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MARKETING AUTOMATION

John D.C. Little

MIT Sloan School
MARKETING AUTOMATION

AGENDA

* Motivation
* Formulating the Challenge:
  - 5 components
* Marketing Mix Variables
  - What do I see at Circuit City?
  - What do I see at Walmart?
* Technologies
* Online Promotion Project
* Key points
MOTIVATION

* just about everything on the web must be programmed
* decision rules and models are required
* huge amounts of data are automatically collected
* technologies exist to improve performance

The situation is made to order for marketing automation
MOTIVATION (cont.)

A recent game theory analysis of internet booksellers concludes:

* major branded booksellers will tacitly collude
* the others will adopt mixed high/low pricing
* these predictions “compare well” to actual pricing behavior

But this type of research doesn’t make specific price (or other) recommendations.
KEY QUESTION

What do we tell retailer X to do when customer Y arrives on Monday morning?

* what specific prices (and values of other marketing mix variables) should be set?
* how can retailer X adaptively change the marketing mix over time?
* what should X’s overall strategy be?

If we can work out the rules, we can automate them.
A FRAMEWORK FOR MARKETING AUTOMATION

(as designed for a Circuit City or an Amazon)

Levels of system operation:

1. Data inputs
2. Real time decision rules
3. Updates of the decision rules
4. Feedback to site management
5. Strategy choice
A FRAMEWORK FOR MARKETING AUTOMATION (cont.)

Level 1: **Data inputs**
- clickstreams of visitors and customers
- data from comparison engines, spiders

Level 2: **Real time decision rules**
- price
- promotion
- display
- page design on the fly
- personalization
A FRAMEWORK FOR MARKETING AUTOMATION (cont.)

Level 3: **Updating decision rules**
- analysis of historical data
- fine tuning of parameters
- adaptive experimentation

Level 4: **Feedback to site management**
- quality control, trend monitoring
- early warning on market changes

Level 5: **Strategy choice**
- positioning: Saks or Walmart?
- target segments
WHAT ARE THE MARKETING MIX VARIABLES?

What do we see at:

Circuit City?
Walmart?

Others?
Personalized Jewelry
Just for Mom

Create a unique ring or pendant today for arrival by Mother's Day. See all jewelry.

- **Loving Promise Ring**
  - From $99.97
- **Flowering Heart Pendant**
  - From $109.97
- **Harmony Ring**
  - From $139.97

Prices shown for 10kt gold & synthetic stones.

Great Gifts for Grads

- **High School Class Rings**
- **No Shipping Charges!**
- **Low Prices on Top Brand Watches**

Your graduate will love the customized design, you'll love the low price. Personalize a class ring today!

Buy any digital camera and there will be no charge for standard shipping.

See all digital cameras.

Find a wide selection of cool styles from Kenneth Cole, Guess and others.

See all watches.

Best Brands, Best Prices

Find your favorite brands at our Every Day Low Prices.

- **Xbox**
- **Little Tikes**

See the coolest games from Xbox.

Find PlayStation 2 packs, accessories and new games.

Inspire your child’s imagination with Little Tikes toys.

Spider-Man Sweepstakes

Win a Spider-Man vacation or see low prices on Spider-Man toys, games and more.

Baby Basics

Register for your shower, design birth announcements, shop for baby gear and more.

Vacations

Carnival 3-Day Bahama Getaway

From $247

Call us at 1-800-288-6036, See more cruises.

Wedding Essentials

- **Keepsake**
  - **Diamonds**
  - **Bridal Jewelry**

Best prices on high-quality bridal jewelry.
Say the magic word and feel slimmer in your swimsuit.

The word is faille. (Say it "file.") And the feel is amazing. This soft ribbed fabric found in our Faille Tankini slims you, shapes you, and gives you a real feeling of confidence and comfort. Like you never thought you could feel in a swimsuit again.

Try one of our faille suits and let those stretchy ribs start working their magic.

New! Pima Lisle Golf Polo, $32

Why should a great Golf Shirt cost as much as a pitching wedge?

Introducing our new Pima Lisle Golf Polo. It's softer, silkier than most $60-and-up shirts with a true golf shirt fit.

And at $32, you might even save enough to pay for a round.

Let Swim Finder locate your perfect suit!

Quickly sorts through hundreds of Suits by:

- Body Shape
- Anxiety Zones
- Leg Height
- Bra Style
- 18W-26W
- Mastectomy
- and more!

It's fast...it's fun! Try Swim Finder today! Or, visit Swim Headquarters to see new styles, swim separates, & more.

Contact Us

Business Outfitters:

- We're here to help — by phone or
- Business solutions: quality logos, etc.
My Personal Shopper
Like having a personal wardrobe consultant!

My Personal Shopper lets you access an expert shopper who suggests products that best suit your unique taste, style and preferences.

[men's items] [women's items]

Log-in or Register a Lands' End Personal Shopping Account and we'll save your preferences for later.
MY PERSONAL SHOPPER

GETTING STARTED

Create a personal profile.
It only takes a few minutes to create your own profile so that your Personal Shopper can suggest items and outfits to suit your style. Just provide us with some basic information about your clothing preferences so that your Personal Shopper is able to tailor recommendations just for you.

What size do you normally wear?
- Regular

For which occasion would you like to create a profile?
- Work
- Leisure

Now you’ll be guided through a series of image choices. Select the image that you feel best expresses your personal taste and dressing style.

[Continue]
Hello, John D.C. Little. We have recommendations for you. (If you're not John D.C. Little, click here.)

Mother's Day is May 12

By Recipient | By Price | Top Sellers | Order Flowers

Pre-order the Oscar®-winning blockbuster *The Lord of the Rings: The Fellowship of the Ring*, arriving on DVD and video August 6.

**Your Recommendations**

**The Serotonin Solution**

*Book Description*

Based on Dr. Judith Wurtman's fifteen years of groundbreaking research at M.I.T., *The Serotonin Solution* is the first book to promote weight loss and eating control through serotonin, the neurotransmitter responsible for calmness and emotional well-being. Through Wurtman's patented Serotonin... Read more | (Why was I recommended this?)

More Recommendations

- *Food & Mood* by Elizabeth Somer, Nancy L. Snyderman (Why?)
- *The Future of Banking* by Henry Engler, James Essinger (Why?)
- *Financial Services Information Systems* by Jessica Keyes (Editor) (Why?)
- *Navigating the Customer Contact Center in the 21st Century* by William Durr (Why?)

**Your Books Store**

**Empire Falls**

Amazon.com's Best of 2001
Welcome to BizRate!
Compare prices and customer ratings of over 1,500 stores to always get the best deal!

Top Sellers
1. Canon PowerShot G2
   - See it at CityWideDigital.com
   - See all Top Sellers in Digital Cameras

2. Palm Vx
   - See it at hudbis.com
   - See all Top Sellers in PDAs & Handhelds

3. Sony Handycam DCR-VXR300
   - See it at CityWideDigital.com
   - See all Top Sellers in Camcorders

Featured Products
- Angel by Thierry Mugler
  - Found at 13 stores
  - Compare stores & prices

- Spring Tulips
  - Found at 6 stores
  - Compare stores & prices

Money-Saving Special Offers

http://www.bizrate.com
A HIERARCHY OF DECISION VARIABLES

First, an allocation of space to functions:

* title
* search box
* sponsored advertising
* special offers
* promoted products
* top sellers
* category index
* administrative items
A HIERARCHY OF DECISION VARIABLES

But a function often contains choices, sub-choices, … e.g.

promoted products
  * number
  * product 1
    - price
    - picture
    - link to product advisor
    - sales copy
      version 1
...

* product 2
...
POTENTIAL TECHNOLOGIES

* space allocation models
* assortment design models
* machine learning
  - reinforcement learning
* personal advisors
  - recommendation agents
* customer profiles
* market response models

Many of these are well developed
ONLINE PROMOTION PROJECT

Hauser, Simester, Little, students
(ongoing for about nine months)

* Focus on promotion within marketing mix
* Design and delivery of online promotions

* How many customers should receive offers?
  Which customers?
  When?
  What total budget?

Initial test bed: two catalog mailing companies
ONLINE PROMOTION PROJECT

Elements:

* Data mining:
  investigate customer response via historical data

* Online experiments
  designed to determine customer response dynamically

* Optimization methodologies
  define new policies
determine potential improvements
ONLINE PROMOTION PROJECT

* Initial effort on mail order catalogs
* Two medium sized companies:
  1) a software-like product
  2) women’s clothing
* Both companies also have web operations
* Data samples from each
  - random sample of 100,000 customers
  - about 10 million records of historical transactions

Significant data handling requirements
ONLINE PROMOTION PROJECT

Progress to date

* development of a sophisticated reinforcement learning model for optimizing catalog mailing decisions
* construction of econometric models to understand drivers of consumer purchasing

Optimization model suggests improvements in 15%-20% range
ONLINE PROMOTION PROJECT

Next steps

* complete testing of current model
* implement and test several improvements
* implement field tests with Company 1
* introduce new econometric techniques
* extend reinforcement learning model to design of email based promotions
* implement field tests with Company 2

After this: extend methods to web operations
MARKETING AUTOMATION: KEY POINTS

1. Technologies are currently available to improve automation.
2. Operational flexibility to perform experiments is extremely important.
3. Design of appropriate architecture for models and data represents a major undertaking.

There are very promising opportunities for improved performance