# Topic 3 : Web Analytics for Site Optimization

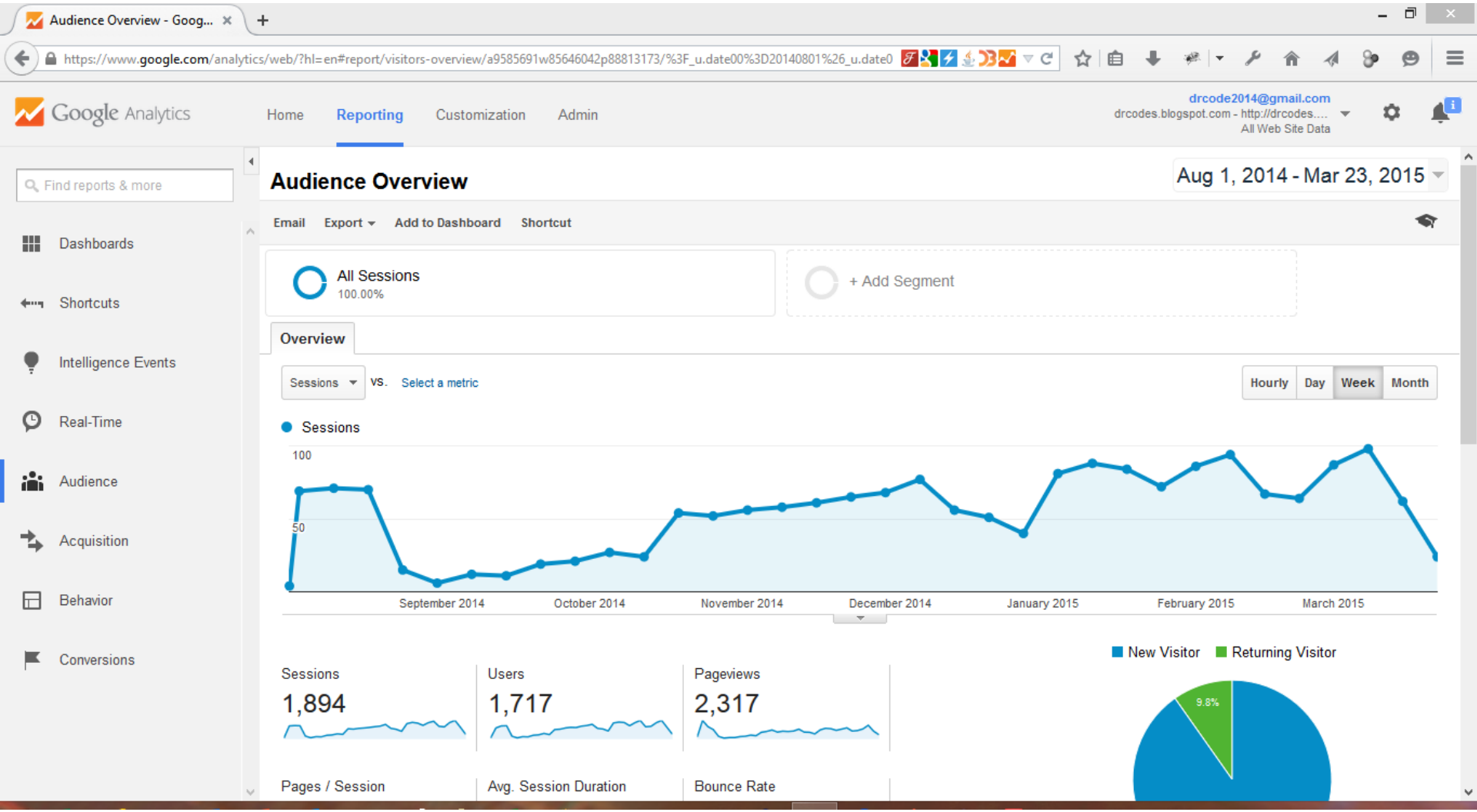
ST2228 WEB AND MOBILE ANALYTICS

# Learning Objectives

- Describe Segmentation of Data
- Explain Visitor Value over Time
- Interpret Results from Visitor Activity Analysis
- Interpret the Results from Navigation and Site Analysis
- Apply Content Analysis
- Apply Conversion Optimization
- Content Experiments
- Voice of Customer

# Major groupings of Google Analytics reports

- AUDIENCE
- ACQUISITION
- BEHAVIOR
- CONVERSIONS


Audience Overview - Goog...
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Google Analytics
Home
Reporting
Customization
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All Web Site Data
Find reports & more
Dashboards
Shortcuts
Intelligence Events
Real-Time
Audience
Acquisition
Behavior
Conversions
Audience Overview
Aug 1, 2014 - Mar 23, 2015
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Add to Dashboard
Shortcut
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+ Add Segment
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vs.
Select a metric
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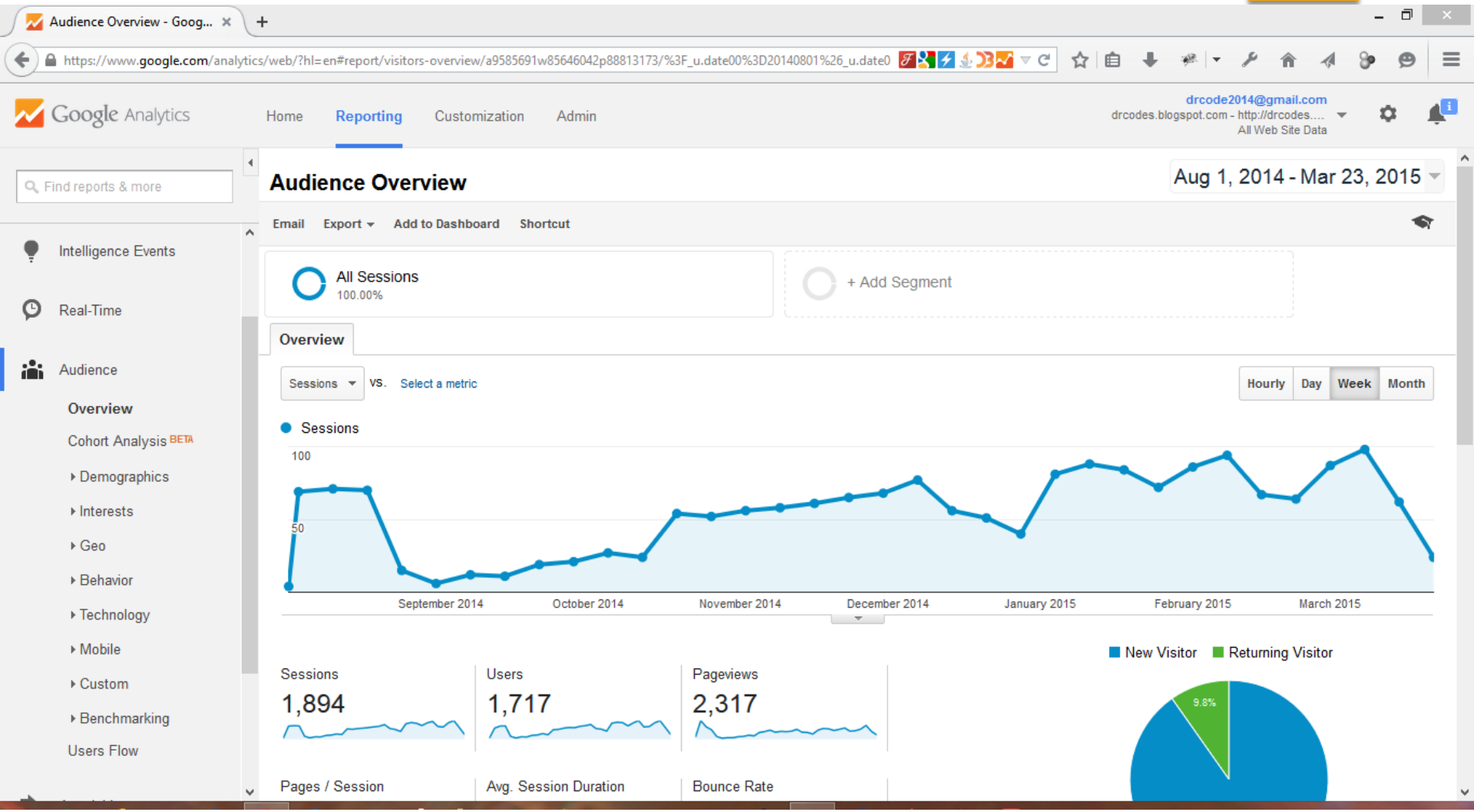
Sessions
100
50
September 2014
October 2014
November 2014
December 2014
January 2015
February 2015
March 2015
Sessions
1,894
Users
1,717
Pageviews
2,317
New Visitor
Returning Visitor
9.8%
Pages / Session
Avg. Session Duration
Bounce Rate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Week
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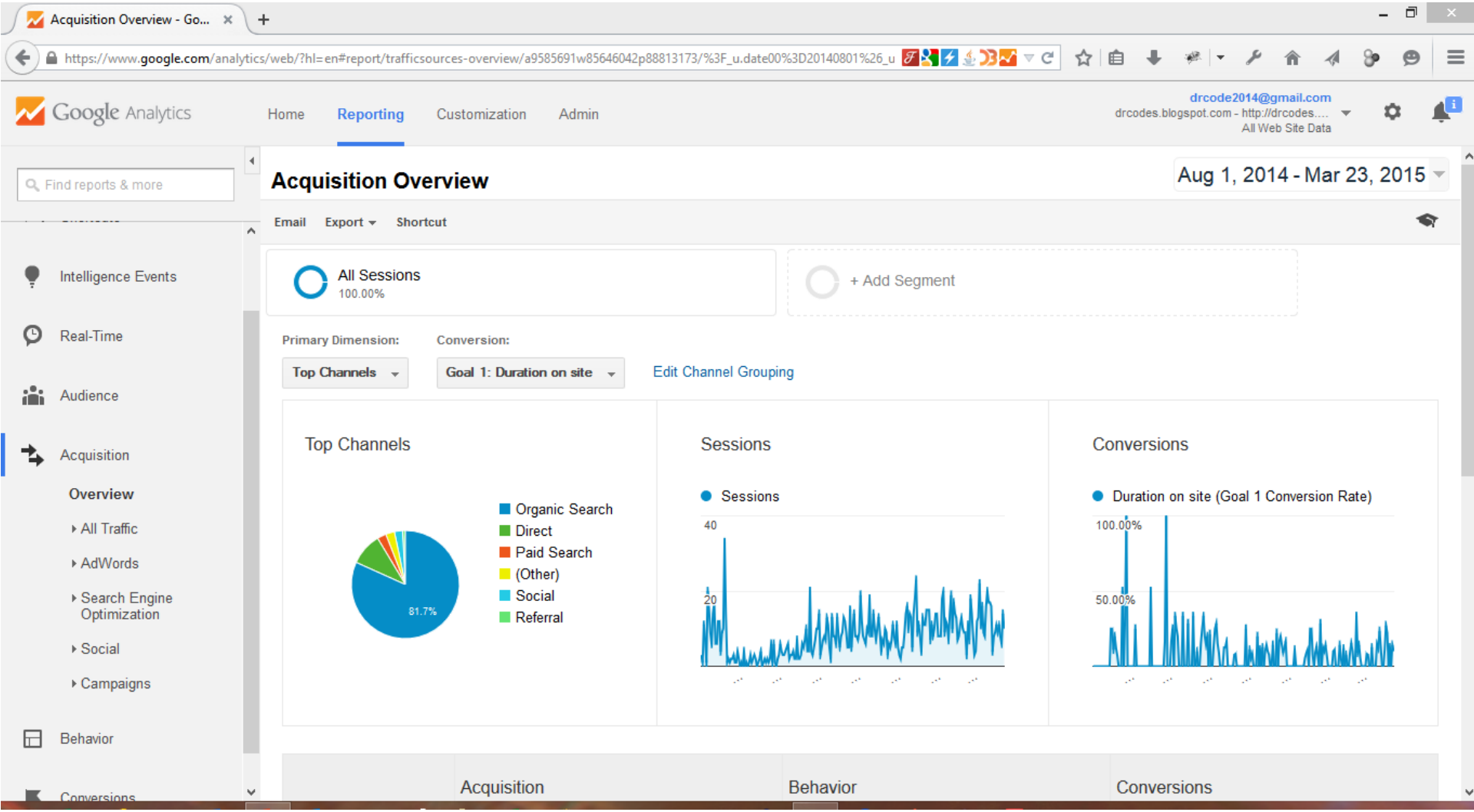
Acquisition Overview - Go...
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Google Analytics
Home
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Customization
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All Web Site Data
Find reports & more
Acquisition Overview
Aug 1, 2014 - Mar 23, 2015
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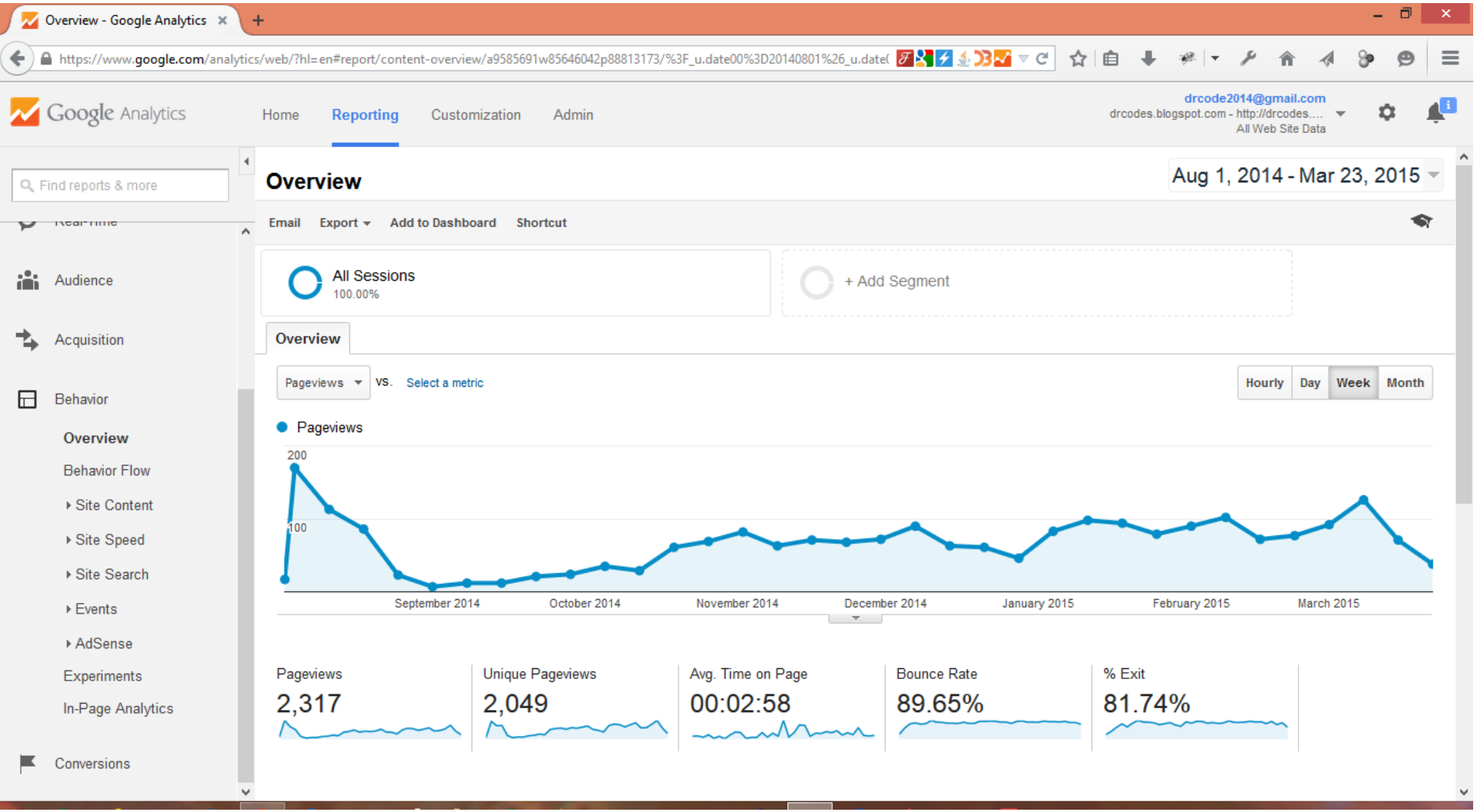
Shortcut
Intelligence Events
Real-Time
Audience
Acquisition
Overview
All Traffic
AdWords
Search Engine Optimization
Social
Campaigns
Behavior
Conversions
All Sessions
100.00%
+ Add Segment
Primary Dimension:
Top Channels
Conversion:
Goal 1: Duration on site
Edit Channel Grouping
Top Channels
81.7%
Organic Search
Direct
Paid Search
(Other)
Social
Referral
Sessions
Sessions
40
20
Conversions
Duration on site (Goal 1 Conversion Rate)
100.00%
50.00%
Acquisition
Behavior
Conversions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Site Content
Site Speed
Site Search
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AdSense
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Overview
Aug 1, 2014 - Mar 23, 2015
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All Sessions
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Overview
Pageviews
vs.
Select a metric
Hourly
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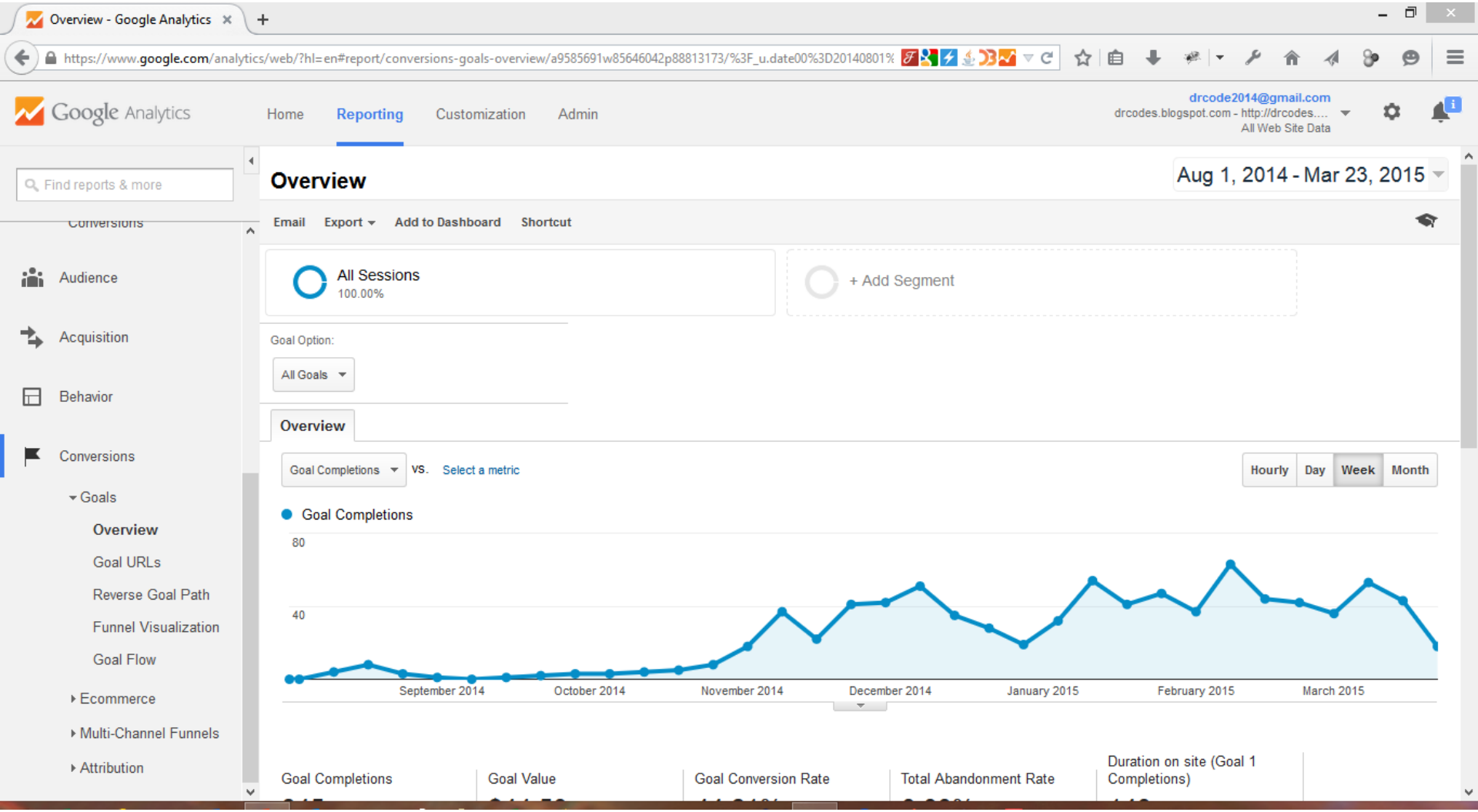
Month
Pageviews
200
100
September 2014
October 2014
November 2014
December 2014
January 2015
February 2015
March 2015
Pageviews
2,317
Unique Pageviews
2,049
Avg. Time on Page
00:02:58
Bounce Rate
89.65%
% Exit
81.74%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Acquisition
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Conversions
Goals
Overview
Goal URLs
Reverse Goal Path
Funnel Visualization
Goal Flow
Ecommerce
Multi-Channel Funnels
Attribution
Overview
Aug 1, 2014 - Mar 23, 2015
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Add to Dashboard
Shortcut
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100.00%
+ Add Segment
Goal Option:
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Goal Completions
vs.
Select a metric
Hourly
Day
Week
Month
Goal Completions
80
40
September 2014
October 2014
November 2014
December 2014
January 2015
February 2015
March 2015
Goal Completions
Goal Value
Goal Conversion Rate
Total Abandonment Rate
Duration on site (Goal 1 Completions)

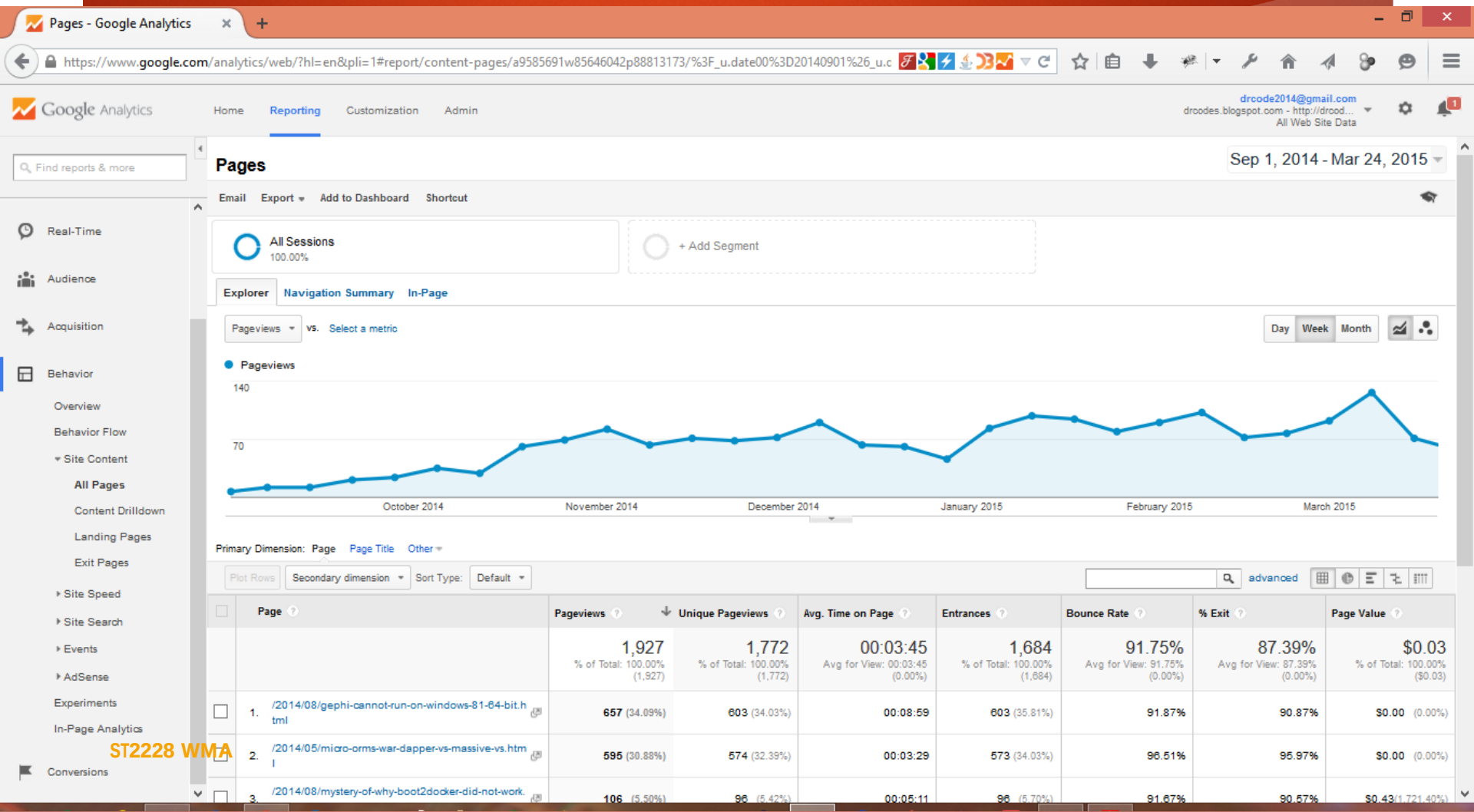
# Content Analysis

ANALYSING HOW PEOPLE USE YOUR CONTENT

# Content analysis

- Content analysis will tell you where users go on your website and how long they stay there, what pages people enter your website on and from which pages they exit your website, and how they move from page to page.

# All pages report —
## the goto place for content analysis



# Why Content Analysis?

- Content Analysis will give you insights into how users interact with the pages on your website.
  - Where do your visitors go?
  - How long do they stay there?
  - What pages people enter your website on?
  - From which pages do they exit your website?

# Why Content Analysis?

- It can confirm your assumptions, and enables you to see how changes to your website affect users' behavior.
- The **Behavior Reports** in Google provide a practical framework for digging into metrics such as
  - Bounce rate,
  - Time on page,
  - Pageviews, etc.

# Purpose

- The main purpose of content analysis is to look for potential problem areas that you can probe through other means, such as heuristic evaluation and usability testing, as well as measuring the effectiveness of design changes.

# What to look for in page usage metrics

- When looking at page usage metrics, look for these patterns:
  - The highest values for a metric.
  - The lowest values for a metric.
  - Pages that have metrics that deviate from the average value.

# High pageviews

- A page may get many pageviews because many people are entering the website on that page, because links to it are easy to find and enticing (whether or not the page actually delivers on the promise of those links is a different matter), or it is really important to users.

# Low pageviews

- On the other hand, a page may get few pageviews because it is difficult to find, links to it are poorly labeled, or because users don't want to go there.

# High Pageview/Unique Pageview ratio

- When pageviews are much higher than unique pageviews, it indicates that users are frequently revisiting that page.

# Low time on page

- Low time on page may indicate:
  - The content of the page doesn't match what users thought they were going to get.
  - The content isn't very interesting or is poorly written.
  - There isn't a lot of content on a page.
  - The page is very well organized and users can quickly satisfy their goals.
  - The purpose of the page is to direct users to other pages, like a search results page.

# High time on page

- High time on page only tells you that users are doing something on that page.

# High bounce rate

- High bounce rate indicates that there are potentially problems on a page for people who enter your website through that page.

# High % exit

- High % exit indicates a potential problem; there are some pages where a high % exit is appropriate.

# Page value

- Page value can indicate how often users view a page before going on to convert.

# Comparing pages

- It is more meaningful to compare page metrics to other pages of the same type (or same template) rather than comparing two pages with completely different purposes.

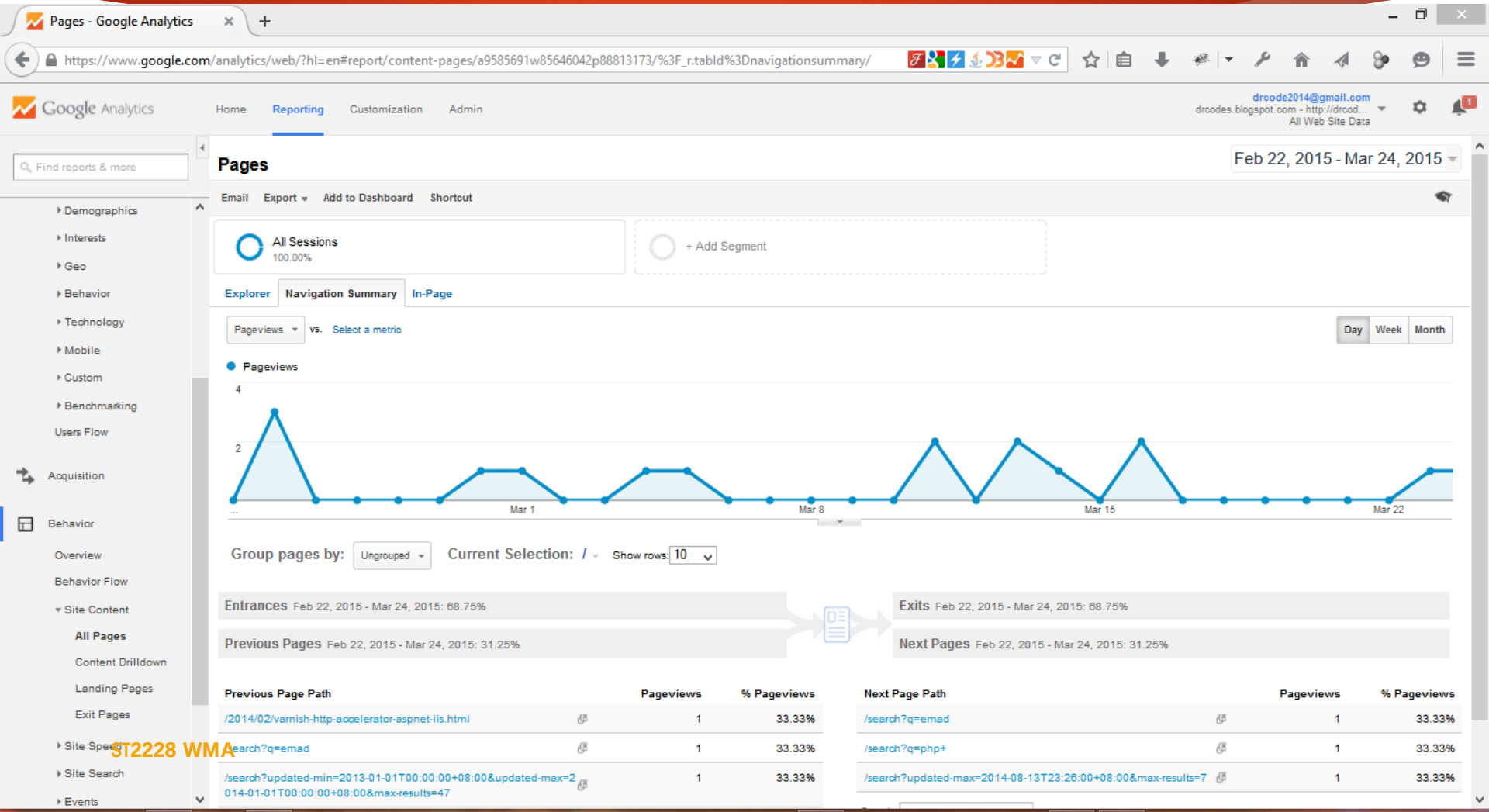
# Click-Path Analysis

VISITORS' FLOW

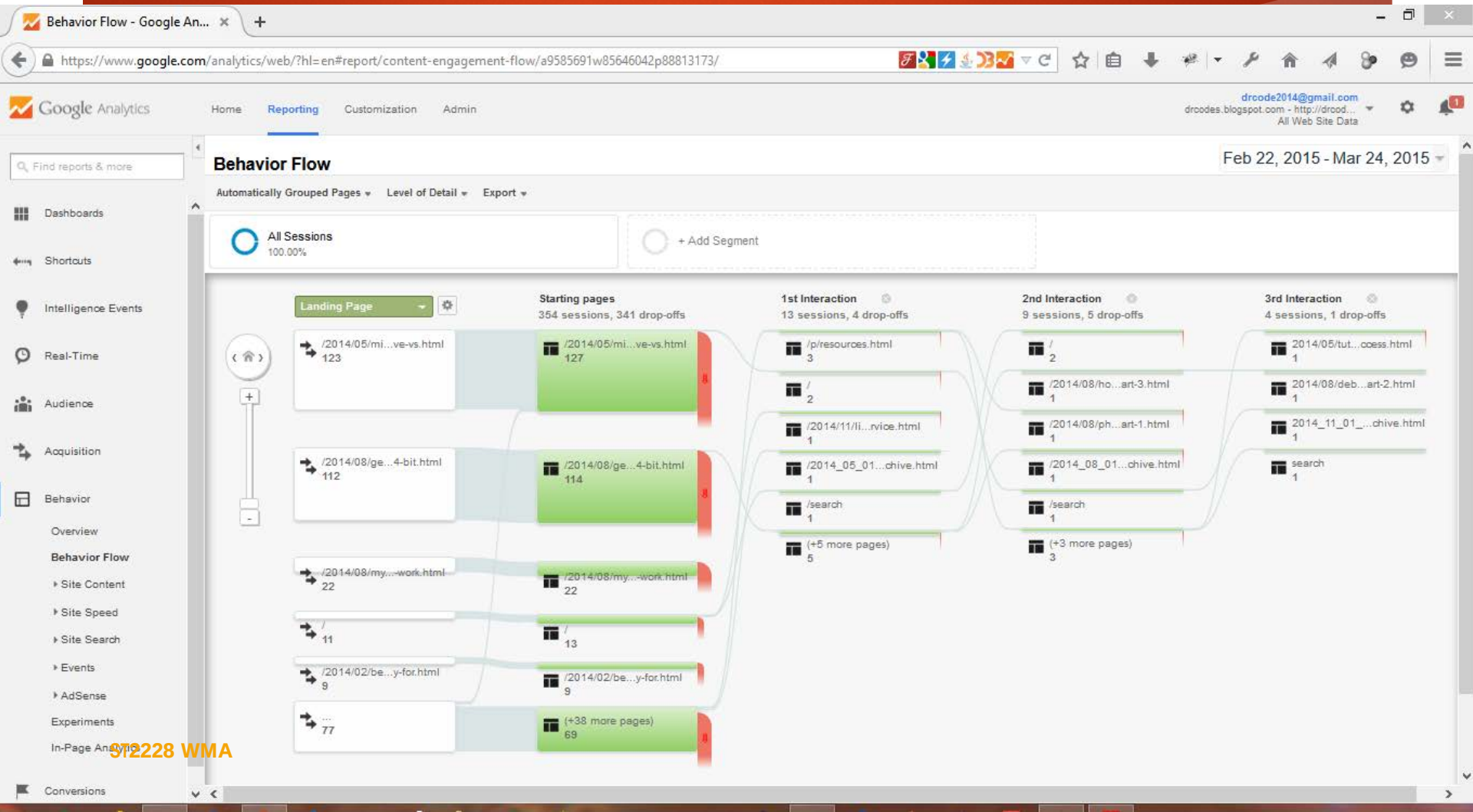
- You will probably find it impossible to pick out the most common path that users take on your website because user behavior can be so varied.
- Instead, focus on relationships between pages—from a given page, where do users come from and where do they go?

- Google Analytics offers two approaches to learning about click paths: the "Navigation Summary" and "Visitors Flow" reports.
  - The "Navigation Summary" report organizes data around page-to-page interactions and is more useful for summarizing all the behavior on a page.
  - The "Visitors Flow" report organizes the data around paths that users take and is better for showing the variety of ways users go from page to page.

# All Pages — Navigation Summary



# Behavior Flow/
## Visitor Flow report



# Process

- To analyze how users move from page type to page type (rather than individual pages):
  - Determine what kind of page you want to analyze (e.g., a product page, search results page, category page, or informational articles).
  - Find out the 10 most-visited pages of this type (or more pages, if you are feeling ambitious).
  - Starting with the most-viewed page, note:
    a. The number of pageviews.
    b. The top 10 pages (or, again, however many you can work with) they came from and how many viewed those pages.
    c. How many entered the website on this page.
    d. The top 10 pages they went to and how many went to those pages.
    e. How many exited the website after visiting this page.
  - Repeat this process with the rest of the most-viewed pages, combining the data for the previous and next pages (you can certainly do this with more than just the top 10 most-viewed pages; the only real limitation is your time).

# Segmentation

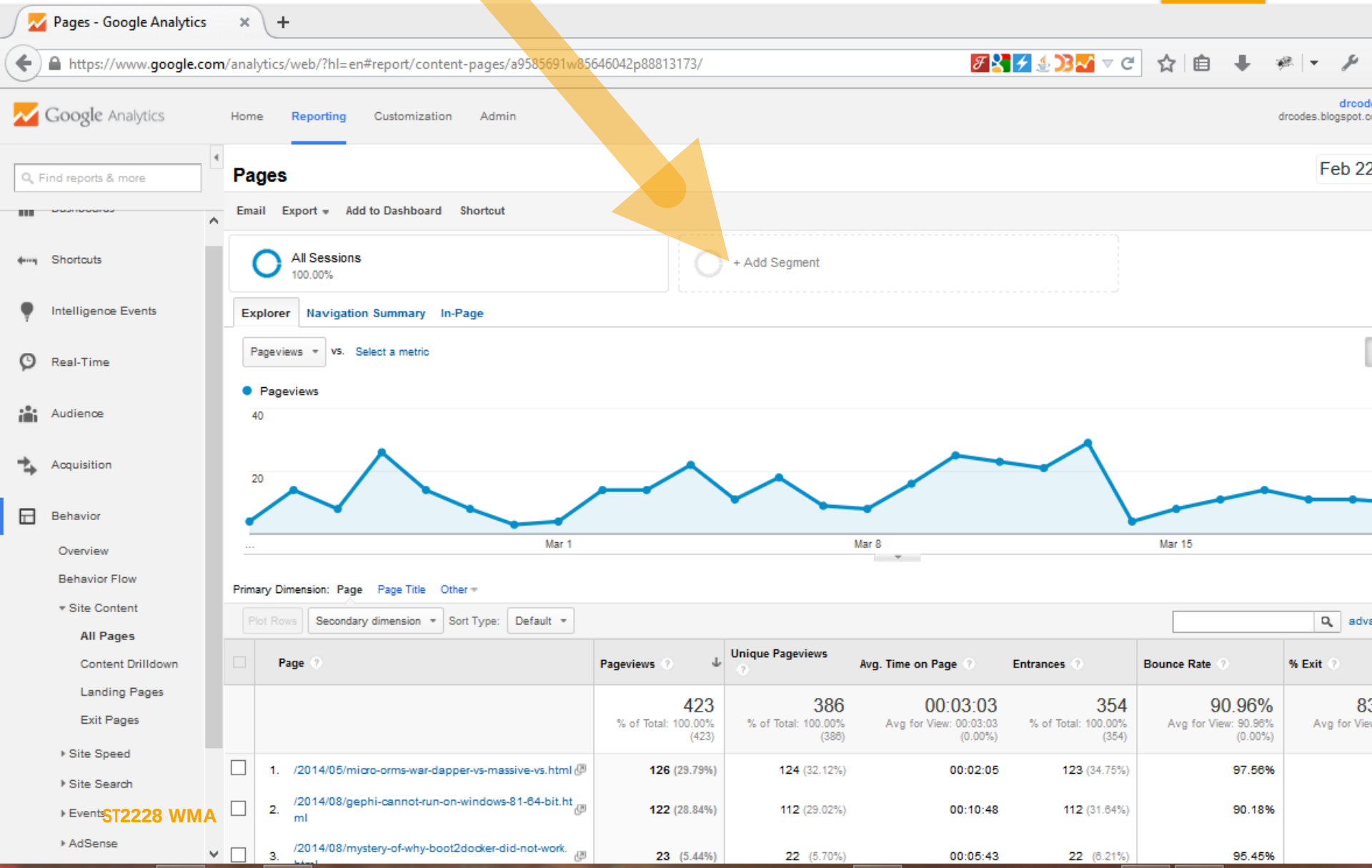
# Why segment?

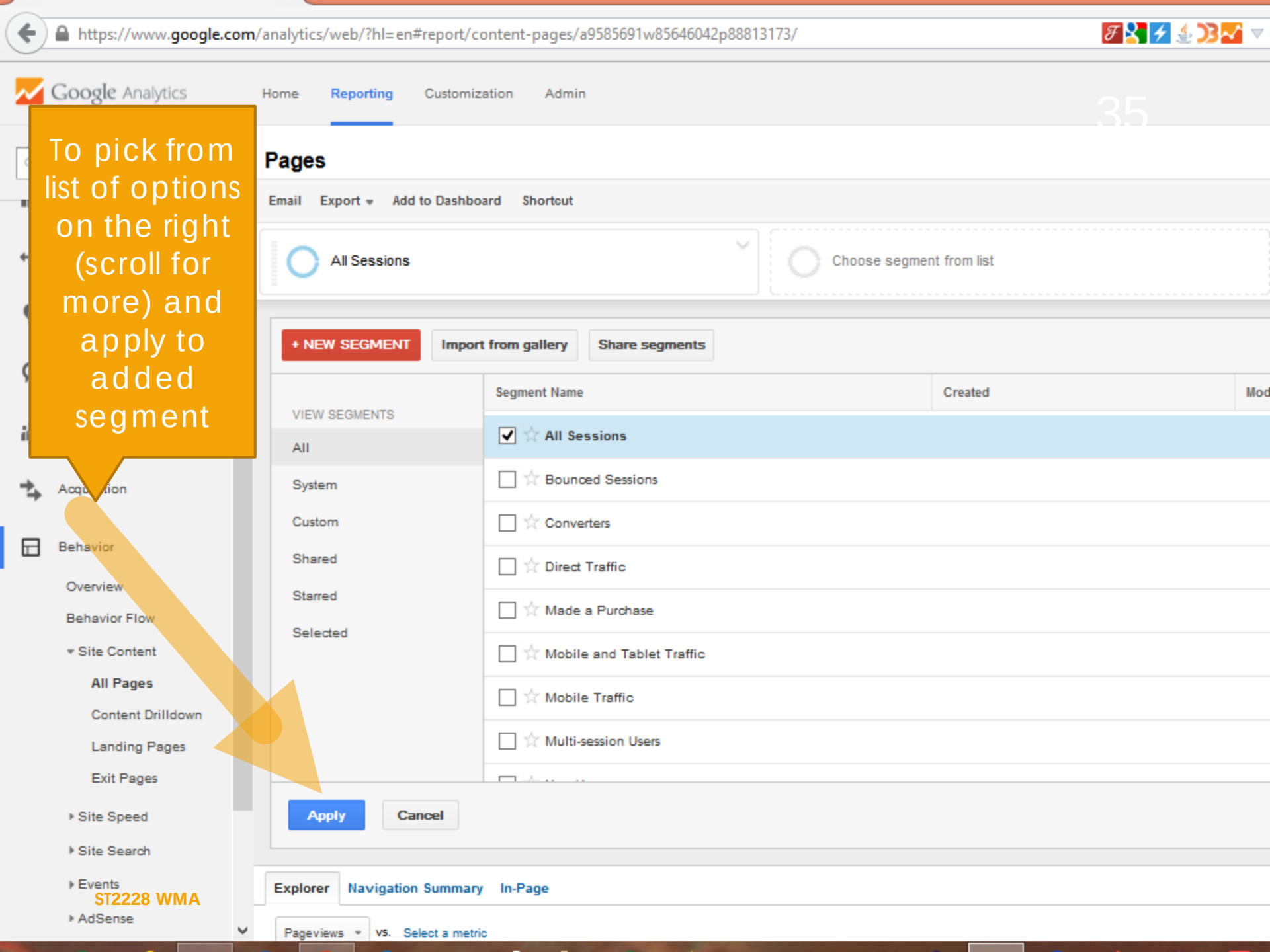
- Segmentation is the filtering of data according to metrics and dimensions so you can just analyze other users, the ones who you care about.
- You segment data so you can see and analyze data for just that segment of visits instead of all visits within a given time period.

# How to segment?

- Some of the useful ways you can segment data are:
  - Whether or not users viewed a page during their visit.
  - According to user traits, such as mobile device use, geographic location, or data you feed into analytics through custom variables.
  - According to what users searched for to get to your website, or in website search.
  - Whether or not users completed a goal (e.g., buying something or filling out a form).
  - Where and/or how users entered your website, such as what page they landed on.

# To add a new segment




https://www.google.com/analytics/web/?hl=en#report/content-pages/a9585691w85646042p88813173/
Google Analytics
Home
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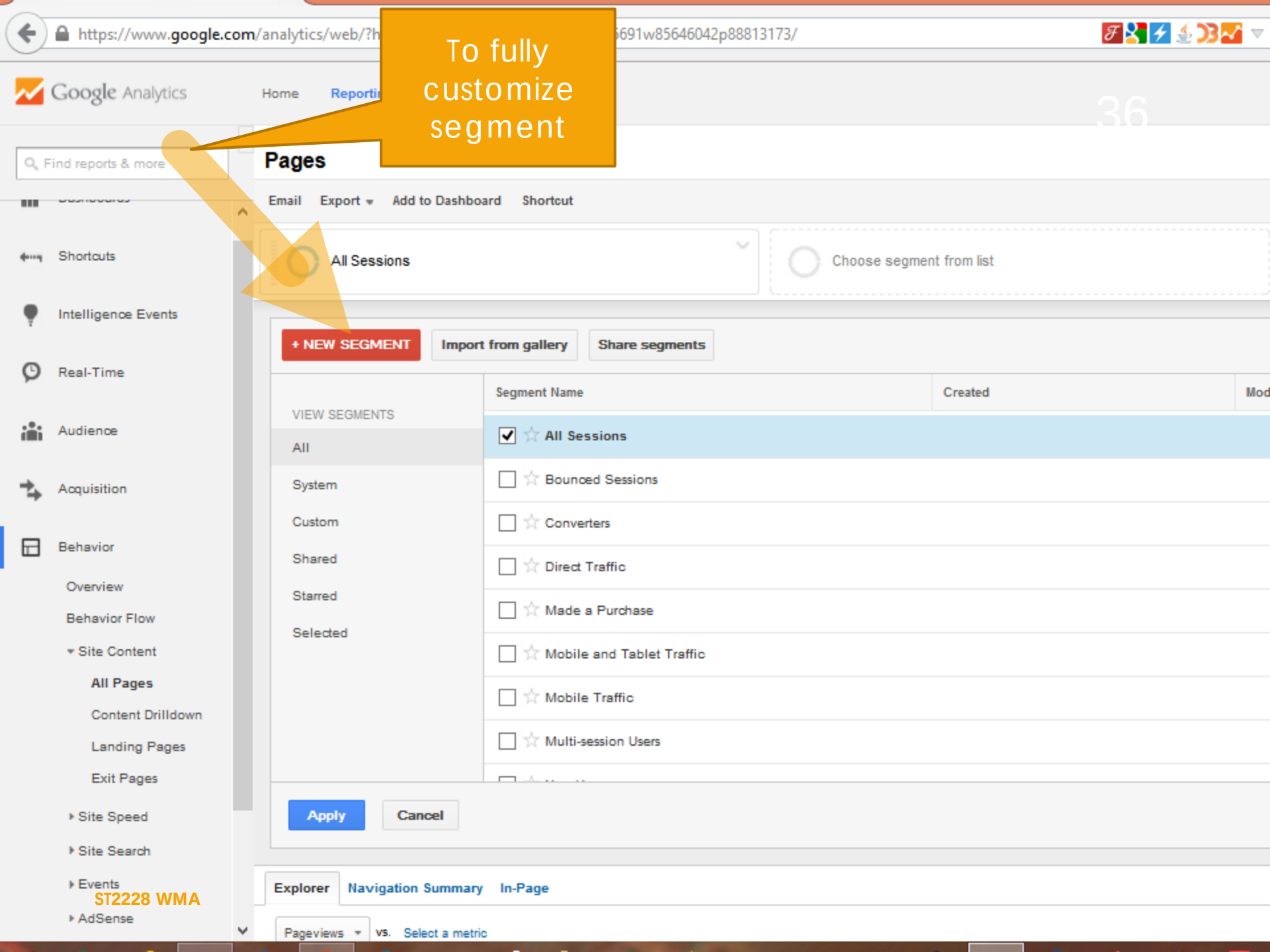
35
To pick from list of options on the right (scroll for more) and apply to added segment
Pages
Email
Export
Add to Dashboard
Shortcut
All Sessions
Choose segment from list
+ NEW SEGMENT
Import from gallery
Share segments
VIEW SEGMENTS
All
System
Custom
Shared
Starred
Selected
Segment Name
Created
All Sessions
Bounced Sessions
Converters
Direct Traffic
Made a Purchase
Mobile and Tablet Traffic
Mobile Traffic
Multi-session Users
Apply
Cancel
Behavior
Overview
Behavior Flow
Site Content
All Pages
Content Drilldown
Landing Pages
Exit Pages
Site Speed
Site Search
Events
AdSense
ST2228 WMA
Explorer
Navigation Summary
In-Page
Pageviews
vs.
Select a metric


To fully customize segment
Google Analytics
Home
Pages
Email
Export
Add to Dashboard
Shortcut
All Sessions
Choose segment from list
+ NEW SEGMENT
Import from gallery
Share segments
VIEW SEGMENTS
All
System
Custom
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Starred
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Bounced Sessions
Converters
Direct Traffic
Made a Purchase
Mobile and Tablet Traffic
Mobile Traffic
Multi-session Users
Apply
Cancel
Shortcuts
Intelligence Events
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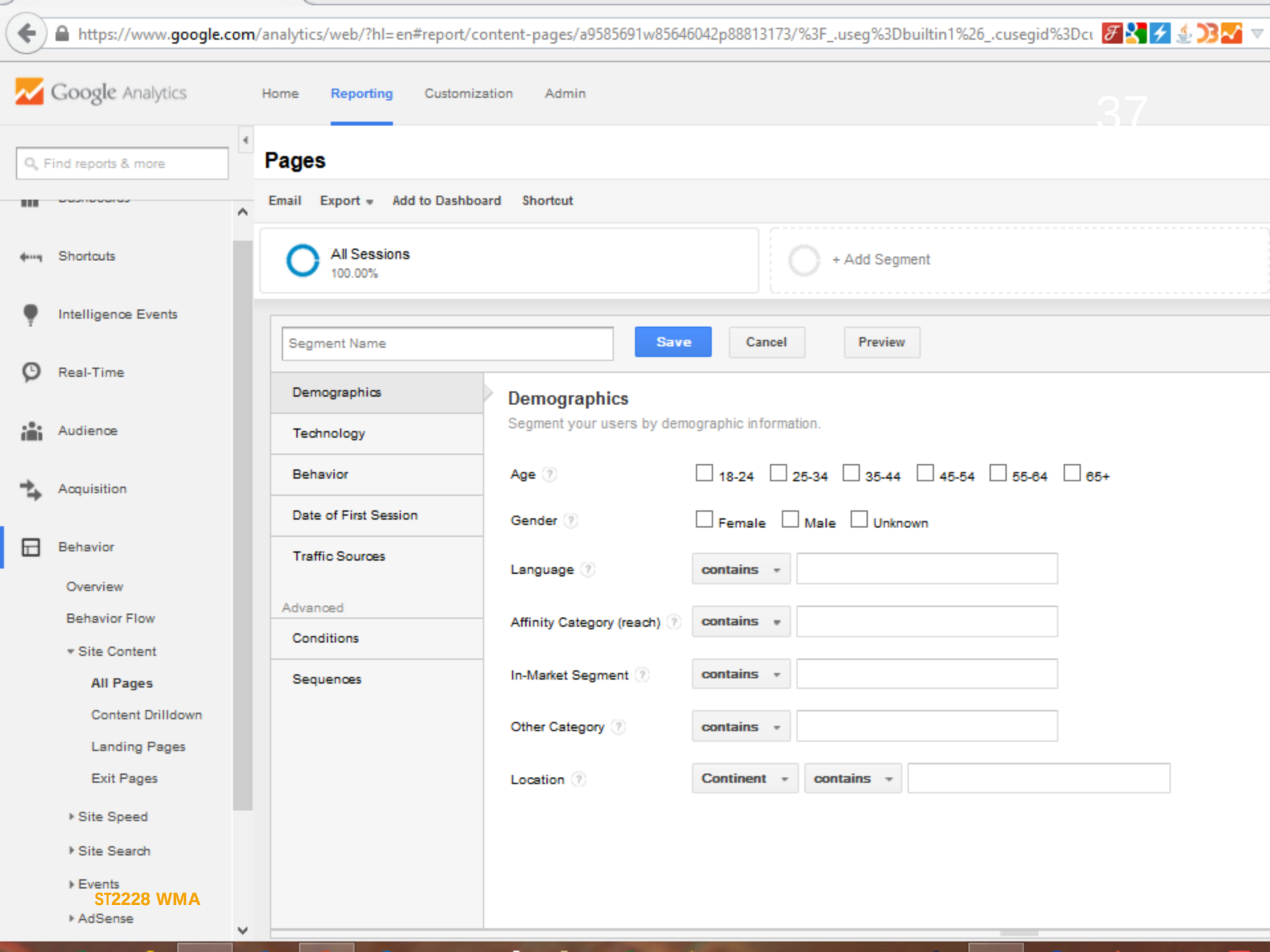
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Demographics
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Behavior
Date of First Session
Traffic Sources
Advanced
Conditions
Sequences
Demographics
Segment your users by demographic information.
Age
18-24
25-34
35-44
45-54
55-64
65+
Gender
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Male
Unknown
Language
contains
Affinity Category (reach)
contains
In-Market Segment
contains
Other Category
contains
Location
Continent
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https://www.google.com/analytics/web/?hl=en#report/content-pages/a9585691w85646042p88813173/%3F_u.date00%3D20140901%26_u.date01%

Google Analytics | Home | Reporting | Customization | Admin

Find reports & more

- Shortcuts
- Intelligence Events
- Real-Time
- Audience
- Acquisition
- Behavior
  - Overview
  - Behavior Flow
  - Site Content
    - All Pages
    - Content Drilldown
    - Landing Pages
    - Exit Pages
  - Site Speed
  - Site Search
  - Events
  - AdSense

ST2228 WMA

# Pages

Email | Export | Add to Dashboard | Shortcut

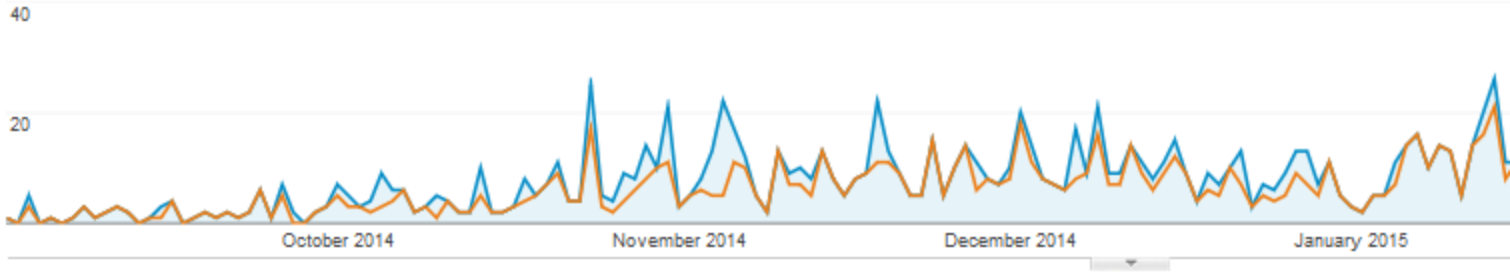
All Sessions
100.00%

Bounced Sessions
80.18%

Explorer | Navigation Summary | In-Page

Pageviews vs. Select a metric

Pageviews (All Sessions) Pageviews (Bounced Sessions)




Primary Dimension: Page | Page Title | Other

Plot Rows | Secondary dimension | Sort Type: Default

| Page | Pageviews | Unique Pageviews | Avg. Time on Page | Entrances |
|---|---|---|---|---|
| All Sessions | 1,927<br>% of Total: 100.00%<br>(1,927) | 1,772<br>% of Total: 100.00%<br>(1,772) | 00:03:45<br>Avg for View: 00:03:45<br>(0.00%) | 1,68<br>% of Total: 100.0<br>(1,6 |
| Bounced Sessions | 1,545<br>% of Total: 80.18%<br>(1,927) | 1,545<br>% of Total: 87.19%<br>(1,772) | 00:00:00<br>Avg for View: 00:03:45<br>(-100.00%) | 1,54<br>% of Total: 91.7<br>(1,6 |
| 1. /2014/08/gephi-cannot-run-on-windows-81-64-bit.html | | | | |

Find reports & more

- Shortcuts
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  - Site Content
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Primary Dimension: Page | Page Title | Other

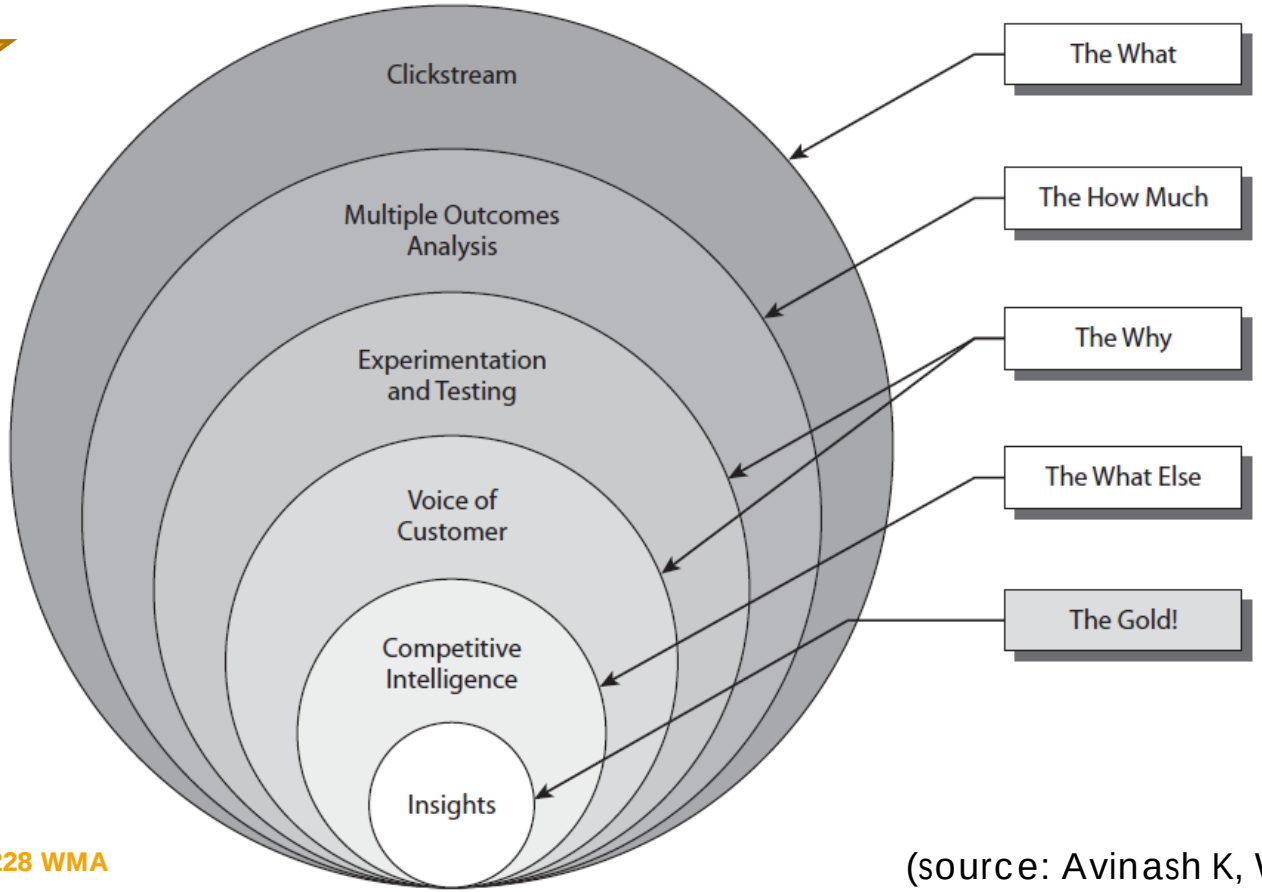
Plot Rows | Secondary dimension | Sort Type: Default

| | Page | Pageviews | Unique Pageviews | Avg. Time on Page | Entrances |
|---|---|---|---|---|---|
| | **All Sessions** | 1,927<br>% of Total: 100.00% (1,927) | 1,772<br>% of Total: 100.00% (1,772) | 00:03:45<br>Avg for View: 00:03:45 (0.00%) | 1,68<br>% of Total: 100.0 (1,6 |
| | **Bounced Sessions** | 1,545<br>% of Total: 80.18% (1,927) | 1,545<br>% of Total: 87.19% (1,772) | 00:00:00<br>Avg for View: 00:03:45 (-100.00%) | 1,54<br>% of Total: 91.7 (1,6 |
| ☐ | 1. /2014/08/gephi-cannot-run-on-windows-81-64-bit.html | | | | |
| | All Sessions | **657** (34.09%) | 603 (34.03%) | 00:08:59 | 603 (35.81 |
| | Bounced Sessions | **554** (35.86%) | 554 (35.86%) | 00:00:00 | 554 (35.8 |
| ☐ | 2. /2014/05/micro-orms-war-dapper-vs-massive-vs.html | | | | |
| | All Sessions | **595** (30.88%) | 574 (32.39%) | | 73 (34.03 |
| | Bounced Sessions | **553** (35.79%) | 553 (35.79%) | | 53 (35.7 |
| ☐ | 3. /2014/08/mystery-of-why-boot2docker-did-not-work.html | | | | |
| | All Sessions | **106** (5.50%) | 96 (5.42%) | 00:05:11 | 96 (5.70 |
| | Bounced Sessions | **88** (5.70%) | 88 (5.70%) | 00:00:00 | 88 (5.70 |
| ☐ | 4. / | | | | |
| | All Sessions | **92** (4.77%) | 66 (3.72%) | 00:01:34 | 57 (3.3 |
| | Bounced Sessions | **39** (2.52%) | 39 (2.52%) | 00:00:00 | 39 (2.52 |
| ☐ | 5. /2014/02/windows-nginx-mysql-php-wnmp-or-wemp.html | | | | |

data is segmented or split

# Conversion Optimization

# Key questions for WA






(source: Avinash K, Web Analytics 2.0)

# Content Experiments

## QUANTITATIVE METHODS:

Run Experiments Live On Your Site And Let Your Customers Show You What Works Best


BBC CHOICE
Wales

# A/B Testing

- A/B Testing
  - A method of marketing testing by which a baseline control sample is compared to a variety of single-variable test samples in order to improve response or conversion rates.

Definition from Wikipedia

  - Testing of more than one version of a web page:
    - Each version of the web page is usually uniquely created and stand-alone.
    - The goal is to try, for example, three versions of the home page or product page and see which version of the page works better - measuring one outcome.

Definition from Avinash Kaushik

# A/B Testing

- How to measure?
  - Put up different versions of the same page with only one variable changed (e.g placement of image, color, font size ) and measure.
- Pros
  - Using existing resources to measure:
  - We'll be using Google Analytics Content Experiments(previously known as Google Website Optimizer).
- Cons
  - Hard to control external factors (campaigns, search traffic, seasonality)



Adapted from http://www.kaushik.net/avinash/experimentation-and-testing-a-

# Multivariate Testing
(multi-armed banding experiments)

- Multivariate testing is a process by which more than one component of a website may be tested in a live environment.
  - Many A/B tests are performed on one page at the same time.
  - A/B tests are usually performed to determine the better of two content variations; multivariate testing can theoretically test the effectiveness of limitless combinations.
  - The only limits on the number of combinations and the number of variables in a multivariate test are the amount of time it will take to get a statistically valid sample of visitors and computational power.

Definition from Wikipedia

# Google Analytics Content Experiments

- http://www.youtube.com/watch?v=TGrujlh2H0I
- Key Features:
  - Content Experiments is a somewhat different approach from either standard A/B or multivariate testing.
  - Content Experiments is more A/B/*N*.
  - You're not testing just two versions of a page as in A/B testing, and you're not testing various combinations of components on a single page as in multivariate testing.
  - Instead, you are testing up to five full versions of a single page, each delivered to visitors from a separate URL.

Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745147&topic=1745207&parent=1745146&rd=1

# Content Experiments

- With Content Experiments, you can:
- Compare how different web pages perform using a random sample of your visitors.
- Define what percentage of your visitors are included in the experiment.
- Choose what type of goal you'd like to test.

Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745147&topic=1745207&parent=1745146&rd=1

# Content Experiments

- **An example of using experiments to improve your business**
- You have a website where you sell house-cleaning services.
- You offer basic cleaning, deep cleaning, and detailed cleaning.
- Detailed cleaning is most profitable of the three, so you're interested in getting more people to purchase this option.
- Most visitors land on your homepage, so this is the first page that you want to use for testing.



Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745149

# Content Experiments

- For your experiment, you create several new versions of this web page:
- One with a big red headline for detailed cleaning, one in which you expand on the benefits of detailed cleaning, and one where you put an icon next to the link to purchase detailed cleaning.
- A random sample of your visitors see the different pages, including your original home page, and you simply wait to see which page gets the highest percentage of visitors to purchase the detailed cleaning.
- When you see which page drives the most conversions, you can make that one the live page for all visitors.



Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745149

# Content Experiments

- Experiments require:
  - Different versions of your web pages to serve to your visitors.
  - Goals that have been defined in Google Analytics.
- Each experiment page is measured according to the percentage of visitors who view the page and accomplish the goal.
- Create different versions of your web pages to test:
  - Headlines and headers
  - Images and icons
  - Text
  - Calls to action
  - Page layout



Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745149

# Content Experiments

- You can use two kinds of Google Analytics goals:
  - URL Destination goals
  - An experiment that uses a URL Destination goal focuses on getting visitors to view a specific web page.
  - Use this kind of goal to find out things like how well your test page encourages visitors along a path to a product page, a page that includes the location of your business, or pages on which you're selling ads.
  - Event goals
    An experiment that uses an event goal focuses on getting visitors to perform a specific action on a page.
  - Use this kind of goal to find out things like how well your test page encourages visitors to sign up for a newsletter, view a video, or click **Add to Cart** for a product.

Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745149

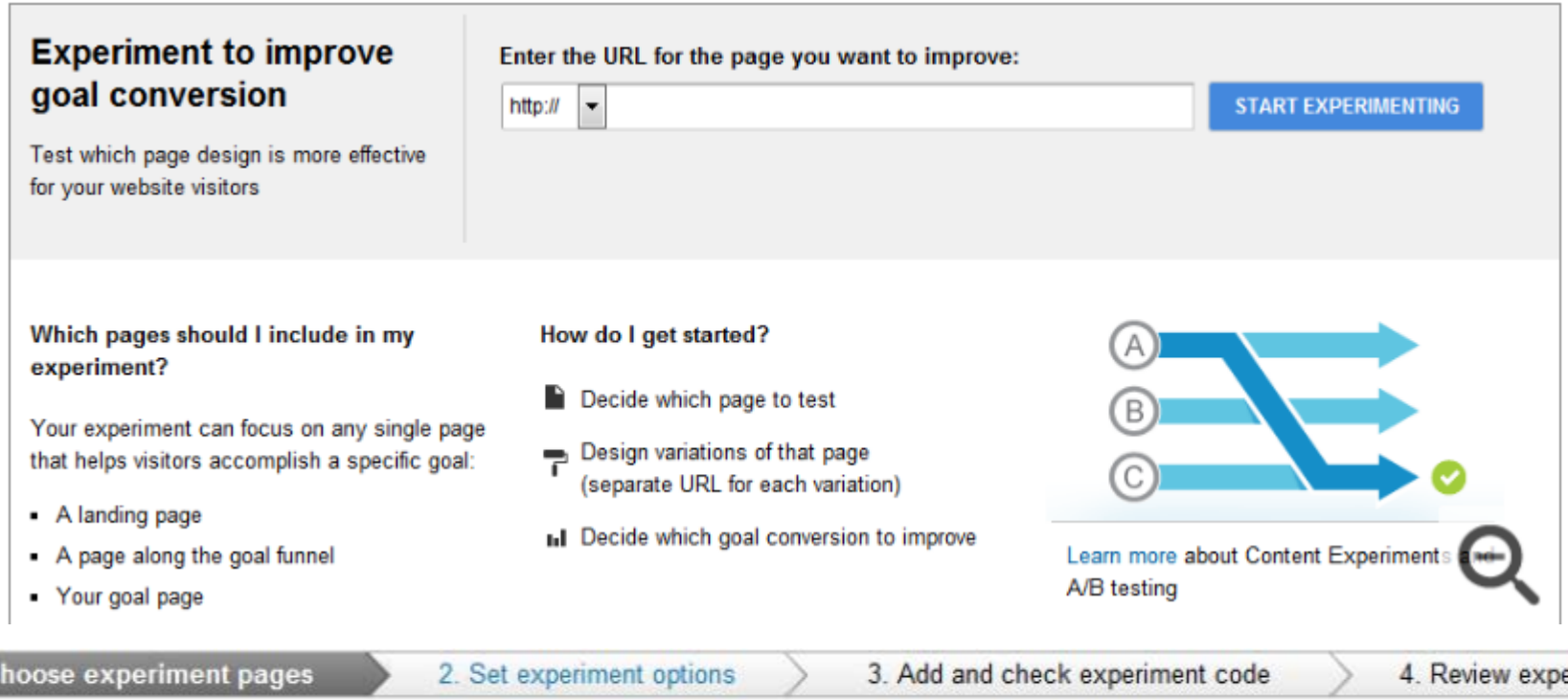
# Content Experiments

- **Testing Guidelines**
  - **Test only a few elements**
    If you change multiple elements on each page, it can be difficult to figure out which element or combination of elements was responsible for the best results. For example, create multiple pages but change only the main image on each page, and keep the same layout and text to ensure that any difference between the page results is due to the image.
  - **Use high-volume pages**
    The more often that people visit a page or complete a goal, the less time it takes to gather data.
  - **Make bold changes**
    Visitors can miss small changes and you can end up with inconclusive results.
  - **Keep testing**
    With follow-up testing, you can build on the success of your experiment. Did one headline encourage a lot more purchases? If so, test it alongside a product image or an image of a spokesperson.



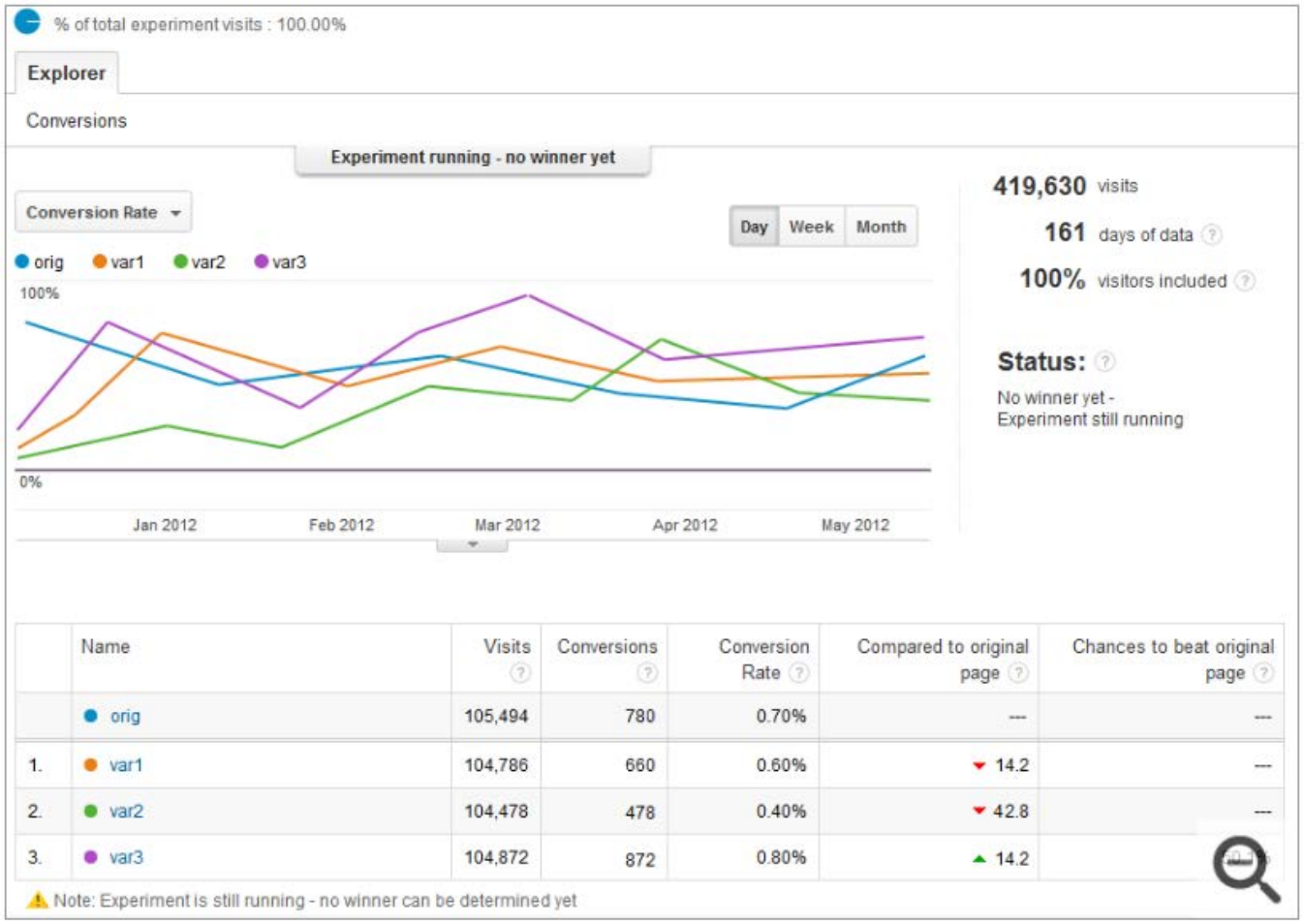
Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745149

# Content Experiments




Adapted from https://support.google.com/analytics/bin/answer.py?hl=en&answer=1745152&topic=1745207&ctx=topic

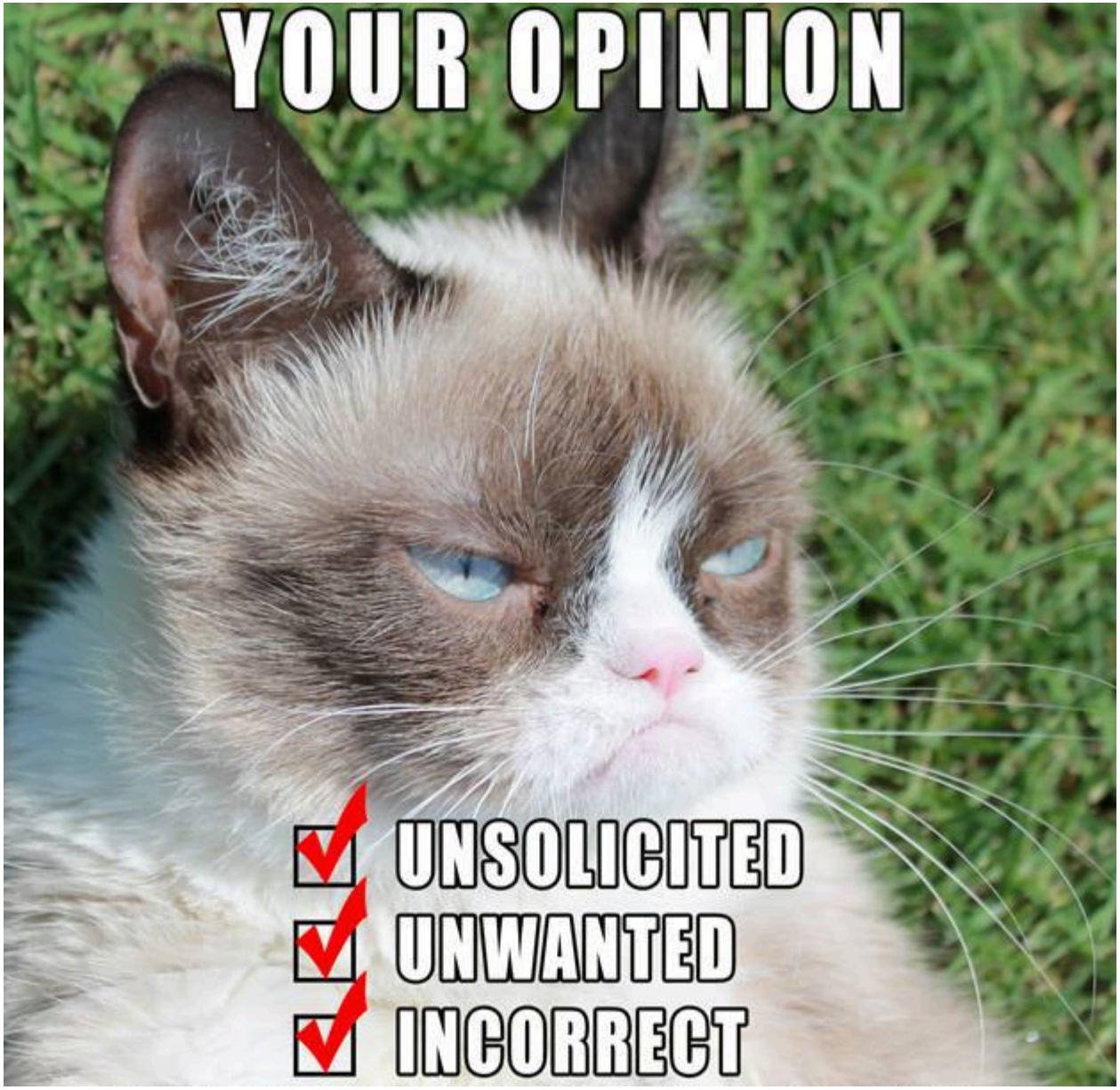
# Content Experiments



# Voice of Customer

## QUALITATIVE METHODS:

Getting Direct Feedback From Customers On Your Website Or From Target Customer Base


YOUR OPINION
UNSOLICITED
UNWANTED
INCORRECT

# Voice of Customer

- Answering the “WHY”
- Direct feedback from the customers or target customer base
- Through
  - Open text VOC surveys,
  - Lab usability studies



Adapted from
Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity by Avinash Kaushik

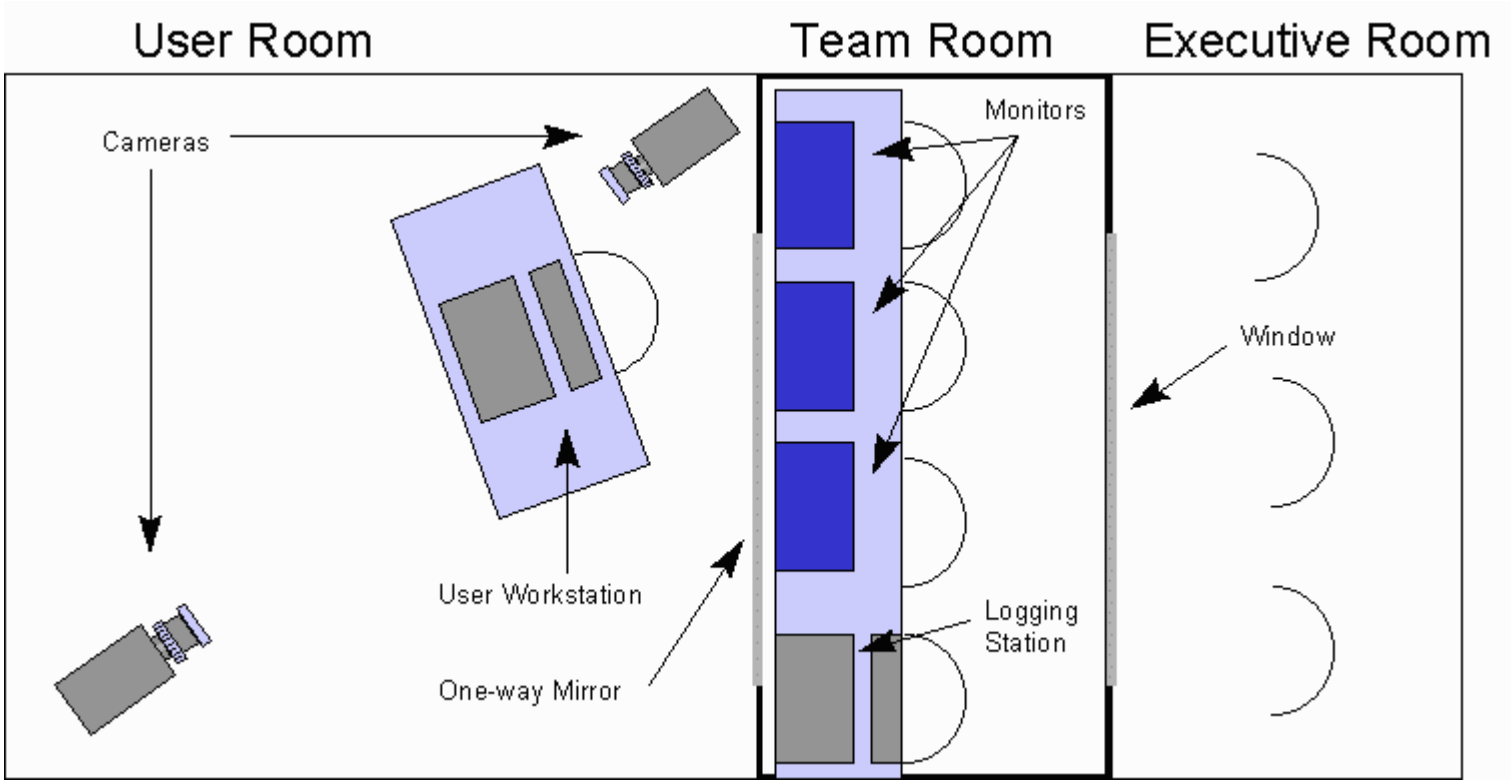
# Voice of Customer

- Lab usability tests measure user's ability to complete tasks using a website with each task defined a specific goal for effectiveness, efficiency and satisfaction in a given context of use.



Adapted from
Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity by Avinash Kaushik

# Usability Lab



# Usability Lab

# Voice of Customer

- Surveys:
  - Page-level surveys.
  - Site-level surveys.



Adapted from
Web Analytics 2.0: The Art of Online Accountability
and Science of Customer Centricity by Avinash Kaushik

# Page-level survey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# Site-level survey


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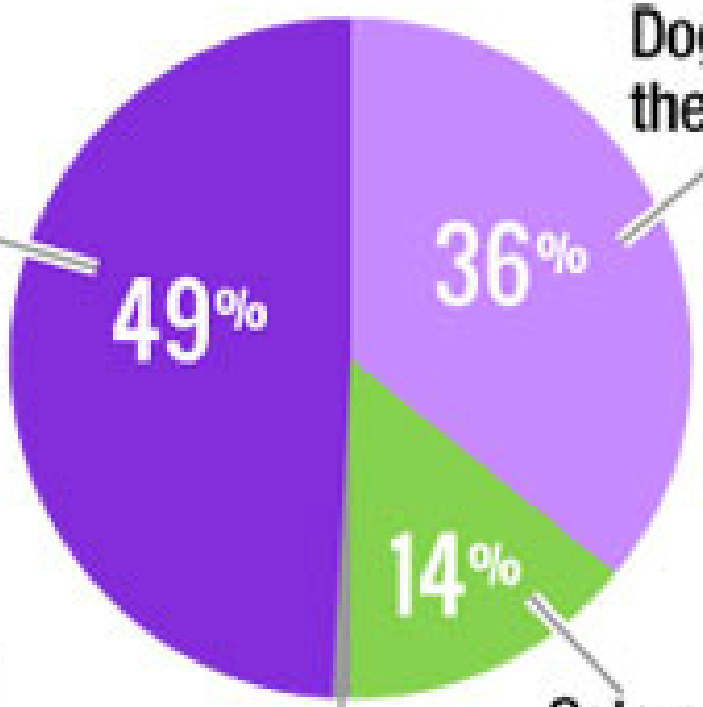
# Dogs vs. Cats

Do I have to choose? I love both!




Source: Petfinder.com Dogs vs. Cats 2012 Survey

# Traffic Analysis

LEARNING HOW USERS GOT TO YOUR WEB SITE