A Typical Multichannel Forensics Project
A CEO's Guide To Reducing Expenses And Increasing Profit

Kevin Hillstrom
President, MineThatData
kevinh@minethatdata.com
http://minethatdata.blogspot.com

A Project … Requested By A CEO

Multichannel Forensics projects have evolved since analyzing internet customer behavior at Eddie Bauer in the late 1990s.

Today, a typical Multichannel Forensics project focuses on a series of objectives designed to identify customers who will continue to generate sales if advertising is reduced.

We begin with at least five years of purchase history, and an enthusiastic desire to learn about customer behavior!

The Data

We create a file that has one row for every item a customer has ever purchased.

We want key attributes like household_id, order_date, price, quantity, fulfillment information, purchase_channel, zip_code, the advertising channel that drove the purchase (search, e-mail, catalogs), and the advertising channel that influenced the purchase (i.e. matchback information), sku, merchandise category/department/division.

With this information, we can run our analysis!

Micro-Channels

A typical project focuses on “micro-channels”, combinations of advertising and physical channels that customers use to purchase merchandise.

For instance, a customer who orders online after clicking through an e-mail campaign that was matched-back to a catalog mailing is a customer who utilizes a “micro-channel”.

Micro-Channel = E-Mail / Catalog.

Micro-Channels

Most business-to-consumer and business-to-business brands have between ten and twenty popular micro-channels that customers use.

Our goal is to understand how customers repurchase after buying from a specific micro-channel. What does the customer do next?

Let's look at an example: 2008 repurchase activity for customers who in 2007 shopped via e-mail without a catalog matched-back to the order.

E-Mail Alone

Our first job is to look at the repurchase rate for this segment … in this case, 29.8%.

Repurchase Rates:

- 60%+ = Retention Mode.
- 40% - 59% = Hybrid Mode.
- 0% to 39% = Acquisition Mode.

The mode dictates the marketing strategy.

Migration Probability Matrix	
	E-Mail Alone
Rebuy Rate	29.8%
Phone / Catalog	3.4%
Web / Catalog	8.4%
E-Mail Alone	15.6%
E-Mail / Catalog	7.7%
Paid Search Alone	1.8%
Paid Search / Catalog	0.5%
Natural Search Alone	2.4%
Natural Search / Catalog	1.3%
Affiliates Alone	0.2%
Affiliates / Catalog	0.3%
Web Alone	6.9%
Rebuy Index	
Phone / Catalog	11.4%
Web / Catalog	28.2%
E-Mail Alone	52.4%
E-Mail / Catalog	25.9%
Paid Search Alone	6.0%
Paid Search / Catalog	1.7%
Natural Search Alone	8.1%
Natural Search / Catalog	4.4%
Affiliates Alone	0.7%
Affiliates / Catalog	1.0%
Web Alone	23.2%

E-Mail Alone

Next, we look at the "rebuy index".

- 0% to 19% = Isolation Mode.
- 20% to 49% = Equilibrium Mode.
- 50%+ = Transfer Mode.

Equilibrium Mode means that customers are willing to try a different micro-channel. Transfer Mode means that customers are leaving for another micro-channel.

Migration Probability Matrix	
	E-Mail Alone
Rebuy Rate	29.8%
Phone / Catalog	3.4%
Web / Catalog	8.4%
E-Mail Alone	15.6%
E-Mail / Catalog	7.7%
Paid Search Alone	1.8%
Paid Search / Catalog	0.5%
Natural Search Alone	2.4%
Natural Search / Catalog	1.3%
Affiliates Alone	0.2%
Affiliates / Catalog	0.3%
Web Alone	6.9%
Rebuy Index	
Phone / Catalog	11.4%
Web / Catalog	28.2%
E-Mail Alone	52.4%
E-Mail / Catalog	25.9%
Paid Search Alone	6.0%
Paid Search / Catalog	1.7%
Natural Search Alone	8.1%
Natural Search / Catalog	4.4%
Affiliates Alone	0.7%
Affiliates / Catalog	1.0%
Web Alone	23.2%

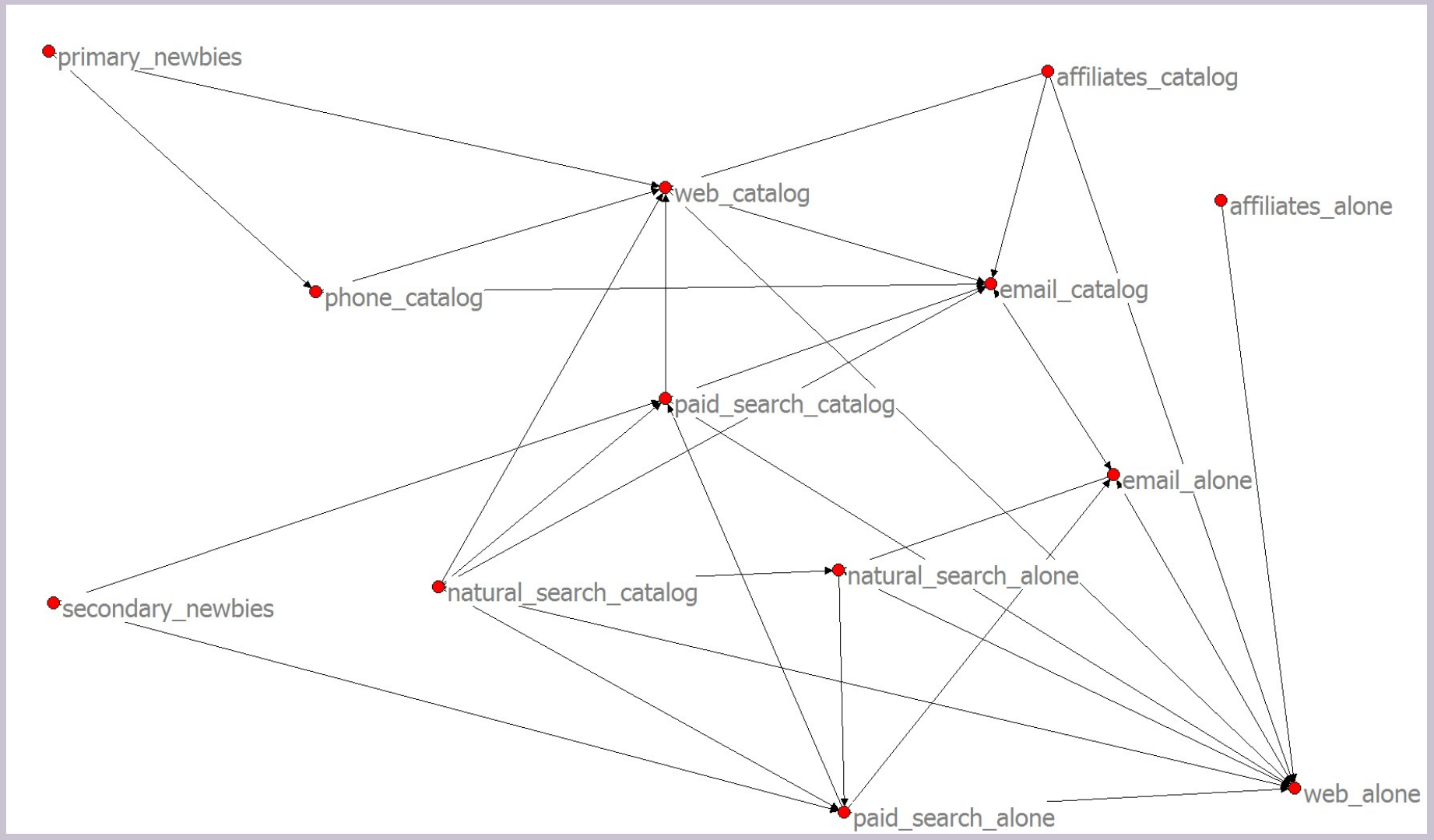
E-Mail Alone

Customers who shopped via e-mail (without catalog assistance) are likely to shop online via a catalog, through e-mail via a catalog, and to shop on the internet without the aid of advertising.

These are the micro-channels that a customer is likely to migrate to after purchasing via e-mail alone. We probably cannot force the customer to shop other micro-channels.

Migration Probability Matrix	
	E-Mail Alone
Rebuy Rate	29.8%
Phone / Catalog	3.4%
Web / Catalog	8.4%
E-Mail Alone	15.6%
E-Mail / Catalog	7.7%
Paid Search Alone	1.8%
Paid Search / Catalog	0.5%
Natural Search Alone	2.4%
Natural Search / Catalog	1.3%
Affiliates Alone	0.2%
Affiliates / Catalog	0.3%
Web Alone	6.9%
Rebuy Index	
Phone / Catalog	11.4%
Web / Catalog	28.2%
E-Mail Alone	52.4%
E-Mail / Catalog	25.9%
Paid Search Alone	6.0%
Paid Search / Catalog	1.7%
Natural Search Alone	8.1%
Natural Search / Catalog	4.4%
Affiliates Alone	0.7%
Affiliates / Catalog	1.0%
Web Alone	23.2%

The Micro-Channel Ecosystem



The Micro-Channel Ecosystem

Notice that this brand acquires customers in traditional ways (often via catalog marketing).

Over time, the customer evolves, migrating to e-mail marketing.

Other customers come in via online marketing channels.

Eventually, many customers buy online, and do not need advertising to place an order. This is a good thing!!!!

The Micro-Channel Ecosystem

Most micro-channel ecosystems illustrate a path that customers take as they move from being advertising-dependent to generating organic demand.

Many customers prefer catalog advertising.

Many customers prefer e-mail marketing, or paid search.

Some customers will shop regardless whether they are marketed to, or not.

Putting The Information To Use

In most of my projects, I have to identify the customers who are most likely to require advertising in the future, and identify customers who are less likely to require advertising in the future.

Three distinct models are built to score every single customer in your database.

Here are the models!

Response Model

I use Logistic Regression to predict the likelihood of a customer purchasing again during the next twelve months.

Traditional variables (recency, frequency, monetary value), geographic variables (zip code forensics), micro-channel metrics, and merchandise preferences are entered into the equation.

Each customer is given a predicted (29.4%) likelihood of buying again in the next twelve months.

Spending Model

I use Ordinary Least Squares Regression to predict how much a customer will spend if the customer purchases again in the next twelve months.

Traditional variables (recency, frequency, monetary value), geographic variables (zip code forensics), micro-channel metrics, and merchandise preferences are entered into the equation.

Each customer is assigned a spending prediction ($150) for the next twelve months, if the customer does purchase.

Organic Model

Variants of regression (probit, hyperbolic tangent transformation) are used to predict the percentage of demand that will be generated without the aid of advertising.

We really focus on micro-channels at this stage of modeling.

Each customer receives a prediction (20%) of demand that will be “organic”, not caused by advertising, in the next twelve months.

Advertising Value

Our predictions are multiplied together, to determine the demand that will be driven by advertising:

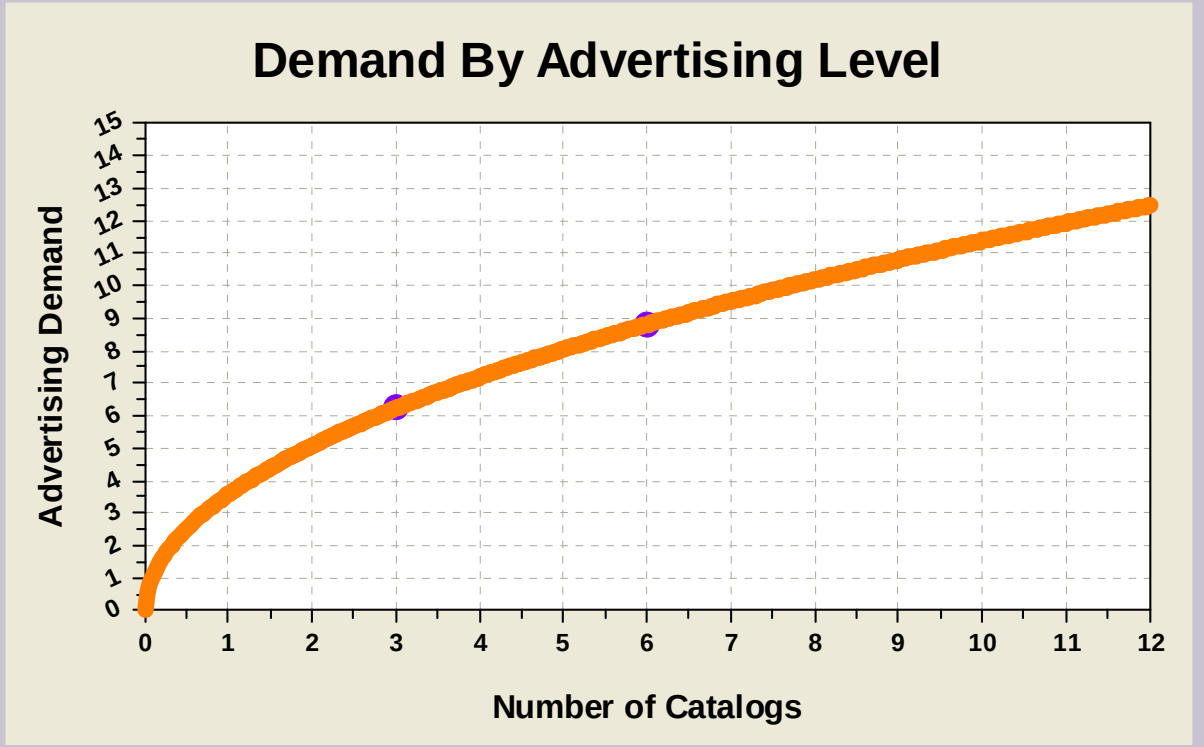
- Response Prediction = 29.4%.
- Spending Prediction = $150.00.
- Organic Prediction = 20.0%.
- Prediction = 0.294 * 150.00 * (1 – 0.20) = $8.82.

This customer will spend $8.82 in the next twelve months if the customer is advertised to. Now let's review how we will use this value to determine a contact strategy.

Contact Strategy

We use a relationship that simulates diminishing returns.

Alternatively, testing data can be used to determine this relationship.



Optimal Contact Strategy

Given our relationships, we can estimate how many catalogs are "right" for any individual customer.

In this case, profit is maximized at two catalog mailings, not the six that this customer would normally receive.

Catalogs	Demand	Profit
0	$0.00	$0.00
1	$3.60	$0.87
2	$5.09	$0.94
3	$6.24	$0.87
4	$7.20	$0.74
5	$8.05	$0.56
6	$8.82	$0.35
7	$9.53	$0.12
8	$10.18	($0.13)

The Future: A Five Year Sales Plan

Multichannel Forensics: Three Channel And Five Year Forecast									
	Internet	Catalog	Retail	Beginning Inventory	After One Year	After Two Years	After Three Years	After Four Years	After Five Years
Existing Buyer	No	No	Yes	82,503	96,357	100,187	101,246	101,507	101,555
	No	Yes	No	85,692	74,673	60,165	48,246	39,431	33,174
	No	Yes	Yes	5,094	4,977	5,054	5,007	4,924	4,848
	Yes	No	No	588,608	604,164	621,146	637,912	654,811	672,281
	Yes	No	Yes	9,840	9,877	10,158	10,318	10,407	10,476
	Yes	Yes	No	33,983	36,806	37,252	36,951	36,585	36,361
	Yes	Yes	Yes	2,775	3,128	3,245	3,270	3,259	3,244
Newbies	No	No	Yes	67,739	67,739	67,739	67,739	67,739	67,739
	No	Yes	No	59,670	41,769	29,238	20,467	14,327	10,029
	No	Yes	Yes	1,901	1,901	1,901	1,901	1,901	1,901
	Yes	No	No	346,385	356,777	367,480	378,504	389,859	401,555
	Yes	No	Yes	3,612	3,612	3,612	3,612	3,612	3,612
	Yes	Yes	No	11,897	11,897	11,897	11,897	11,897	11,897
	Yes	Yes	Yes	640	640	640	640	640	640
12 Month Buyers, Total			Internet	635,206	653,975	671,801	688,451	705,063	722,361
			Catalog	127,544	119,584	105,715	93,474	84,199	77,627
			Retail	100,212	114,339	118,644	119,842	120,097	120,122
			Totals	808,495	829,982	837,206	842,950	850,925	861,938
12 Month Volume, Total			Internet		$93,201,198	$95,790,242	$98,151,534	$100,465,049	$102,859,647
			Catalog		$23,241,461	$20,743,007	$18,427,818	$16,638,550	$15,356,783
			Retail		$25,542,709	$26,714,904	$27,046,185	$27,116,092	$27,118,505
			Totals		$141,985,368	$143,248,153	$143,625,537	$144,219,691	$145,334,935

The Future: A Five Year Sales Plan

The CEO will thoroughly understand the anticipated five year sales trajectory, by channel.

The CEO will thoroughly understand how customer retention, customer acquisition, and marketing spend interact to drive the business forward.

With this data, the CEO will be able to craft a strategy to grow sales and profit, or will be able to trim expense in the least damaging way.

E-Mail Marketing Strategy

Many folks are looking to develop a “targeted” e-mail marketing strategy --- one that is not terribly complicated, one that is easy to implement, one that is human driven --- not driven by automated algorithms.

So, many projects have an e-mail component --- one where each customer is assigned to a “merchandise preference”, so that the marketer can match an individual customer to a unique version of an e-mail campaign.

Merchandise purchases are very important here!

E-Mail Segmentation

I'll assign customers into one of nine segments, for instance, based on how many merchandise divisions the customer buys from, and their merchandise preference.

	One Division	Some Divisions	All-Divisions
Womens Merchandise			
Shoes and Accessories			
Mens Merchandise			

E-Mail Marketing Strategy

Once we assign customers into one of nine different e-mail marketing segments, we match customers to the version of an e-mail campaign that is most similar to their interests.

A womens merchandise customer who only buys womens merchandise should probably receive … womens merchandise!

A mens merchandise customer who buys from many merchandise divisions could receive just about anything and be productive --- test and measure!!!

Multichannel Forensics And Profit

Most of the Multichannel Forensics projects I work on require a reduction in advertising expense coupled with demand maximization.

We do this by analyzing micro-channels, reducing catalogs to customers who generate demand organically.

We also do this by matching e-mail marketing campaigns to customers who have specific merchandise preferences.

Project Cost

Projects are based on the number of buyers who purchased from your business in the past twelve months.

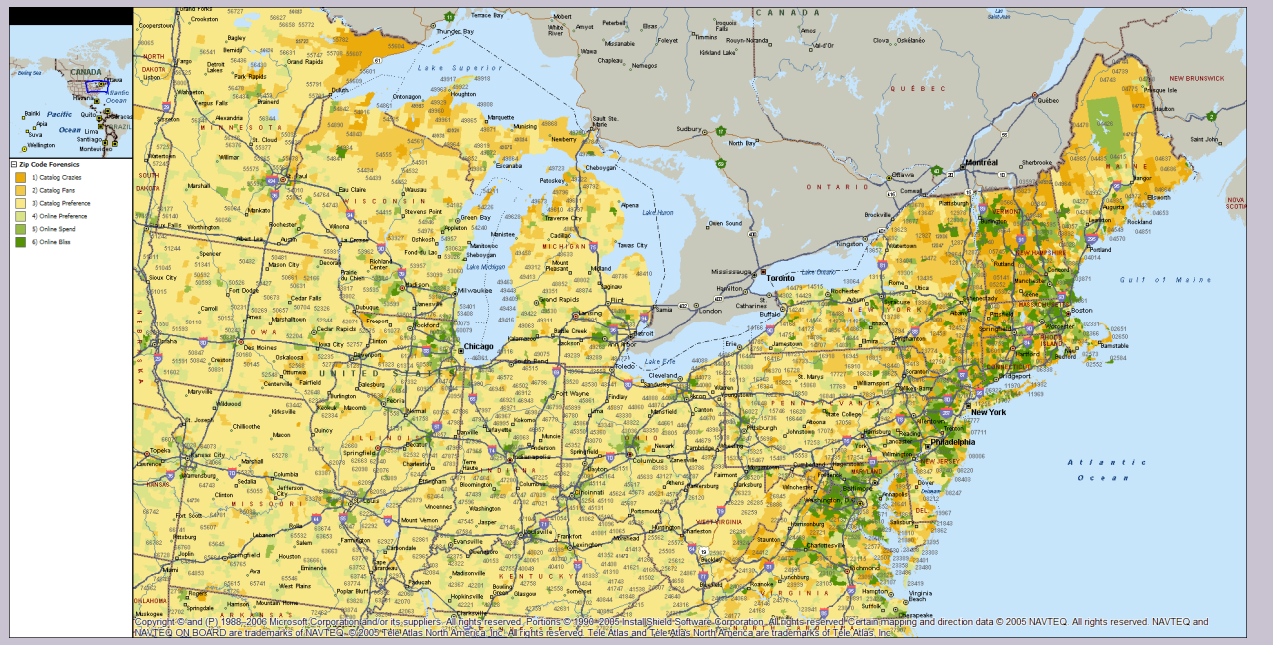
- 10,000 buyers = $8,500.
- 100,000 buyers = $15,300.
- 1,000,000 buyers = $27,300.
- 10,000,000 buyers = $49,000.

Many larger companies have the resources to do this work on their own. About three dozen brands have worked with me on Multichannel Forensics projects of this nature during the past two years.

Too Expensive? How Does Free Sound?

For some folks, a Multichannel Forensics project is too expensive.

So why not leverage a free tool?



Zip Code Forensics is a free tool that allows you to target customers dedicated to e-commerce or catalog marketing.

Interested?

Most projects take about four weeks to complete, once data is received.

Multichannel Forensics projects have been completed for more than thirty marketers … from $10,000,000 online businesses to $50,000,000 catalogers to multi-billion dollar retail multi-channel brands. You get the benefit of this aggregated learning by working on a project.

Send me an e-mail (kevinh@minethatdata.com) for project details, timelines, costs, and requirements.