

Yahoo!

Web site optimization using a bucket testing framework built into web analytics

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Information Excellence Summit,
February 25, 2012 Bangalore

<http://Informationexcellence.wordpress.com>



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Ashish Vikram is Vice President - Engineering, User Data and Analytics (UDA) at Yahoo!. UDA is the group that analyzes Yahoo!'s customer data to provide deep insights into user behavior, which is then leveraged to personalize digital content and enhance Yahoo!'s products.

Ashish is a software industry veteran with over 20 years of hands-on design and development experience. He worked with Rational Software for 15 years both in the US and India, a role in which he set up Rational's Software Development Center in India and grew it into a highly productive lab with complete responsibility for several of Rational's Software Engineering products, including the flagship Rational Rose. Ashish also led the team through the transition, subsequent to IBM's acquisition of Rational Software.

He went on to play a crucial role in creating highly productive software development centers in Bangalore for two more startups, OAT Systems and Kalido. OAT was a pioneer and leader in the RFID space, while Kalido is a leading provider of data driven governance solutions.

Ashish holds a B. Tech. in Electrical and Electronics Engineering from the Indian Institute of Technology, Delhi and an M.S. in Computer Science from Purdue University, Indiana.



Big Data Statistics at Yahoo!

- 500 Peta Bytes of Data
- 50 Tera Bytes of Data added everyday
- 700 Million Users
- Created Hadoop to help deal with Big Data and open sourced it



Web Analytics – 7 days traffic

Summary for [REDACTED]

Type any id or name Search Share ▾ Action ▾ ?

~network (0) | ▾ Day ▾ [REDACTED] Apply Cancel

Hotlist ~network (Hotlist Children: included) Space ID: 0 Lookup / Search

User login state: Total (Users were either logged in or had browser cookies enabled) Report Settings

All Metric Snapshot



Time Spent - Breakdown

Hotlist Children Breakdown: Time Spent ?		View Report
Hotlist Children	Time Spent	%Change
site (2718085)	53.72%	▲ 27.68%
intl (7825331)	38.28%	▲ 41.27%
yahoo (2766678)	7.95%	▲ 30.98%
Top Bottom		

Country Breakdown: Time Spent ?		View Report
Country	Time Spent	%Change
United States	45.11%	▲ 29.01%
Taiwan	9.73%	▲ 32.56%
United Kingdom	4.12%	▲ 32.87%
India	2.75%	▲ 22.6%
Hong Kong	2.19%	▲ 44.43%
Top Bottom		

Age Breakdown: Time Spent ?		View Report
Age	Time Spent	%Change
Not Set	29.61%	▲ 12.51%
35-44	16.88%	▲ 59.57%
45-54	12.59%	▲ 48.3%
30-34	10.24%	▲ 56.83%
25-29	8.45%	▲ 45.15%
Top Bottom		

Gender Breakdown: Time Spent ?		View Report
Gender	Time Spent	%Change
Male	37.89%	▲ 41.86%
Female	32.14%	▲ 46.34%
Not Set	29.61%	▲ 12.51%
Unknown	0.37%	▲ 23.14%
Top Bottom		



Overview



Test the ***effect** of product changes on a sample set of users by before launching to the entire population

Measure ***reach, engagement and monetization metrics** on different versions of the product pages

Test on smaller scale Set realistic referral expectations Reduce risk Forecast impact of product changes
Forecast impact of product changes Statistical data Statistical data
Set realistic expectations **Why Experiment?** Data substantiated decisions
Statistical data Quantify user reaction Test on smaller scale
Forecast impact of product changes Reduce risk Test on smaller scale
Quantify user reaction

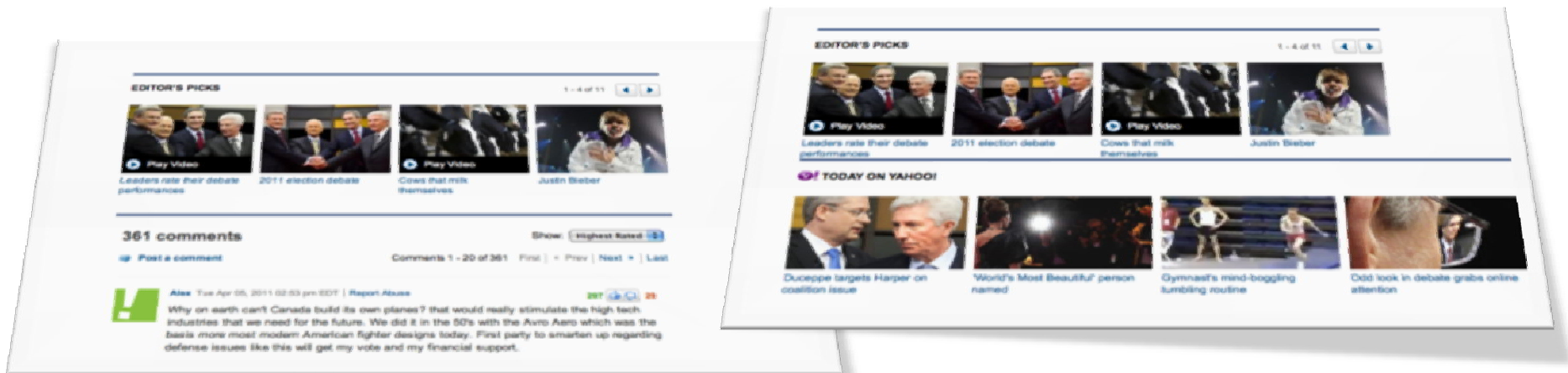


Workflow: Media Business Case

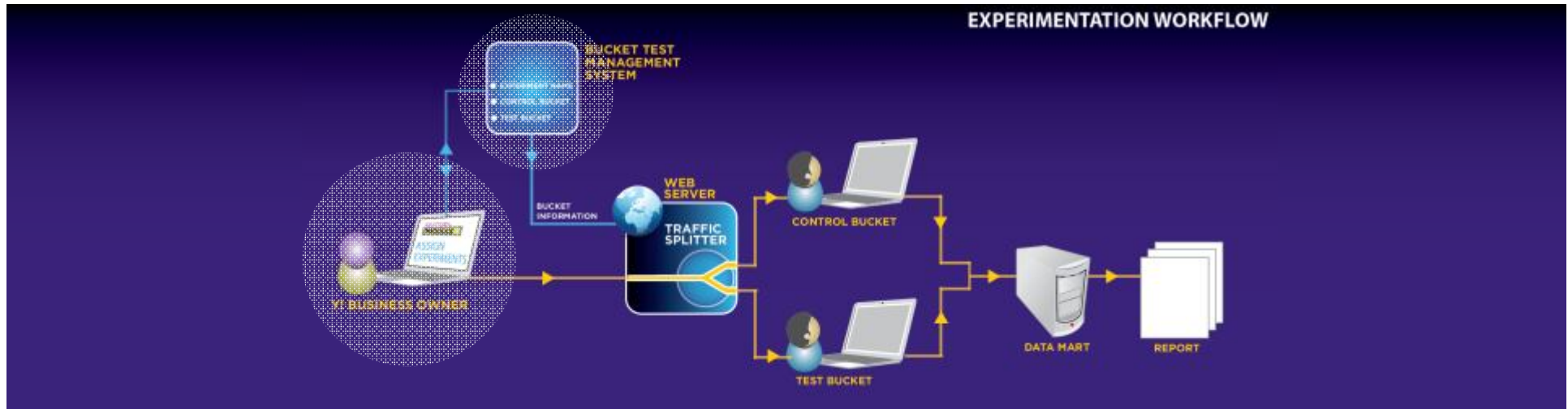
The media team desires to test the effect on user engagement for different layouts of a webpage before rolling it out to the entire audience...

HYPOTHESIS

The new layout is more engaging than the existing design...



Workflow: Setup, Targeting & Reporting



SETUP

The Editor sets up an experiment using the **Experiment Management System (EXP)**

The screenshot shows the **YAHOO! EXPERIMENTATION DATA & ANALYTICS** interface. The left pane displays **Step 3: Add Buckets** for an experiment named "QEDemo". It shows the **Remaining Bucket Percentage for "News99 (UK)": 90.0 %**. Under **Control Bucket**, the **Test ID** is "QE_Control" and the **Description** is "QE Control". The **Sample Size** is set to 0%. The right pane shows a table of **Running Experiments**.

Experiment ID	Name	Property	Start Date	End Date	Created By	Action
79	QE News	114 (News)	9/21/2011	9/21/2011	JD	View Stop
110	Article Experiment	114 (News)	11/10/2011	12/15/2011	JD	View Stop
79	QE_OEM	8811 (no org)	9/23/2011	9/23/2011	JD	View Stop
80	QE Demo	2182 (News99-UK)	10/20/2011	11/24/2011	JD	View Stop
107	QE Sports experiments	127 (Sports)	11/15/2011	11/30/2011	JD	View Stop
108	article_test	114 (News)	11/14/2011	12/11/2011	JD	View Stop
102	Newsreader Profile	114 (News)	11/4/2011	12/4/2011	JD	View Stop
106	article_test_child	114 (News)	11/15/2011	12/11/2011	JD	View Stop



Creating a new Experiment



Home

Manage

Create

Step 1 : Experiment Settings

Create New Experiment

Experiment Name

Example: "Search box width experiment"

◀ Required

Property

Start typing property name (eg. "Finance")

Hypothesis

Example: "A wider search box will result in a higher search CTR"

◀ Required

Start Date

Example: "9/15/2010"

@ 12:00am GMT

◀ Required

End Date

Example: "9/25/2010"

@ 11:59pm GMT

◀ Required

Sampling Method

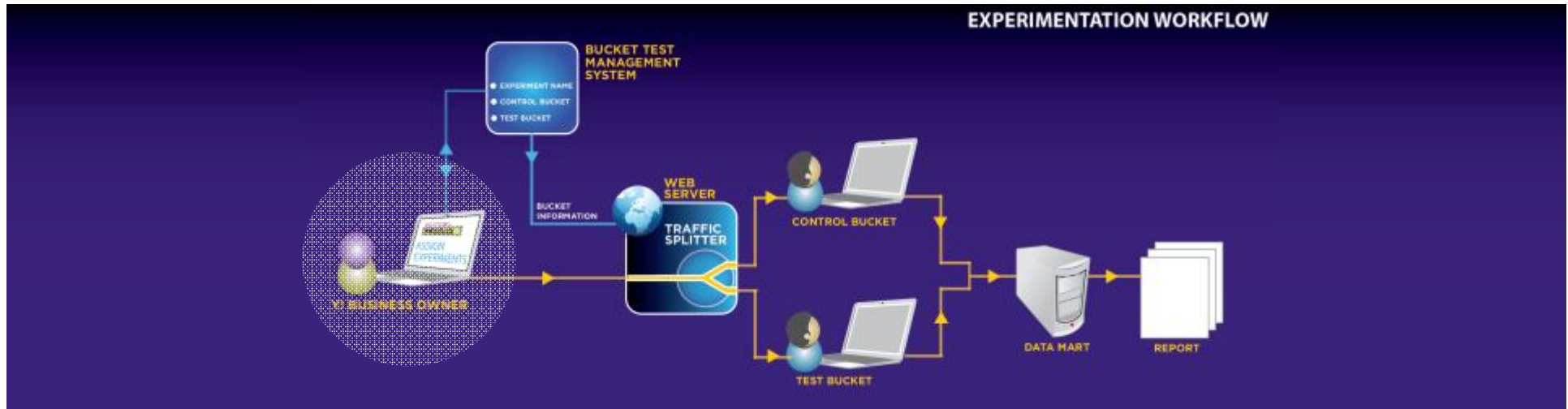
bcookie

◀ Required

Next

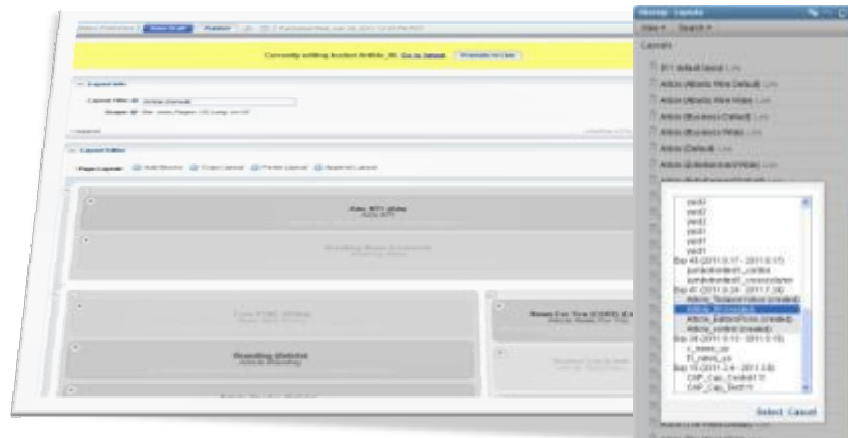


Workflow: Setup, Targeting & Reporting

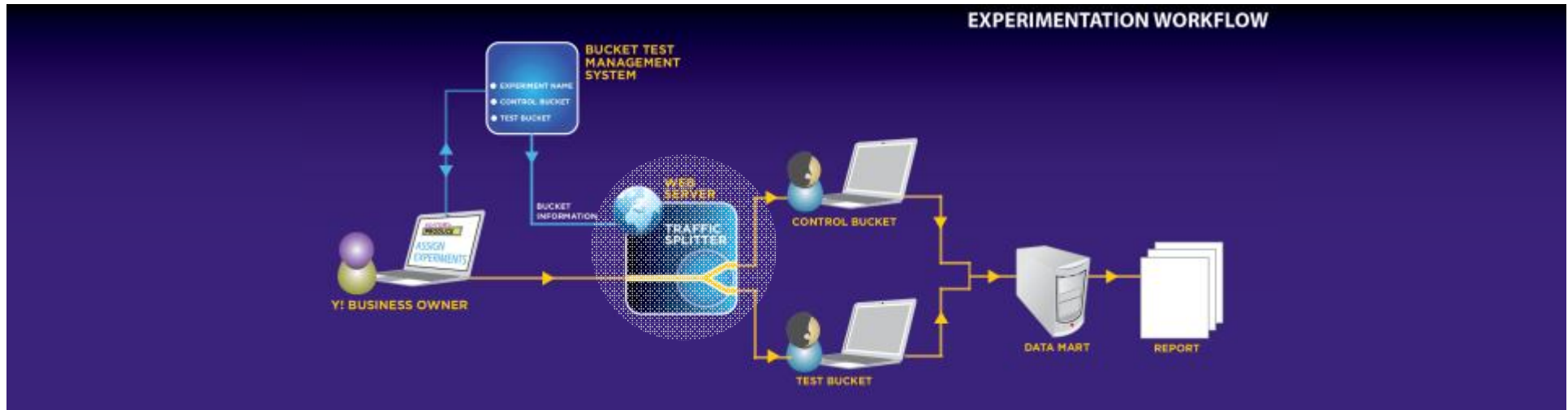


SETUP

The Editor assigns the experiment from the **Publisher Desktop (PD2)**



Workflow: Setup, Targeting & Reporting

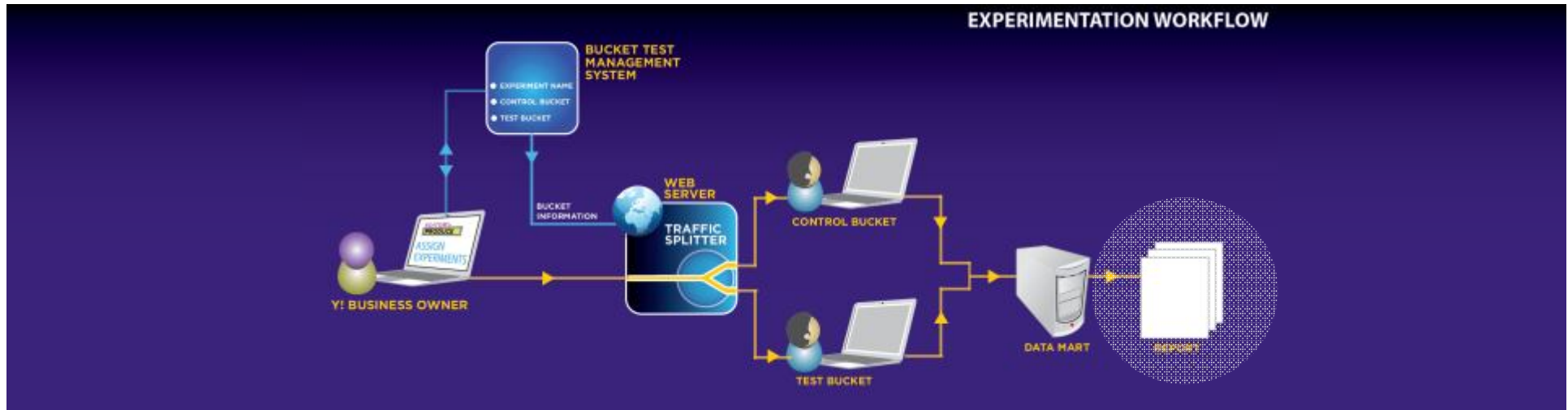


TARGETING

The Traffic Splitter then creates **control** and **test group** from all visitors of the page



Workflow: Setup, Targeting & Reporting



REPORTING

Microstrategy Reports with detailed findings from the test are made available to the Media team

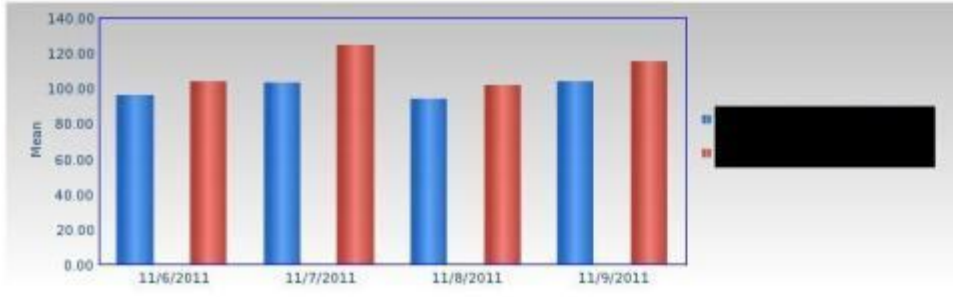
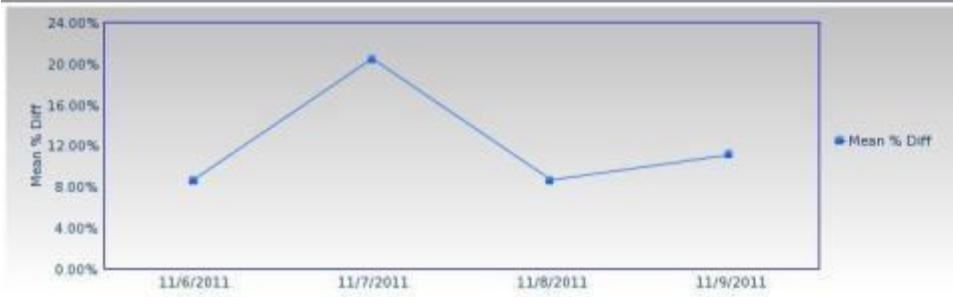


Results Summary

GROUPING: Metric: TimeSpent

Control Vs Test					Mean	Projected Value	Mean	Projected Value	
Date Range	Date	Mean % Diff	Projected Value Diff	zTest	pValue	Mean	Projected Value	Mean	Projected Value
		12.50%	1197494.93	2.70	0.0000	99.84	9579761.19	111.42	10777256.12
11/6/2011		8.58%	107742.50	0.94	0.4000	95.48	1954518.37	103.68	2122260.87
11/7/2011		-20.41%	549139.66	2.54	0.0400	102.81	2689997.85	123.80	3239136.52
11/8/2011		8.61%	203567.84	1.01	0.4000	93.45	2366296.34	101.50	2560863.18
11/9/2011		11.11%	200587.94	1.37	0.2500	103.73	2571039.90	115.26	2856627.83

Legend: ■ Significantly Better ■ Significantly Worse ■ Not Significantly Better ■ Insufficient data



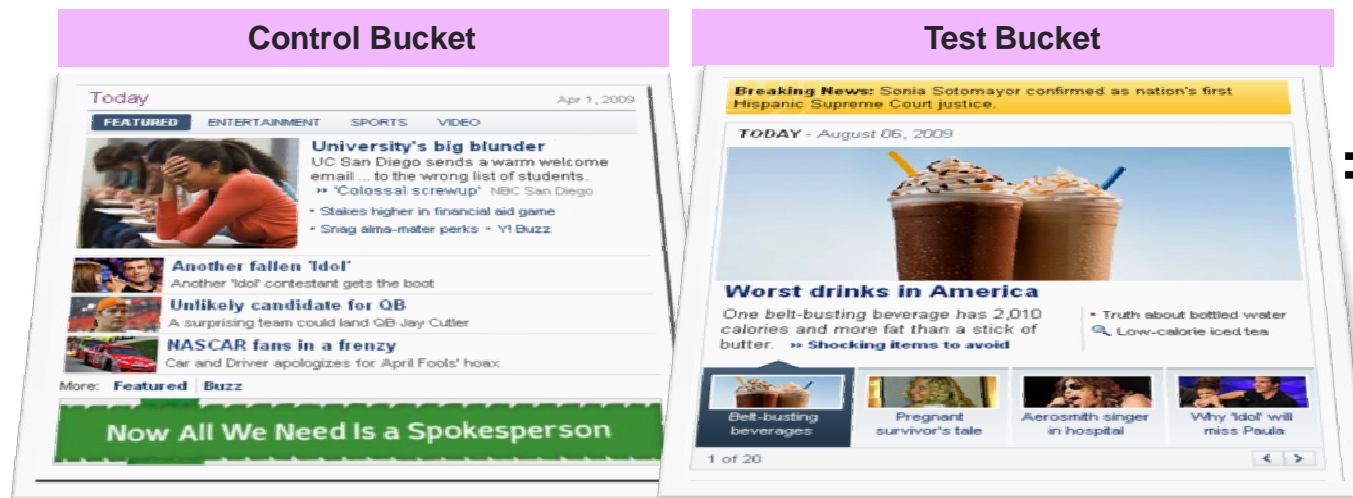
Time Spent – control Vs Test



Success Stories : Wider Today Module Headline Image

Front page team desires to test the effect on user engagement on the Today module content, as a result of widening the headline image

Control group has a narrow headline image and the test group has a wider headline image



The **CTR** of the Today module **increased** as a result of widening the headline image



Success Stories: Wider Search Box

Front page wants to test the effect on user engagement on Search link as a result of widening the search box.

Control group has a regular search box the test group has a wider version of search box

Control Bucket



Test Bucket



=

A wider and pronounced search box led to an **increase in the CTR** of the search link.



Thank You!

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