Personalizing Google Analytics

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Personalizing Google Analytics Using Events and Custom Variables

Josh Wilson
State Library of North Carolina
What you’re about to sit through

- GA reports are ready to be customized!
- What are Custom Variables? What are Events?
  - Definitions & Differences
- Examples
  - Tracking metadata values in CONTENTdm
  - Tracking specific content usage in Drupal
- Basics of implementation
  - Classic vs. Universal
And there’s more still, wow huh? (2)

- Advanced implementation
  - GA under the hood
  - Gotchas
  - Script timing issues
  - Diagnosing problems
Also, there will be some sparkly rainbows in this presentation.
Events and Custom Variables

● Out of the box, GA gives you all kinds of general data:
  ○ **Audience (WHO):** visits, technology, location
  ○ **Acquisition (HOW):** search, referral, direct
  ○ **Behavior (WHAT):** pageviews, landing/exit pages

...with room to make customizations.
E-commerce stuff

Where are visitors from?

New vs returning, visit length

Browser & network

Devices
E-commerce stuff

Where are visitors from?

New vs returning, visit length

Browser & network

Devices

Custom data!
Custom **variables** help define the audience

**Events** help clarify their behavior
Events and Custom Variables

- Record personalized data about your site’s usage
- Custom Variables:
  - In Universal Analytics, these are replaced by Custom Dimensions
  - Additional data about **WHO’S DOING THE STUFF** on your site
  - Conceptually like a custom segment
  - e.g., users not logged in, people with items in their shopping cart
- Events:
  - **STUFF THAT’S HAPPENING** on your site beyond basic pageviews
  - e.g., download, facet click, video play
## Which to use?

- **Depends on what you want to know!**

<table>
<thead>
<tr>
<th>If you want to know more about the <strong>people</strong> using your site, like…</th>
</tr>
</thead>
<tbody>
<tr>
<td>…which visitors are logged in</td>
</tr>
<tr>
<td>…which visitors have site badges</td>
</tr>
<tr>
<td>…which visitors have tried the site search</td>
</tr>
<tr>
<td>…you probably want to use <strong>CUSTOM VARIABLES</strong> (aka <strong>CUSTOM DIMENSIONS</strong>)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If you want to know more about <strong>things that happen</strong> on the site, like…</th>
</tr>
</thead>
<tbody>
<tr>
<td>…how many times X happens</td>
</tr>
<tr>
<td>…how often users click feature Y</td>
</tr>
<tr>
<td>…what the value of some element Z is on each page as users browse</td>
</tr>
<tr>
<td>…then you probably want to use <strong>EVENTS</strong></td>
</tr>
</tbody>
</table>
Examples!

- Events in CONTENTdm
  - Built-in
  - Custom

- Variables in Drupal
  - Google Analytics module
OCLC offers a default Google Analytics tool.

Works with Universal Analytics.

Enable in Website Config Tool.
Events - example from CONTENTdm

OCLC’s default analytics provides detailed events relevant to how visitors use CONTENTdm

Categories cover a lot!

You can drill down for details
Events - example from CONTENTdm

Drilling down into the Facets Category for relevant Actions
Events - example from CONTENTdm

Drill down into the Actions for Labels:

<table>
<thead>
<tr>
<th>Event Label</th>
<th>Total Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>409</td>
</tr>
<tr>
<td>Time Period</td>
<td>400</td>
</tr>
<tr>
<td>Subject</td>
<td>237</td>
</tr>
<tr>
<td>Format</td>
<td>174</td>
</tr>
<tr>
<td>Format-Medium</td>
<td>166</td>
</tr>
<tr>
<td>Coverage-Spatial</td>
<td>105</td>
</tr>
<tr>
<td>Coverage-Temporal</td>
<td>90</td>
</tr>
<tr>
<td>Creator</td>
<td>63</td>
</tr>
<tr>
<td>Publisher</td>
<td>26</td>
</tr>
<tr>
<td>Project Subject</td>
<td>20</td>
</tr>
</tbody>
</table>

The facets that were Toggled or Clicked are recorded here.
Events - custom example from SLNC

At the State Library of North Carolina, we wanted to record data from certain metadata fields in CONTENTdm.
Specifically, we wanted to be able to report how often each state agency’s documents were being used.
Events - example from SLNC

- Custom GA script developed:
  - For use in CONTENTdm
  - Locates field names of interest
  - Whenever a value is set, record it!
  - Generate GA event with the value

https://github.com/joshwilsonnc/ga_cdm
...now we have this data and can report it to state agencies.

<table>
<thead>
<tr>
<th>Event Action</th>
<th>Total Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. North Carolina Department of Cultural Resources</td>
<td>3,578</td>
</tr>
<tr>
<td>2. North Carolina Office of Archives and History, Department of Cultural Resources</td>
<td>1,866</td>
</tr>
<tr>
<td>3. North Carolina Office of Archives and History, Department of Cultural Resources</td>
<td>1,860</td>
</tr>
<tr>
<td>4. North Carolina General Assembly</td>
<td>813</td>
</tr>
<tr>
<td>5. North Carolina Department of Environment and Natural Resources</td>
<td>497</td>
</tr>
<tr>
<td>6. North Carolina Department of Health and Human Services</td>
<td>489</td>
</tr>
<tr>
<td>7. North Carolina Department of Public Instruction</td>
<td>474</td>
</tr>
<tr>
<td>8. North Carolina Department of Transportation</td>
<td>453</td>
</tr>
<tr>
<td>9. North Carolina Department of Commerce</td>
<td>368</td>
</tr>
</tbody>
</table>
Google Analytics module makes it easy to add custom variables within the administration GUI. You can also add custom snippets (say, for Events) easily, as you would add any custom JS.
In NCpedia, we are tracking usage by original source.
Implementation!

- Your CMS may do it for you (as we’ve seen)
  - Built-in or with a plugin/module/add-on/gizmo
- THE CODE
- Where it fits into the GA snippet
- How to decide on labeling
- Notes
- Gotchas
Code: the GA snippet

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

(function() { var ga = document.createElement('script'); ga.type = 'text/javascript'; ga.async = true; ga.src = ('https:' == document.location.protocol ? 'https://ssl' : 'http://www') + '.google-analytics.com/ga.js'; var s = document.getElementsByTagName('script')[0]; s.parentNode.insertBefore(ga, s); })();
```

Universal Analytics snippet (analytics.js):

```javascript
(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
})(window,document,'script','//www.google-analytics.com/analytics.js','ga');

ga('create', 'UA-XXXX-Y', 'auto');

ga('send', 'pageview');
```
Code: Events (variables are similar)

Add this line to your tracking code:

```c
_trackEvent(category, action, opt_label, opt_value, opt_noninteraction);
```

Universal Analytics syntax:

```c
ga('send', 'event', 'category', 'action', 'opt_label', opt_value, opt_fields);
```
Track a Category and Action:
    _trackEvent('Videos', 'Play');

Add a label:
    _trackEvent('Videos', 'Play', 'Amazing Cat Video');

Additional fields available:
    _trackEvent('Videos', 'Play', 'Amazing Cat Video', viewTime);
    _trackEvent('Videos', 'Play', 'Amazing Cat Video', viewTime, true);
Events - organizing data

Category 1
  Action 1
  Label
  Action 2
Category 2
  Action 1
  ...
  ...

Videos
  Play
  Amazing Cat Video
  Download
Polls
  Submission
  ...
  ...
  ...
Events - organizing data

Category 1
  Action 1
    Label
  Action 2
Category 2
  Action 1

Broad bin
  Thing that happens
    Specific details
  Another thing
  Another bin
    Different thing

Implementation considerations

- Extra JS: usually some sort of trigger code is required
- Changing a category/action/label?
  - Surprise! It’s now a new event
  - Need to balance clarity with consistency
- Test to make sure it’s actually recording
  - Look at real-time
  - Use an HTTP watching tool (e.g., HTTPFox)
  - Or just wait a day
● TIMING IS EVERYTHING
  ○ Event can’t fire if GA isn’t loaded
  ○ Can’t record page element value if it’s not loaded
  ○ Custom variables must be set BEFORE _trackPageView
  ○ Tracking a download or link-click Event?
    ■ You may need to include a short JS timeout to record the event before proceeding
Gotchas

- Yes, you have to check IE8

- Multiple domains or subdomains?
  - GA code requires some extra switches
Questions?

Now, or: josh.wilson@ncdcr.gov

Code:
https://github.com/joshwilsonnc/ga_cdm
Extras: if there’s time...
Background: How does GA record data?

1. When a page loads, a script on the page requests a 1x1 GIF from GA servers...

   ![Firefox NCpedia](image)

   

   http://www.google-analytics.com/collect?
   v=1&_v=j15&a=663574665&t=pageview&_s=1&dl=http%3A%2F%2Flocalhost%2FGa%2F&u=en-us&de=UTF-8&dt=GA%20testing&sd=24-bit&sr=1920x1200&vp=1920x510&je=1&fl=11.9%20r900&_utma=111872281.230098139.1387306295.1387306295.1387306295.1&_utmz=111872281.1387306295.1.1.utmcsr=(direct)|7Cutmccn%3D(direct)|7Cutmcmd%3D(none)&_utmht=1387306844444&u=MACCAE~&cid=230098139.1387306295&tid=UA-2-2&z=1393673858

2. ...only the request is loaded with a bunch of data about the requesting page (and user, from cookie data...)

   (This is a trick that’s been around since the late ‘90s. Eric Peterson’s Web Site Measurement Hacks has some details.)

3. GA servers parse the request and generate reports for your amusement
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

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```

Universal Analytics snippet (analytics.js):

```javascript
(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
})(window,document,'script','//www.google-analytics.com/analytics.js','ga');

ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
```
Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);
//Library
```

Universal Analytics:

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
//Library
```
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

//Library
```

Creating tracking object & setting account info

Universal Analytics:

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');

//Library
```
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);
//Library
```

Universal Analytics:

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
//Library
```

Actual sending of data to Google
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
/**** MAGIC ! *****/
_gaq.push(['_trackPageview']);
//Library
```

Universal Analytics:

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
/**** MAGIC ! *****/
ga('send', 'pageview');
//Library
```

WHERE MAGIC HAPPENS!
Customizing!

You can also:

- Enhance how your data gets recorded
  - Send extra information
  - Record additional data as it happens
- See what is sent to Google
- Break stuff and fix it

(For best results: users need to have JavaScript and cookies enabled. And they have to work. And the page has to load quickly. And etc etc)