

The Dynamics of Managing a Life Insurance Company

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Abstract

This paper reports the findings of an internal McKinsey research and development project designed to test the value of applying System Dynamics thinking to the life insurance industry. The aim was to understand better how management decisions and actions can affect the success or failure of a typical direct sales life company. The study compared the evolution over 20 years of two companies, Equitable Life and London Life. Starting out in 1975 from virtually identical competitive positions, Equitable has become the U.K.'s most successful life company, while London Life was rescued by the AMP Society from near insolvency in 1989.

We found System Dynamics a powerful means of identifying which managerial actions had accounted for the extraordinary divergence of the two companies. The lessons learned include many counter-intuitive insights that have relevance for any life company manager. Through simulation we were able to isolate which management actions made the difference to long term performance. In particular, we show how attempts to exceed the maximum sustainable growth rate specific to any individual company can lock it into a slow but relentless spiral of decline, from which there is little hope of escape. This growth ceiling can be quantified and we also identify a number of long range early warning signs. Consequently, we believe that our conclusions are likely to change the way life companies are managed in the future.

The Dynamics of Managing a Life Insurance Company

INTRODUCTION

One might have expected in the 250 years since the invention of the first life insurance products that competitor performance would have converged. It is intriguing, therefore, to discover companies like Equitable Life in the U.K. that enjoy productivity and growth rates **many times** their nearest rivals. How can this be? What advantages does Equitable Life have that are not shared by competitors?

The situation is particularly interesting because Equitable emerged in a remarkably short period (less than 20 years) from relative obscurity to hold its currently pre-eminent position in the U.K. industry. The case is doubly intriguing because Equitable's 'sister' company, London Life, which enjoyed a virtually **identical** competitive position* in 1975, not only failed to keep pace with Equitable's growth, but actually came close to insolvency following the 1987 stock market crash, needing a major capital injection to survive (Exhibit 1). It was, in fact, taken over in 1989 by the AMP Society and following rescue continues to exist in a much reduced form.

There was a strong *prima facie* case that System Dynamics would be of great help in unravelling this question. The typical life company is characterised by complex economic interrelationships, very long lead times between actions and their full effect (often as much as 25 years), and a profusion of 'soft' variables, such as salesforce motivation. In our experience, the coincidence of such features usually means a System Dynamics approach yields significant value for our clients. Our confidence was boosted by earlier analysis suggesting that poorly performing U.K. life companies tended to do badly on all dimensions of performance. This suggested the existence of a self-reinforcing spiral of decline which we subsequently termed a 'black hole'.

This paper outlines how we developed our understanding of the different evolutionary paths of Equitable and London Life. We go on to explore the broader implications of our findings for managers in the life industry. Our focus is both on explaining the impact of different actions taken by the managers in the two companies and in identifying why 'reasonable' managers might have done what London Life managers did. In the process, we highlight a number of counter-intuitive features of the industry that help to explain why managers with only a partial view of the system might take actions that lead to the demise of the company.

The balance of this paper takes up these themes under the following headings:

- ¶ Key causal relationships in the life companies.
- ¶ Impact of different management actions taken at Equitable and London Life.
- ¶ Implications for life company management priorities more generally.

KEY CAUSAL RELATIONSHIPS

To uncover the key causal relationships in a typical direct sales life company we interviewed and brainstormed with a number of internal McKinsey industry experts (including several actuaries).

* Both were direct sales mutual life companies employing non-commission salesforces. In 1975, their new premium incomes were very similar and, in both cases, approximately half their new premium income came from one shared client, a universities pension fund

These sessions resulted in a number of central hypotheses that were later tested with external industry experts and with past and present managers at a number of life companies, including Equitable and London Life.

We gained a number of key insights from the causal mapping process. The secret of success in a life company is to:

- ¶ First get the basic reinforcing loops working in a virtuous direction
- ¶ Then build long term (10-20 year) reinforcing relationships
- ¶ Proactively manage limiting factors.
 - Sales manager time.
 - Back office capacity.
 - Capital.

Basic reinforcing loops

At the core of a direct salesforce are sales staff whose productivity depends on, among other things, their skills (experience) and their motivation (Exhibit 2). If their productivity is high, a virtuous circle is stimulated: Good productivity leads to higher compensation which is motivating and provides an economic incentive to remain employed by the company. The longer salespeople stay, the more experienced they become and the more productive they are. This circle of causality reinforces itself.

Unfortunately, **it works just as well in reverse**. Low sales productivity leads to low compensation and motivation. Poorly compensated and demotivated staff are more likely to quit and take any developed skills with them. Unfortunately, empirical observation suggests it is far harder to create and sustain a virtual reinforcing loop than most managers imagine.

Sales skills also drive other reinforcing loops (Exhibit 3).

- ¶ Skilled salespeople become experienced first line managers. Typically, the more experienced management is, the better they are at recruiting, training and coaching new staff, which in turn feeds into more skilled sales staff. Also, the more skilled the average salesman is, the more time managers have to focus their efforts on training and coaching new recruits.
- ¶ Highly skilled sales staff are more productive and better paid. Good compensation makes the company more attractive to new recruits, which allows the company to be more selective.
- ¶ They more often refer good salesperson candidates and contribute to raise recruit quality.

More highly skilled salespeople can be leveraged in a number of ways (Exhibit 4).

- ¶ They are better at matching policies to customers' real needs, thus reducing subsequent lapse rates. Low lapse rates are important because they allow companies to offer high surrender values in the early years of the policy life. This offer not only makes the policies fundamentally more attractive, but can significantly enhance the purchaser's confidence, increasing sales productivity still further. Low lapse rates also reduce the 'clawback' of commission forfeited by sales staff when a policy lapses, reducing the negative impact on individual compensation.

Fewer lapses are also a consequence of lower salesforce attrition rates, because customers who 'lose' (i.e., are 'orphaned' by) their salesperson are more likely to lapse (either because of loss of the post-purchase decision reinforcement that a good salesman offers, or because a relationship with a new salesman is established which often results in a change of portfolio emphasis).

- ¶ They are better at selling to high net worth individuals who tend to buy larger policies. This leads to higher productivity and acts as a key stimulant to the core compensation - motivation - productivity feedback loop.

Exhibits 2-4 embody the principal 'building block' causal relationships in a typical life company. That is not to say (as we shall see later), that these relationships are well understood by the typical sales manager; rather, these relationships are the foundation for setting in motion powerful reinforcing feedback processes that can raise a company from above average to truly outstanding, like Equitable. To those familiar with the U.K. life industry, will recognise how the model we have described so far fits a company like Allied Dunbar. Allied Dunbar has been the archetypal, traditional 'cold calling' salesforce in the U.K. with productivity 50 per cent higher than the average competitor. To begin capitalising on these building block causal relationships probably takes 5-10 years - slow compared to other industries, but quite rapid in the life industry. However, most sales managers in the life industry have time horizons typically more like 3-12 months, strongly reinforced by management information systems and reward systems that report sales weekly or monthly.

Long term reinforcing relationships

The most successful companies, however, have recognised the importance of longer term feedback relationships that, with some very long lags, can convert an above average company into a truly outstanding company (Exhibit 5): As individual compensation rises, management can cut back the incremental rate of commission (or bonus) payments without demotivating or losing salespeople (particularly if the company has a good reputation and the volatility of earnings is low). Reduced commissions costs as a per cent of premia mean lower new business acquisition costs and hence higher profits to the company which ultimately translates into higher returns for policyholders (particularly mutual companies selling conventional as opposed to unit linked policies). At the same time total salesforce compensation continues to grow. Superior returns to policyholders can contribute with a very long lag to an enhanced reputation in the market, which makes policies easier to sell. (The reason for the long delay is that most observers and financial advisers prefer to use 10 year or even 25 year rates of return as their guide to company performance. This is, of course, a little like driving a car by looking in the rear view mirror - but it is nevertheless a fact of life in this industry.) Reputation is also enhanced, both directly (now expense disclosure is mandatory in the U.K.) and indirectly by the low expense ratios that are a direct consequence of focusing on larger cases.

Improved returns to shareholders have another, very beneficial long term effect. To the extent that the company is able to satisfy current demands for returns to shareholders from current profits and, at the same time, set aside additional funds for the capital reserve, it can increase its solvency margin. A solvency margin is required by law to guard against falls in the value of investments. The narrower the solvency margin, the more careful the company must be to hold assets that closely match its liabilities (both in terms of asset class and duration). Conversely, a company with a wide solvency margin can afford to hold a highly mismatched portfolio. Such companies can safely hold a higher proportion of equities which tend over the long term to offer superior returns to fixed interest securities (e.g., gilts). These higher returns compound the profitability of the company and, again with a very long delay, its reputation in the market.

Limits to growth

After a period of, say, 10-20 years, these long lag effects begin to dominate the performance of the company leading to excellence such as has been achieved by Equitable Life.

The feedbacks discussed so far have been reinforcing. As long as these loops are 'stimulated' in the right way, they can drive superior performance. There are also limits to growth that can counterbalance the reinforcing loops and slow performance improvements (Exhibit 6).

- ¶ If the company grows too quickly, the accrued liabilities created by new business 'strain'* can drive down capital adequacy. When this happens, regulatory constraints put a brake on further growth.
- ¶ Increased recruitment, whether the result of higher attrition or higher targets reduces the availability of sales manager time, which reduces the quality of training and coaching.
- ¶ Back office processing capacity can also be a limiting factor. If the back office is overloaded, work will take longer and be of lower quality. Either outcome can seriously disrupt the time salesmen have available to sell new business since they must devote time to redressing administrative problems and dealing with enquiries from their clients.

The challenge for management in life companies to target prudent growth rates that ensure the constraining resources are not over stretched. Our research shows that each life company has its own individually determined sustainable growth rate beyond which virtuous feedback loops can switch to constrained growth or, still further, to accelerating decline. If you like, the management task involved is similar to the space shuttle's re-entry window into the earth's atmosphere: if the re-entry trajectory is too shallow, the shuttle misses the landing field; if too steep, it will burn up in the atmosphere. The actual sustainable growth rate for each company will depend on its internal organisation, cost structure, target markets, its starting position (e.g., capital available) and the interplay of the various management determined factors.

MANAGEMENT ACTIONS AT EQUITABLE AND LONDON LIFE

As described in the opening paragraphs, Equitable Life and London Life began in 1975 from virtually identical competitive positions. In that year, the university pension fund gave 5 years' notice that it intended to take its pension fund inhouse. This was a potentially devastating blow to both companies as a substantial proportion of their new business each year came from this source. How did each company respond and, in particular, what were the management actions that led to phenomenal success on the one hand and failure on the other?

Equitable Life decided to launch a direct salesforce in 1977 with strict yearly limits of 10 per cent growth in new business volume and no more than two new recruits per sales manager. Simultaneously, it reduced the size of its back office in anticipation of the loss of the university business while it negotiated with the universities to retrain all existing business until its natural cessation date. In the early 1980s, it decided to target higher net worth individuals referred by a network of accountants and solicitors attracted by its 'no commission' claim. This initiative was supported by a strong training programme. From the mid-1980s onwards, it began reducing its effective salesforce costs and advertising its by now superior investment returns.

* New business 'strain' arises from the requirement that, whenever a new policy is written, life companies must set aside a contingency reserve to cover new liabilities taken on. In the early years of the policy, these liabilities will exceed the accumulated assets

In the early 1990s, as investment performance and policyholder returns continued to improve, Equitable was able to make further adjustments to the salesforce which ensured that more of the economic surplus was captured by policyholders.

London Life on the other hand converted the university business to a 'paidup' managed fund format which proved difficult to defend from demands for surrender. It also placed more emphasis on its own direct salesforce, but made no special efforts to reduce costs. Perhaps influenced by the first successes of its traditional rival, Equitable, or perhaps for unrelated reasons, London Life managers set aggressive growth targets for the new direct salesforce, growing salesforce numbers by 40 per cent or more each year. Sales increased rapidly, although productivity rates declined. Reserves were strained by the volume of new business (much of it written at low, even unprofitable, margins) and in the mid-1980s, the investment portfolio was switched to a riskier mix in the hope that higher returns would help underwrite ambitious sales targets. Unfortunately perhaps the 1987 stockmarket crash dealt London Life the *coup de grâce*. AMP Society took over the company in 1989 and agreed to inject new capital. Despite this, salesmen continued to leave in large numbers as some sales offices were closed and some salesmen were made redundant. Management in the early 1990s switched marketing emphasis to unit-linked policies (which had been launched in 1979, but did not gain high levels of acceptance amongst salesmen who preferred to sell conventional with profits policies) in order to reduce the new business strain and attempted to rebuild morale, but it has remained difficult to attract and retain top salesmen.

One of the intriguing aspects of this case is that, viewed in isolation, each of the actions taken by London Life managers could be regarded as a rational response to the circumstances and this conviction may have been reinforced by early increases in sales. It is of course impossible to reconstruct the true rationale for particular actions taken - what follows therefore is entirely speculative, but in each case entirely plausible.

Management Initiative	Plausible Rationale
1. Aim to grow the salesforce at 40%	We need to fill the gap left by the loss of university business if we are to take advantage of processing and marketing scale economies and avoid layoffs
2. Ease actuarial constraint on solvency margin to allow higher growth	The closer we can come to leveraging our entire capital base, the faster we can grow
3. Concentrate effort on the most familiar markets; do not explicitly target high net worth individuals to raise case size	We do not have the skills to cultivate the high end of the market; 'stick to the knitting'
4. Limit investment in back office cost reduction; focus instead on growing the business	Our back office costs will be a smaller and, therefore, less important cost element as we grow
5. Pay a flat rate commission regardless of salesforce incomes	If we cut back on commissions to our high earners, they will be tempted to leave
6. Shift the investment portfolio to higher return, but nevertheless riskier assets	Our customers are concerned about achieving good investment results. Lapse rates would increase if we had to reduce payout ratios

Would London Life have failed had it not been for the 1987 stockmarket crash? Our preliminary (and possibly controversial) simulations suggest not only that eventual failure was inevitable (probably within a year or two), but **that virtually irreversible seeds of failure had been sown by mid-1983**. There was nothing management could do to avoid failure after that date, except recapitalise. It took just 3½ years of dynamically naive policies to do irreversible damage. This suggests, interestingly, that the typical life company actuary's instinctive conservatism although it may hamper the growth of well managed companies acts as a desirable brake on the ambitions of aggressive sales managers and CEOs. A significant potential benefit of applying system dynamics thinking to life companies is the emergence of more 'intelligent' conservatism on the part of actuaries and a greater understanding of the value of the long term view on the part of sales and marketing managers - i.e., a new dialogue between salesmen and actuaries.

IMPLICATIONS FOR MANAGEMENT PRIORITIES

There are a number of points in the 'system' where managers can intervene (Exhibit 7). To what extent does a dynamic view result in better management priorities than the traditional static view?

In order to get at this question, we built a model using the traditional static approach drawing on statistical correlation of financial performance versus potential explanatory variables. Models like this are used widely in the industry. We then compared its results with the dynamic model. Exhibit 8 compares the impact of a 10 per cent change in six management levers from each model.

According to the static model investment performance is the most important lever. Typically, however, managers pass straight onto the next lever, because they argue investment performance cannot be influenced. (However, as already demonstrated, influencing investment performance by releasing the investment manager from the solvency straitjacket as Equitable did is an important long term success factor).

Renewal expense is second; although not regarded as an exciting topic, it is increasingly being addressed by life managers. Then follow the overall lapse rate and average case size. Case size, ranked fourth, is generally perceived as being a weak influence on performance - in this case, a 10 per cent increase in case size yields only a 2.9 per cent improvement in embedded value* of the company.

When a dynamic view is taken (using our iThink model), the picture changes substantially: case size and initial expenses, precisely the two areas on which Equitable focused early, turn out to be much more important than the static model would suggest.

The implications for managers are clear - they should focus on quite different priorities. In particular, they should re-examine the assumption that investment returns are exogeneous ('challenge the clouds' in the language of system dynamics) and put a lot more effort into increasing average case size.

Another important conclusion, counter-intuitive to most practising managers but easily demonstrated using the dynamic model, is that life company managers should be very wary of setting the aggressive salesforce growth targets which we read about in the industry press virtually every week. The problem is that growing the salesforce does, in fact, grow sales - in the short term - which encourages 'macho' sales managers to continue setting aggressive growth targets. Even worse perhaps, they are head-hunted to do the same elsewhere, where they repeat their errors, rationalising the stagnation (or havoc) at their previous companies as symptomatic of poor management skills amongst their successors.

* Embedded value is essentially the Net Present Value of inforce policies

In fact, as Exhibit 9 illustrates, setting aggressive salesforce growth targets is forgivable for managers with a static mental model. Our static model shows that any growth target, even as high as 80 per cent per annum, is profitable. While not quite as profitable as lower growth rates, higher growth targets could be justified on the grounds that it might be easier to grow the business quickly and then harvest or exit at high multiples of new premium value.

The dynamic model illustrates the folly of this approach. This model shows that business net present value suffers quite seriously at any growth rate of the salesforce above 20 per cent (compare this with Equitable's maximum of 10 per cent and practice of about 5 per cent). Very high target growth rates – of the level that London Life in fact pursued – lead to accelerating destruction of value beyond a short lived period of higher actual growth.

CONCLUSION

In sum, we found the System Dynamics approach had real value in the life industry and this has been confirmed in our subsequent client work. Key management insights include the following:

- ¶ Management levers take on decidedly different priorities when dynamic factors are considered. From a dynamic management perspective, changes in key leverage points – like case size – trigger reinforcing benefits like higher investment returns and lower renewal expenses that belie simple statistical efforts and rewrite the book on success factors. Of course, the critical leverage points will differ from company to company.
- ¶ Management decisions have consequences (favourable and adverse) that show up many years later. Only managers with a dynamic view and/or a highly subtle intuitive understanding of the interrelationships between the many variables will reach the right balance of initiatives.
- ¶ Beyond a certain point, the damage done by poor management decisions is very difficult to undo – a conclusion that has important implications for industry regulators. It is not impossible to conceive that some companies may be in trouble following the collapse of the endowment mortgage collateral market in recent years. Commission disclosure could well uncover further weak links as some salesforces fail to meet the demands of the new environment.
- ¶ Short term sales performance is not a good predictor of longer term sales performance (and sometimes can be quite a perverse indicator).
- ¶ Early warning signals exist and are useful to the alert manager who understands the underlying dynamics:
 - Adequacy of management time available for training.
 - Attrition rates of the salesforce.
 - Quality and timeliness of back office support.
 - Solvency margins.
- ¶ There is a quantifiable, sustainable growth rate that is unique for each company. If managers try to grow faster, they will destroy value and potentially bankrupt the company. The sustainable growth rate depends on a range of company and market factors – including product structure, salesforce training, compensation and promotion policies.

¶ Finally, a System Dynamics approach can result in better communications between actuaries (traditionally seen as impediments to growth) and sales managers (who tend to want growth at any cost). System dynamics brings the different viewpoints together for the first time using language that both sides can understand, for the common objective of improving company performance. Indeed there may well be value in building an interactive 'learning laboratory' for life company managers that helps them understand better the feedback relationships (both long and short term) in this industry.

Exhibit 1

It is interesting to contrast the Equitable case with London Life. Both companies started at the same point in 1975: equitable grew to be the most successful competitor in the UK, while London Life had to be rescued after reaching virtual insolvency, what explains the difference?

NEW PREMIUMS
£m

CONCEPTUAL

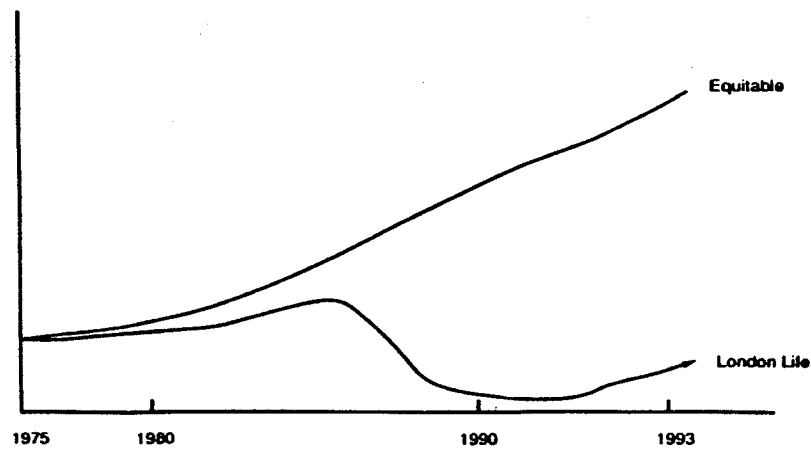


Exhibit 2

CORE REINFORCING SALESFORCE DYNAMIC

Delay
Reinforcing loop

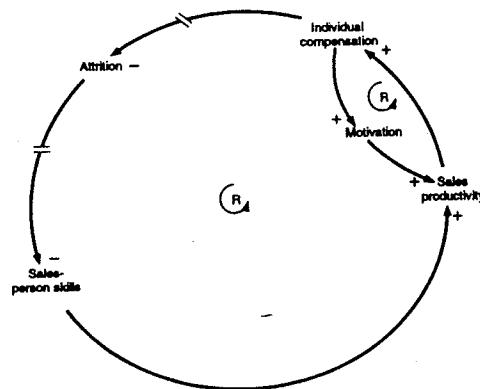
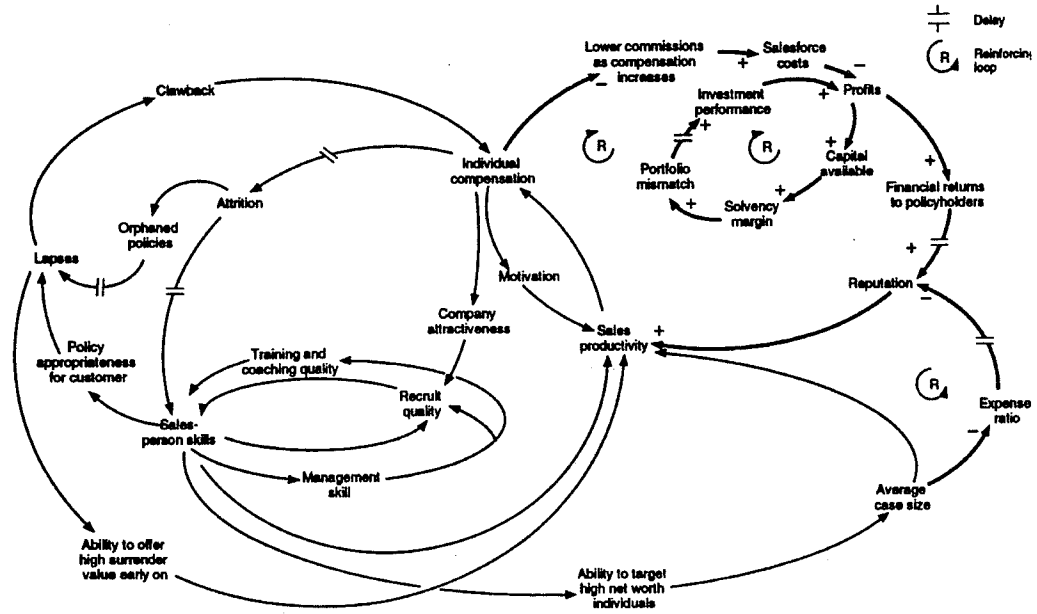


Exhibit 5

LONGER TERM REINFORCING RELATIONSHIPS



Source: Interviews and model syndication

Exhibit 6

LIMITS TO GROWTH

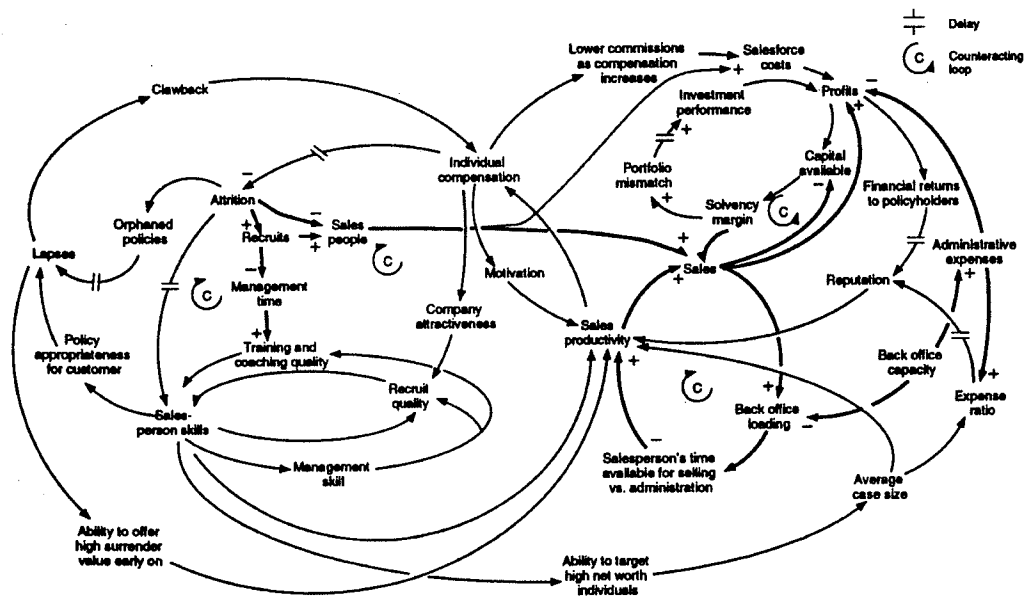
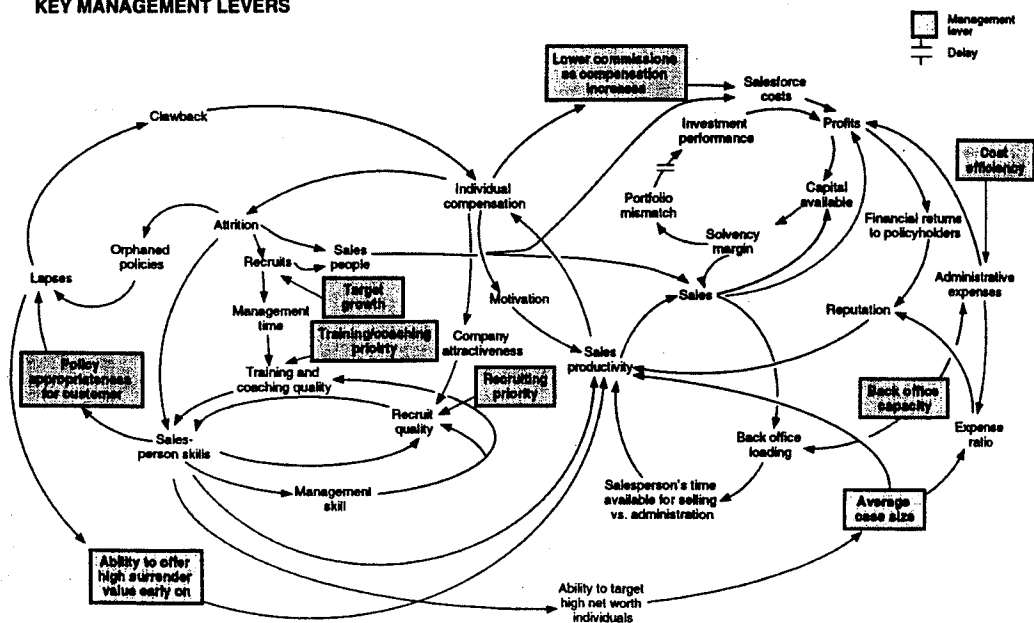


Exhibit 7

Exhibit 7

KEY MANAGEMENT LEVERS

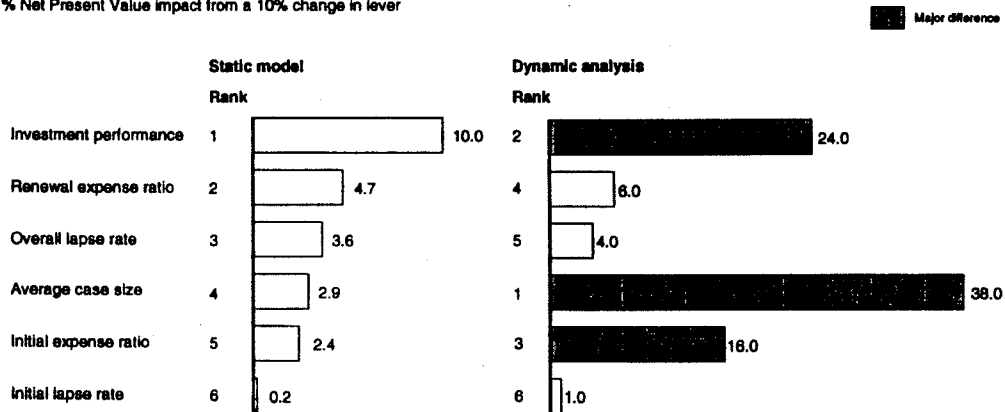


Source: Interviews and model syndication

Exhibit 8

DYNAMIC IMPACT IS DRAMATICALLY DIFFERENT FOR A FEW KEY MANAGEMENT LEVERS

% Net Present Value impact from a 10% change in lever



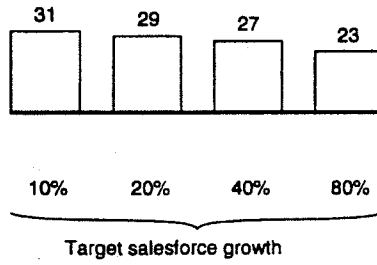
Source: Business Dynamics Life Company model

Exhibit 9

VALUE RESULTING FROM VARIOUS GROWTH STRATEGIES

Net Present Value of profits, £m

Static model



Dynamic model

