

In Confidence

The RFM Toolbox (excerpt taken from the book "Thought Leadership – The Data Fuelled Business")

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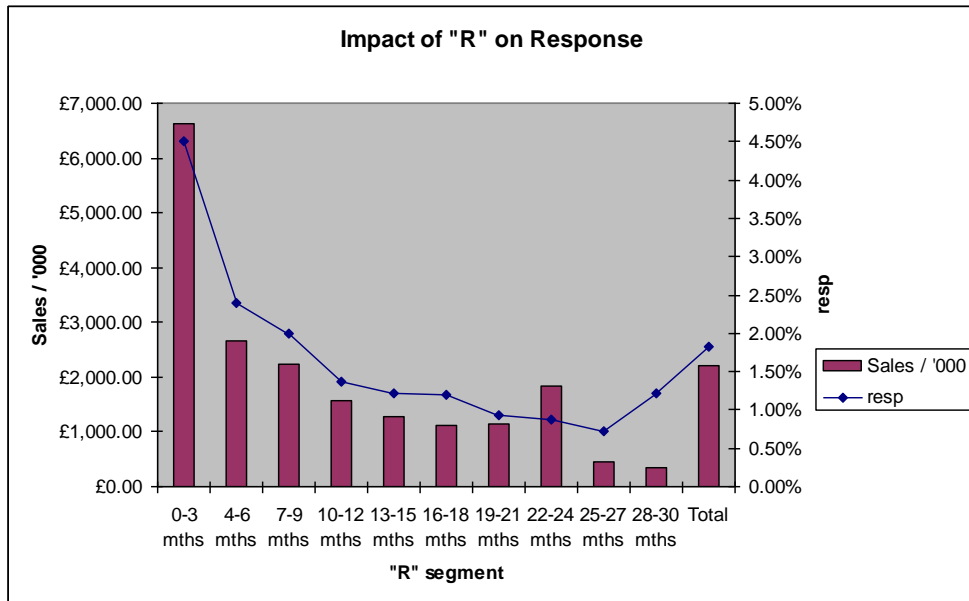
The RFM Toolbox

RFM is still king! Why? Quite simply, because it works. Whilst first utilised by cataloguers, it's still amazing how well RFM works for other types of businesses and mediums. And yet, even more amazing are the number of companies who are not using RFM or a derivative of it in their marketing analysis. If you are a high activity business, (a mailer, an e-tailer, cataloguer, etc) then you SHOULD be using it. Nothing beats the look on a new customer's face when you present the first results from a mailing that has been segmented using RFM. To see the top segments out-pulling response from the lower segments by factors of 10 or more makes it all worthwhile! In my experience, there is no quicker way of improving your ROI than creating those 3 simple fields and using the data to drive your activity. This chapter outlines a number of ways in which RFM can be used to not only (tactically) improve your response rates, but how it can be used to (strategically) help you to manage your business.

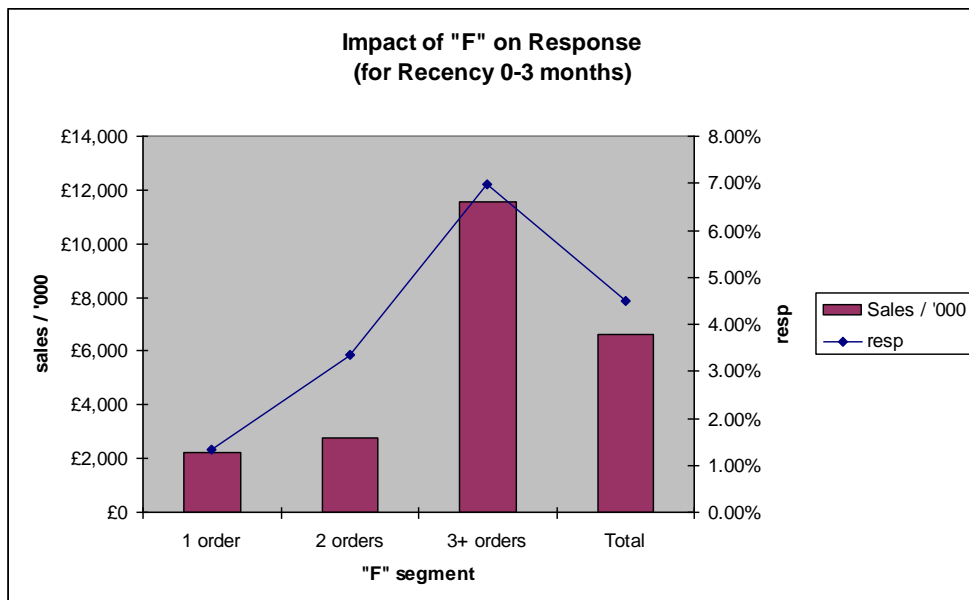
RFM - Definition

So what is RFM? Quite simply, it is a method of segmenting customers based on their previous behaviour with you. More importantly, RFM provides an excellent basis of predicting future behaviour, and as predicting the future is more valuable than reporting on the past, this is where it gets interesting.

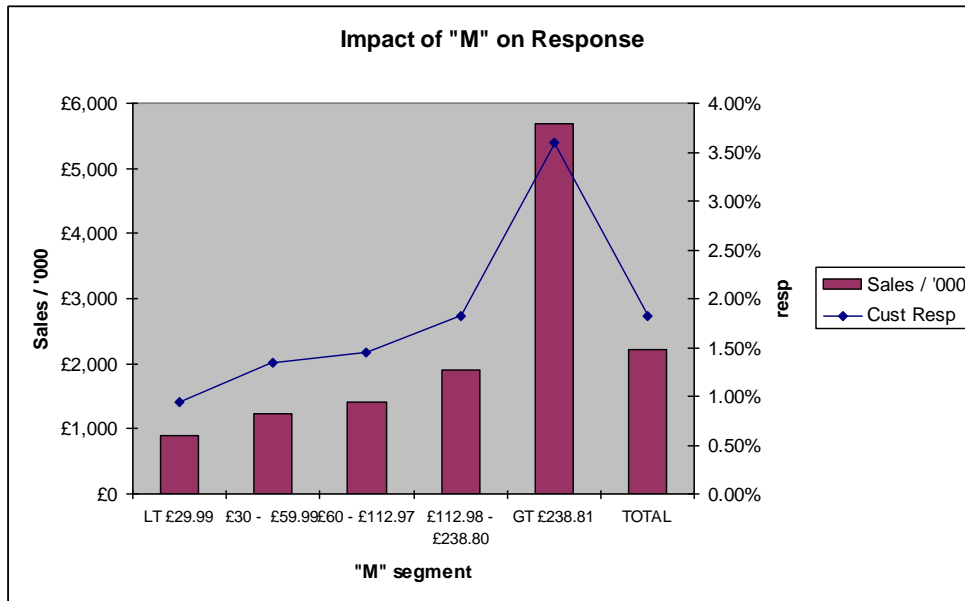
Basically, the more recently that a customer has purchased, the more likely he is to buy from you again. This is why you will always receive a new promotion, catalogue, offer, etc from an organisation within a few days of placing an order, (if they are using the technique!) Scientists, sociologists, statisticians and business people have all come up with theories as to why this is the case but for the moment, all we need to know is that is true! You may argue that if you've just bought a new car, then you're not in the market for another – quite true. But you are in the market for servicing, breakdown cover and any other relevant cross-sells that you come up with. It is true however that RFM works best for high-activity businesses. Look at the graph below, taken from a real response analysis for a Qbase client:



Frequency is the next best predictor. The biggest benefit that "F" offers is to segment Trial-buyers, (ie one time buyers) from Multi-buyers. Depending on your business, sub-segmenting "F" can refine things further. Again, the graph below shows the impact of "F" on the same mailing:



Monetary Value is the third predictor. Often, "M" is used more as a means of sub-segmenting RF. So, if you have 2 customers, both of whom have purchased in the last month and have placed 2 orders, you can differentiate them on the basis of their value.



Some companies prefer to use an RF model rather than RFM. If your customer file is relatively small, this is a good way of reducing the number of segments. The acronym "RFM" is in that order for good reason – Recency is the best predictor of future behaviour, followed by Frequency, followed by Monetary Value. As touched on later, Monetary Value can penalise new customers and falsely promote older customers if it is used as a snapshot rather than looking at the trend. "M" is also directly correlated with "F", so if you have a business where the pricing has little variation, it may be of benefit to drop the "M".

The table below demonstrates the proof of RFM. Look at the highlighted cell within the matrix – these are the Client's best customers, (the most recent, highest frequency, highest value). Whilst accounting for just 4% of the customer file, they have generated 19% of the total revenue. It makes little sense to treat these customers in the same way as the lower cells. By apportioning your marketing budget accordingly, you will see an immediate improvement in ROI.

RFM Segment Matrix

Recency	Frequency	Monetary Band										Total		
		LT £29.99		£29.99 - £63.92		£63.93 - £119.95		£119.96 - £249.99		GT £249.99		Sum	% All Sum	
		Sum	% All Sum	Sum	% All Sum	Sum	% All Sum	Sum	% All Sum	Sum	% All Sum			
8-3 MONTHS	1X	Customers	1077	1.77	915	1.50	734	1.20	520	0.85	289	0.49	3545	5.82
		Sales	£21,368	0.19	£41,544	0.37	£63,350	0.58	£88,922	0.78	£142,659	1.26	£357,832	3.15
	2X	Customers	87	0.14	380	0.62	682	1.12	951	1.56	676	1.11	2776	4.58
		Sales	£1,967	0.02	£18,668	0.16	£61,521	0.54	£164,534	1.45	£323,696	2.85	£570,337	5.02
	3X+	Customers	11	0.02	83	0.10	245	0.40	828	1.36	2491	4.09	3638	5.97
		Sales	£298	0.00	£3,160	0.03	£23,203	0.20	£151,862	1.34	£2,145,937	18.88	£2,324,551	20.46
Total		Customers	1175	1.93	1350	2.23	1661	2.73	2269	3.77	3466	5.69	9659	16.35
		Sales	£23,601	0.21	£63,312	0.58	£148,075	1.30	£405,448	3.57	£2,612,283	23.00	£3,252,719	28.64
4-6 MONTHS	1X	Customers	1504	2.47	1219	2.00	1061	1.74	704	1.16	360	0.59	4948	7.96
		Sales	£29,991	0.26	£55,580	0.49	£92,401	0.81	£118,919	1.05	£158,182	1.39	£445,073	4.01
	2X	Customers	62	0.10	251	0.41	496	0.81	701	1.15	454	0.75	1964	3.22
		Sales	1363.63	0.01	£1279.97	0.11	£4912.95	0.40	£22027.490	1.07	£21089.1204	1.86	£91343.1504	3.45
	3X+	Customers	4	0.01	46	0.08	155	0.25	448	0.74	1214	1.99	1667	3.08
		Sales	£98	0.00	£2,373	0.02	£14,837	0.13	£83,535	0.74	£810,543	7.14	£911,387	8.02
Total		Customers	1570	2.58	1516	2.48	1712	2.81	1853	3.04	2028	3.33	6679	14.24
		Sales	£31,453	0.28	£70,134	0.62	£152,151	1.34	£324,482	2.86	£1,179,884	10.38	£1,757,804	15.48
7-9 MONTHS	1X	Customers	1619	2.66	1403	2.30	1131	1.86	888	1.46	398	0.65	5439	8.93
		Sales	£32,577	0.29	£63,700	0.56	£97,757	0.86	£150,553	1.33	£202,878	1.79	£547,465	4.82
	2X	Customers	80	0.13	267	0.44	443	0.73	650	1.07	472	0.77	1912	3.14
		Sales	£1,888	0.02	£12,962	0.11	£39,983	0.35	£112,572	0.99	£233,310	2.05	£400,716	3.53
	3X+	Customers	6	0.01	46	0.08	152	0.25	438	0.72	637	1.07	1479	2.43
		Sales	£137	0.00	£2,371	0.02	£14,165	0.12	£80,632	0.71	£653,887	5.75	£750,991	6.61
Total		Customers	1705	2.80	1716	2.82	1726	2.83	1978	3.24	1707	2.80	6800	14.49
		Sales	£34,803	0.30	£79,033	0.70	£151,906	1.34	£343,757	3.03	£1,089,874	9.60	£1,699,173	14.96
10-12 MONTHS	1X	Customers	1848	3.03	1708	2.80	1470	2.41	954	1.57	587	0.96	6567	10.78
		Sales	£36,840	0.32	£77,471	0.68	£126,846	1.12	£162,407	1.43	£267,391	2.35	£670,953	5.81
	2X	Customers	89	0.11	270	0.44	455	0.75	496	0.81	486	0.80	1937	3.18
		Sales	£1,462	0.01	£13,179	0.12	£41,009	0.36	£115,543	1.02	£234,795	2.07	£405,888	3.57
	3X+	Customers	7	0.01	34	0.06	99	0.16	320	0.53	647	1.06	1107	1.82
		Sales	£167	0.00	£1,891	0.01	£9,447	0.08	£58,580	0.52	£472,458	4.16	£542,333	4.77
Total		Customers	1924	3.16	2012	3.30	2024	3.32	1931	3.17	1720	2.82	9611	15.77
		Sales	£39,468	0.34	£92,330	0.81	£177,303	1.56	£336,529	2.96	£974,644	8.58	£1,619,275	14.26
13-15 MONTHS	1X	Customers	1816	2.98	1584	2.60	1411	2.32	990	1.62	552	0.91	6365	10.43
		Sales	£35,774	0.31	£71,794	0.63	£121,872	1.07	£170,776	1.50	£249,740	2.20	£649,955	5.72
	2X	Customers	61	0.10	206	0.34	320	0.53	453	0.74	400	0.66	1442	2.37
		Sales	£1,341	0.01	£10,143	0.09	£28,986	0.26	£78,919	0.69	£208,319	1.83	£327,717	2.89
	3X+	Customers	4	0.01	26	0.04	65	0.11	175	0.29	319	0.52	599	0.97
		Sales	£102	0.00	£1,316	0.01	£6,020	0.05	£32,839	0.29	£217,573	1.92	£257,650	2.27
Total		Customers	1883	3.09	1818	2.98	1736	2.95	1618	2.66	1271	2.09	8388	13.76
		Sales	£37,217	0.33	£83,254	0.73	£156,888	1.38	£282,533	2.49	£675,632	5.95	£1,235,523	10.88
16-18 MONTHS	1X	Customers	1763	2.89	1394	2.29	1316	2.16	862	1.41	448	0.74	5783	9.49
		Sales	£34,089	0.30	£63,903	0.56	£113,459	1.00	£145,436	1.28	£191,242	1.68	£547,930	4.82
	2X	Customers	41	0.07	161	0.26	228	0.37	307	0.50	234	0.38	971	1.59
		Sales	£973	0.01	£7,875	0.07	£20,790	0.18	£52,775	0.46	£122,074	1.07	£204,487	1.80
	3X+	Customers	1	0.00	19	0.03	36	0.06	86	0.14	164	0.27	306	0.50
		Sales	£30	0.00	£824	0.01	£3,298	0.03	£15,882	0.14	£102,014	0.90	£122,146	1.06
Total		Customers	1805	2.96	1574	2.58	1580	2.59	1259	2.06	846	1.39	7060	11.59
		Sales	£35,092	0.31	£72,403	0.64	£137,547	1.21	£214,093	1.88	£415,330	3.66	£874,465	7.70
19-21 MONTHS	1X	Customers	1216	2.00	917	1.51	796	1.31	482	0.79	267	0.44	3678	6.04
		Sales	£25,469	0.21	£42,188	0.37	£69,509	0.61	£80,724	0.71	£111,400	0.98	£327,289	2.88
	2X	Customers	24	0.04	85	0.14	117	0.19	169	0.28	106	0.17	501	0.82
		Sales	£478	0.00	£3,997	0.04	£10,535	0.09	£29,549	0.26	£54,103	0.48	£96,862	0.87
	3X+	Customers	2	0.00	10	0.02	12	0.02	59	0.06	72	0.12	135	0.22
		Sales	£95	0.00	£472	0.00	£1,084	0.01	£7,205	0.06	£38,482	0.34	£47,298	0.42
Total		Customers	1242	2.04	1012	1.66	925	1.52	690	1.13	445	0.73	4314	7.08
		Sales	£24,003	0.21	£46,657	0.41	£81,126	0.71	£117,478	1.03	£203,985	1.80	£473,250	4.17
22-24 MONTHS	1X	Customers	836	1.36	651	1.07	513	0.84	382	0.63	180	0.31	2560	4.20
		Sales	£15,520	0.14	£30,375	0.27	£44,828	0.39	£66,133	0.57	£86,825	0.76	£242,482	2.13
	2X	Customers	17	0.03	41	0.07	54	0.09	85	0.14	59	0.10	256	0.42
		Sales	£381	0.00	£1,822	0.02	£4,704	0.04	£14,800	0.13	£32,834	0.28	£54,849	0.48
	3X+	Customers	3	0.00	12	0.02	7	0.01	11	0.02	27	0.04	60	0.10
		Sales	£73	0.00	£573	0.01	£617	0.01	£2,044	0.02	£12,799	0.11	£16,105	0.14
Total		Customers	846	1.39	704	1.16	574	0.94	478	0.78	274	0.45	2876	4.72
		Sales	£15,974	0.14	£32,870	0.29	£49,549	0.44	£81,985	0.72	£132,458	1.17	£313,236	2.76
25-27 MONTHS	1X	Customers	374	0.61	296	0.48	232	0.38	164	0.27	88	0.11	1134	1.86
		Sales	£7,103	0.06	£13,842	0.12	£20,110	0.18	£27,515	0.24	£35,197	0.31	£103,595	0.91
	2X	Customers	7	0.01	14	0.02	15	0.02	17	0.03	16	0.03	69	0.11
		Sales	£172	0.00	£642	0.01	£1,226	0.01	£3,165	0.03	£15,196	0.13	£20,402	0.18
	3X+	Customers	2	0.00			1	0.00			6	0.01	9	0.01
		Sales	£39	0.00			£110	0.00			£9,144	0.08	£9,293	0.08
Total		Customers	383	0.63	310	0.51	248	0.41	181	0.30	90	0.15	1212	1.99
		Sales	£7,314	0.06	£14,284	0.13	£21,446	0.19	£30,680	0.27	£59,537	0.52	£133,262	1.17
Total		Customers	12533	20.57	12020	19.73	12246	20.10	12261	20.16	11847	19.44	60927	100.00
		Sales	£247,726	2.18	£554,276	4.88	£1,076,392	9.48	£2,136,966	18.81	£7,343,327	64.65	£11,358,707	£100

Most importantly, you must tailor RFM to suit your business. Before defining the variables, it is best to undertake an Exploratory Data Audit (EDA) and analyse the distribution of the variables. Should Recency be defined in terms of days, weeks or months? How many bands are required for Frequency? What ranges should be used for Monetary Value? And what exactly are you measuring? If you are running an advertising-supported

website, then maybe frequency of hits or impressions is most suitable. If you are an e-tailer then possibly "F" is measured by number of orders placed. And what about Monetary Value? For a low-margin business, then "M" can be margin value rather than revenue. Depending on your customer lifecycle, you may use total "F" and "M" within, say, a year, rather than the total to date.

Customer Potential and Churn

But used correctly, RFM is more than a segmentation method. It makes sense to invest more of your budget in the high responding segments and reduce your outlay on the lower ones, but of course, this can become a self-fulfilling prophecy. If you track movements across the segments then RFM becomes a great method of identifying potential. This is particularly true for "M". New customers will naturally have a lower "M" value than older ones. So if you use RFM as a snapshot, you will not necessarily promote to those new customers, as they are in the lower segments. Conversely, you may continue to promote to those older customers who used to spend a lot with you, but whose pattern is decreasing. The key here is to look at the movements and the trend. So you may have customers in lower segments, but if they are moving their way up the RFM matrix then they clearly have greater potential. So promote to them! And then do it again!

In the same way, tracking movements will identify customers who are churning. By identifying customers who are moving down through the segments you can act early to halt the movement. You can also track different types of churning behaviour – some customers will be reducing frequency, some will be reducing order value and some will simply stop altogether. So you can tailor your promotions accordingly.

Micro-Management

Talk to any owner of a successful, high activity business and they will tell you that someone in the organisation must be responsible for the micro-management of the customers and related promotions. Simply sending the same catalogue, email or promotion to all your customers, with the same frequency is the best way of ensuring that you are not maximising ROI. Logically, a customer who purchases once a month cannot be treated the same as one who purchases once a year. The former needs a retention program, the latter requires development. Once again, RFM can help to identify these customers.

Now start to incorporate RFM into your KPI's. These Key Performance Indicators may include AOV, sales per customer, gross margin, lines per order, etc. Measure these by RFM segment and monitor the trends and you will find gold nuggets. Very often, business critical issues, such as reducing AOV can be spotted early on through this kind of analysis. You will see that segment x is showing a declining trend whilst segment y is

static. You can take proactive steps to reverse the trends for each segment through changing your promotions, based on the RFM segment.

And here's another way to instantly improve ROI – calculate your breakeven point based on a promotion. Now use the historical results to previous promotions and overlay them onto your RFM matrix. Let's say that to breakeven on the promotion, you need a return of £200 / '000 mailed. Select those segments which gave a return of £200 / '000 or more and you've just removed the loss-makers from the promotion.

And then there's prospecting. Don't just measure response rates, cost per recruit, etc by acquisition source. Look at how those new recruits behave once on board. If prospect list x gives a high response rate, but very low conversion to Multi Buyer status, ie they don't buy again, then over the longer term, that list may not be as good as you first thought. List y may return a lower initial response rate but a higher rebuy rate. And the easiest way of analysing this is to look at the proportion of customers by source who fall into each of the RFM cells.

When it comes to profiling, too many companies ignore the 80/20 rule. If 80% of your business comes from 20% of your customers, then why profile all of them? By doing so, the result is a profile that is heavily skewed towards your worse customers! Once again, RFM can help. If you compare the profile of your best RFM segments to the worse ones, you can identify the characteristics of prospects that you should be acquiring, rather than the ones you don't want.

Technology

Technology is increasingly providing the ability to analyse, segment and understand data. At Qbase, we utilise a range of analytical software, including SPSS, AnswerTrees, (CHAID) and more recently, KXEN. These tools enable us to spend more time understanding the results of the analysis and less time actually building models. But no matter how sophisticated the tools, the factors which continue to remain the most predictive are those related to Recency, Frequency and Monetary Value. The advantage these tools offer is that they can generate the necessary categories and bandings in a more robust and meaningful manner and they can combine the variables in a superior way. As an example, KXEN can analyse individual order lines and headers from the raw data and produce highly predictive models, but the variables it uses will still be based around R, F & M. The analyst does not have to pre-define the variables however.

But the proof is in the pudding. Below are some real-life examples from a Qbase catalogue Client. By comparing the gains charts, we can see the level of uplift that is available through each technique. For each method, the customer file of 60,927 has been grouped into deciles, (ie 10

segments, each containing 10% of the customers. The highest decile contains the 10% most responsive customers, according to the technique). Response rates, sales, gross margin and net margin have then been calculated for each decile.

Example 1 – Unsophisticated mailing, (ie no segmentation)

In this example, no segmentation was undertaken on the customer mailings – all customers were mailed. The Client had to mail 60,927 catalogues in order to generate 1,454 responses. At a cost of £380 / '000, the total campaign cost £23,152 and generated sales of £189,326. The net profit (defined as gross margin less catalogue costs) was £14,713.

Example 2 – RFM segmentation


This example utilises RFM segmentation. This enabled the Client to mail 24,368 catalogues in order to generate 872 responses. At a cost of £380 / '000, the total campaign cost £9,620 and generated sales of £135,233. The net profit (defined as gross margin less catalogue costs) was £17,787.

Example 3 – KXEN segmentation

This example utilises KXEN segmentation. This enabled the Client to mail 30,463 catalogues in order to generate 1,079 responses. At a cost of £380 / '000, the total campaign cost £11,576 and generated sales of £150,266. The net profit (defined as gross margin less catalogue costs) was £18,477.

The gains chart on the following page shows the comparisons:

Gains Chart Comparing Uplift Available from Segmentation Techniques

 Decile	RFM mail volume	RFM net profit	RFM resp. rate	RFM sales	KXEN mail volume	KXEN net profit	KXEN resp. rate	KXEN sale
10 (highest)	6,092	£12,774	5.9%	£75,443	6,092	£13,297	7.3%	£78,05
9	12,183	£16,050	4.6%	£103,398	12,185	£16,785	5.6%	£107,07
8	18,278	£17,046	3.9%	£119,956	18,278	£17,290	4.5%	£121,17
7	24,368	£17,787	3.6%	£135,233	24,371	£17,955	3.9%	£136,08
6	30,361	£17,436	3.3%	£144,863	30,463	£18,477	3.5%	£150,26
5	36,556	£17,608	3.0%	£157,495	36,556	£17,968	3.2%	£159,29
4	42,659	£17,314	2.8%	£167,624	42,649	£17,313	3.0%	£167,59
3	48,394	£16,840	2.7%	£176,149	48,742	£16,382	2.7%	£174,52
2	54,027	£16,039	2.6%	£182,846	54,835	£15,272	2.5%	£180,54
1 (lowest)	60,927	£14,713	2.4%	£189,326	60,927	£14,713	2.4%	£189,32

RFM methodology

 No Targeting Methodology

 KXEN Methodology

Comparison of Segmentation Techniques

So what do we learn from this?

1. RFM segmentation generated a £3,074 improvement in net profit, ON ONE MAILING! This is a 21% profit improvement on mailing everyone;
2. KXEN generated a £3,764 improvement in net profit, ON ONE MAILING! This is a 26% profit improvement on mailing everyone;
3. KXEN is better at segmenting than RFM – it enables you to mail deeper into the file whilst generating a higher return, (by including other variables such as previous products ordered, demographics, etc, an even higher return can be achieved);
4. Note that any form of segmentation will REDUCE your total sales, compared to mailing everyone. The question you must ask is “how much do I have to spend to generate those sales?” In the example above, an additional £39,060 sales were made by mailing the whole file. This equates to a gross margin of £7,812. But it cost £11,576 to mail the additional customers! Therefore the bottom 50% of the customer file was unprofitable for that mailing. Both RFM and KXEN would have identified this fact.

Having made the improvements in the mailing, our Client re-invested in the best customers by doing a cover change and re-mailing the catalogue into the top segments only. By doubling the frequency of mailings to these best customers, the Client still made an overall cost saving, but increased profits AND sales!

Benchmarking

As more companies invest in sophisticated CRM systems and database / analytical solutions, there is an increasing requirement to prove that the investment has been worthwhile – that payback is being achieved. And this is notoriously hard to do. One simple way is to use RFM as benchmarks. The end objective of these solutions is to increase customer purchasing and this can be seen through the movement of customers up through the RFM matrix. By benchmarking activity before and after implementation, you can judge how successful the solution has been. Measure the average “R”, “F” & “M” values for the segments and track the changes over time. By monitoring the customer file complexion and the KPI’s, you can also calculate the actual improvements in revenue since implementation.

Summary

Everything in this chapter seems to me to be common sense. What’s more, it doesn’t require highly technical nor expensive software – a spreadsheet will do the job. But ask yourself the question “is your business fully utilising this simple technique?” If not, I strongly

recommend that you do so – it will be the quickest improvement in ROI that you will make! Typically, investment in CRM systems and other high tech. solutions such as KXEN should be made after you have exhausted RFM.

And as a last comment – make sure that your data has been cleaned and deduped first. Otherwise, those 3 Trial Buyers, each placing just one order of medium value may actually be 1 high value Multi Buyer!