



Marketing Analytical Consulting
Mathematics at the Service of Marketing

Subject No 10 – May 2008

Word Of Mouth Analytics

In a world where traditional media are losing ground, Word Of Mouth is getting more and more powerful



From concept:

*PRODUCER-
CONSUMER*

To concept:

*CONSUMER-
CONSUMER-
CONSUMER...*



Introduction

Companies regularly need to make resource-allocation decisions that involve trade-offs among their Marketing strategies. However, in another different dimension, consumers share their opinions, experiences and ratings of products. This is what is known as “Word Of Mouth”, and the potential benefits to be derived from it can be huge.

Therefore, being able to measure and compare the value provided to companies by customers generated through traditional Marketing activities against those generated through word-of-mouth, will be key in measuring the Return on different Marketing strategies.

In this Newsletter we will study the different effects that can occur, how to measure them, and what the implications will be for the companies which decide to develop bi-directional Marketing strategies.

Definition and Measurement of Word Of Mouth Advertising

- In the context of the Marketing Department of a given company, a Word Of Mouth action is that which is intended to get a target number of people to pass on specific information (about products or services) to other consumers so that they become interested and acquire them.

- There are two types of Word Of Mouth:

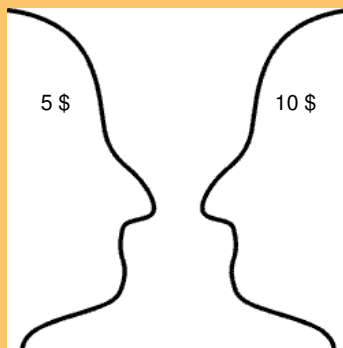
- Organic: occurring naturally, without being planned in advance.

- Planned: developed in a planned manner, normally creating one or several networks on which to test its effectiveness.

- In the first type, the way to discover and measure the impact of Word of Mouth can be via Brand Tracking, Reputation case studies or Monitoring some effectiveness-index.

- Additionally, in the second type, we will be able to apply the customary techniques of ROI, since such action will be associated to an investment, as well as monitoring actual experiences in networks or controlled communities.

Two customers who buy the same product do not have the same value for the company selling it.



Although effectiveness measurement will be focused on the "Recipient", all components are equally important



Traditional Marketing vs. Word Of Mouth

- Traditional Marketing strategies can get you fast results but they are expensive. Word Of Mouth, however, delivers a slower return but at a lower investment cost.
- As a matter of fact, these two approaches do not represent mutually exclusive options, on the contrary, Word Of Mouth can be an invaluable supplement which Traditional Marketing may or may not be able to achieve.
- A Communication campaign can bring in new customers, and hence such an effect will become apparent in a significant Sales increase in the month in which the campaign was launched. But, in addition, a Communication campaign can get those new consumers to bring in others who in turn will bring in new consumers and so on. This would be the case of a Traditional Marketing strategy involving more people by Word-Of- Mouth.
- Now, the dilemma arises when the Marketing Manager has to choose between a massive action plan, capable of generating a high return in the short-term, not allowing for Word Of Mouth to have an impact; or a more focused action plan, with a less profitable Return but opening up more possibilities to create Word of Mouth for improved return on investment in the long-term.
- The key issue, once again, will be that of being able to measure these actions in order to analyze them and quantify results.

WOM Component Plans – 5 metrics

- There are 4 key components:
 - **PARTICIPANTS:**
 - The **"Creator"**: decides what information to deliver
 - The **"Transmitter"**: discloses the information
 - The **"Recipient"**: receives the information
 - **UNIT OF INFORMATION:** the information intended to be conveyed
 - **ACTION:** what participants do to disseminate information (talk about it, send emails, etc).
 - **CHANNEL:** where the transmission of information takes place (at home, in the street, on the Internet).
- And 5 measurements we can take on the "Recipient" :
 - 1.Knowledge:** knowing the information being transmitted
 - 2.Search:** looking for more information on the subject
 - 3.Conversion:** performs the action that was intended
 - 4.Retransmission:** re-transmits the same information
 - 5.Creation:** creates some parallel information which he transmits

We need to be discriminating in defining what PROMOTERS are



The short-term neither has the expansive waves nor the strong current



WOM Organic Components – 1 metric

• The Net Promoter Score developed by Fred Reichheld, is the metric used to measure the Effectiveness of this type of Word Of Mouth.

• This index (NPS) is calculated based on three different types of consumers of a product:

- **PROMOTERS**: satisfied with the product and enthusiasts.
- **PASIVES**: satisfied with the product but they are not enthusiasts.
- **DETRACTORS**: dissatisfied with the product.

• To calculate the index, a simple questionnaire is used to determine the number of consumers of each type, and then it will be calculated in the following way:

• **NPS** = % PROMOTERS - % DETRACTORS

• A tracking of this index will show us how the Organic WOM is evolving, since it should be increasing if it is working properly.



LONG-TERM: New Consumer vs. Value

• The process resulting in a consumer making the first purchase of a product, has a significant effect on the probability that he or she will buy again from you, as well as their capacity to provide positive feedback for the product.

• It is not only a short-term view, but also a long-term one.

• In the case of the Word of Mouth, there are two things to bear in mind:

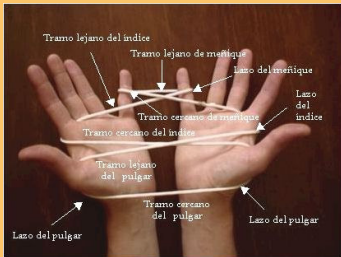
1. On the one hand, that the people coming from the Word of Mouth have a higher repeat buy rate.
2. And, on the other hand, that they are in turn Word of Mouth creators, and therefore, contribute to value in this sense.

• The outline would be the one shown on the following page.

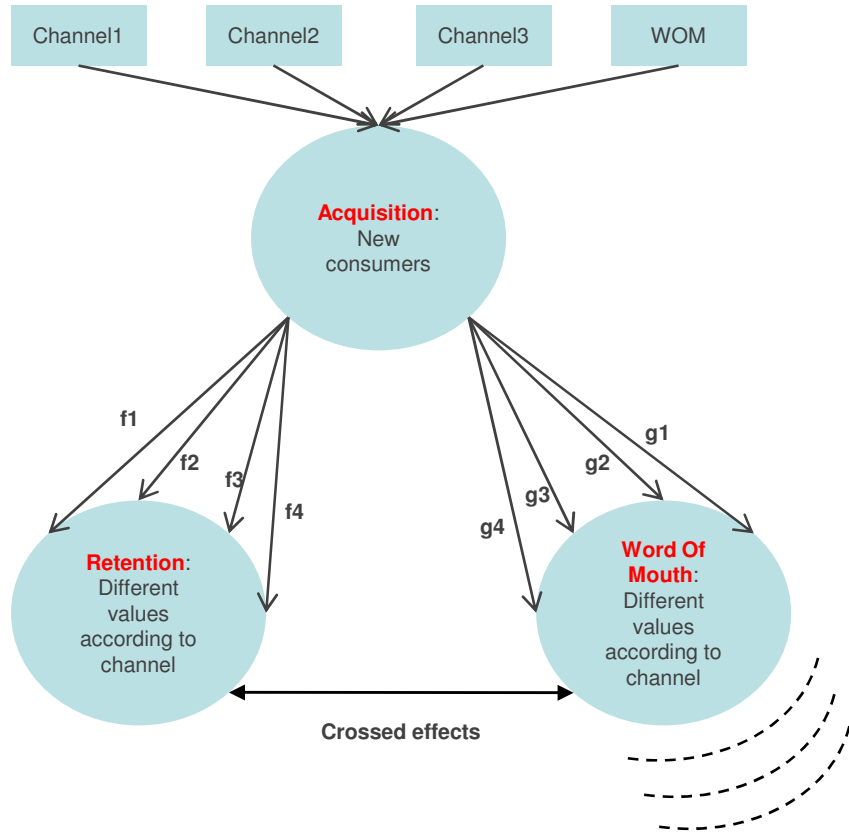
The long-term perspective give us the real value of actions



All interactions count



Long-Term Value Outline



VAR-type Models

• If we consider 2 channels: Traditional Marketing and WOM; and the Value of the Company as the explanatory variable, we will have the following possible effects, which will be translated into a system of equations:

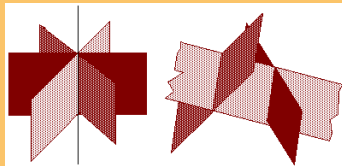
- **Direct Effect** from each New Consumer: how Traditional Marketing or Word of Mouth, contribute to the Value of the company.
- **Crossed Effect** among New Consumers from different Channels: how Traditional Marketing can generate Word Of Mouth or vice versa.
- **Crossed Effect** between the **Company** and the New Consumers: how the Value of the Company at a given time can affect the New Consumers coming from each channel.



Marketing Analytical Consulting

Matemáticas at the Service of Marketing

A single equation would be unsatisfactory



Lower customer acquisition but higher customer retention → higher value in the long-term.



(*) "The Impact of Marketing-Induced Versus Word-Of-Mouth Customer Acquisition on Customer Equity Growth".

• **Strengthening Effect:** how the New Consumers coming from Traditional Marketing or Word Of Mouth are influenced, at a given time, not only for those channels, but also by everything that was done in the past.

• Mathematically, with only a time delay in the variables, and using a color to represent each type of effect, we will have:

$$\begin{aligned} \text{MKT}(t) &= a_{10} + a_{11}\text{MKT}(t-1) + a_{12}\text{WOM}(t-1) + a_{13}\text{VALOR}(t-1) \\ \text{WOM}(t) &= a_{20} + a_{21}\text{MKT}(t-1) + a_{22}\text{WOM}(t-1) + a_{23}\text{VALOR}(t-1) \\ \text{VALUE}(t) &= a_{30} + a_{31}\text{MKT}(t-1) + a_{32}\text{WOM}(t-1) + a_{33}\text{VALOR}(t-1) \end{aligned}$$

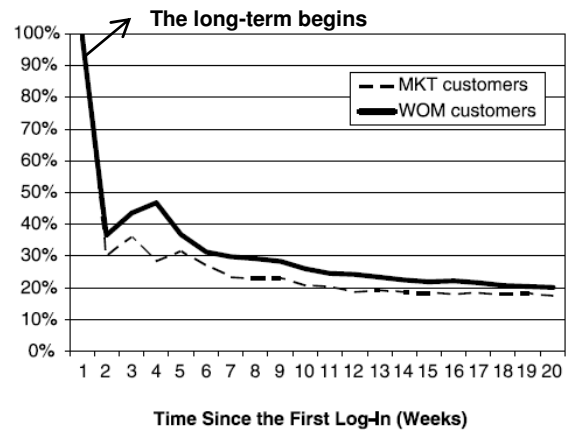
• Which is a system of equations whose solution will give us the weight that both Traditional Marketing actions (without Word of Mouth) and Word of Mouth actions, have on the Value of Companies in the long-term.

Conclusion: an actual case

• According to Villanueva (2008) (*) (with this type of models) the economic impact of 1000 New Consumers coming from Traditional Marketing is compared against 1000 New Consumers coming from Word of Mouth.

• In the short-term (2 weeks), the revenue from Traditional Marketing was 18,9% higher.

• However, in the long-term (20 weeks) the revenue from Word Of Mouth was 99,7% higher, mainly due to higher customer retention for this type of consumers.



Source: Villanueva (2008)

• And all of this without taking into account the cost of Traditional Marketing against that of Word Of Mouth.