdf
pcgamer201203-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201203-dl.pdf
pcgamer201204-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201204-dl.pdf
pcgamer201205-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201205-dl.pdf
pcgamer201206-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201206-dl.pdf
pcgamer201208-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201208-dl.pdf
pcgamer201209-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201209-dl.pdf
pcgamer201210-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201210-dl.pdf
pcgamer201211-dl
sp2013-dev:18580/PC Gamer 2012/pcgamer201211-dl.pdf
pcgamer201212_opt-dl
sp2013-dev:18580/pcgamer201212_opt-dl.pdf

OK

Cancel

Build Your Query

BASICS REFINERS **SETTINGS** TEST

[Learn how to build your query](#)

Query Rules:

Use query rules from Site Settings for this web part.

- Use Query Rules
 Don't use Query Rules

URL Rewriting

If the query is returning items from a catalog, choose whether to use that catalog's URL settings

- Use URL settings from catalog
 Don't rewrite URLs

Loading Behavior

Choose whether this query is issued on the server while the page is loading, which is better for your main content, or from the browser after the page appears.

- Sync option: Issue query from the server
 Async option: Issue query from the browser

Priority

Choose the importance of this web part's query. We'll run queries according to their relative priorities when the search service is overloaded.

- High
 Regular
 Low

SEARCH RESULT PREVIEW

RelevantResults (126)

Simple Search Results

sp2013-dev:18580/SimpleSearchResults

Content Rollup

sp2013-dev:18580/ContentRollup

Display Template Styling

sp2013-dev:18580/DisplayTemplateStyling

Query Driven Selection

sp2013-dev:18580/QueryDrivenSelection

Tinkering with the CSWP

sp2013-dev:18580/Tinker

pcgamer201201-dl

sp2013-dev:18580/PC Gamer 2012/pcgamer201201-dl.pdf

Echo

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=77

The Unicorn Song

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=78

Mother Nature

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=79

Closer

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=64

OK

Cancel

Build Your Query

BASICS REFINERS SETTINGS TEST

[Learn how to build your query](#)

Query text

Queries may give different results based on dynamic page- or user-driven values. See the final query text based on the original query template, query rules, and variable values.

[Show more](#)

```
path:"http://sp2013-dev:18580" (IsDocument:"True"  
OR contentclass:"STS_ListItem")
```

SEARCH RESULT PREVIEW

RelevantResults (126)

Simple Search Results

sp2013-dev:18580/SimpleSearchResults

Content Rollup

sp2013-dev:18580/ContentRollup

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sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=78

Mother Nature

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=79

Closer

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=64

OK

Cancel

Build Your Query

BASICS REFINERS SETTINGS TEST

[Learn how to build your query](#)

Show less

Query template

See the query as defined in Basics or in the result source.

```
{?path:{Scope}} {?owstaxidMetadataAllTagsInfo:  
{Tag}} (IsDocument:"True" OR
```

Refined by

See the refiners applied to this query.

Grouped by

See the managed property groups applied to the results.

Applied query rules

See the active query rules based on the query template and its variables.

Query template variables

Test the query template's functionality by specifying values for the different variables.

{Scope} :

{Tag} :

User segment terms

Test the query template's functionality with different user segment terms.

[Add user segment term for testing](#)

Query text

Queries may give different results based on dynamic page- or user-driven values. See the final query text based on the original query template, query rules, and variable values.

```
path:"http://sp2013-dev:18580" (IsDocument:"True"  
OR contentclass:"STS_ListItem")
```

Test query

SEARCH RESULT PREVIEW

RelevantResults (126)

Simple Search Results

sp2013-dev:18580/SimpleSearchResults

Content Rollup

sp2013-dev:18580/ContentRollup

Display Template Styling

sp2013-dev:18580/DisplayTemplateStyling

Query Driven Selection

sp2013-dev:18580/QueryDrivenSelection

Tinkering with the CSWP

sp2013-dev:18580/Tinker

pcgamer201201-dl

sp2013-dev:18580/PC Gamer 2012/pcgamer201201-dl.pdf

Echo

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=77

The Unicorn Song

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=78

Mother Nature

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=79

Closer

sp2013-dev:18580/BunkerTuneage/DispForm.aspx?ID=64

OK

Cancel

The Query Builder

#1



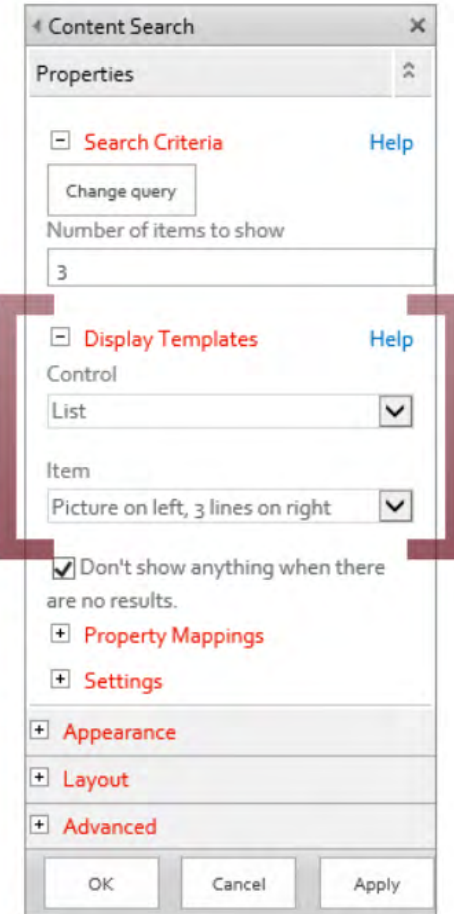
The Query Builder

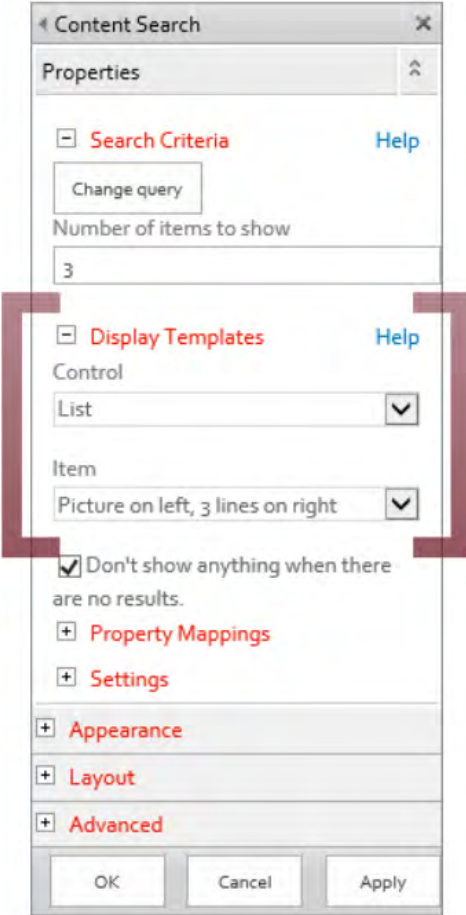


DEMO

#2

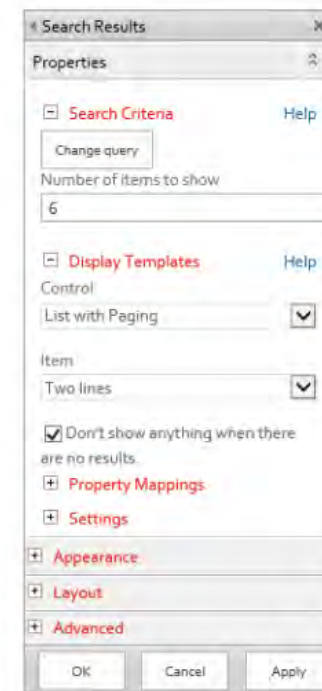
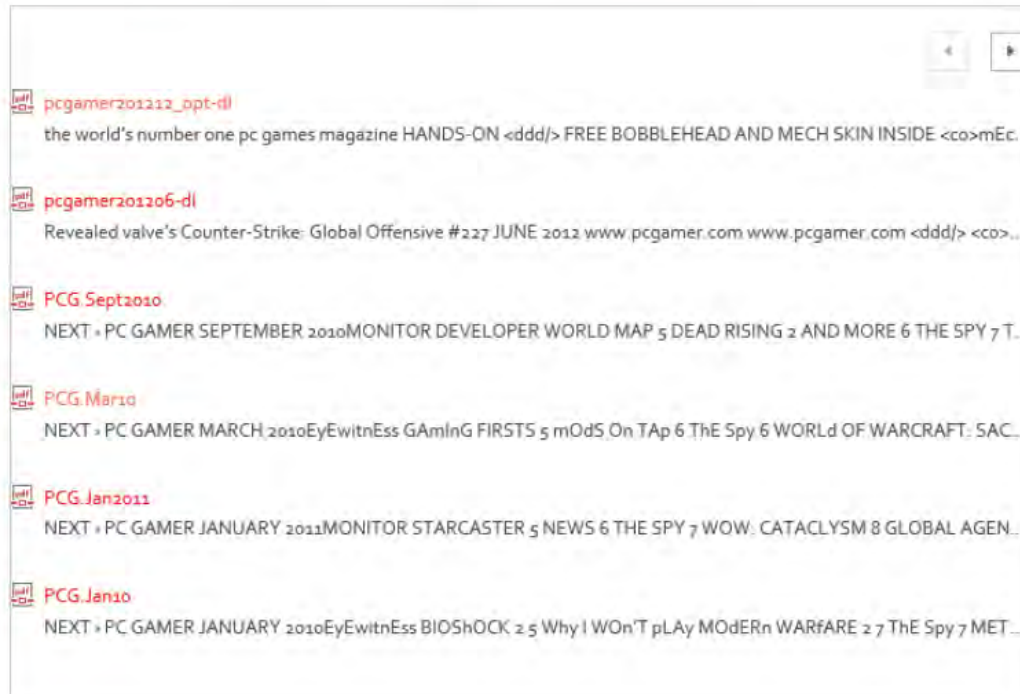
Display Templates



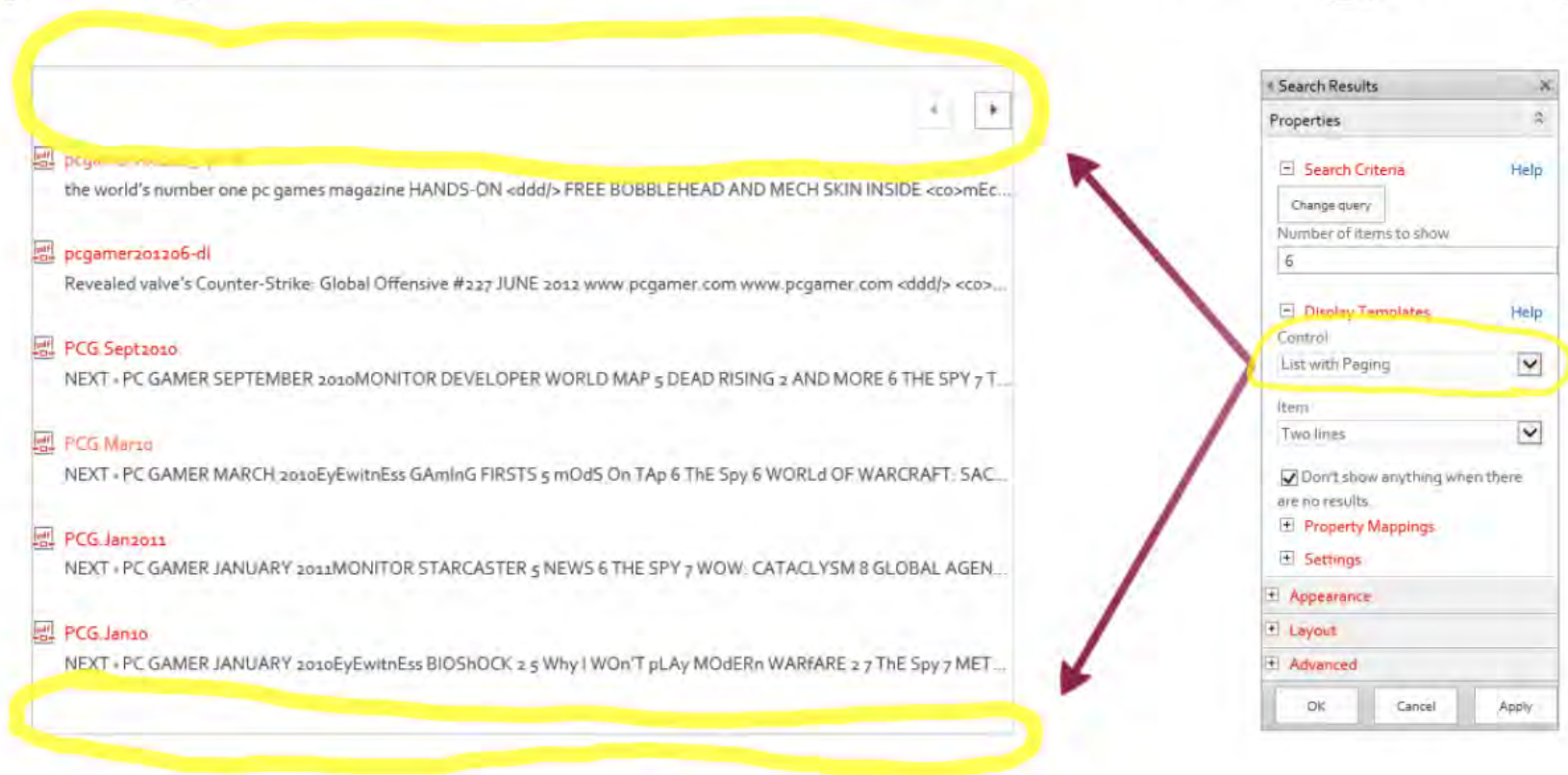


Two simple
selections
that make
ALL the
difference

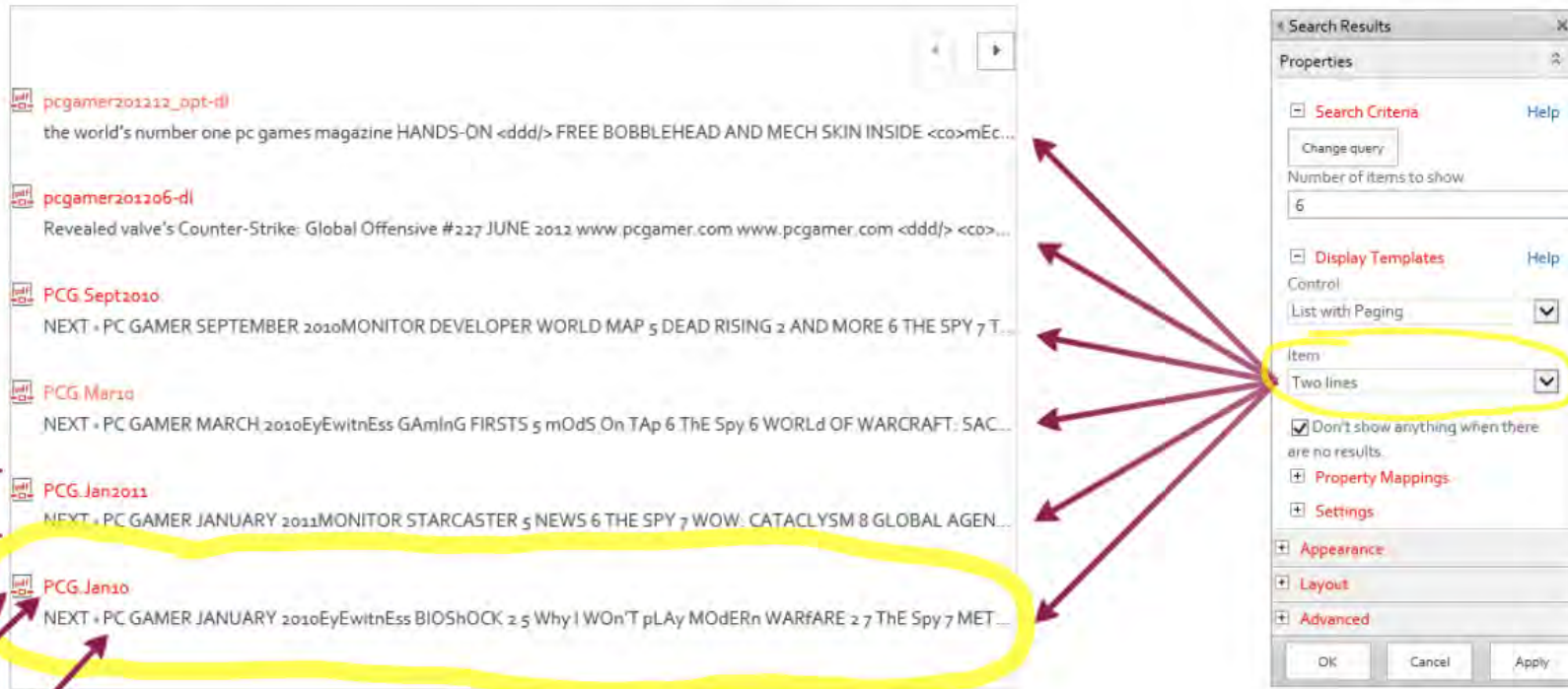
Consider this CSWP and the selected display templates



The Control template covers the display of the surrounding region



An Item template controls each result that appears in the Control



Looking more closely at the template

The image shows a search results window on the left and a configuration dialog box overlaid on it. The search results window has a 'Search Results' title bar, a 'Properties' section, and a 'Search Criteria' section with a 'Change query' button and a 'Number of items to show' dropdown set to '6'. The configuration dialog box has a 'Diagnostic' section with a list of templates: 'Large picture', 'Picture on left, 3 lines on right', 'Picture on top, 3 lines on bottom', 'Recommended Items: Picture on left, 3 lines on right', 'Swiss Army Item Template', 'Two lines' (highlighted in blue), and 'Video'. Below this is a 'Property Mappings' section with a checked checkbox 'Change the mapping of managed properties for the fields in the Item Display Template'. There are three dropdown menus for 'Link URL' (set to 'Path'), 'Line 1' (set to 'Title'), and 'Line 2' (set to 'HitHighlightedSummary'). At the bottom are 'Settings', 'Appearance', 'Layout', and 'Advanced' sections, and 'OK', 'Cancel', and 'Apply' buttons.

The image shows a list of search results. The first three items are 'PCG.Sept2010', 'PCG.Mar10', and 'PCG.Jan2011'. The fourth item, 'PCG.Jan10', is highlighted with a yellow oval. Arrows from the right point to the 'PCG.Jan10' item and the 'Two lines' template in the configuration dialog.

PCG.Sept2010
NEXT » PC GAMER SEPTEMBER 2010 MONITOR DEVELOPER WORLD MAP 5 DEAD RISING 2 AND MORE 6 THE SPY 7 T...

PCG.Mar10
NEXT » PC GAMER MARCH 2010 Eyewitness GAMING FIRSTS 5 mOds On Tap 6 The Spy 6 WORLD OF WARCRAFT; SAC...

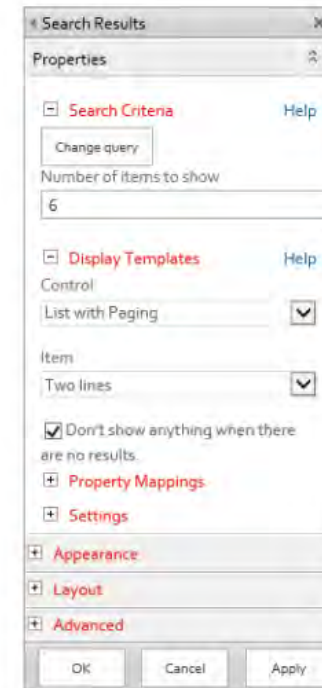
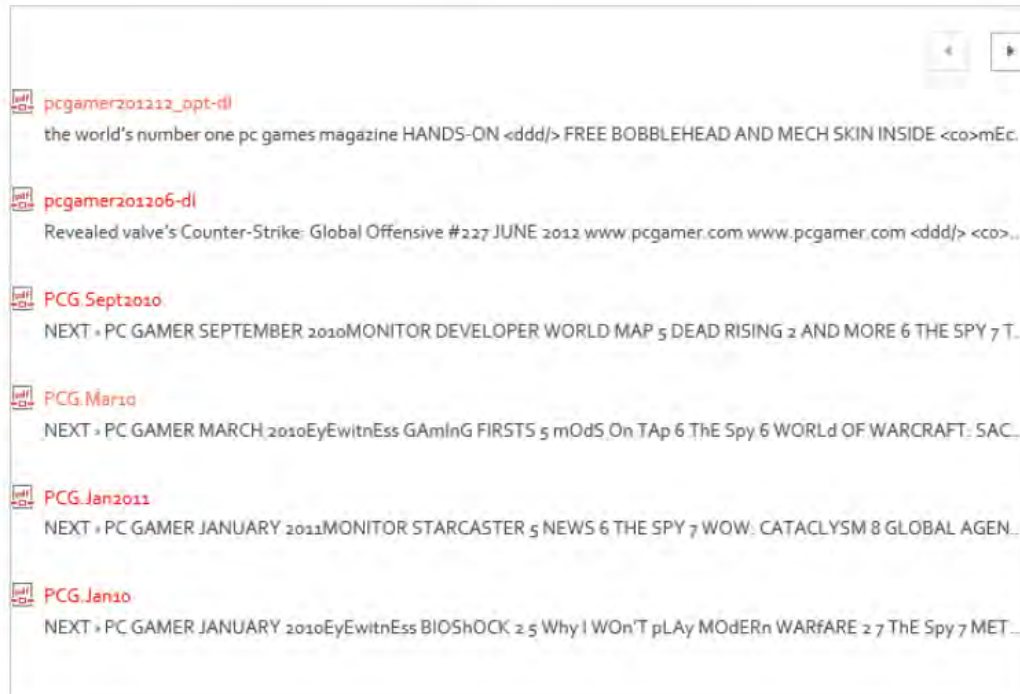
PCG.Jan2011
NEXT » PC GAMER JANUARY 2011 MONITOR STARCASTER 5 NEWS 6 THE SPY 7 WOW: CATAclysm 8 GLOBAL AGEN...

PCG.Jan10
NEXT » PC GAMER JANUARY 2010 Eyewitness BIOSHOCK 2 5 Why I WO'n'T PLAy MODERn WARfARE 2 7 The Spy 7 MET...

Looking more closely at the template and Property Mappings assignments:

- Several control and item templates are available OOTB.
- Property Mappings identify "which" Search property goes "where" for display

Consider this CSWP and the selected display templates



the world very different

Display Templates Can Be Edited ...



But first we need to acknowledge

• • • • •

Display templates can be edited ...

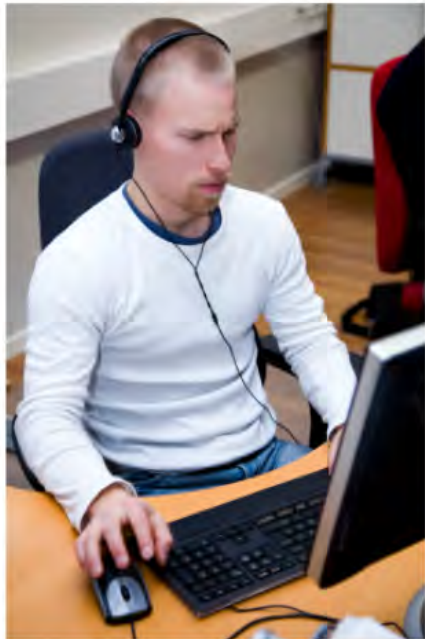


But first we need to acknowledge
some important differences

To play to stereotypes

These two types of individuals tend to see the world very differently

Display Templates Can Be Edited ...



But first we need to acknowledge some important differences



To play to stereotypes



Display Templates Can Be Edited ...



But first we need to acknowledge some important differences



To play to stereotypes

Devs

Designers



With SharePoint's

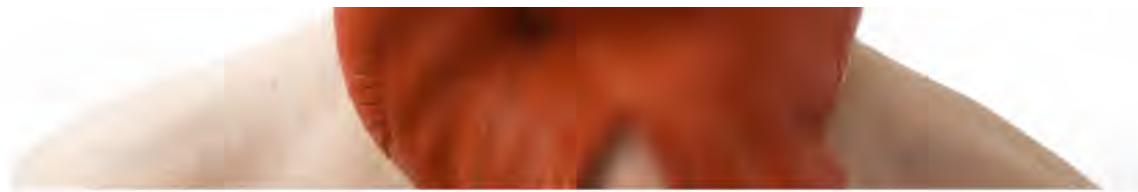


Prior to display templates, you didn't stand a chance if you were a designer



You needed to know XSL,

```
<?xml version="1.0" encoding="UTF-8"?>  
<xsl:stylesheet version="1.0" xmlns="http://www.w3.org/1999/xhtml"  
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xmlns:html="http://www.w3.org/1999/xhtml"  
>xsl:output method="xml" indent="no" encoding="UTF-8"
```



You needed to know XSL, how to handle ASP.NET tags and markup, and other "non-designer" technical details



```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns="http://www.w3.org/1999/xhtml"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xmlns:html="http://www.w3.org/1999/xhtml"
  <xsl:output method="xml" indent="no" encoding="UTF-8"
    omit-xml-declaration="yes" />

<xsl:param name="currentPage" />
<xsl:template match="/">
  <xsl:variable name="recordsPerPage" select="5" />
  <xsl:variable name="pageNumber">
    <xsl:choose>
      <!-- first page -->
      <xsl:when test="$currentPage <= 0 or $currentPage >= 10" />
      <!-- what was passed in -->
      <xsl:otherwise>
        <xsl:value-of select="$currentPage" />
      </xsl:otherwise>
    </xsl:choose>
  </xsl:variable>
  <xsl:variable name="numberOfRecords" select="count(/group/*)"/>

  <!-- The fun starts here -->

  <xsl:call-template name="pagination">
    <xsl:with-param name="pageNumber" select="$pageNumber" />
    <xsl:with-param name="recordsPerPage" select="$recordsPerPage" />
    <xsl:with-param name="numberOfRecords" select="$numberOfRecords" />
  </xsl:call-template>

  <ul class="listing self-clear">
    <xsl:for-each select="//item">
      <xsl:if
        test="position() > $recordsPerPage * $pageNumber" />
      <li>
        <xsl:attribute name="class">
```




Designers



With SharePoint's Design Manager, designers have a fighting chance



Design Manager: Welcome

1. **Welcome**
2. Manage Device Channels
3. Upload Design Files
4. Edit Master Pages
5. Edit Display Templates
6. Edit Page Layouts
7. Publish and Apply Design
8. Create Design Package

The Design Manager helps you create your own site design in SharePoint. [Learn how SharePoint sites work](#)

If you aren't creating your own design, you may instead want to choose from one of the following options:

- [Import a complete design package](#)
- [Pick a pre-installed look](#)

Otherwise, go ahead to the next step of the Design Manager. [Get an overview](#)

The Design Manager crunches HTML input

7. Publish and Apply Design
8. Create Design Package

Otherwise, go ahead to the next step of the Design Manager. [Get an overview](#)

The Design Manager crunches HTML input

```
<div class="sas-tablecell" id="_#= containerId =#" data-displaytemplate="SAS_Item_Template">  
  <div id="_#= dataContainerId =#">  
    <a href="_#= linkURL =#" title="_#= $htmlEncode(displayText.defaultRenderer(displayText)) =#" id="_#= displayText">  
  </div>  
</div>  
</div>  
</body>  
</html>
```

Design Manager: Edit Display Templates

Search results and other search-related web parts rely on display templates to control the appearance and behavior of search results. The best way to create new display templates is to copy an existing one that's similar to what you want and then change your using any HTML editor. [Learn more](#)

Icon	Name	Status	Control Type	Target Control Type (General)	Block Template	Approval Status
	Blank Control	Control_Blank	Control Display Template		No	Approved
	Default Catalog Result	Control_CatalogDefault	Control Display Template	Content Web Parts	Yes	Approved
	Tabular Exchange results	Control_ExchangeResult	Control Display Template	Content Web Parts	Yes	Approved
	Tabular SharePoint results	Control_SharePointResult	Control Display Template	Content Web Parts	Yes	Approved
	List	Control_List	Control Display Template	Content Web Parts	No	Approved
	List with Paging	Control_ListWithPaging	Control Display Template	Content Web Parts	No	Approved
	Query Builder - Preview Control	Control_QueryBuilderPreview	Control Display Template		No	Approved
	Query Builder - Refinement Control	Control_QueryBuilderRefinement	Control Display Template		No	Approved
	Recommended Items Result	Control_Recommendations	Control Display Template	Content Web Parts	Yes	Approved
	Vertical	Control_Refinement	Control	Refinement	No	Approved

... and spits out a converted layout

```
linkURL=#_&title=#_&htmlEncode(displayText.defaultRenderer(displayText))=#_&id=#_&displayText
```

Design Manager: Edit Display Templates

- 1. Welcome
- 2. Manage Template Packages
- 3. Upload Design Files
- 4. Edit Master Pages
- 5. **Edit Display Templates**
- 6. Edit Page Layouts
- 7. Publish and Apply Design
- 8. Create Design Package

Search controls and other search-related web controls on display templates to control the appearance and behavior of search results. The best way to create a new display template is to copy an existing one that's similar to what you want and then change your design using any HTML editor. [Learn more](#)

Control Name	Control Type	Control ID	Control Name	Control Type	Control Name	Control Type	Control Name
Blank Control	Control	Blank	Control	Display Template	Control	Web Parts	Approved
Global Catalog Result	Control	GlobalCatalogResult	Control	Display Template	Control	Web Parts	Approved
Table: Exchange result	Control	TableExchangeResult	Control	Display Template	Control	Web Parts	Approved
Table: SharePoint results	Control	TableSharePointResults	Control	Display Template	Control	Web Parts	Approved
List	Control	List	Control	Display Template	Control	Web Parts	Approved
List with Paging	Control	ListWithPaging	Control	Display Template	Control	Web Parts	Approved
Query Builder (Preview Control)	Control	QueryBuilderPreview	Control	Display Template	Control	Web Parts	Approved
Query Builder Refinement Control	Control	QueryBuilderRefinement	Control	Display Template	Control	Web Parts	Approved
Recommended Items Result	Control	RecommendedItemsResult	Control	Display Template	Control	Web Parts	Approved
Vertical	Control	Vertical	Control	Display Template	Control	Web Parts	Approved



... and spits out a converted Javascript display template that is ready for use

For example

from this



to this

```
<html xmlns:mso="urn:schemas-microsoft-com:office:office" xmlns:msdt="uuid:C2F41010-65B3-11d1-A29F-00AA00C14882">
<head>
<title>Swiss Army Item Template</title>
<!--[if gte mso 9]><xml>
<mso:CustomDocumentProperties>
<mso:TemplateHidden msdt:dt="string">0</mso:TemplateHidden>
<mso:ManagedPropertyMapping msdt:dt="string">
  'Link URL'(Link URL):'Path',
  'Display Text'(Display Text):'Title',
  'FileExtension',
  'SecondaryFileExtension'
</mso:ManagedPropertyMapping>
<mso:MasterPageDescription msdt:dt="string">This display template controls an individual item in the full page of results.</mso:MasterPageDescription>
<mso:ContentTypeId msdt:dt="string">0x0101002039C038E1C64EC4A04F5361F385106603</mso:ContentTypeId>
<mso:TargetControlType msdt:dt="string">#Content Web Parts;</mso:TargetControlType>
<mso:HtmlDesignAssociated msdt:dt="string">1</mso:HtmlDesignAssociated>
</mso:CustomDocumentProperties>
</xml><![endif]>-->
</head>
<body>
<!--
Warning: Do not try to add HTML to this section. Only the contents of the first <div>
inside the <body> tag will be used while executing Display Template code. Any HTML that
you add to this section will NOT become part of your Display Template.
-->
<script>
$includeLanguageScript(this.url, "--sitecollection_catalogs/masterpage/Display Templates/Language Files/(Locale)/CustomStrings.js");
```

```
/* This file is currently associated to an HTML file of the same name and is drawing content from it. Until the files are disassociated, you will not be able to move, delete,
rename, or make any other changes to this file. */

function DisplayTemplate_2aa45a743fd94e75a3e53c940628e2ec(ctx) {
  var ms_outHtml=[];
  var cachePreviousTemplateData = ctx['DisplayTemplateData'];
  ctx['DisplayTemplateData'] = new Object();
  DisplayTemplate_2aa45a743fd94e75a3e53c940628e2ec.DisplayTemplateData = ctx['DisplayTemplateData'];

  ctx['DisplayTemplateData']['TemplateUrl']='-sitecollection\u002f_catalogs\u002fmasterpage\u002fDisplay Templates\u002fContent Web Parts\u002fSwissArmy_Control_Template.js';
  ctx['DisplayTemplateData']['TemplateType']='Control';
  ctx['DisplayTemplateData']['TargetControlType']='Content Web Parts';
  this.DisplayTemplateData = ctx['DisplayTemplateData'];

  ms_outHtml.push('','
','
');
  if (!isNull(ctx.ClientControl) &&
  !isNull(ctx.ClientControl.shouldRenderControl) &&
  !ctx.ClientControl.shouldRenderControl())
  {
    return '';
  }
  ctx.ListDataJSONGroupsKey = "ResultTables";
  var $acResults = Srch.ContentBySearch.getControlTemplateEncodedNoResultsMessage(ctx.ClientControl);

  var isRollupPageInEditMode = Srch.ContentBySearch.isRollupPage(ctx.ClientControl) && !Srch.U.isPageInEditMode();
  var noResultsClassName = isRollupPageInEditMode ? "ms-attraccMode ms-upperCase ms-alignCenter" : "ms-srch-result-noResults";

  var ListRenderRenderWrapper = function(itemRenderResult, inCtx, tpl)
```

```
<html xmlns:mso="urn:schemas-microsoft-com:office:office" xmlns:msdt="uid:C2F41010-65B3-11d1-A29F-00AA00C14882">
<head>
<title>Swiss Army Item Template</title>

<!--[if gte mso 9]><xml>
<mso:CustomDocumentProperties>
<mso:TemplateHidden msdt:dt="string">0</mso:TemplateHidden>
<mso:ManagedPropertyMapping msdt:dt="string">
  'Link URL'(Link URL):'Path',
  'Display Text'(Display Text):'Title',
  'FileExtension',
  'SecondaryFileExtension'
</mso:ManagedPropertyMapping>
<mso:MasterPageDescription msdt:dt="string">This display template controls an individual item in the full page of results.</mso:MasterPageDescription>
<mso:ContentTypeId msdt:dt="string">0x0101002039C03B61C64EC4A04F5361F385106603</mso:ContentTypeId>
<mso:TargetControlType msdt:dt="string">#Content Web Parts:</mso:TargetControlType>
<mso:HtmlDesignAssociated msdt:dt="string">1</mso:HtmlDesignAssociated>
</mso:CustomDocumentProperties>
</xml><![endif]-->
</head>

<body>

<!--
Warning: Do not try to add HTML to this section. Only the contents of the first <div>
inside the <body> tag will be used while executing Display Template code. Any HTML that
you add to this section will NOT become part of your Display Template.
-->
<script>
$includeLanguageScript(this.url, "~sitecollection/catalogs/masterpage/Display Templates/Language Files/Localize/CustomStrings.js");
</script>
</body>
</html>
```

```
/* This file is currently associated to an HTML file of the same name and is drawing content from it. Until the files are disassociated, you will not be able to move, delete,
rename, or make any other changes to this file. */

function DisplayTemplate_2aa45a743fd94e75a3e53c940628e2ec(ctx) {
  var ms_outHtml=[];
  var cachePreviousTemplateData = ctx['DisplayTemplateData'];
  ctx['DisplayTemplateData'] = new Object();
  DisplayTemplate_2aa45a743fd94e75a3e53c940628e2ec.DisplayTemplateData = ctx['DisplayTemplateData'];

  ctx['DisplayTemplateData']['TemplateUrl'] = "~sitecollection/catalogs/masterpage/0002fdisplay templates/0002fcontent web parts/0002fswissarmy_control_template.js";
  ctx['DisplayTemplateData']['TemplateType'] = 'Control';
  ctx['DisplayTemplateData']['TargetControlType'] = '#Content Web Parts';
  this.DisplayTemplateData = ctx['DisplayTemplateData'];

  ms_outHtml.push('');
};
if (!isNull(ctx.ClientControl) &&
!isNull(ctx.ClientControl.shouldRenderControl) &&
!ctx.ClientControl.shouldRenderControl())
{
  return "";
}
ctx.ListData.JSONGroupsKey = "ResultTables";
var $noResults = $rch.ContentBySearch.getControlTemplateEncodedNoResultsMessage(ctx.ClientControl);

var $isRollupPageInEditMode = $rch.ContentBySearch.isRollupPage(ctx.ClientControl) && !$rch.U.isPageInEditMode();
var $noResultsClassName = $isRollupPageInEditMode ? "ms-ctrlraoMode ms-uppzoase ms-alignCenter" : "ms-ctrlraoMode-noResults";

var ListRenderRenderWrapper = function(itemRenderResult, inCtx, tpl)
```

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Worth mentioning: display templates
and related files can be packaged for
deployment

DEMO





**Yes, this is a real knife.
Look up "Wenger
16999 Swiss Army
Knife" on Amazon!**

Sum-Up:

- The CSWP is your friend
- Usable by novices and experts alike
- Uses Search to serve content quickly
- Available on-prem and in the cloud

Query variables in SharePoint Server 2013

<http://technet.microsoft.com/en-us/library/jj683123>

Resources

Search Driven Publishing Features Are Now Available in SharePoint Online

http://community.office365.com/en-us/b/office_365_community_blog/archive/2013/10/30/search-driven-publishing-features-are-now-available-in-sharepoint-online.aspx

Configure Search Web Parts in SharePoint Server 2013

[http://technet.microsoft.com/en-us/library/jj679900\(v=office.15\).aspx](http://technet.microsoft.com/en-us/library/jj679900(v=office.15).aspx)

SharePoint Content Query Web Part vs Content Search Web Part in SharePoint On-Premises vs SharePoint Online Environments

<http://nikpatel.net/2014/02/28/content-query-web-part-vs-content-by-search-web-part/>



Sum It Up.

Resources

Using the Content Search Web Part (and Understanding SP2013 Search)

<http://www.sharepointnutsandbolts.com/2012/10/using-content-search-web-part-and.html>

SharePoint Online Service Description

<http://technet.microsoft.com/en-US/library/jj819267.aspx>

SharePoint 2013 Content Search Web Part vs Search Results (video)

http://www.youtube.com/watch?v=RkhCYZm_ljo

Query variables in SharePoint Server 2013

<http://technet.microsoft.com/en-us/library/jj683123>

Resources

About: <http://about.me/spmcdonough>

Resources

Advanced Paging with SharePoint Content Search Web Part Display Templates

<http://sharepointinterface.com/2015/05/03/advanced-paging-with-sharepoint-content-search-web-part-display-templates/>



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Resources