

## Notes on Scored Files and Value in OPTIM

### 1. Overview

The central philosophy behind the CDS business solution to Third Party Marketing (3PM) operations in the mail channel is that pricing policies that systemically mis-classify profitable opportunities as unprofitable have to be replaced with pricing policies that eliminate that mis-classification. Also central to the CDS philosophy is that Assignment Policies (AP), which determine what Inserts are included in each Recipient's mail piece must essentially be a competitive auction process and keenly aware of Setup costs.

Competition for inclusion into mail pieces by Inserts drives up the average revenue earned by the Mass Mailer (MM) on an economically justifiable basis since all bids for inclusion satisfy individual marketer ROI requirements. Under the CDS business solution, all Recipient-Insert Pairs (RIP) are assigned a Value by the CDS OPTIM decisioning software based on information in "Scored Files" (SF). These notes attempt to describe the function and capabilities of Scored Files, how OPTIM assigns Value to the RIP in them, and how OPTIM attempts to extract the most Value (as defined by MM management through OPTIM) it can during its processing. The document assumes the reader is up to speed on the content of the CDS White Paper "Identifying and Extracting Hidden Profits in the Mail Channel".

### 2. Review of Scored Files

Scored Files are the mechanism by which a Third Party Marketer (3PM) submits information that generates its conditional bids for inclusion of an insert into a Mass Mailer Recipient's mail piece. A number of lines of such a file is given below:

File	Edit	Format	View	Help						
00000001	N	V	0.0008784	0.00000	0.01732					
00000002	N	C	0.0006803	0.01100	0.01297					
00000003	H	V	0.0004464	0.00000	0.00782					
00000004	N	V	0.0004735	0.00000	0.00842					
00000005	N	V	0.0005887	0.00000	0.01985					
00000006	N	V	0.0001317	0.00000	0.00090					
00000007	N	V	0.0001597	0.00000	0.00151					
00000008	D	V	0.0008418	0.00000	0.01652					
00000009	N	V	0.0009905	0.00000	0.01979					
00000010	N	C	0.0007034	0.01500	0.01347					
00000011	N	V	0.0006791	0.00000	0.01294					
00000012	N	V	0.0004956	0.00000	0.00890					
00000013	N	F	0.0008558	0.00000	0.01683					
00000014	N	V	0.0007726	0.00000	0.01500					
00000015	D	V	0.0006782	0.00000	0.01292					

The actual Scored File only consists of the first 5 columns to the left of the vertical red line. The column to the right of the vertical red line is the Variable Price (VP) that is, when necessary, "backed out" on the fly during OPTIM processing. The VP will be useful in further discussions. This view of the SF also provides some insight into the precision OPTIM applying its analytics on the mail channel problem:

- 2.1. Probability of Sale: 0.0000001 (one chance in a million)
- 2.2. Offer Prices for Insert Inclusion: \$0.00001 (1/1000 of a cent)

The column contents are explained below:

### 2.3. CustomerID

Every SF has one record for every Mass Mailer (MM) mail Recipient. Therefore, every SF has the same amount of records: a number equal to the number of MM mail Recipients.

### 2.4. Managerial Priority

Every Recipient-Insert Pair (RIP) has a Managerial Priority that provides enhanced control over how OPTIM manages that RIP. The possible values for the Managerial Priority (from lowest to highest) are:

Priority	Meaning	Notes on Insert Inclusion in Mail Piece
D	Do Not Send	Not Included
N	Normal	Included if part of maximum Value combination
H	High	Included if part of maximum Value combination - price is secondary issue
A	Absolute	Included if MM allows Inserts to the Recipient
X	Extreme Absolute	Absolutely Included

#### 2.4.1. Managerial Priority D

A Priority of D prohibits OPTIM from executing this RIP. Possible reasons could be the Recipient is delinquent in his payments so the MM is denying further marketing efforts. This RIP might also have been executed the prior month so the Marketer might view the effort as redundant.

#### 2.4.2. Managerial Priority N

A Priority of N permits OPTIM to execute this RIP only if it is part of the "Value maximizing" set of Inserts included in the Recipient mail piece. Value will be explained shortly but Priority N RIPs can only contribute to Value through the CAC(Customer Access Charge: revenue) component of Value.

#### 2.4.3. Managerial Priority H

Likewise, a Priority of H permits OPTIM to execute this RIP only if it is part of the "Value maximizing" set of Inserts included in the Recipient mail piece. However, a Priority of H can greatly increase the probability of a RIP being executed because its Value is higher than every Priority D RIP. CAC (revenue) is a secondary issue.

#### 2.4.4. Managerial Priority A

A Priority of A guarantees OPTIM will execute this RIP if the Recipient is deemed eligible to receive marketing material by the MM. In such cases, it is by definition part of the "Value maximizing" set of Inserts included in the Recipient mail piece. Its Value is higher than every RIP with Priority D, N, or H. This may be a source of additional income for the MM by allowing Marketers to designate Priority A in return for side payments.

#### 2.4.5. Managerial Priority X

A Priority of X also guarantees OPTIM will execute this RIP. It is by also definition part of the "Value maximizing" set of Inserts included in the Recipient mail piece. Its Value is highest there is. Since OPTIM is concerned with Integrated Messaging, a possible use for this would be MM mailer legally required messaging that has to go every account - even those being denied marketing material.

### 2.5. Pricing Option

The third column in an SF is the Pricing Option. The core philosophy of OPTIM is that mis-classification of profitable marketing opportunities must be eradicated and that Variable Pricing is the basic methodology to do this. However, OPTIM allows for further marketing sophistication by allowing three possibilities for a Pricing Option in an SF. The sophistication is that, at the MM Recipient level,

Marketers can employ mixed pricing strategies to earn better ROI than a single "one size fits all" Variable Pricing (VP) strategy might offer.

#### 2.5.1. Pricing Option V - Variable

This option allows OPTIM to calculate ("on the fly") the Variable Price that equalizes ROI for a marketer across all MM Recipients. The reader should be fully aware of how this works given a Marketer's desired ROI, Insert print cost, and the MM Recipient's Probability of Sale.

#### 2.5.2. Pricing Option F - Fixed

This option allows OPTIM to import a global CAC offer from a single entry in the OPTIM Master Inserts table. Marketers may employ a mixed strategy of continuing to market high Probability of Sale MM Recipients as they have in the past under this option but now increase their marketing reach by using VP to compute CAC for heretofore unpursued low Probability of Sale MM Recipients.

#### 2.5.3. Pricing Option C - Custom (Contingent in many documents related to OPTIM)

This option allows Marketers to proffer MM Recipient specific customized CAC within OPTIM. This gives Marketers yet another tool for executing sophisticated mixed marketing strategies. A possible use would be for a Marketer to generally follow the pricing guidelines laid down by VP calculations but to offer a slightly lower CAC for MM Recipient segments not highly marketed by competitors. Conversely, the Marketer might choose to offer slightly higher CAC to the MM in Recipient segments where the Marketer has many competitors. Examples of these actions are given for CustomerIDs 00000002 and 00000010 in the SF pictured on page 1.

### 2.6. Probability of Sale

Probability of Sale is a fundamental input for VP CAC calculations to work correctly. How these can be estimated is the subject of another readily findable document under "Notes and Demos".

### 2.7. Custom Price

This column holds the Custom Price (CP) explained in paragraph 2.53 on Pricing Option C. It follows the same precision allowances of all OPTIM CAC: accuracy to 5 decimal places: 1/1000 of a cent.

## 3. Value of Recipient Insert Pairs (RIP) In OPTIM

Now that we have explained the possible values for Priority in OPTIM and the role of Pricing Option to determine CAC (revenue) for a RIP we can define Value of any RIP in OPTIM:

3.1. Value for a RIP is a two part vector: [Priority,CAC]

Given this definition, one can compare any 2 RIP by the following rules:

3.2. if two RIP have different Priorities, then the RIP with the higher Priority has the higher Value

3.3. if two RIP have equal Priorities, then the RIP with the higher CAC has the higher the Value

RIP Values can be compared within the same Insert/SF or across different Inserts/SF. Below are some examples of RIP comparisons:

Example	RIP1	RIP2	Higher Value	Reason
1	[N,0.045]	[N,0.040]	RIP1	Priorities Equal So CAC Decides
2	[N,0.045]	[N,0.050]	RIP2	Priorities Equal So CAC Decides
3	[H,0.045]	[N,0.050]	RIP1	Priorities Not Equal So Priority Decides
4	[H,0.045]	[H,0.050]	RIP2	Priorities Equal So CAC Decides
5	[A,0.045]	[H,0.050]	RIP1	Priorities Not Equal So Priority Decides
6	[D,0.045]	[N,0.001]	RIP2	Priorities Not Equal So Priority Decides

#### 4. How OPTIM Works

Conceptually, OPTIM processing has a relatively straightforward objective: to maximize the total Value of all the RIPs it "executes". By "execute" we mean actually include the Insert of an RIP in the mail piece of an MM Recipient. It is an iterative algorithm that attempts to increase the total Value of all executed RIP by constructing Test SetUps (combinations of Inserts) and examining the amount of net additional Value these test SetUps generate. If the incremental Value generated exceeds the cost of a SetUp the Test SetUp is confirmed as a scheduled SetUp, the changes in RIP analyzed under the Test SetUp are also confirmed and the process repeats itself until one of two events takes place:

- 4.1. OPTIM finds a Test SetUp whose incremental Value is not justified by the SetUp costs
- 4.2. a user defined maximum number of SetUps has been reached

In the case where there are no Priorities other than D and N in any of the Scored Files Value is synonymous with transactional Profit of selling surplus weight to Marketers. However, through judicious use of selling or allowing Priorities higher than N in Scored Files straight transactional Profit becomes a secondary consideration to the management objectives implicit in the allowance of Priorities higher than N. The following table should provide some insight into OPTIM's justification of SetUps:

Example	Highest Priority RIP In Test SetUp	Incremental CAC Exceed SetUp Costs?	Confirm Test SetUp?
1	X or A	Irrelevant	Y
2	H	Y	Y
3	H	N	N
4	N	Y	Y
5	N	N	N