mather:

ALIGNING DIGITAL AUDIENCE & CONTENT STRATEGY

1215 Hightower Trail

Bld. A, Ste. 100

Atlanta, Ga, 30350

- SESSION INTRODUCTION AND GOALS
- CLUSTERING TECHNIQUE
- THE CLUSTERS
- WORKING SESSION
- NEXT STEPS

CLUSTERING TECHNIQUE

WHY CLUSTERING?

Identify distinct patterns in behavior and engagement online

Prior work in other industries using customer data has yielded strong results and helped to align strategy and communication to customers

Mix of advanced analytics and visualization makes data easy to understand

"Don't tell them how the clock is made, tell them the time" – Bob Terzotis

WHAT IS CLUSTERING?

Clustering/Segmentation is the practice of grouping a defined population into subsets based on similarities and/or dissimilarities

We use a proprietary K-means approach to build the clusters

- *K-means* clustering is a technique where the population is partitioned into ***k*** number of clusters centered around a mean

LISTENER INPUTS PER USER

mather:

Engagement Clusters

Continuous inputs

- ***Page views***
- ***Article page views***
- ***Unique days on site***
- ***Time on site***
- ***Scroll depth***
- ***Content breadth***

Behavioral Clusters

Continuous inputs &

Discrete inputs

- ***Content preference***
- ***Device usage***
- ***Top referrer***
- ***Primary region***

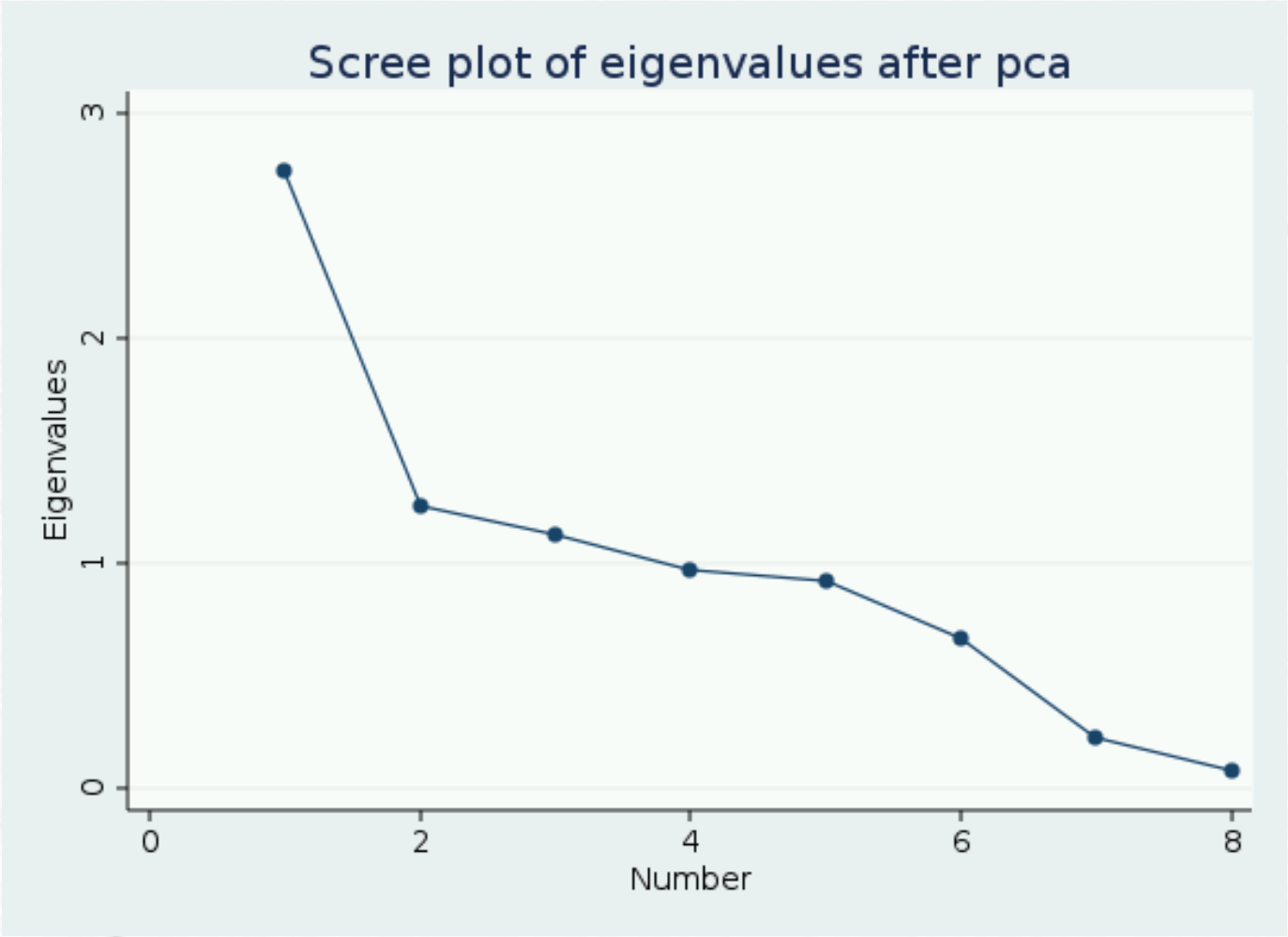
DIMENSION REDUCTION

mather:

Dimension Reduction is the practice by which many variable input fields are reduced to a few through sophisticated data mining techniques

- **Principal Component Analysis** is a method of dimension reduction for continuous variables

- **Factor Analysis** is performed on fields whose values take discrete form

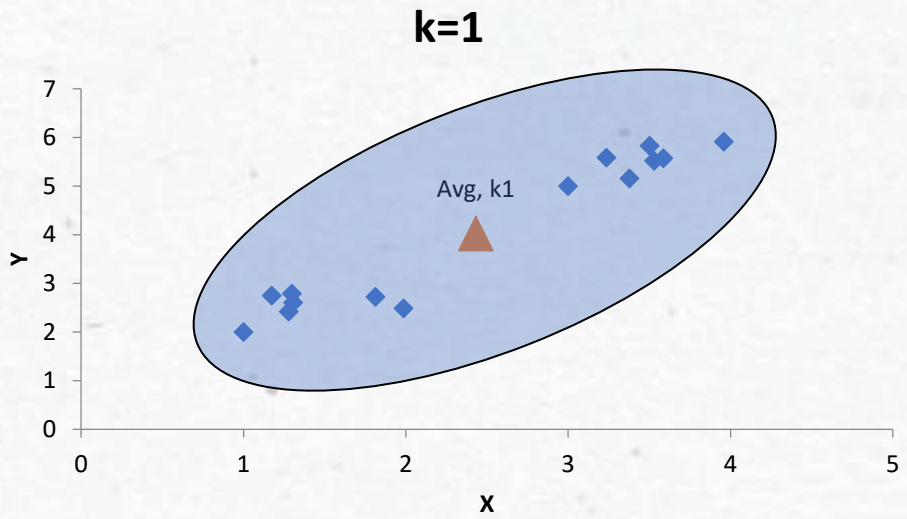


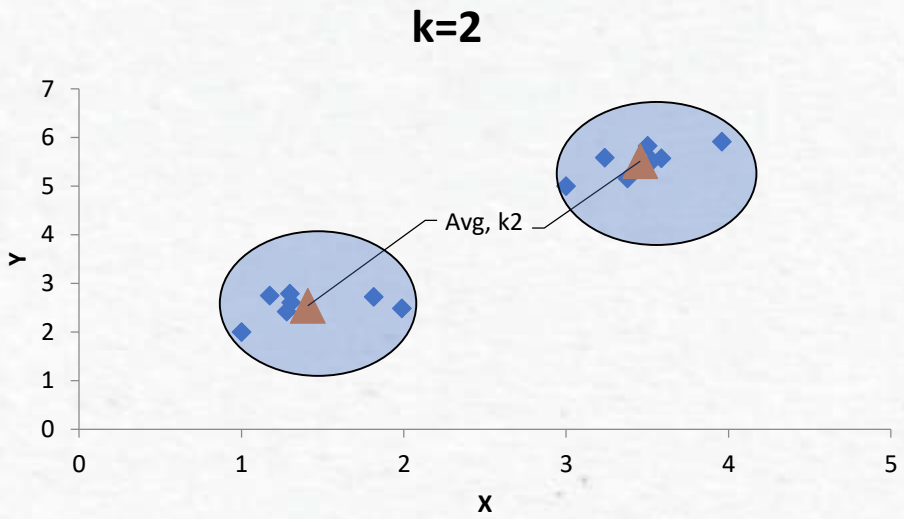
CHOOSING K – LOWEST DEVIATION

mather:

The distance from the mid-point of a cluster is maximized with 1 cluster, and falls as k increases (becomes zero when every subject is a cluster)

The distance being measured in this case is the **standard deviation** calculated for each cluster



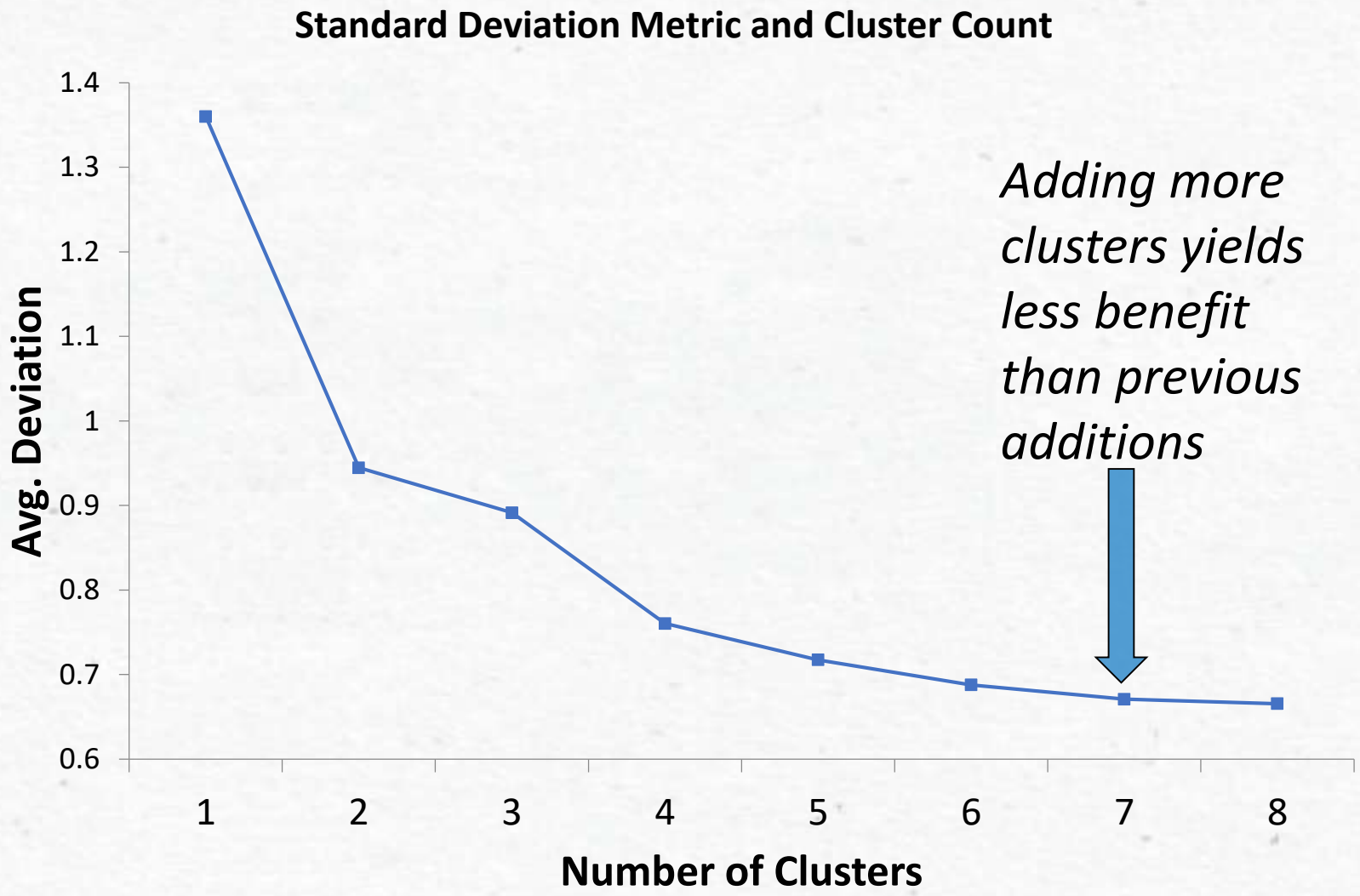


CHOOSING K - OPTIMAL CLUSTERS

mather:

The ideal number k is found where there are diminishing returns from additional clusters

In this case, 6 clusters is optimal



K-MEANS VALIDATION

One issue with k-means is the **randomness** of clusters

- i.e. k-means can be run on identical data with the exact same number k, and yield completely different results!
- Row sorting may also impact results

The "law of large numbers approach" corrects this issue

- Applies k-means 500 times to the same data
- Calculate the average deviation for every run
- Out of the 500, identify the cluster set with the lowest average deviation

Typically ~6% of outcomes "repeat" with the lowest deviation

WORKING SESSION

WORKING SESSION

mather:

1. Split into teams and choose a presenter

2. List tactics you would implement for these audiences
   - Use the second page as a worksheet to guide your recommendations
   - ~15 mins

3. Present your team's recommendations
   - ~15 mins

MATHER FEEDBACK

mather:

1. Email system
    - Retention campaigns: preventing digital disengagement
    - Acquisition campaigns: acquiring new subscribers via email channel
    - Engagement campaigns: encouraging users to read more content that is relevant to them

2. Paywall
    - Intelligent targeting to acquire new subscribers and registered users
    - Managing digital advertising risk by adjusting paywall settings

3. Ad server
    - Same-site acquisition targeting
    - Same-site advertiser targeting
    - Off-site acquisition/advertiser retargeting

CLUSTER OVERVIEW

mather:

SEATTLEITES

Preferring news, this group uses the homepage to seek out new content. These are your core readers.

60% come from **Internal** or **Direct**, **70%** are local, and **33%** are known

PER USER:	22 avg. article page views	8 days per month	17 avg. visits

31% | 11% | 58%

MAIN SECTIONS CONSUMED:
1. Homepage
2. News

SEARCH & SOCIAL

Avoiding the Homepage entirely, this group uses popular platforms to read your content. This group likely has the highest share of millennials.

33% come from **Google**, **30%** from **Facebook**, and **55%** are local

PER USER:	3 avg. article page views	3 days per month	3 avg. visits

63% | 9% | 28%

MAIN SECTIONS CONSUMED:
1. News
2. Sports

COMICS & GAMES

These users are anchored in Comics & Games. They only read two articles per month, but generate 147 total page views from non-article content.

79% come from **Internal** or **Direct**, and **33%** are local

PER USER:	2 avg. article page views	9 days per month	11 avg. visits

10% | 17% | 73%

MAIN SECTIONS CONSUMED:
1. Comics
2. Entertainment

SPORTS & LIFE

This cluster varies based on the season. We expect this group to grow in size and engagement level based on the sports season.

43% come from **Search Engines** (Google, Yahoo, Bing), and **68%** of page views are articles

PER USER:	3 avg. article page views	3 days per month	4 avg. visits

39% | 12% | 49%

MAIN SECTIONS CONSUMED:
1. Sports
2. Life

OUT & ABOUT

Always looking for things to do, the members of this group use their phones to find what's happening around the city.

40% come from **Google**, and **63%** are local

PER USER:	4 avg. article page views	3 days per month	4 avg. visits

46% | 9% | 45%

MAIN SECTIONS CONSUMED:
1. Entertainment
2. News

HIBERNATORS

With a large number of known users (28% of ALL users), They do not show any distinct characteristics, but visit the site multiple times per month.

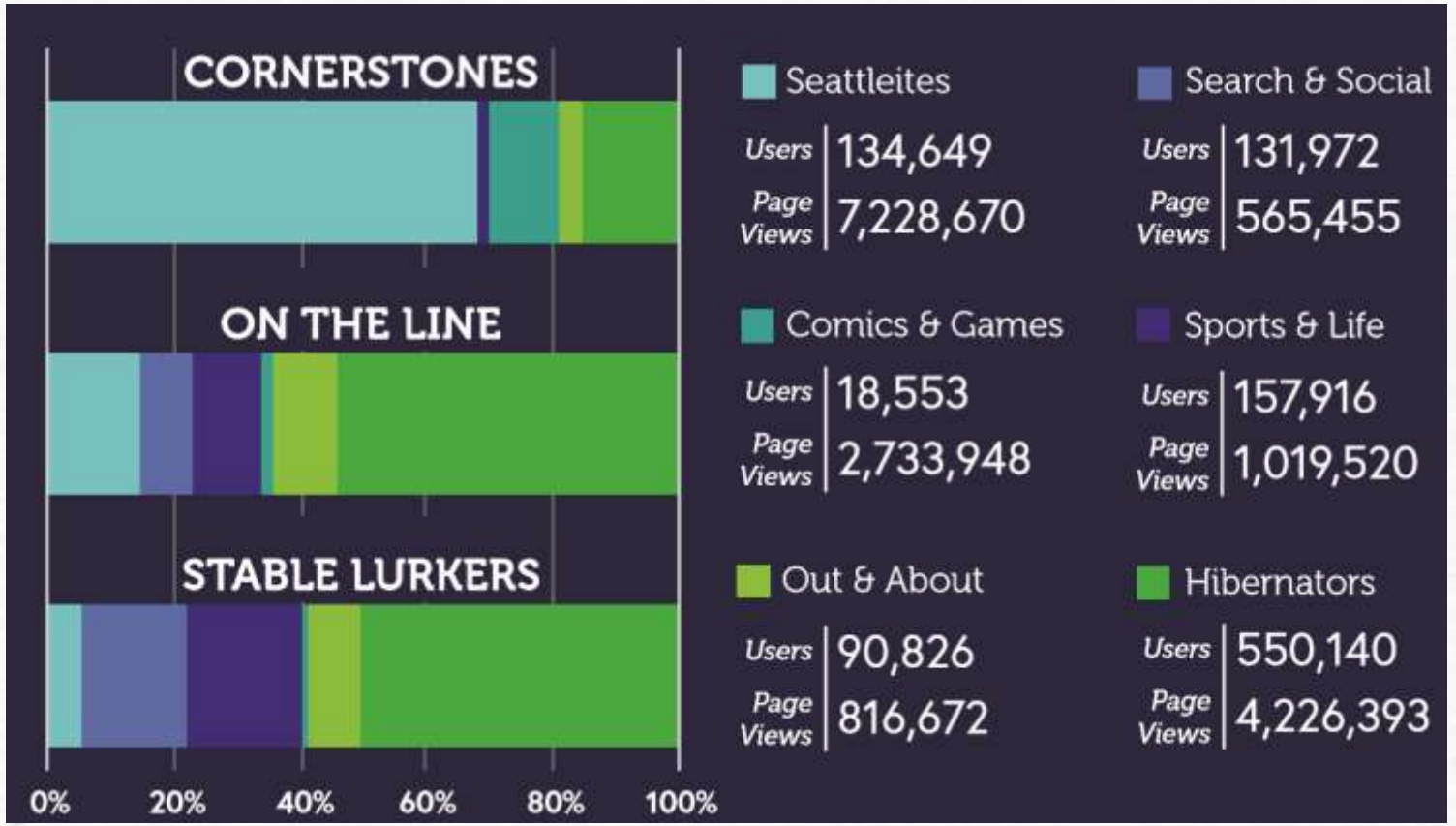
38% come from **Direct**, and **10%** come from **Internal**

PER USER:	4 avg. article page views	3 days per month	4 avg. visits

41% | 10% | 49%

MAIN SECTIONS CONSUMED:
1. News
2. Homepage

	CORNERSTONES	ON THE LINE	STABLE LURKERS
Users	49,100 | 5%	489,984 | 45%	544,972 | 50%
Page Views	8,556,955 | 52%	5,628,671 | 34%	2,405,032 | 15%



CLUSTER OVERVIEW

mather:

CORNERSTONES

This is the smallest but most engaged cluster. The top 5% of audience generates over half of total page views, and over a third of all article page views and visits. 60% of this cluster are known users, which means they generate a significant amount of revenue per user (advertising and subscription).

TOTAL SUMMARY

USER COUNT	PAGE VIEWS	VISITS	KNOWN
49,100 | 5%	8,556,955 | 52%	2,106,229 | 36%	29,262 | 37%

AVG. ARTICLE PAGE VIEWS **50**

KNOWN USERS **60%**

AVG. VISITS **43**

20 AVG. UNIQUE DAYS

7m 24s TIME PER VISIT

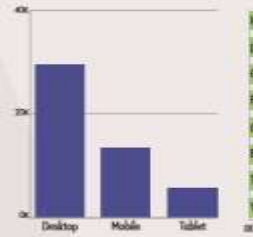
50% DEPTH PER PAGE

USER PROFILE

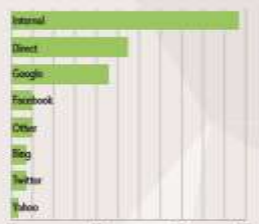
The majority of **Cornerstones** are known subscribers and highly engaged users. They visit seattletimes.com almost every day, multiple times a day. In a typical month, they generate 174 page views per user, of which 50 are article page views. These users are most likely to actively seek out new content.

USER ACCESS

Cornerstones are familiar with the Homepage, and access the site directly or from other Seattle Times articles. Some may use Google to find articles and stories, but few **Cornerstones** use social media to read content. Less than one-third of this group use a mobile device to access content, preferring the desktop experience.



BY DEVICE



BY REFERRER

USER BEHAVIOR

68% of **Cornerstones** are also Seattleites, who are the highest valued audience. 15% of this group are Hibernators, but this only accounts for 1% of Hibernators overall. 11% of the **Cornerstones** are heavily engaged Comics & Games (of which 30% are **Cornerstones**) members. Very few Search & Social members are in this cluster, and in the summer there are only a few who belong to Sports & Life.

Seattleites	Hibernators	Comics & Games
1. Homepage	1. News	1. Comics
2. News	2. Homepage	2. Entertainment

ON THE LINE

The second-largest and moderately engaged cluster accounts for 45% of audience, almost half of all visits, and one-third of page views. Over half of all known users are in this cluster, which is 9% of users within the cluster.

TOTAL SUMMARY

USER COUNT	PAGE VIEWS	VISITS	KNOWN
489,984 | 45%	5,628,671 | 34%	2,766,430 | 48%	43,205 | 54%

AVG. ARTICLE PAGE VIEWS **4**

KNOWN USERS **9%**

AVG. VISITS **6**

4 AVG. UNIQUE DAYS

5m 00s TIME PER VISIT

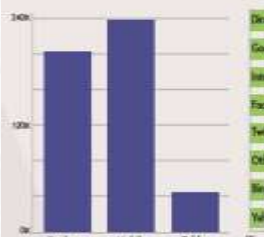
54% DEPTH PER PAGE

USER PROFILE

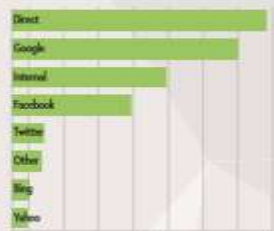
These users access the site once per week and read one article per week. **On the Liners** may visit the site twice on certain days to explore other non-article content, but spend five minutes per visit, which is the lowest time per visit amongst the three engagement groups. They are aware of the *Seattle Times* brand and content, but only moderately loyal to the content.

USER ACCESS

Nearly half of these users access the site by mobile device (49%). An almost equal share of users access the site directly (30%) or from internal referrers (18%) as do via Google (27%), Facebook (14%) and other search/social channels. There is not a single channel or device that stands out as the primary access method.



BY DEVICE



BY REFERRER

USER BEHAVIOR

Hibernators account for the majority within this cluster (54%) and nearly half of all Hibernators fall into this cluster. The lesser-engaged Seattleites account for 14% of this cluster though over half of all Seattleites also fall into this group. Search & Social is only the 5th largest subset (9%) and Out & About is the 4th largest subset (10%) within this cluster. However, over half (51%) of the Out & About behavioral group are On the Line.

Hibernators	Seattleites	Sports & Life
1. News	1. Homepage	1. Sports
2. Homepage	2. News	2. Life

STABLE LURKERS

Stable Lurkers are the largest and least engaged cluster. Accounting for half of all users, this cluster generates fewer than 1/6th of total page views and visits. These users are relatively low-value and less likely to become paid subscribers.

TOTAL SUMMARY

USER COUNT	PAGE VIEWS	VISITS	KNOWN
544,972 | 50%	2,405,032 | 15%	941,328 | 16%	7,182 | 9%

AVG. ARTICLE PAGE VIEWS **2**

KNOWN USERS **1%**

AVG. VISITS **2**

2 AVG. UNIQUE DAYS

9m 58s TIME PER VISIT

70% DEPTH PER PAGE

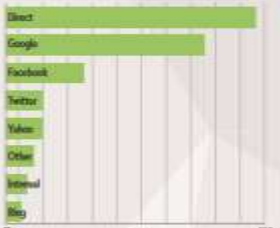
USER PROFILE

Though these users scroll 70% down a page and spend nearly ten minutes per visit, they interact with the site only two times per month. 99% of these users are anonymous and only read a handful of articles per month.

USER ACCESS

Surprisingly, 37% of users come to the site directly, but the majority come from a mix of search and social referrers. Stable Lurkers have the highest proportion of Google referrers (30%) and Twitter referrers (8%) among the three clusters. Interestingly, the mobile device is only used by 37% of users, while desktop accounts for 51% of users.

BY DEVICE



BY REFERRER

USER BEHAVIOR

Hibernators are the primary behavioral group of this cluster. Half of all Hibernators fall into this cluster and the cluster is comprised of more than 50% Hibernators. Just under 40% of this cluster is comprised of Search & Social and Sports & Life behavior groups (2/3rd of the total population of S&S and S&L). However, nearly half (47%) of Out & About also fall into the **Stable Lurkers**.

Hibernators	Sports & Life	Search & Social
1. News	1. Sports	1. News
2. Homepage	2. Life	2. Sports