Marketing Science Past & Present
Excerpts & Observations

The Practice & Impact of Marketing Science
January 15-16, 2010 (MIT)

MSI Conference on Effective Marketing Spending
March 1-3, 2010 (UCLA)

Earl Taylor, CMO
Marketing Science Institute
Charter Director of the MASB
March 10, 2010
Chicago
Marketing Science Institute: Bridging the gaps since 1961

Theory

Practice

Rigorous

Relevant

Readable
The Practice and Impact of Marketing Science

January 15 – 16, 2010

MIT

Cambridge, Massachusetts
Conference Overview

- Held every two years
- Review and advance the state of marketing science
- 100 participants
  - Half academics/Half Practitioners
  - Half US/Half Non-US
- Co-sponsors
  - INFORMS Society on Marketing Science (ISMS)
  - Massachusetts Institute of Technology (MIT)
  - European Marketing Academy (EMAC)
  - Marketing Science Institute (MSI)
Agenda

- Keynote Address (Glen Urban, MIT)
  - Discussant (John Little, MIT)
  - Discussant (Gary Lilien, Penn State)
- Sixth ISMS/MSI Practice Prize Competition
- Parallel Sessions
  - 15 over 2 day period
  - 11 topics of interest to constituency
Viewing the Implementation of Marketing Models as Organizational Change

Glen L. Urban
Practice and Impact of Marketing Science Conference
January 15, 2010
OUTLINE

• Problem of continuing implementation, institutionalization, and cultural change
• Three cases – Personal experience
  ➢ ASSESSOR (success)
  ➢ Intel personal advisor (failure)
  ➢ Web and advertising morphing (in process)
• Revised organizational change model
• Lessons for Managers and Researchers
• Discussants – Little and Lilien
SUCCESS: ASSESSOR

• Pre-Market Forecasting of new frequently purchased products
• Priors – Big Problem and SPRINTER too late – need pre-market read
• Entry – Cal Hodock (Director of Market Research) at Gillette
• Problem Finding – Gillette Deodorant
• Model Building Criteria – Decision Calculus
• Model Building – Trial/Repeat standard plus emerging Logit modeling
ASSESSOR — CONTINUED

• Estimation and fitting – Laboratory measures and estimation of Trial/Repeat and Logit models (Al Silk)

• Tracking – Validation study 8 Gillette products – 44 pretest versus test-market predictions (Gerry Katz)
Figure 16.5  Comparison of Pretest-Market and Test-Market Shares (Urban and Katz, 1983, p. 223; reprinted with permission)
ASSESSOR — CONTINUED

- Continuing Use – Publication, Management Decision Systems, imitation by BASES and others – Over 5,000 ASSESSOR tests in last 25 years
- Evolution – Add trial repeat dynamics, conjoint – Extend to durables – autos and finally Information Acceleration
- Cultural Change – pre-market milestone for all new products
WHAT WORKED

- Early managerial interface and advocate
- Important Problem – pain point
- Simple but powerful model and measurement
- Understandable to prior managerial model
- Validation
- Easy implementation with outside firms – contracting accepted method – Fast and high benefit/cost
- Learning and evolution
- Institutionalize the step into process of new product development – “standard practice”
FAILURE: INTEL’S “ROSA”

- Priors – trust and virtual advisors (Trucktown)
- Entry Digital Business Center and Visionary head of IT R&D committee and project team (6 people)
- Problem Finding – Download Costs and Difficulty
- Model Development Criteria – Personal Advisor
- Model Building – AI/IT Advisor
- Estimation and fitting – simple data base structures – multiple experiments – learning
Rosa (to reduce tele-center costs)
## MANAGERIAL IMPLICATIONS

### Savings for PC Camera downloads

<table>
<thead>
<tr>
<th>Visitors per month</th>
<th>1.5 Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera visitors (3.84%)</td>
<td>54,600</td>
</tr>
<tr>
<td>Successful downloads (assuming 66.0%)</td>
<td>36,036</td>
</tr>
<tr>
<td>Successful downloads (assuming 85.3%)</td>
<td>46,574</td>
</tr>
<tr>
<td>Additional successful downloads (assuming 100% selects wizard)</td>
<td>10,538</td>
</tr>
<tr>
<td>Additional successful downloads (with 33% selecting new wizard)</td>
<td>3,478</td>
</tr>
<tr>
<td>Saving per call averted</td>
<td>$27.4</td>
</tr>
<tr>
<td>Total Saving per year</td>
<td>$1.14M</td>
</tr>
<tr>
<td>If wizard made more salient (assuming 50% select wizard)</td>
<td>$1.73M</td>
</tr>
</tbody>
</table>

Note: Savings if wizard applied to all products: $29.7M
ROSA CONTINUED

- Tracking – Use and reduce tele-center costs
- Continuing Use – Visionary Left, team transfers, and Budget Priorities and NIH/turf battles – Rosa persists, but not widely implemented on other products
- Evolve – Use in HR, but not IT continuing use – Rosa lived for 6 years
WHAT WORKED AND DID NOT

• **Worked**
  - Team
  - Individuals on team gained visibility from MIT aura
  - Persona was easy to understand
  - Multiple experiments
  - Rosa was implemented and worked (6 years)
  - HR Adoption by osmosis

• **Did Not Work**
  - Lost sponsor and top manager
  - Budget limits and staff transfers – other priorities
  - Complexity of tracking on multiple servers – data problems
  - Territorial Interests – Failure to get buy in at mid level
  - No continuing top management commitment to implement widely – people and budgets lacking
CHANGE PROCESS (Revised Model)

- Priors
- Entry
- Problem Finding
- Model Criteria
- Model Building
- Estimation Fitting
- Tracking
- Continuing Use
- Cultural Change

Use Tool Kit
- Value Proposition
- Team - Cross Firms
- Change Agent
- Top Support
- Existing “models”
- Informal – Power/Friendship
- Psychological Contract

Goals - success criteria
- Decision Calculus
- Consumer Phenomena
- Implementation Plan
- Art
- Level of Detail
- Alternatives
- Judgment
- Statistics
- Tuning

- Adaptive Control
- Evolution
- Learning
- ROI Calculation

- New Needs
- Decision Supports
- Diffusion
- Standard Practice
- Build Into Process
- Staff/Budget
CONCLUSIONS

• Implementation is organizational/cultural change
• Use change process
• Enhancement of Process Model – New Emphasis on Cultural Change
• Diffusion – publish, consult, change agent firms, competition, and aim for establishing a new standard practice
Comments on: “Implementation of Marketing Models”

Better Mousetrap?

Gary L. Lilien
“The big problem with management science models is that managers practically never use them. There have been a few applications, of course, but the practice is a pallid picture of the promise.”

John D. C, Little “Models and Managers: The Concept of a Decision Calculus” 1970
“The good news is that more managers than ever are using models. The bad news is that many managers do not even realize they are using models . . . what hasn’t changed is organizational inertia”

John D. C. Little “Comments on: Models and Managers: The Concept of a Decision Calculus” 2004
Wide Applicability/Benefit

- “... it is highly unlikely that decision makers will consistently outperform a good quality model-based decision support system and they are better off relying on even a simple, but systematic model...” (Hoch and Schkade 1996, p. 63)

- Retail pricing DSSs that include price-optimization models dramatically outperform retail managers (Reda 2003, Montgomery 2005)
And Yet...

- Only 5 to 6% of retailers use such DSSs even after their organizations have purchased them, with most managers preferring to use gut-feel for making pricing decisions (Sullivan 2005)

- Research shows managers’ disinclination to use DSSs even when the models embedded in the systems are known to improve decision quality and performance (Ashton 1991, Singh and Singh 1997, Yates, Veinott, and Patalano 2003, Sieck and Arkes 2005)
“My contacts in consumer products firms, banks, advertising agencies and other large firms say that [model builders] are a rare find and that models are not used much internally. Personal experience with member firms of MSI indicates the same.”

Russell Winer “Comments on Leeflang and Wittink” 2000
Everything in your comments resonates with my own experiences, working with United Shoe Machinery while in graduate school and with two startups in the last 20 years. I have come to the conclusion that models can be deployed in one of two ways—either fully automated, untouched by human hands, or as a decision support system under the direction of a manager. I have been involved in the application of the 1st in vehicle routing applications that ran overnight to schedule delivery of orders received the preceding day and in retail inventory applications that set order points for millions of store-sku replenishment items. I have found that these applications require a very accurate model and powerful optimization algorithm, but, after a validation phase, can be run as black boxes. In the second mode, I have found that simplicity and transparency beats complex optimization every time because it enables a better coupling with the heavily involved manager. In fact, most of my failures have come from trying to deploy sophisticated, black box optimization models in DSS environments.

Marshall Fisher, quoted in Little, 2004
An Industry Perspective

“Adoption of Marketing Science”

What Success Looks Like for One Marketing Organization (P&G)

Delaine Hampton
Director, Consumer and Market Knowledge
Procter & Gamble
The Journey from Knowledge to Belief.

Commercial Researchers See Business Opportunity: Create method or “research product”

Early Adopters pilot method and see business benefits

Use grows, calibration, validation mounts,

Organization formally incorporates into project management, resource allocation

Over time problems and opportunities are approached differently

Many papers published.: New Insight, New Methods Emerge

New Marketing Question/ New Data Source Stimulates Research

New Thinking Model shapes Everyday Decisions

- (Good) DSS use improves objective performance
- DSS’s can help in de-anchoring from prior beliefs

BUT

- Users may not perceive improvement/little effect on subjective performance evaluation
- Expert raters (e.g., top management???) are not able to judge quality of decisions
Decision-makers must be motivated to change

- "Why should I change my mental model?" "What is the upside?"
- DSS model design must incorporate upside potential (incentive)

AND

Decision-makers must be given guidance to change their mental models

- "How should I change my mental model?"
- DSS models must calibrate, evaluate, and correct manager’s mental model
The Real 5 Stages of Organizational Adoption of a New Model...

1. Exaltation
2. Disenchantment
3. Search for the Guilty
4. Punishment of the Innocent
5. Distinction for the Uninvolved
Marketing Model Success Depends on…

- **Technology factors** The model/DSS must be objectively good, appropriate for the problem AND well designed: *Feedback and Upside potential.*

- **Personal factors** Users must have personal incentive and absorptive capacity to use models: *Training and model customization*

- **Organizational factors** Multiple stakeholders, multiple/conflicting objectives/incentives, resource limitations, inertia. 
  *Models=Organizational Change and Manage Accordingly*

- **Market/Environmental Conditions** Market uncertainty, competition, etc. *Plan accordingly*

  ➔ All must be accounted for to facilitate on-going Marketing Model success
Question from the Floor:

“It seems we are stumped at the foot of the organizational change mountain . . . and feel the need to climb it in addition to creating the marketing models (better mousetraps).

Why don’t we look at other areas of the business that have been successful with organizational change and continuous improvement over a long period of time?

Like Manufacturing & Product Quality, and Accounting & Financial Reporting? They both have standards bodies to enable permanent transformation.”

Answer from the Floor:

“She’s right! When the CFO or COO leaves, none of the models change (measurement and process); but when the CMO leaves, everything changes!”
Agenda

- Keynote Address (Glen Urban, MIT)
  - Discussant (John Little, MIT)
  - Discussant (Gary Lilien, Penn State)
- Sixth ISMS/MSI Practice Prize Competition
- Parallel Sessions
  - 15 over 2 day period
  - 11 topics of interest to constituency
The Prize

“Dynamic Marketing Budget Allocation across Countries, Products, and Marketing Activities”

Marc Fischer (University of Passau)
Sönke Albers (Christian-Albrechts-University at Kiel)
The Parallel Sessions

- 15 sessions over 2 days
- Based on constituency interest
- 11 topics covered
- 4 topics having multiple sessions
  - Brand Equity* (7 presenters)
  - Customer Lifetime Value* (panelist discussions)
  - Marketing Mix Modeling (4 presenters)
  - Implementing Marketing Science (6 presenters)

* Also on MASB Project Agenda
Observations related to MASB*

- Across Sessions
  - Need for “common language and definitions”
  - Need to “link measures to the street”
  - Need to “define methods, reliability and validity”

- From CLV Sessions
  - “Not proven yet for CPG”

* And on MASB Project Agenda
Allocating Marketing Resources

Sunil Gupta and Thomas Steenburgh
MSI Conference on “Effective Marketing Spending”
UCLA March 2, 2010
Budget allocation process is complex

- Marketing budget allocation can be broad in scope and can be done across:
  - media mix (offline vs. online)
  - marketing mix (detailing, DTC)
  - products and countries

- It needs to balance multiple objectives:
  - Share, profits, brand equity
  - Short run and long run goals

- And models can be complex to implement:
  - “The big problem with management science models is that managers practically never use them.”
    John D.C. Little (1970)
Most allocation models follow two stages

Stage-1: Demand Estimation
How do consumers react to my marketing actions?

Stage-2: Economic Impact Analysis
What is the impact of demand change on my profits?
Each stage has three broad approaches …

<table>
<thead>
<tr>
<th>Economic Impact Analysis</th>
<th>Demand Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Decision-Calculus</td>
</tr>
<tr>
<td>Descriptive</td>
<td></td>
</tr>
<tr>
<td>What-if Analysis</td>
<td></td>
</tr>
<tr>
<td>Optimization</td>
<td></td>
</tr>
</tbody>
</table>

... with their pros and cons

<table>
<thead>
<tr>
<th>Demand Estimation</th>
<th>Decision-Calculus</th>
<th>Experiments</th>
<th>Econometric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What-if Analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact Analysis</td>
<td>No history</td>
<td>New activities</td>
<td>Purchase data</td>
</tr>
<tr>
<td></td>
<td>Policy change</td>
<td>Large database</td>
<td>Fewer biases</td>
</tr>
<tr>
<td>Optimization</td>
<td>Manager+model</td>
<td>Adaptive</td>
<td>Valid w/in data range</td>
</tr>
</tbody>
</table>
Thank-you!