

Credit Scoring as a Strategic Management Tool

Abstract

Over the past thirty years or so, credit scoring has been used to support a range of micro-level decisions. Perhaps, the most obvious and common one is to decide whether or not to grant a new facility to an applicant. However, it is also used to decide on whether or not to renew or upgrade a facility or how to manage limits. Further, it is used to manage accounts, through card authorisations and cheque payment, for example. More recently, scoring has been applied in the collections area and, treating scoring as a simple application of statistical model-building, it has also been used to predict response, fulfilment, and attrition.

However, credit scoring and its methodology is also being used increasingly to help to address some fundamental strategic management issues.

In this paper, we shall discuss the reasons for this

We shall also explore four examples of scoring being used at a macro level within a lending organisation. One will be within the modelling of arrears and provisions, another is in assessing the value of the underwriting process, the third is dealing with Risk-based pricing and processes, while the fourth looks at using scoring in setting the medium-term strategy.

Finally, we shall consider organisational structures for credit and what type of organisation is leading the way.

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Credit Scoring as a Strategic Management Tool

Introduction

One might say that, although credit scoring has been around and in use in some form in consumer credit since the 1950's, it is probably only since the 1970's in the US and the 1980's in the UK that it has been used in a form that we would easily recognise now – fast, automated calculation rather than manual, CPU-CPU links to the bureaux, data capture for analysis and MI as well as decision-making, auto-decisioning for some / all, etc.

Credit scoring is now used in a variety of decision points in a consumer and SME lending environment:

Perhaps, the most obvious and common one is to decide whether or not to grant a new facility to an applicant.

However, it is also used to decide on a wide range of other decisions:

- Whether or not to renew or upgrade a facility
- Limit Management - both the contractual limit and any shadow limit – cards, budget accounts, overdrafts, flexible mortgages
- Account Management - card authorisations or cheque payment
- Account Management - which facilities to offer and to upgrade to
- Account Management - facility renewal
- How to set and manage the price charged

More recently, scoring has been applied in the collections area.

Also, treating scoring as a simple application of statistical model-building, it has also been used to predict response, fulfilment, attrition, and even revenue.

Therefore, it is now used in each of the four R's – Risk, Response, Revenue, and Retention.

So, why has a methodology originally introduced into risk management been adopted into Response – a preserve of Marketing departments?

Well, I think the simple answer is that it is because the Risk or Credit department was often the first one to both gain access to the data required for analysis and to also have the analytic resource and skills to analyse the data. Also, the Risk department had other quantitative skills that might be of use to other areas. The first of these might be clear analytic thought processes and the ability to present their findings and to present them in a logical and structured framework, which could be understood by the senior executive. This is not always found in Risk departments and can be found elsewhere, but a Risk department is certainly a more fruitful hunting ground. The Risk or Credit department would also have knowledge and experience of statistical methods such as clustering, principal components, time series forecasting, etc. or the wide range of what we might call O R methods, such as linear and mathematical programming, and some of the softer O R skills. The fact that some of the techniques were aligned with those in the Finance area – such as discounting and taking Net Present Values, only added to the perceived usefulness of the Risk area, as it would be able to obtain sign-off for their analysis and results from the Finance function.

More recently, those in charge of these analytic functions have tried to aggregate the issues for analysis. Thus, we have combined Risk and Response modelling projects, and clearly Revenue and Retention are closely linked, and also strongly associated with cross-sales.

Now, many other papers at this conference will discuss some of these – and they are important.

But I want us to take a step backward. Not a step backward in time, but a step backward so that we can have a wider perspective of things.

I want to do this for two reasons.

1. to get to a set of circumstances / locations / applications where we can use scoring to address some higher level problem
2. to consider problems and opportunities that are not generated by the credit scoring analyst or credit risk management or sales or customer relationship management, but by (or for) senior management

We have now come to the point in the development and utilisation and methodology of scoring that senior management understand scoring (to some extent) and want to see it and its basic ideas and methodology used to answer some quite fundamental questions at a macro level.

Not only do they want this but they are beginning to expect it; but why are their expectations going that way?

Well, one reason might be to off-set the costs of scoring within the organisation. After all, these costs can, to the uninitiated, seem quite high. For example, how does one justify the cost of a scorecard when all you might get back is a few pieces of papers with attributes weights and some TTD distributions? It is a far step from taking delivery of 10,000 widgets or 2500 boxes of photocopying paper.

Another reason is that we in the credit risk management side of the business have been moaning for a long time about how much value we can deliver – and now they are beginning to put us to the test and to call our collective bluff.

In this paper, I shall deal with four examples of some higher-level problems that can be addressed at a senior management level using scoring. Obviously, I will be able to touch on each one only briefly, but you should be able to see how scoring has been used or can be used to address some fundamental strategic management issues.

Example – Forecasting Provisions and Collections Resource Requirements

Many of you will be familiar with transition matrices and how they are used in Account Management and especially Collections. (For those of you who wish to read more, see Till (2003), Till & Hand (2001) and Edelman (1999).)

We might track accounts as they move from one state of arrears to another

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.97	0.03	0	0	0
1 Down	0.45	0.25	0.3	0	0
2 Down	0.17	0.24	0.22	0.37	0
3 Down	0.08	0.04	0.18	0.17	0.53
4+ Down	0.04	0	0	0.05	0.91

Note here that the probability of staying at 4+ is very high as this state is the aggregation of 4 down and other more severe states.

Now, with this analysis, we can multiply matrices together and find out the position not one month later but six months later or 12 months later. This involves making some assumptions about stationarity and also about accounts closing.

Let's look ahead 12 months.

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.902	0.043	0.019	0.010	0.027
1 Down	0.808	0.039	0.019	0.016	0.118
2 Down	0.675	0.034	0.019	0.024	0.248
3 Down	0.512	0.027	0.019	0.034	0.408
4+ Down	0.411	0.023	0.018	0.040	0.507

Explanation:

Of those accounts that are up to date, we should expect 2.7% of them to be 4+ in 12 months time. Also, of the accounts that are up to date, we should expect 3.7% of them to be 3+ in 12 months time. And, of the accounts that are currently 2 payments in arrears, we expect 27.2 of them to be 3+ in 12 months time.

Thus, we can begin to use this to

- a) forecast the number of cases that will be in collections in 12 months' time from this tranche of cases and, by aggregating across tranches, forecast the total number of cases in collections
- b) forecast the provisions charge over the next 12 months – beginning to look like a BASEL II calculation.

Being able to forecast the number of cases in collections of course is very important. If there is going to be an increase in collections cases, you need to plan for this and can adopt one (or more) of the following tactics:

- begin or increase your out-sourcing capabilities, such as the use of third party agencies
- investigate how to allocate your existing resources more efficiently, perhaps using collections scoring
- plan for having more collectors – and it takes perhaps 9 – 12 months to advertise, interview, recruit, train, and raise performance to an adequate level

Being able to forecast provisions is extremely important. It impacts on financial reporting, both internally and to the stock market, and on Basel II reporting, and therefore on how we plan to run the business.

Now can we improve on this forecasting?

Well, we have already seen that, for example, of the cases currently up to date, 3.7% of them will be 3 or more payments in arrears in 12 months' time.

But, suppose we were able to segment this tranche of accounts into two simple groups – a better performing group where fewer cases go into arrears and, when they do, they have a higher probability of recovering or improving or at least staying the same – and a worse performing group. I have taken the better performing group to comprise 75% of the total and the worse group 25%.

This produced the following transition matrices and the 12-month transition matrices.

Better Group (75%) – one month transition

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.98	0.02	0	0	0
1 Down	0.5	0.27	0.23	0	0
2 Down	0.2	0.25	0.3	0.25	0
3 Down	0.1	0.05	0.2	0.2	0.45
4+ Down	0.05	0	0	0.06	0.89

Better Group (75%) – 12-month transition

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.946	0.030	0.010	0.004	0.009
1 Down	0.893	0.029	0.012	0.009	0.057
2 Down	0.791	0.028	0.014	0.017	0.150
3 Down	0.635	0.025	0.016	0.030	0.293
4+ Down	0.515	0.022	0.018	0.040	0.404

Worse Group (25%) – one month transition

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.94	0.06	0	0	0
1 Down	0.3	0.19	0.51	0	0
2 Down	0.08	0.21	0.13	0.58	0
3 Down	0.02	0.01	0.12	0.08	0.77
4+ Down	0.01	0	0	0.02	0.97

Worse Group (25%) – 12-month transition

	0 Arrears	1 Down	2 Down	3 Down	4+ Down
0 Arrears	0.685	0.064	0.043	0.031	0.177
1 Down	0.418	0.039	0.027	0.028	0.487
2 Down	0.249	0.023	0.017	0.026	0.684
3 Down	0.129	0.012	0.010	0.024	0.825
4+ Down	0.099	0.009	0.008	0.024	0.860

Now we have,

Expected Percentage 3+ in 12 months

	Currently up-to-date	Currently 2 Down
Unsegmented	3.7%	27.2%
Segmented		
Better Group	1.3%	16.7%
Worse Group	20.8%	71.0%
Aggregated	6.2%	30.3%

Therefore, we can see that, by using a simple risk segmentor, we can develop a more accurate understanding of the likely future performance of the lending book.

But this is simply a risk segmentation. It could be constructed using a measure of risk, such as an application score or a behavioural score. Alternatively, it might be created using a proxy for risk, such as Age, Existing Customer (Y/N) or Length of Relationship, or Channel.

In this case, we would predict a higher percentage of cases at 3+ in arrears using a segmented approach than an undifferentiated approach, but by having segments with a greater degree of homogeneity, we may reduce our variability. Reduced variability is good for Basel and good as it reduces the unexpected loss portion of our losses and in general it is good for management and for the stock market, neither of whom like surprises.

Another issue here is that, without segmentation, there may be changes in our portfolio which we are not seeing because there are compensating differences cancelling each other out. By segmenting, we can begin to see what those changes actually are, what is causing them and what will happen if they continue. This will allow us to manage these two segments appropriately and to plan to market to these two segments accordingly. This is simply good business management as well as good credit management.

Good credit management, Basel, reduced unexpected losses – these ideas will arise in other papers at the conference.

Example - Value of Underwriting Process

Another senior management issue is to ensure that different parts of the process deliver value, and that this value is optimised.

Within the credit risk management arena, there is often an underwriting function. In some organisations, this operates in a fairly slim way at one end of the spectrum, only dealing with issues such as proofs and mis-matches at the bureaux. Thus, most cases will have an automated decision, but a few need to be referred to satisfy Money Laundering requirements, credit policy, or fraud prevention measures.

At the other end of the spectrum, we may be using the score only to prioritise cases or to assign them to underwriters who will then consider the risk represented by the proposition.

Somewhere in the middle of this range is perhaps the most common situation. Here, we have many automated decisions, but apart from the proofs and mis-matches, we may also have a small grey area around the cut-off which is referred to underwriters or possibly just below the cut-off, or we have a grey area around the threshold for one or more policy rules – LTV, Value, term, affordability, adverse events, etc.

Now a key senior management question is how much value, if any, does the underwriting process add to the business.

Let us consider a Final Score Report.

This one is discussed in the Scoreplus Course Scoring Making It Work.

This type of report should be familiar to most of you, although not necessarily in this format.

Final Score Report

By scoreband	Application date range (current sample) 6/00 - 8/00						
	Accepts		Rejects		Total		Accept rate
Score	#	%	#	%	#	%	
Up to 189	18	0.1%	663	12.0%	681	2.0%	2.6%
190-199	61	0.2%	893	16.2%	954	2.8%	6.4%
200-204	51	0.2%	800	14.5%	851	2.5%	6.0%
205-209	491	1.7%	497	9.0%	988	2.9%	49.7%
210-219	1,593	5.6%	825	14.9%	2,418	7.1%	65.9%
220-229	1,999	7.0%	692	12.5%	2,691	7.9%	74.3%
230-239	3,183	11.2%	666	12.1%	3,849	11.3%	82.7%
240-249	4,501	15.8%	97	1.8%	4,598	13.5%	97.9%
250-259	4,545	15.9%	189	3.4%	4,734	13.9%	96.0%
260-269	3,708	13.0%	107	1.9%	3,815	11.2%	97.2%
270-279	2,718	9.5%	41	0.7%	2,759	8.1%	98.5%
280 and up	5,671	19.9%	51	0.9%	5,722	16.8%	99.1%
Total	28,539	100.0%	5,521	100.0%	34,060	100.0%	83.8%
Up to 204	130	0.5%	2,356	42.7%	2,486	7.3%	5.2%
205 and up	28,409	99.5%	3,165	57.3%	31,574	92.7%	90.0%

Scorecard expected accept rate: 88.9%

There is a lot of information in this table; but a first pass high level analysis would be as follows:

We expected 88.9% to achieve the cut-off but 92.7% actually did – therefore we may have attracted better quality than expected.

However, we only accepted 83.8%.

While we had a Low Side Over-ride (LSO) rate of 5.2%, we had a High Side Over-ride (HSO) rate of 10.0%

Now, one key question that we are going to consider is whether the over-ride process, or the over-ride processes, are adding value.

To do this, we need to add the data on performance.

Application and Performance Data

Accounts opened : June to August 2000
Performance measured as at August 2001

Goods : never delinquent plus ever arrears 1, but no worse
Bads : ever arrears 3+

Score band	Mid point	Applications		Accepts #	Rejects #	Accept rate (%)	Accept population		
		#	Col %				Goods	Bads	Odds
Up to 189	185	681	2.0%	18	663	2.6%	12	3	4.0 /1
190 - 199	195	954	2.8%	61	893	6.4%	41	10	4.1 /1
200 - 204	202.5	851	2.5%	51	800	6.0%	37	8	4.6 /1
205 - 209	207.5	988	2.9%	491	497	49.7%	378	73	5.2 /1
210 - 219	215	2,418	7.1%	1,593	825	65.9%	1,296	221	5.9 /1
220 - 229	225	2,691	7.9%	1,999	692	74.3%	1,657	238	7.0 /1
230 - 239	235	3,849	11.3%	3,183	666	82.7%	2,673	325	8.2 /1
240 - 249	245	4,598	13.5%	4,501	97	97.9%	3,888	402	9.7 /1
250 - 259	255	4,734	13.9%	4,545	189	96.0%	4,093	316	13.0 /1
260 - 269	265	3,815	11.2%	3,708	107	97.2%	3,503	158	22.2 /1
270 - 279	275	2,759	8.1%	2,718	41	98.5%	2,627	97	27.1 /1
280 & up	290	5,722	16.8%	5,671	51	99.1%	5,552	105	52.9 /1
Total		34,060	100.0%	28,539	5,521	83.8%	25,757	1,956	13.2 /1
Above cut off		31,574	92.7%	28,409	3,165	90.0%	25,667	1,935	13.3 /1
Below cut off		2,486	7.3%	130	2,356	5.2%	90	21	4.3 /1

Let us first consider the Low Side Over-rides (LSO's).

These are in some sense easier to deal with. We have 130 cases accepted and we have their performance. We also have the scorecard expectation of how well cases scoring in these ranges should have performed – but of course those LSO's taken on have been carefully selected by the underwriters.

One key question is whether these LSO's made a positive contribution to profit. One simple measure of this is that their G:B odds should be at least as high as the performance we expected at the scorecard cut-off. Of course, we must be careful here to use the correct benchmark. Note that we should not use the actual performance of cases at the cut-off as, with a HSO rate of 50% in the first band above cut-off, there is also some careful selection going on here.

Of course, if the underwriters are being carefully selective regarding LSO's, this would typically result in the LSO's performing better than what we would expect from the scorecard for the first band of cases above cut-off. Again this needs to be considered in the appropriate context. I have worked in functions where this led to a proposal to lower the scorecard cut-off. Initially,

this argument is appealing, ... but only initially. Once one considers the careful selectivity of the underwriters – the fact that the LSO rate is only 5.2% - we see that this does not really justify a reduction in cut-off, although it might justify running a short and narrow experiment with a lower cut-off.

Now, let us turn our attention to the High Side Over-rides (HSO's).

Again, we would expect the performance of the accounts taken on above cut-off to be better than the scorecard predicts – because we have taken a selection of them. But would the HSO cases, i.e. the ones actually declined, perform much worse than the scorecard, and perform worse than the break-even odds? Well, we simply don't know, as we didn't take them on.

We also don't know how effective the underwriters were.

An empirical approach to this problem is followed in the Scoreplus course. They consider an ineffectiveness factor for the underwriting process.

If the factor is 1, then this suggests that the G:B odds for the HSO's, i.e. those passing but ultimately declined, will be the same as for those that were approved. In other words, the underwriters are "randomly" selecting HSO cases to decline.

On the other hand, if the factor is 0, this means that there would be no Good cases among the HSO's. In other words, all of the HSO cases would turn out to be Bad.

With this framework, the delegates on the course analyse the situation using a range of plausible factors, from 0.4 up towards 1.

However, there is also a theoretical way to look at this problem.

We have a scorecard and we know what the scorecard forecasts are at each scoreband in terms of G:D odds.

Thus, when we consider the HSO's together with the cases that were accepted, these should aggregate to what the scorecard predicts.

Thus we can see that, as in the table above, the G:B odds for those accepted at the cut-off were 5.2:1 (actually 5.18:1). Now suppose that the scorecard G:B odds at the cut-off were 2.7:1. For this to be the case, we would need to have 314 Goods and 183 Bad among those rejected – the HSO's, i.e. G:B odds of 1.71:1, so that when aggregated we get back to 2.7:1.

Thus, at each scoreband, we can evaluate how many Goods and Bads would have been among the HSO's; and can then, at each scoreband, assess whether the HSO's would have made a profit or a loss to the lender, factoring in staff costs, interest income, loss, insurance income, etc.

	Accepts	Accepts	Accepts	Overall Fitted	Rejects	Rejects	Rejects
	Goods	Bads	G:B Odds	G:B Odds	Goods	Bads	G:B Odds
205-209	378	73	5.18	2.70	313.87	183.13	1.71
210-219	1296	221	5.86	3.24	493.41	331.59	1.49
220-229	1657	238	6.96	4.65	472.43	219.57	2.15
230-239	2673	325	8.22	6.69	514.42	151.58	3.39
240-249	3888	402	9.67	9.61	85.60	11.40	7.51
250+	15775	676	23.34	23.11	365.47	22.53	16.22

Thus, we can now, with a fair degree of certainty, evaluate for each scoreband whether the underwriters are adding value by protecting the business from bad debts or are reducing value by being overly cautious.

Of course, this analysis should be carried out for each scoreband. One reason for this may be to develop a process which only allows HSO's in some scorebands, those where the underwriters may be adding value.

Another reason is that, if we have an operation utilising Risk Based Pricing, as the price may vary by scoreband and therefore the degree to which we can afford a higher level of risk, we need to consider each scoreband and the profit and loss separately, and especially as the increased risk and increased revenue may be something that the human underwriter is unable to factor into their assessment.

Another area where we can use scoring to assess the effectiveness of underwriting is in comparing underwriter performance.

There are several operations where we have a team of underwriters and we wish to establish who is better and what it is that makes them better so that we can spread that to the others. Some simple key measures of underwriters are:

- Average time taken per case
- Acceptance rate
- Arrears rate for acceptances

Now, one issue that arises in comparing underwriters is the variability in the types of cases with which they are dealing. They will all quote cases that took far longer than the norm, whatever that is. But we can use score and perhaps one or two other measures related to the actual complexity of the proposition, to either measure the types of cases that they had to deal with or to spread the load evenly. Thus, at the end of each week or month, we can try to ensure that underwriters who are being compared have had very similar proportions of cases in each of several scorebands. Thus, their acceptance rates should in theory be similar or at least comparable. We can also use the score to measure their arrears rates otherwise one underwriter may have much lower arrears rates purely because they had a better risk profile to deal with. Also, using these measures helps to smooth out any differences caused by shift patterns as you will probably get a different quality of applicant at different times during the day and week.

Example - Risk Based Pricing and Risk Based Processing

Papers at this and at previous conferences here and at various other conferences have talked about elements of risk-based pricing.

The principle is that we assess the risk and then charge accordingly.

This principle has existed in the insurance market for a long time now.

It has existed in the corporate lending market for a long time as well, but it is only in the past 10 years or so in the UK, that it has really entered the consumer lending market and it is still making inroads with many lenders only now either introducing Risk Based Pricing or beginning to use it properly.

Now, to deliver risk-based pricing requires faith in the scorecard.

With a simple Pass:Fail process and a cut-off of 200, say, a high quality applicant might score 300. However, if we have a sub-standard scorecard, that applicant could score 240 or even 350, but they will still be accepted.

The challenge with scoring and risk based pricing is that we need the score to be fairly accurate across the spectrum, rather than just near the cut-off. If this high quality applicant scores 240 rather than 300, they will still be accepted but may get an offer at a higher price than advertised or expected, and may choose to take their business elsewhere. Thus, we have lost a customer whom we would have been happy to accept, due to the scorecard.

Now, I can also mention an alternative to risk based pricing. I call it Risk Based Processing. Let me explain.

Suppose that we then have a scorecard with a cut-off at 200 and cases scoring between 0 and 400.

We can consider a tranche of applications that score 320. These cases will perform like cases scoring 320 – or at least will perform in that way if we treat them in the same way as the cases in the scorecard development. If we are less careful with them, then their actual Bad Rate will be higher than is predicted by the scorecard, but we still have plenty of room for manoeuvre before we begin to get close to the cut-off.

Thus, we can cut some corners – and reduce costs or improve service or turnaround or whatever – and these cases may now perform as if they had scored 275, say.

Let us look at some examples of where this may occur or be used in practice.

Ex 1. This would occur in mortgage lending. We have some very good cases and, rather than get a full property valuation, we are prepared to accept a drive-by valuation, or a desk top valuation, or an old valuation which we can index, or even the applicant's estimated valuation. Thus, by not seeking a full valuation, we are increasing our risk; but on the other hand, we are reducing the time it takes to make a firm offer and also reducing the costs and the hassle, both to ourselves and to the customer.

Ex. 2 Here, we are scoring an application but can produce a partial score. Those who are in the top X%, say, of the partial score distribution, will be approved without further information being obtained. The percentage might be 1% or 2% or perhaps up to 20%, depending upon the product, the risk, and how much information we are dispensing with. Again, this will deliver a faster decision process. There may also be a significant reduction in costs – reduced length of telephone call, reduced staff cost, fewer bureau searches, etc. All

that we are doing is identifying a group of applications which score very well or are likely to score very well and making them a little bit riskier.

Ex. 3 Here, we have a process where we have the right to require the applicant to provide proofs for credit assessment purposes. Based upon the score, we may dispense with the requirement to provide proofs.

We must realise that making faster decisions or decisions with less hassle for the applicants may generate the following benefits:

- Applicant is impressed
- Applicant may be forced to commit earlier, thus reducing their inclination to shop around
- Applicant may even be prepared to pay a little more because of this better service – and this increment will be useful to help to defray the slightly increased risk
- Thus, we have higher acceptance rates on our side and also higher acceptance rates from the applicants
- Reducing the number of pieces of paper to be supplied or chased, or reducing other aspects of the fulfilment process, will reduce the administrative burden and also reduce the number of things that can go wrong or be forgotten, etc.

So what can scoring deliver, either through risk-based pricing or risk-based processing?

Well, it can help to deliver a balance of risk and reward, delivering a balance among lower risk cases, higher risk cases with associated higher income, and cases with a slightly raised level of risk but where our costs are lower and our acceptance rates are higher, i.e. more profitable business.

Example - Acceptance Strategy / Strategic Planning

When reviewing options at the board level, the factors used are often quite vague. Certainly the means for delivering targets are often vague. Thus, we get things like:

- 10% p.a. growth in balance sheet over the next five years
- 5% cost reduction
- 20% increase in annual profits
- Book size of £5Bn.

We also may have to operate with constraints applied to marketing spend, IT spend and sometimes provisions.

Now, I am not going to discuss where these might come from, or how they are actually measured, or the fact that some of them may conflict with each other.

But I do want to take things down a step, once again – to the executive committee – the people who actually run the business and are charged with delivering on the targets.

Where does scoring fit in?

Well, scoring has a clear input into all of these key criteria. Certainly scoring can help to control losses which are a clear contributor to costs. However, scoring can also be used to control or to manage operational costs. Certainly this will contribute to profits, but so also will acceptance rates and pricing, both also influenced by the use of scoring.

However, when we turn to balance sheet growth, we run into a significant issue. If we take on £1bn of personal loans today, and it is all 12-month loans, the one thing that is certain is that none of them will be on the balance sheet next October. To be strictly accurate, there will be a few cases still on the balance sheet – but these will be in arrears or in collections or recoveries.

To support balance sheet growth, we need to book longer-term loans. Now, from a purely risk point of view, longer-term loans may be higher risk than shorter term loans, principally due to the longer exposure period.

There are mitigants, however. Firstly, for the same amount borrowed, a longer-term loan will have a lower monthly repayment, and this may mitigate the risk. Secondly, a longer-term loan will be on the books for longer. This matters a lot when one considers that it may take the first 9 – 12 months to establish customer behaviour; and targeted and controlled cross-selling of credit products and perhaps other products can only begin after the credit behaviour has been established. Thirdly, and perhaps obviously, a longer term loan will generate far greater interest income. Thus, we want to be able to select the better longer-term loans and need to select them to support balance sheet growth.

Another area where scoring will help to achieve the business objectives is in its analysis and control of quality from different channels. Business can be processed through several different channels – branch network, telephone, Internet, intermediary / broker, WAP, television, face-to-face (at airport, exhibitions, door-to-door), etc.

Each one will have its own risk profile and we can also use cut-off's and policy rules to control the volumes from each channel and the levels of risk that we take on.

Controlling the volumes is important as we need to ensure that we have the right numbers of personnel at various points of the process, with the appropriate training. Thus, we may need advanced warning so that we can begin advertising for new staff, followed by interviewing, recruitment, and training.

With Internet applications, it is true, more or less, that there is no real capacity constraint. However, we still need to issue documents, deal with mis-matches and proofs and suspect

frauds, and doubling our volume of applications handled by using the Internet will still double the volume of cases through these labour-intensive areas. Also, doubling the volume of new business will eventually impact on customer service areas as there will be a greater number of existing accounts and, with loans and mortgages, a greater number of accounts settling early.

A further area in which scoring can help is marketing.

Response scoring is one deliverable which can be extremely useful in cutting costs. Using response and risk scoring together will also help to avoid the processing centres being deluged with large volumes of poor quality applicants. Once again, this conference has seen some papers on aspects of this topic.

This approach can be implemented across the board; but it pays much greater dividends if implemented differentially; using different sources and processing through different channels and overlaying this with the seasons / months of the year.

Through this, we should be able to optimise the marketing spend, perhaps using some fairly simple ideas from linear programming.

Within collections, other papers in this conference and elsewhere will address the benefits of using scoring in collections, often to allocate resources more efficiently and so reduce costs. When one considers the cost of a scorecard development and the cost to employ of an experienced collector, it is not too difficult to begin to justify using scoring in this part of the operation.

Finally, we come to the actual business plan or strategy. Part of this plan could and should include plans to rebuild scorecards, taking into the financial figures both the development costs and then the flow through of improved performance, whether taken in the form of reduced bad debts or increased acceptance rates or a bit of both. When we factor in the improved performance, we always need to factor in the portfolio drag effect, a term coined in the 1980's by George Wilkinson, to describe the lagged effect of the improved quality or increased acceptance rates seeping into the portfolio.

Through this financial planning, one might even decide on the optimum time to re-build a scorecard – it may not always be as soon as possible – despite what the scorecard developers may say.

I have also seen cases where the scorecard development and its implementation are factored in with a range of IT developments, and where the scorecard re-build is delayed until some system development has been implemented that might support a more powerful and better scorecard or a greater level of control of credit policy.

The output of this type of thinking, is not only some financial figures that will deliver the high level Board objectives, but also a set of plans involving marketing, IT, sales, collections, and credit risk management, with the latter area covering both credit policy and scorecard development.

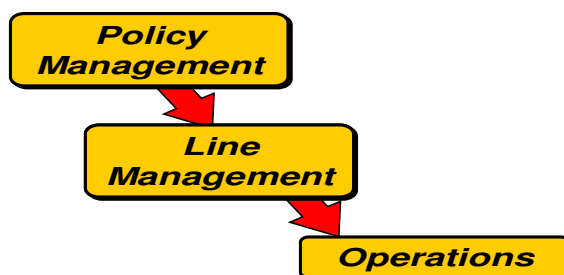
Summary and Rationale

We have visited four areas where scoring can inform senior management and help them to run the business better. Why does this opportunity exist?

Well, it is more a case of why is this necessary.

This model describes the credit organisation in the 1950's. This structure and model worked very well because things were reasonably stable. We had stable products and stable staffing. Customers were stable / loyal too.

Credit Organisation: 1950's



The possibility for feedback was limited, but so also was the need for it.

People joined the organisation straight from school and, if they had ability and worked hard and were lucky, they might move into Line Management after 20 years. The really good ones would move on after 10 years there into Policy Management for 5 – 10 years before retiring.

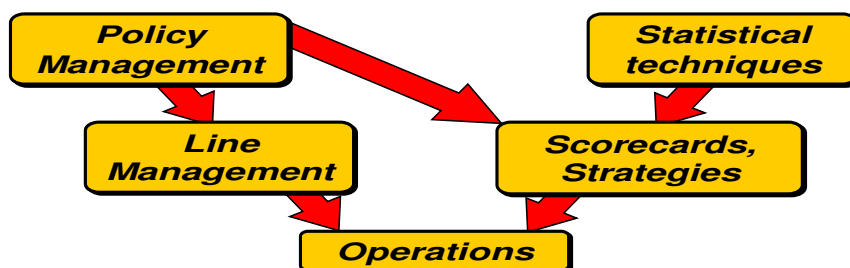
In this model, Operations Line Managers were the lynchpins. They controlled sales in the branches or other outlets. They implemented rules – such as don't lend to people wearing brown suede shoes or avoid lending to people employed in the hotel industry.

Because the whole environment was stable, the people in Policy Management had done the Operations role 20 – 30 years before – but it had hardly changed. Thus, when they introduced a new policy, they knew how it would be interpreted and implemented and what ruses the sales people would develop to evade the rules and also to avoid detection.

So why did we introduce scoring?

Well it was done to improve the risk/reward trade-off or to improve operational efficiency or to get better control, all of this against a background that was no longer the stable environment that the 1950's model operated in.

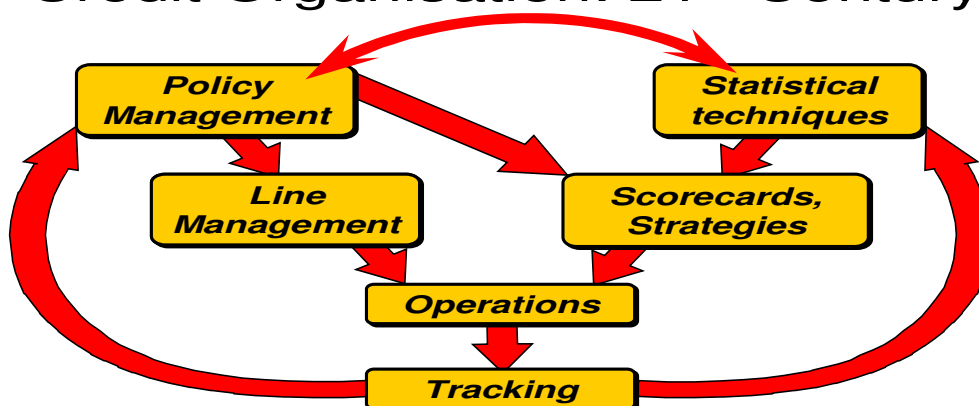
Credit Organisation: 1980's



Scoring is a communication channel

Things were moving faster and we couldn't wait 15 years to find out how things worked. New products were being developed as well as new delivery channels. The Policy management team needed to have a faster and more streamlined way to implement policy. Scoring became their delivery and communications channel. Scoring also allowed the removal of an expensive link and one that proved difficult to control – the Line Management.

Credit Organisation: 21st Century



The model for now and for the future has full tracking in place to provide the detailed feedback that is required. This feedback is not just for the Policy management team. It is also for the statistical analysts who need to manage the scorecards and the strategies used. And there is now a direct link between this area and the policy directorate. Policy is now run much more based on information rather than on gut feel and experience. Senior management want and require accurate and timely analysis for them to run the modern lending organisation.

So, this is the model for now and for the future, but does your organisation look like this yet? And, if not, how are you going to get it there?

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