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**EVALUATING INVESTMENTS IN CRM
WITH REAL OPTIONS**

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Lynette is a Registered Representative of the London Stock Exchange and is the only woman in the UK to have passed the Fellowship examinations of the Society of Investment Professionals.

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Evaluating Investments in CRM with Real Options

Abstract

CRM practices are being adopted in most industry sectors to build stronger relationships with customers in order to develop superior customer value and increase shareholder value.

This article questions the basis upon which the business case for CRM investments is traditionally made, highlighting the shortcomings of focusing only upon discounted cash flows, and points towards a strategic approach that accounts for such investments in asset value terms. A case study is used to illustrate how to value the returns using both cash flow and strategic investment calculations for comparative purposes. The managerial implications are discussed.

Introduction

This paper reviews the financial and business logic behind investing in Customer Relationship Management (CRM). Too often, the current practice is to manage a business case as a budgeting and financial planning exercise rather than a strategic event. We argue that the dominant form of financial analysis (Copeland and Weston, 1998), Discounted Cash Flow (DCF) and Net Present Value (NPV) calculations, are too limited a basis on which to make CRM investment decisions because they undervalue returns and focus management attention on short term cash flow when, perhaps, the biggest benefits lie in building a strategic asset.

Finance scholars suggest real options may be a better means of valuing strategic management investments (Copeland and Keenan, 1998; Luehrman, 1998). However, their writings' build a generic financial analysis framework and do not guide managers or researchers involved with CRM specifically. We extend the Finance literature by illustrating the problems of using DCF and NPV through a case study of a telecoms company *considering investing in CRM, in which a range of business case scenarios are generated and discussed.* These scenarios show wide variability, depending upon the business assumptions made. We argue that cash-flow calculations significantly undervalue CRM since it fails to account for all the effects of better customer relationships: such as, learning and innovation, reduced risk and improvements in shareholder value. To understand these customer relationship benefits more comprehensively, the case study demonstrates how a real options approach builds a stronger business case for CRM investments and focuses managerial attention on the areas of CRM that offer the firm perhaps greater value than cash flow alone. The managerial implications of accounting for CRM investments as an asset valuation, rather than a cashflow decision, form the conclusions of our paper.

The Promise of CRM

Interest in CRM investments have been fuelled by the prospect of the win:win scenario for both the business and its customers; for customers, CRM promises customised solutions and superior service at reduced cost, and for the business, loyal customers improve profitability and shareholder value, and release capital. We consider both these perspectives next.

The customer perspective

Economic theory predicts that without indirect reciprocity, customers buy from many suppliers to reduce costs and improve service (Palmer, 2000). In reality, they willingly restrict their choice to a few preferred suppliers or brands (Gummesson, 1998; Sheth, 1995). For instance, customer inertia in switching banks, utilities and telecoms suppliers is a major challenge facing new competitors in each of these markets. In global markets, many multinationals have rationalised their supplier base to a core of business partners, abandoning traditional 'sealed envelope' bidding processes to improve collaboration, information sharing and JIT procurement (Christopher, 1998, pp.190-191).

Economists explain this apparently irrational behaviour with search and transaction costs. In a perfect market, all information is known and there are no transaction costs. In reality, however, customers faced with purchase decisions generate and evaluate options, choose, negotiate terms and then hope that suppliers deliver their promises. Negotiations with these suppliers cost time and money, particularly when things go wrong (Williamson, 1981). Customers have imperfect information about markets and it costs time and money to learn more (Bakos, 1991); those suppliers are considered to be acting in a 'rational' manner if the total lifecycle costs of owning an asset or procuring a service are accounted for (Degerature et al., 1999). These costs include search, procurement, installation, maintenance and after sales service. The more costly the search and transaction costs are, the greater the value created by trusted suppliers.

In some markets changing suppliers generates 'switching costs'. For instance, a new software application may force customers to relearn the application; where telephone numbers are not portable, changing suppliers means informing everyone who has phone contact. The avoidance of switching costs becomes another reason for maintaining supplier loyalty (Shapiro and Varian, 1999).

Where firms develop and act upon customer insights, they create additional relationship benefit to their customers by enhancing their offer and the purchase experience (Pine, Peppers, and Rogers, 1995). Lean supply chains place a premium on close process integration between supplier and customer because factories grind to a halt if suppliers don't deliver (Anderson and Narus, 1999, pp. 95, 99). Increasingly, supply companies are also encouraging their customers to participate in product, marketing, sales and manufacturing innovation (Von Hippel, Thromke and Sonnack, 1999). Over time, the quality of the customer's contribution is likely to develop since they are more likely to invest in process and quality improvements when they have a strong and enduring relationship (Williamson, 1981).

In sum, most sophisticated customers today prefer to deal with a small core of supplier-partners than to procure important supplies in the open market. Relationships are considered to add value and reduce costs, and buyers demonstrate a preference for building stable relationships over pure market transactions for all but straight commodities or low risk purchases.

The business perspective

In recent years, businesses have paid increasing attention to the profit impact of customer loyalty. Reichheld (1996) makes a compelling argument that it is more profitable to focus on

building loyal customers rather than just maximising market share. He argues that loyal customers generate superior profits because:

- It is cheaper to retain existing customers than acquire new ones
- They may trade up to higher margin products and services or buy more
- Their familiarity with a firm's products and services reduces service costs
- Satisfied customers refer other customers
- They are generally less price sensitive.

Reichheld also maintains that these effects increase over time, so that the profitability of loyal customers grows exponentially.

Other researchers have suggested that most firms 'carry' many unprofitable customers who don't generate margins commensurate with the cost to serve them (Peppers and Rogers, 1997; Ryals, 2002). They argue that firms should discontinue subsidising unprofitable customers and redirect resources to retaining profitable ones – and attracting potentially profitable ones.

Recent research also suggests that loyal customers can increase shareholder value by reducing the volatility of the firm's cash flow (Ryals, 2002). Serving large numbers of transient customers makes cash flow volatile and creates fluctuations in short term assets, such as inventory and receivables. Investors demand greater return on investment to compensate for volatile cash flow. In addition, loyal customers may contribute valuable and unique learning to the firm (Wilson, 1996). Knowledge gained by a firm from its customers over time can be translated into marketing action tailored to individual customers (Peppers and Rogers, 1997). Once a customer sees a supplier acting on information it has been given, there is a strong disincentive to start again with a competitive supplier. Peppers and Rogers argue that this history creates a 'switching cost' and a sustainable competitive advantage.

Learning from customers is particularly important in new product development – there will be fewer expensive failures when customers can input early into the product development process (von Hippel, 1986, 1989; Urban and von Hippel, 1988). The reduced development risk (or improved rate of innovation) builds cash flow and reduces overall business risk.

Value Exchange and the CRM Business Case

CRM creates value for both customers and the business. The more customers 'teach' their suppliers, the more these businesses can support and respond to them. This value exchange process lies behind the most critical business assumptions about the CRM business case:

- **Trust is developed.** Research suggests trust is developed through repeated experiences that meet or exceed customer expectations (Constable, 1998). The CRM business cases must address this issue of how trust is to be built, and over what timeframe.
- **The CRM programme has integrity.** Customers will continue 'teaching' firms about their needs and preferences for as long as they perceive benefit. The business case must address how customer interactions will be managed and for what purpose.
- **There is mutual commitment.** The business case must identify how and why customer commitment will increase over time, and how this increased commitment can be leveraged commercially through increased sales, referrals and references. Commitment comes when the customer recognises that the supplier is contributing to achieving important professional (or personal) goals.

A major criticism of current practice is that most CRM business cases assume the outcome of the customer learning process at the outset, write these assumptions into the sales

targets, and design customer relationships around what the firm wanted to sell in the first place (Maklan, 2000).

At the core of most CRM business cases lies a financial investment analysis, usually the Discounted Cash Flow Analysis (DCF) and its associated Net Present Value (NPV) calculation (Ryals et al., 2000). Investment policy aims to ensure that managers create shareholder value by determining whether expected returns on any investment exceed the risk-adjusted cost-of-capital for that type of investment.

In this financial model, CRM represents an investment in technology, people, new processes and marketing to stimulate an increase in cash flow from customers in future years by them buying more at reduced sales and marketing costs. This cash flow is discounted by an appropriate charge for capital to enable managers to compare investment and return on a like-for-like basis; that is, the present value of each. If net present value (NPV) is positive when cash flows are adjusted for the true cost of capital, then risk-adjusted return exceeds cost of investment. Sophisticated users of DCF estimate a residual value for the asset at the end of the planning period.

NPV is based upon estimated incremental cash flows that are uncertain, and there is no guarantee that the business case will be delivered once projects start. However, the forecasting process assumes that the business is a portfolio decision maker, making a series of investment decisions based on expected value. This is a risk reduction strategy; the business makes a large number of investments, none of which will expose it to unacceptable risk levels (Copeland, et al., 1995). If each business case is honestly made, then investments that return less than forecast are balanced by those that exceed their estimates. Across a large number of investments, provided the charge for capital is appropriate, the use of DCF and NPV calculations should lead to decisions that increase shareholder value.

Limitations of Using DCF and NPV in the CRM Business Case

A number of critical assumptions made by these modelling techniques are not necessarily true for CRM investment. For instance:

- DCF primarily values measurable cash flow from increased sales and lower costs. Sophisticated DCF would also estimate the residual value of the investment in the CRM technology but it struggles to measure the non-cash value of enhanced relationships. Customers are worth more than cash (Ryals, 2002); CRM should encourage customers to recruit new customers, to act as test markets for new ideas and to teach firms how to continually improve their operations.
- The portfolio decision maker assumption may also be suspect. If an industry is in flux and there is a clear imperative to move to a more customer-centric business model, the firm may not have the luxury of repeated experimentation. When customer-centric change is a 'bet your business' initiative, DCF fails to value the consequence of getting it wrong.
- Where there is great uncertainty around the outcome, a business case that looks at the NPV of a best estimate scenario is not always helpful (Copeland and Keenan, 1998). Too many business cases have a wide range of outcomes that a mid-point estimate with some sensitivity around that estimate fails.

These limitations are demonstrated next in the case study of Westel*, a telecoms hardware manufacturer struggling with a CRM business case. Then, the contribution of a real options approach for this CRM investment decision is illustrated:

Developing the CRM Business Case at Westel

Mary First, Marketing Director of Westel, is preparing the CRM business case for a programme she believes necessary for the company's survival. Westel is a multinational company which provides telecoms network hardware. It has an extensive product and service range, and an established reputation in solving complex, demanding problems. Its high-end products form the telecoms backbone of many of its customers and command high margins. Once installed, Westel can confidently expect the lion's share of upgrades, extensions and ancillary services.

However, Westel is under attack from new competitors who combine solution design with hardware, installation, and network management. These firms are disintermediating Westel from its customers, and the Board is worried that the firm will become a low-margin, hardware supplier to these upstarts. Mary was asked to put together a strategic response.

Mary divided customers into three segments: profitable; marginally profitable with substantial growth potential; and unprofitable with no prospect of becoming profitable. In the first two segments, Westel was only selling one-third of what it 'should' be achieving. Each business unit was focusing on its own offerings rather than total customer need. The firm was neither maximising opportunities across business units nor matching sales and marketing expenditure to the opportunity. Each business unit pursued its own targets. To address this, Westel would need to change from being product- to customer-centric. So, Mary recommended the creation of a key account management function to:

- Integrate Westel offerings into bespoke, value-added customer solutions
- Co-ordinate marketing, sales and service expenses, aligning them to priority customers and development programmes
- Exploit the potential for referral. Mary knew that her customers networked extensively and that Westel was not actively fostering customer referrals.

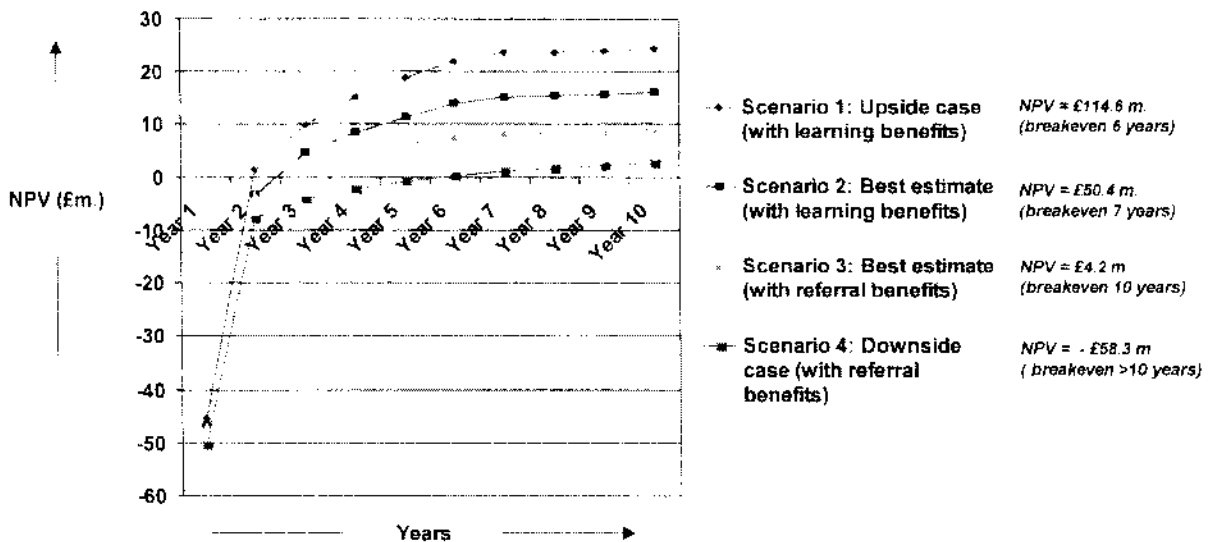
This programme would require substantial investment in sales and marketing, new technology and considerable reorganisation of the business.

Estimating The CRM Business Case

The Finance Director had advised Mary to use 10-year cash flow forecast with a discount rate of 15%. Mary felt confident that she could estimate the costs, but assessing increased revenue was more difficult. Mary added her best estimates of incremental sales from key account management, increased referral and reduced marketing and sales costs. However, the NPV analysis demonstrated that the project would only break-even over 10 years (Figure 1; scenario 3; Appendix 1 shows four different scenarios in more detail).

* Westel is a representative case developed from our research and consultancy work in CRM.

Figure 1: CRM Business Case for Westel



Moreover, the variability of different scenarios was enormous. Nobody could prove how well CRM would work. Mary estimated upside and downside scenarios at plus or minus 50% of her best estimate. But she had no basis for this. The downside case (scenario 4) generated NPV of -£58.3 million and a 50% sales uplift would take NPV to +£84 million.

She knew that an effective account management programme would also deliver further hard-to-quantify benefits of learning from customers: new product development ideas, and opportunities for reducing non value-add activities. But nobody could easily identify these until the programme was in place. Nevertheless, she created a second, best-estimate business case by adding in two further revenue lines which assumed that key account managers would be able to identify new product opportunities, and identify means of eliminating non-value-adding activities. This took the best estimate NPV from break-even (scenario 3) to £50 million (scenario 2), and generated a NPV of £114 million against her upside case (scenario 1).

Mary consulted the Finance Director before going to the Board. He advised her to upgrade the incremental revenue estimate on her best estimate scenario: 'If being customer-centric is such a good idea, then it had better do more for our top-line than your initial estimate. We are only selling one-third of our potential in our best account. Triple the revenue line! If we're not confident about CRM, we could get more return increasing investment in our business units without turning our organisation inside out. As for those two revenue lines for future product enhancements and cost savings – how am I to evaluate them? They're so speculative that if you present them to the Board, I'll have to suggest that they are removed.'

Mary pondered what to do. Should she be even more ambitious about the revenue and margin upside even though she had no firm basis? Could she scale down CRM investment and still justify her growth assumptions? Should she try to convince the Board with 'soft', unquantifiable benefits? Should she try frightening the Board by painting a vision of doom if Westel allowed competitors to consolidate their hold on its best customers?

Analysis of the Westel's CRM Business Case

Westel needs to become customer-centric. But the only way to make the NPV numbers work is to make heroic assumptions about increased revenue, reduced cost and the risks of 'do

nothing'. Forecasting large increases in revenue based on market beliefs, experts' claims and hard-to-verify estimates of best practice is risky. Moreover, it assumes that you know the outcome of stronger customer relationships before entering into them. Whilst Westel might have an idea about how it could 'help' its customers further, it has not validated this in the real world.

The Finance Director's advice to invest more in the current business would show immediate return. Smaller initial investments giving short-term returns are favoured in NPV calculations because the discount rate – the time value of money – dramatically reduces benefits that are realised only in the long term. But what will happen to Westel if Mary and the Board are right about the threat from new competition and the expected shift in their customers' behaviour? How should senior managers assess the risk of being cautious? If they fail to implement CRM now, can they come back later or will they have missed the chance forever?

DCF/NPV are not good at assessing this type of low-probability, but potentially fatal risk. They also favour the short over the long term. And what about the 'soft' benefits?

Mary was convinced that once the new organisation was in place, Westel would find opportunities to reduce non-value-added costs and identify winning new business ideas. The firm would also be at the 'top-table' with its customers - gaining inside knowledge both of their evolving needs and by leading through innovative business practices. Without this access, Westel would lose its edge.

Whilst the Board recognised the threat, they were to side with the Finance Director. There was no clear basis for valuation. Any assumption was speculative.

DCF, not surprisingly, is best used when the situation can be described in cash flow terms. It fails to value what Westel will learn from its customers – a major CRM benefit. If Mary's speculations are right, then Westel is undervaluing the benefits of the CRM investment case.

The Westel Solution: Asset Valuation, rather than Cash-Flow

The leading thinking in valuing customer relationships is to adopt an asset valuation rather than cash flow approach. Market-based assets create shareholder value by providing financial, relational and intellectual benefits to the firm over time (Srivastava, Shervani and Fahey, 1998, 2001). Since both relational and intellectual assets contribute to financial performance, they should be valued in NPV calculations. Let's look at Westel's CRM investment again.

Mary's analysis identified the financial and relational benefits that arise from increased purchase, referral of new customers and lower marketing, sales and service costs. She also identified the intellectual benefit of learning and what this could mean for new products and operational efficiencies in financial terms (scenarios 1 and 2). Another relational benefit that should have formed part of her case is customer risk assessment. CRM investments that improve customer retention can reduce cash flow volatility and risk (Srivastava, Shervani and Fahey, 1998). This reduction in the firm's risk improves share prices: investors considering two firms generating equal cash flow, all other things being equal, will place a higher value on the firm with less volatile cash flow. This would show up in reduced cost of capital which Mary accounts for in the 15% discount rate and, since CRM investments tend to produce longer term benefits, the NPV calculation is very sensitive to that discount rate. This is normally handed down, unchallenged, from Finance. But if CRM can reduce Westel's overall risk, then perhaps 15% is too high. In Mary's best estimate (scenario 3 – where CRM investment breaks even after 10 years) each point of reduced

discount rate is worth £8.2M. However, these NPV calculations still place no value on other aspects of learning through CRM or the risk of disintermediation. Even without this, asset valuation thinking suggests that Westel should consider taking a 'real option' on becoming customer-centric.

Understanding Real Options to Overcome These Limitations

Real options were developed as an analysis tool to overcome the limitations of traditional financial analysis and the inability of DCF to reflect the value of learning and risk reduction. An option is the right (not the obligation) to buy or sell an underlying asset, traditionally a financial asset, at some future time. Real options are so called because the underlying asset is real, not financial. They are useful for valuation in situations in which investment decisions can be deferred: this flexibility has value not just because an organisation can earn interest on the capital it retains but also because deferring a decision until the business situation clarifies reduces the uncertainty surrounding that decision (Buckley and Tse, 1996²⁴).

The real options approach modifies DCF to capture the value of flexibility and learning in a project such as a major CRM installation. The value of flexibility is the option to scale a project up (or down) as the opportunity becomes clearer. In other words, the total value of the project is the NPV *plus* the value of the option to scale up, scale down, or to pull out.

The value of an option depends on five factors:

1. The value of the underlying asset
2. The amount it costs to exercise the option
3. The interest rate
4. The period for which the option is available
5. The volatility of the underlying asset

The value of the option is related positively to all these factors except the second, the exercise price. In other words, the *bigger* the value of the underlying asset, the *higher* the interest rate, the *longer* the period for which the option is available, and the *greater* the volatility in value of the underlying asset, the *higher* the value of the option is to buy (Amram and Kulatilaka, 1999²⁵).

Proponents of real options claim that they offer a superior pricing technique and decision support analysis to Net Present Value alone; they are a particularly useful technique for evaluating major, future investments. Real options have recently been demonstrated to have applications in marketing (Dias and Ryals, 2002²⁶).

The real options approach offers significant benefits to marketers because financial values can be put on difficult issues, such as the value of learning and risk reduction. Adding back the value of learning and risk reduction enables marketing management to demonstrate to the Board that apparently unattractive, or marginally attractive, CRM investments can sometimes have merit and focuses the organization on generating the learning that is critical to success.

Real Option Approach to Westel

Mary could consider the option to test market customer relationship at Westel with a small number of clients whom she believes could prove the potential upside of relationships. In two years, it would be possible to validate the CRM revenue case or at least reduce the uncertainty illustrated in Figure 1 dramatically. That it is possible to defer a large part of the CRM investment for two years whilst the test market is underway, indicates that a real option exists for Westel. It will exercise that option only if it can validate optimistic economic and relationship benefits over the time frame. If those benefits prove illusory, then it will not exercise its option.

Instead of incurring initial costs of £54 million and complete business reorganisation, testing CRM on, for example, 20% of its business would cost £15 million. After two years of learning, the firm will then have the option of changing its entire business to a new model based upon validated business benefit assumptions. Or, if the downside forecast looks more likely (scenario 4), then the firm will have lost most of its initial investment (£15 million) but saved £39 million and the pain and diversion of a major reorganisation.

The question then becomes how much should Westel pay for this option? In the application of financial strategy to business risk, there is an accepted standard for options pricing which looks at the risk of cash flows, the time frames and interest rates in making this determination (Copeland and Keenan, 1998).

We would argue that the Finance Director may become more customer-centric himself if he helped his managers learn how to use real options pricing, rather than rigidly sticking with NPV spreadsheets, when it comes to assessing the business case for CRM investments!

Managerial Implications

The CRM business case is a major strategic document and not merely a financial forecasting exercise. CRM represents a fundamental change and should be evaluated as a strategic, risky and contingent investment in an unknown future.

The business logic is based upon creating a win:win scenario. For customers, relationships reduce the total lifecycle costs of owning an asset or procuring a service inclusive of the search, procurement, installation, maintenance and after sales service. Moreover, business partners can meet customers' deeper, more profound, needs based upon better mutual knowledge and trust. For firms, committed and loyal customers are more profitable to serve as they tend to buy more, demand less discounts, attract lower sales, marketing and service costs and act as references for the firm. Equally, firms that enter into genuine learning relationships with their customers will find that customers teach them to improve operational efficiencies and develop successful new products and services.

The foundations of win:win are trust, integrity and mutual commitment. Unfortunately, most business cases for CRM emphasise purely the commercial, economic benefits to the seller rather than the mutuality of the firm learning from customers and responding to that learning.

The Westel example demonstrates the limitations of the financial models managers typically use when building the business case for CRM. Generally, they are forced into making heroic assumptions about increased revenue (lower cost) per customer even before really engaging in the relationship. The value of learning from customers, arguably the key to CRM, is not properly valued in the cash flow analysis. Equally, major risks, such as discontinuous business change, are inadequately represented.

The business case for CRM should be presented in a manner that views customer relationships as assets, generating financial, relational and intellectual value. The business case then focuses not only upon revenues and costs but also on learning, trust and commitment to the relationship. If there is extreme uncertainty about CRM benefits, managers should consider using real options pricing as way around the limitations of the DCF analysis. Such CRM trials can help validate the key growth assumptions and quantify the value of customers 'teaching' the firm.

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Appendix 1: CRM Business Case for Westel

Scenario 1: Upside Case (with learning benefits)

£ millions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Costs:											
Technology	40	5	5	5	5	5	5	5	5	5	85
Reorganisation	5	0	0	0	0	0	0	0	0	0	5
People	5	5	5	5	5	5	5	5	5	5	50
Marketing	4	4	4	4	4	4	4	4	4	4	40
Total	54	14	14	14	14	14	14	14	14	14	180
Benefits:											
Increased "cross sell"	3	6	10.5	13.5	16.5	19.5	21	22.5	24	27	163.5
New referrals	1.5	1.5	6	7.5	9	10.5	13.5	15	18	21	103.5
Marketing cost reduction	4	5	6	7	8	9	10	11	12	14	86
Operational effectiveness	0	0	3	4.5	6	7.5	9	10.5	12	13.5	66
New business ideas	0	0	1.5	4.5	7.5	12	15	18	21	24	103.5
Total	8.5	12.5	27	37	47	58.5	68.5	77	87	99.5	522.5
Net Benefit	-45.5	-1.5	13	23	33	44.5	54.5	63	73	85.5	342.5
Discounted at 15%	-45.5	-1.3	9.8	15.1	18.9	22.1	23.6	23.7	23.9	24.3	114.6

Scenario 2: Best Estimate (with learning benefits)

£ millions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Costs:											
Technology	40	5	5	5	5	5	5	5	5	5	85
Reorganisation	5	0	0	0	0	0	0	0	0	0	5
People	5	5	5	5	5	5	5	5	5	5	50
Marketing	4	4	4	4	4	4	4	4	4	4	40
Total	54	14	14	14	14	14	14	14	14	14	180
Benefits:											
Increased "cross sell"	2	4	7	9	11	13	14	15	16	18	109
New referrals	1	1	4	5	6	7	9	10	12	14	69
Marketing cost reduction	4	5	6	7	8	9	10	11	12	14	86
Operational effectiveness	0	0	2	3	4	5	6	7	8	9	44
New business ideas	0	0	1	3	5	8	10	12	14	16	69
Total	7	10	20	27	34	42	49	55	62	71	377
Net Benefit	-47	-4	6	13	20	28	35	41	48	57	197
Discounted at 15%	-47	-3.5	4.5	8.5	11.4	13.9	15.1	15.4	15.7	16.2	50.4

Scenario 3: Best Estimate (with referral benefits)

£ millions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Costs:											
Technology	40	5	5	5	5	5	5	5	5	5	85
Reorganisation	5	0	0	0	0	0	0	0	0	0	5
People	5	5	5	5	5	5	5	5	5	5	50
Marketing	4	4	4	4	4	4	4	4	4	4	40
Total	54	14	14	14	14	14	14	14	14	14	180
Benefits:											
Increased "cross sell"	2	4	7	9	11	13	14	15	16	18	109
New referrals	1	1	4	5	6	7	9	10	12	14	69
Marketing cost reduction	4	5	6	7	8	9	10	11	12	14	86
Total	7	10	17	21	25	29	33	36	40	46	264
Net Benefit	-47	-4	3	7	11	15	19	22	26	32	84
Discounted at 15%	-47	-3.5	2.3	4.6	6.3	7.5	8.2	8.3	8.5	9.1	4.2

Scenario 4: Downside Case (with referral benefits)

£ millions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Costs:											
Technology	40	5	5	5	5	5	5	5	5	5	85
Reorganisation	5	0	0	0	0	0	0	0	0	0	5
People	5	5	5	5	5	5	5	5	5	5	50
Marketing	4	4	4	4	4	4	4	4	4	4	40
Total	54	14	14	14	14	14	14	14	14	14	180
Benefits:											
Increased "cross sell"	1	2	3.5	4.5	5.5	6.5	7	7.5	8	9	54.5
New referrals	0.5	0.5	2	2.5	3	3.5	4.5	5	6	7	34.5
Marketing cost reduction	2	2.5	3	3.5	4	4.5	5	5.5	6	7	43
Total	3.5	5	8.5	10.5	12.5	14.5	16.5	18	20	23	132
Net Benefit	-50.5	-9	-5.5	-3.5	-1.5	0.5	2.5	4	6	9	-48
Discounted at 15%	-50.5	-7.8	-4.2	-2.3	-0.9	0.2	1.1	1.5	2.0	2.6	-58.3