Deriving Key Insights from Blue Martini Business Intelligence

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Agenda

- Debenhams and MEC
- Web site, DSSGen, and Bots
- Easy insights – out of the box reports
- Harder insights – what you could write
- Actions at Debenhams and MEC
- BIG ROI project
- Q&A
Debenhams

Debenhams plc, “Britain's favourite department store”
- UK's fashion retail leader for more than 200 years
- Runs approximately 100 department stores in the UK and Ireland
- Offering brand-name women's, men's and children's apparel as well as high-end housewares and cosmetics
- Debenhams also offers the award winning ‘Queen's Award for Enterprise - April 2001’ bridal registry service

Debenhams online profile
- Over 500,000 customers
- About £18 million in total sales in the last year
- Wedding list purchases account for about half of sales

Clickstreams
- About 2M page views / week
- About 6,000 new customers per week
MEC

- MEC – Mountain Equipment Co-op
- Canada’s leading supplier of quality outdoor gear and clothing
- MEC has
  - 1.8 million members
  - Sales over $160 million
  - Seven physical retail stores
- As a co-op, MEC supports the community in several ways.
  - One of them is gearswap, an area of the site for selling used gear, where MEC makes no money
  - Products link to information promoting environmental responsibility
Survey

We asked early participants what they wanted to hear in this webinar

Observation:

• Everyone wants to learn how to start fires
• Few are thinking about fire safety
• What you don’t know can hurt you - bots
Bot Detection (Fire Safety)

- Bots are automated programs, sometimes called crawlers/robots
  Examples: search engines, shopping bots, performance monitors

- Significant traffic may be generated by bots

- Can you guess what percentage of sessions are generated by bots at MEC and Debenhams?
  
  - 23% at MEC
  - 40% at Debenhams

- Without bot removal, your metrics will be inaccurate

- Blue Martini has good heuristics, but look at the bot report and make sure your performance monitors are recognized
Website Checklist

- Collect clickstreams at 100%
  - You can’t improve what you don’t measure
- Turn ReverseDNS on to get host names, not IPs (note, this is off by default)
- Setup home page redirect correctly so that you do not lose referrers (avoid client-side redirects)
- When customizing site, don’t lose business events (search, checkout, etc)
- Do not run reports against web site DB, unless they are small. That’s why there is the DSS DB
Real Time Reporting Against Store

- Sometimes executing a small query against live DB makes sense.
- For example, on the www.bluemartini.com site, we provide our salespeople with a live query JSP that shows visitors from any domain to help sales activities. Example report below.
- For you, this could be useful for customer support, for example

IE6 user
Running Win 2000
Came from our press release on Yahoo

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Template</th>
<th>Time (min:sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>index.jsp</td>
<td>2:07</td>
</tr>
<tr>
<td>2</td>
<td>news/press_release_content.jsp</td>
<td>1:21</td>
</tr>
<tr>
<td>3</td>
<td>news/index.jsp</td>
<td>5:59</td>
</tr>
<tr>
<td>4</td>
<td>news/index.jsp</td>
<td>0:08</td>
</tr>
<tr>
<td>5</td>
<td>news/articles_list.jsp</td>
<td>0:53</td>
</tr>
<tr>
<td>6</td>
<td>redirect/external.jsp (<a href="http://comment.cio.com/crm/050702.html">http://comment.cio.com/crm/050702.html</a>)</td>
<td>1:11</td>
</tr>
<tr>
<td>7</td>
<td>news/index.jsp</td>
<td>0:09</td>
</tr>
<tr>
<td>8</td>
<td>company/company_browse.jsp</td>
<td>0:13</td>
</tr>
</tbody>
</table>
Setting Session Timeout

- Set your session timeout to an hour
- Note the impact session timeout has on the percent of people who will lose their shopping cart (or see annoying message)

Watch for an upcoming article on developer.bluemartini.com around this recommendation

Recommended timeout duration is 60 mins
2.5% of sessions with an item in cart will experience timeout

Left axis: % of Sessions that Experience Timeout
Right axis: % of Sessions with Add To Cart that experience a timeout

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DSSGen

- Reports should run against a data warehouse (DSS)
- DSSGen builds the data warehouse from the store/click/main DBs
- Normally, such an ETL (Extract/Transform/Load) process takes months to develop, but with Blue Martini you get 95% of it out of the box
- The other 5% are:
  - Adding your custom tables
  - Marking performance monitors/bots
  - Changing things due to web site customizations
- Common mistakes
  - Inappropriate hardware – Build and Reporting need strong hardware
  - Bad database setup (Oracle must be tuned)
  - Running DSSGen without –parallel flag
  - Running all reports every DSSGen run instead of daily, weekly, monthly options
Reports

- Blue Martini provides two ways to build reports
  - Crystal Reports
    - Industry standard
    - Easy to layout reports
    - Limited capability to transform data (e.g., can’t sort by percentages requiring multiple passes)
  - Blue Martini Reports
    - Use transformation chains
    - Can integrate multiple investigations into unified report
    - Generic reports easy, custom reports require JSP coding
    - Visualizations are interactive
Dataviz Webstart

- Every graph has a “dataviz” icon
- Example: the standard dashboard

**Demo**

- View->Scatterplot
- Right click Settings, X: Day of week Y: hour of day, size: heatmap, color -> web visits
Easy Insights – Out of the Box Reports

- With the Analysis Center, you get an extensive set of reports for web analytics and sales analysis
- Here are some examples from Debenhams and MEC
Search Effectiveness at MEC

- Customers that search are worth two times as much as customers that do not search
- Failed searches hurt sales

<table>
<thead>
<tr>
<th>Visit</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search (64% successful)</td>
<td>Avg sale per visit: 2.2X</td>
</tr>
<tr>
<td>Last Search Succeeded</td>
<td>Avg sale per visit: 2.8X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg sale per visit: $X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last Search Failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg sale per visit: 0.9X</td>
</tr>
</tbody>
</table>
Top Searches

- Top searched keywords (percent of searches)
  - Empty search string (3.9%) returns over 160 results
  - GPS (1.2%)
  - sunglasses (0.8%)
  - watches (0.6%)
  - nalgene (0.5%)
  - ecological footprint (0.5%)

  Recommendation:
  - Do not allow empty search
  - Create custom pages for often searched keywords

- Top failed keywords in the product category (percent of failed searches)
  - gift certificate(s) (0.98%) (already implemented since study)
  - arc’teryx (0.44%)
  - bear spray (0.44%)
  - pedometer (0.37%)
  - stroller(s) (0.36%)
  - north face (0.33%)
  - (gift) registry (0.21%)

  Recommendation:
  - Parse search string to remove special characters
  - Build extensive thesaurus
  - Consider carrying products
Referrers at Debenhams

- **Top Referrers**
  - **Google**
    - 5.8% of all visits are referred by google
    - Visit to purchase conversion 1.6%
    - Average purchase per visit = 1.8X
  - **MSN (including search and shopping)**
    - 11% of all visits are referred by MSN
    - Visit to purchase conversion 0.7%
    - Average purchase per visit = X
  - **AOL search**
    - 0.62% of all visits are referred by AOL Search
    - Visit to purchase conversion 2.6%
    - Average purchase per visit = 4.8X

*Recommendation*

Define an ad strategy based on ROI

Emphasize AOL
Micro-Conversion Rate at Debenhams

- Understand abandonment and conversions
- Not just visitor to purchaser, but also the micro-conversions
- Shopping Cart Abandonment 62% = 55% + 45% * 17%
- Abandonment varies from about 25%-80% across sites
- Excellent opportunity to identify problematic steps in processes and improve
- Also a good way to identify abandoned products, send targeted e-mails if those products are on sale
Acxiom

- BMS supports ADN – Acxiom Data Network
- Seamless integration: get username/password
  Note: Acxiom recently changed their interface, so you will need a patch
- Comprehensive collection of US consumer and telephone data available via the internet
  - Multi-sourced database
  - Demographic, socioeconomic, and lifestyle information.
  - Information on most U.S. households
  - Contributors’ files refreshed a minimum of 3-12 times per year.
  - Data sources include: County Real Estate Property Records, U.S. Telephone Directories, Public Information, Motor Vehicle Registrations, Census Directories, Credit Grantors, Public Records and Consumer Data, Driver’s Licenses, Voter Registrations, Product Registration Questionnaires, Catalogers, Magazines, Specialty Retailers, Packaged Goods Manufacturers, Accounts Receivable Files, Warranty Cards
Example - Income

- Graph showing incomes for a company that targets high-end customers based on POS purchases.
- Income of their customers in blue.
- The US population in red.

Note highest bracket (30% vs. 5% for US).
Product Affinities

- Which products sell well together
- Together these form a model which can be used as a *Product Recommender*

Note: this does not ship by default as an AC report, but as an example investigation
### Product Affinities at MEC

<table>
<thead>
<tr>
<th>Product</th>
<th>Association</th>
<th>Lift</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orbit Sleeping Pad</td>
<td>Orbit Stuff Sack</td>
<td>222</td>
<td>37%</td>
</tr>
<tr>
<td>Bambini Tights Children’s</td>
<td>Bambini Crewneck Sweater Children’s</td>
<td>195</td>
<td>52%</td>
</tr>
<tr>
<td>Silk Crew Women’s</td>
<td>Silk Long Johns Women’s</td>
<td>304</td>
<td>73%</td>
</tr>
<tr>
<td>Cascade Entrant Overmitts</td>
<td>Polartec 300 Double Mitts</td>
<td>51</td>
<td>48%</td>
</tr>
</tbody>
</table>

- **Minimum support for the associations is 80 customers**
- **Confidence:** 37% of people who purchased Orbit Sleeping Pad also purchased Orbit Stuff Sack
- **Lift:** People who purchased Orbit Sleeping Pad were 222 times more likely to purchase the Orbit Stuff Sack compared to the general population
Product Affinities at Debenhams

<table>
<thead>
<tr>
<th>Product</th>
<th>Association</th>
<th>Lift</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Reversible Mats</td>
<td>Egyptian Cotton Towels</td>
<td>456</td>
<td>41%</td>
</tr>
<tr>
<td>White Cotton T-Shirt Bra</td>
<td>Plunge T-Shirt Bra</td>
<td>246</td>
<td>25%</td>
</tr>
</tbody>
</table>

- **Minimum support for the associations is 50 customers**
- **Confidence:** 41% of people who purchased Fully Reversible Mats also purchased Egyptian Cotton Towels
- **Lift:** People who purchased Fully Reversible Mats were 456 times more likely to purchase the Egyptian Cotton Towels compared to the general population
Identifying Top Products - Debenhams

It’s hard to update top products manually

Website recommended products for Homeware - Bedroom

Top Homeware – Bedroom products for the last year

- Bombay Quilt Cover
  - Units: 10.1X
  - Revenue: 7.3Y

- Elephant Parade Quilt Cover
  - Units: 10X
  - Revenue: 8.2Y

- Opulent Check Quilt Cover
  - Units: 9.7X
  - Revenue: 6.1Y

- Elephant Parade Throw
  - Units: 8.7X
  - Revenue: 2.6Y

- Quilt Cover Oxford edge border
  - Units: X
  - Revenue: Y

- Polycotton Mattress Cover Set
  - Units: 1.7X
  - Revenue: 0.8Y

- Border Quilt Cover
  - Units: 5X
  - Revenue: 6.4Y

It’s hard to update top products manually.
## Campaign Analysis - Debenhams

- Analyze the effectiveness of campaigns

### Recommendation:
- Send targeted emails

### Click-through rates are high - good

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Emails Sent</th>
<th>Opens</th>
<th>Click-throughs</th>
<th>Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign 1</td>
<td>100% (4.8p/email)</td>
<td>22%</td>
<td>9.3% (52p/email)</td>
<td>0.07%</td>
</tr>
<tr>
<td>Campaign 2</td>
<td>100% (0.5p/email)</td>
<td>11%</td>
<td>3% (17.9p/email)</td>
<td>0.01%</td>
</tr>
<tr>
<td>Campaign 3</td>
<td>100% (0.8p/email)</td>
<td>22%</td>
<td>5.3% (15.3p/email)</td>
<td>0.01%</td>
</tr>
</tbody>
</table>
Campaign and Ad “Tricks”

To track clickthrough from external ads

- Use jump pages (e.g., www.foo.com/ad2.jsp) or
- Add unused extra parameter to URL
  - http://www.bluemartini.com/bi&biwebinar=3
  - The biwebinar=3 will be ignored, but you can then see how many sessions have biwebinar=3 in the first request

Examples

- Use with Google adwords
- Use with rented lists, which you can’t mail using Blue Martini’s campaign management / RM
Page Effectiveness Report
Percentage of visits clicking on different links

14% Top Menu
3% Any product link
2% Welcome page
8% New Year
2% New Year
13% New Year
9% New Year
0.6% New Year

18% of visits exit at the welcome page
Top Links followed from the Welcome Page: Revenue per session associated with visits

Note how effective physical catalog item #s are
“Harder” Insights

- Blue Martini collects a lot of data for which there are no out-of-the-box reports yet
- Some will be in future releases
- Some need to be written depending on your attributes, hierarchy, etc
- Some answer specific questions you have

- BMAS has developed many such reports
Top Searches On Search Engines / Internet Portals

- Which keywords do people type on popular search engines/internet portals to get to our site?
- The ‘Referrer’ recorded as part of the Blue Martini clickstream data contains these keywords
- For example
  - AOL Search: http://aolsearch.aol.co.uk/web.adp?query=department%20stores%20uk
- Extract the keywords, substitute HTML escape characters with their ASCII equivalents (such as ‘space’ for ‘%20’)
- Determine the top searched keywords
Top Searched Keywords (Debenhams)

- Variations of Debenhams are by far the most frequent
  - DEBENHAMS
  - debenhams.com
  - debenhams;direct
  - debenhams department store

- Other interesting search keywords

Google
- Burberry
- Calvin Klein Crave
- Cravela / Cravela Shoes
- Jane Packer / Suede Boots

MSN Search
- Faith shoes
- Nike
- Wedding invitations
- Luggage
- Swimwear

AOL Search
- burberry
- carvela
- Mother of the bride
- Skiwear
- Jane Packer
- BRIDESMAIDS

Recommendation
Monitor top searched keywords to identify interesting trends
Form errors logged on 5.0 and later

- Any form that is filled and has an error caught by the Blue Martini architecture generates a Form Error event
- MINE_EVENT table in the DSS database has these
- BMAS has written initial reports to analyze typical form errors and help website designers improve the form design
- For example, on MEC there were thousands of errors on the member application page and address change page
  - Many errors for fields that cannot be empty
  - Many mismatches between postal code and region
Usability – Form Errors

This was the Bluefly home page

Looking at form errors, we saw thousands of errors every day on this page

Any guesses?
Improved Home Page

This is the new Bluefly home page

- Search box added
- E-mail box clearly marked as email
Building The Customer Signature

- Building a customer signature is a significant effort, but well worth the effort.
- A signature summarizes customer or visitor behavior across hundreds of attributes, many which are specific to the site.
- Once a signature is built, it can be used to answer many questions.
- The mining algorithms will pick the most important attributes for each question.
- Example attributes computed:
  - Total Visits and Sales
  - Revenue by Product Family
  - Revenue by Month
  - Customer State and Country
  - Recency, Frequency, Monetary
  - Latitude/Longitude from the Customer’s Postal Code
Migration Study - MEC

- Customers who migrated from low spenders in one 6 month period to high spenders in the following 6 month period

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spent over $200</td>
<td>Spent over $200</td>
</tr>
<tr>
<td>Spent $1 to $200</td>
<td>(5.5%)</td>
</tr>
<tr>
<td></td>
<td>Spent under $200</td>
</tr>
<tr>
<td></td>
<td>(94.5%)</td>
</tr>
</tbody>
</table>

Migrators
Key Characteristics of *Migrators* at MEC

- During October 2001 – March 2002 (Initial 6 months)
  - Purchased at least $70 of merchandise
  - Purchased at least twice
  - Largest single order was at least $40
  - Used free shipping, not express shipping
  - Live over 60 aerial kilometers from an MEC retail store
  - Bought from these product families, such as socks, t-shirts, and accessories
  - Customers who purchased shoulder bags and child carries were LESS LIKELY to migrate

**Recommendation:**
Score light spending customers based on their likelihood of migrating and market to high scorers.
RFM – Recency, Frequency, Monetary (described in appendix). Insights from Debenhams

- Anonymous purchasers have lower average order amount
- Customers who have opted out [of e-mail] tend to have higher average order amount
- People in the age range 30-40 and 40-50 spend more on average
Customer Locations Relative to Retail Stores

Heavy purchasing areas away from retail stores can suggest new retail store locations.

No stores in several hot areas: MEC is building a store in Montreal right now.
Distance From Nearest Store (MEC)

- People farther away from retail stores
  - spend more on average
  - Account for most of the revenues
World Wide Revenue Detail

Although Debenhams online site only ships in the UK, we see some revenue from the rest of the world.

UK – 98.8%
US – 0.6%
Australia – 0.1%

NOTE: About 50% of the non-UK orders are wedding list purchases
Other Results at MEC (See Appendix)

- Free shipping changed to flat-fee (C$6 flat charge)
  - Orders - down 9.5%
  - Total sales - up 6.5%

- Gear Swap (buy/sell used gear)
  - Visit-to-Purchase very low: 0.34% vs. 2.1% for non gear-swap
  - However, these visitors converted to purchasing customers (over multiple visits) at a rate 62% higher than visitors who never visited gear swap!

- Visits where an FYI page (For-Your-Information) page was viewed had a Visit-to-Purchase conversion of 7.1%
Other Results at Debenhams (See Appendix)

- People who got the timeout page for a high percentage of their sessions are less likely to migrate (to heavy spenders)
- Revenue due to wedding list item purchases is clearly affected by summer weather
  - Weddings are more common in the summer in the UK
  - In June/July, 65% of revenues were generated through the wedding list
- A page-tagging-based service provider was used, but was about 30% inaccurate due to people hitting links before page download was complete
MEC Actions Resulting From Analysis

● Done
  ● Implemented links to on-line shop from Gear Swap (appendix has before and after pictures)
  ● Implemented gift certificates and increased their visibility on the site (#1 failed search)
  ● Used the content page view information to inform our IA redesign

● Planned
  ● Refine internal measures by removing bot, internal and production host visits
  ● Design and implement controlled experiments to help guide our content planning process in particular
  ● Product Recommender (as budget permits)
Debenhams Actions

- **Note**: Debenhams analysis delivered recently, so there was less time to take action

- **Done**
  - Increased session timeout

- **Planned**
  - Some failed searches were for products available at stores but not online. Will import all brands and offer a store locator for brands not available online
  - Looking to enable ‘save basket’ functionality
BIG ROI Project

- The Business Intelligence Group (BIG) Guarantees Return On Investment in 6 months or You Don’t Pay

- Process
  - Client provides us with a backup of databases
  - BI group analyzes data and makes recommendations
  - BI group provides the JSP changes using a test/control group methodology
    - Half the people will see the “old” site (control group)
    - Half the people will see our recommendations (test groups)
  - Client approves the changes, QAs, deploys
  - Client provides us with a second backup for assessment
  - Client pays 20% of the revenue delta between the test and control groups, extrapolated to the next 6 months, assuming it would be implemented for everyone
The ROI

- Assuming your profit margin is about 20%, this project has a 6-month ROI.

- With a test/control group methodology, the delta revenue is clear:
  - Seasons, ads, campaigns will affect both the test group and the control group in the same way.
  - Once the experiment is done, you can end the experiment and stop the control group (old site).

- Example:
  - Measurement time: 2 weeks
  - Revenue for control group is $200,000
  - Revenue for test group is $205,000
  - Expected revenue if implemented for everyone: $410,000
  - You pay: 26 weeks / 2 weeks * ($410,000-$400,000) * 20% = $26,000
Qualifications

- Must run 4.1.4 or later, preferably 5.0 or 5.5
- Must have clickstream collection on at 100%
- Must commit to timeline
  - Must be able to generate backup of DBs and send to Blue Martini
  - Commit to implement changes in 3 weeks from the time code is provided by BMAS
    - We will not recommend significant site changes
    - We will provide the code to implement changes
Examples and Commitments

- **Potential recommendations:**
  - Improvements to usability
  - Improvements to search
  - Product recommender for cross sells, top products
  - Identification and reduction of abandonment

- **Commitments by Blue Martini**
  - We will fix code that the BI group provided for this agreement, free of charge, to help deployment
  - This SOW (Statement Of Work) will be governed by your existing contract with Blue Martini. (Easy contractual agreement.)
Additional Resources

- Business Intelligence - Getting Started Guide on http://developer.bluemartini.com
- Data Mining Tutorial on http://www.bluemartini.com/bi
- MEC case study at http://www.bluemartini.com/bi
- Debenhams case study at http://www.bluemartini.com/bi
- Appendix has more examples

For questions and a copy of these slides, send e-mail to bi-sales@bluemartini.com
Q&A

- Questions and Answers
- Type your questions into the Q&A (upper-left)
Appendix

Here are additional slides with some interesting insights
Recency, Frequency, and Monetary calculations are used extensively in retail for customer segmentation

Implemented the Arthur-Hughes RFM Cube
- R, F, and M scores are binned into 5 equal sized bins
- Each dimension is labeled 1 (best) – 5 (worst)

Interactive visualization using Filter Charts

Look at charts instead of cell-tables
More frequent customers have higher average order amount

Majority of customers have purchased once

Recommendation
Targeted marketing campaigns to convert people to repeat purchasers, assuming they did not opt-out of e-mails
Interacting with the RFM visualization

- Explore sub-segments with filter charts

![Graph showing age bins with different customer counts](image)

- People in the age range 30-40 and 40-50 spend more on average

![Graph showing anonymous purchaser](image)

- Anonymous purchasers have lower average order amount
RFM for Debenhams Card Owners

Debenhams card owners
Large group (> 1000)
High average order amount
Purchased once (F = 5)
Not purchased recently (R=5)

Recommendation
Send targeted email campaign since these are Debenham’s customers. Try to “awaken” them!
Customers who have opted out tend to have higher average order amount

- Customers who have opted out tend to have higher average order amount

**Recommendation**
Send targeted emails to prevent email fatigue

**Recommendation**
Log changes to opt out settings and track unsubscribes to identify email fatigue
Free Shipping Offer (MEC)

- Free shipping stopped on Aug 14, 2002
- A flat $6 Canadian Dollars shipping charge introduced
- Express shipping at higher charge continues

Observations

- Total sales - up 6.5%
- Revenue (excluding shipping and tax) - up 2.8%
- Orders - down 9.5%
- Average Sales per Order – up 18%
Free Shipping Offer (Cont.)

- The distribution shows fewer orders from low spenders (probably a good thing)
- No impact on rest of buyers

![Graph showing distribution of orders]

**Fewer low spenders (<= $50)**
Free Shipping Offer (Cont.)

- Breakdown of orders by shipping method
- More people used express shipping, probably because the delta to ship express wasn’t as large (from C$6 instead of from C$0)

Free/Standard Shipping

Express Shipping
Recommendation:
Link back to MEC Shopping from Gear Swap
GEAR SWAP - Cycling

Looking for a used bike to take on your next outdoor adventure? MEC's OutdoorGearSwap.com is the place to buy, sell, and trade used bikes and other cycling gear.

229 Items Found  Show 20  Items Pages: 1 2 3 4 5 6 7 8 9 10 11 12

Showing 1-20 of 229 items:

Sort Listing By: Title  Region  Type  Price  Date

Kona Lavadome  BC  For Sale  550.00 OBO cad

Description: 15" green, great bike, like new. Perfect for petite lady or teen wanting to get into mountain biking. Rock Shocks front suspension, Shimano LX components, new brake pads, 1 1/2 inch travel on front tire.

Date: Feb 10  Name: Nicky
Contact Info: 604-904-9456
Email: toybrink@hotmail.com

2002 TIME ATAC CARBON PEDALS  ON  For Sale  150 cad
Definitions for Gear Swap Analysis

- A visitor is defined as someone who is registered (MEC member) or is identified by a cookie
  - Note that in the Blue Martini system a registered user will have all of his/her cookies combined into a single visitor ID

- Comparing visitors who viewed gear swap with those who did not
  - Several non-bot sessions have 1 request that just visited the MEC homepage (Main/home.jsp)
  - To get to the Gear Swap section you have to click at least twice
  - To make a fair comparison we have excluded all 1 request sessions that just visited the MEC homepage (Main/home.jsp) from the following analysis
Visitors who viewed Gear Swap pages had a 62% higher visitor to purchaser conversion ratio as compared to those who did not view Gear Swap.

<table>
<thead>
<tr>
<th>Category</th>
<th>Visitors who ever viewed Gear Swap</th>
<th>Visitors who never viewed Gear Swap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitors</td>
<td>14.3% of X</td>
<td>85.7% of X</td>
</tr>
<tr>
<td>MEC members</td>
<td>20.8% of Y</td>
<td>79.2% of Y</td>
</tr>
<tr>
<td>Purchasing Customers</td>
<td>21.1% of Z</td>
<td>78.9% of Z</td>
</tr>
</tbody>
</table>
Distribution of Orders (the real ROI)

Overall

Orders: X
Average Basket Value: $Y

Visitors who ever viewed Gear Swap

Orders: X
Average Basket Value: 1.05 * Y

Visitors who never viewed Gear Swap

Orders: 3,875 (78.3%)
Average Basket Value: 0.98*Y
Distribution of Visits

- Although, Gear Swap visitors have lower visit-to-purchase conversion than non Gear Swap visitors, they visit more often and their overall visitor-to-purchase conversion is higher

**Overall**

<table>
<thead>
<tr>
<th></th>
<th>Visits:</th>
<th>Visit to Purchase Conversion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitors who ever</td>
<td>24.8% of X</td>
<td>1.94%</td>
</tr>
<tr>
<td>viewed Gear Swap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitors who never</td>
<td>75.2% of X</td>
<td>2.3%</td>
</tr>
<tr>
<td>viewed Gear Swap</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Effectiveness of FYI Pages

- People viewing FYIs are more likely to purchase

**Viewed FYI**

- Visits: 6.2% of all
- Purchases: 23% of all
- Visit-to-Purchase: 7.1%
- Avg. Sales per Visit: 6.1X

**Did Not View FYI**

- Visits: 93.8% of all
- Purchases: 77% of all
- Visit-to-Purchase: 1.2%
- Avg. Sales per Visit: $X

**Recommendation:**
Controlled experiment to study the effect of FYIs
FYIs (Cont.)

- Setting up controlled experiments to study the cause-effect relationship of FYI
  - Select a handful of products (say 6) for introducing FYIs
  - Randomly show the new FYIs to 50% of the visitors viewing these products and don’t show the FYIs to the other 50% of the visitors
  - At the end of the trial period (say 2-3 weeks) measure the visit-to-purchase conversion of the two groups
  - Determine if there is a significant difference in the visit-to-purchase conversion of the two groups
Some attributes are more useful when combined with other attributes.

For each visitor we computed the number of sessions which went to the page timeout.jsp.

This was binned as shown on the X axis of the chart.

The height shows the number of visitors in each bin and color shows the percentage of those visitors who migrated.

Just looking at this variable alone it is difficult to tell what the pattern is.
By combining the number of timeout sessions with the total number of sessions for each visitor a pattern emerges.

In this heatmap the X axis shows the total number of sessions, the Y axis shows the number of timeout sessions, and color shows the percentage of migrators at each pair of values.

The green along the diagonal shows that people who got the timeout page for a high percentage of their sessions are less likely to migrate.
The number of sessions a visitor has is a good indicator of whether or not they will migrate.

However there are some inconsistencies that are apparent. For example, why does the percent of visitors who migrate drop at 19 sessions?

We can construct new attributes based on the relationship we saw between the number of timeouts and the number of sessions.

Two more attributes can be created:

- Number of sessions that did not time out
- Percentage of sessions that did not time out
Migrators: Timeout

Number of sessions without timeout is a good predictor of migration

Percentage of sessions without timeout is also a good indicator of migration

* 68,000 visitors with no timeout sessions have been filtered out
Revenue due to wedding list item purchases clearly affected by summer weather, when weddings are more common in the UK.
Hidden Page Requests

- Page Tagging
  - Debenhams used a third-party ASP that uses page tagging to track users
  - Tag generation implemented using a separate JSP
  - This causes two requests to be executed
    - Generates higher server load
    - Hurts user experience

- Many users are clicking on links before the complete page downloads
  - Page Tag jsp is never executed
  - Statistics are inaccurate: 34% of non-bot sessions did not execute the page tagging jsp