

Financial Management : Issues for a Developing Life Company in India

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Abstract and Acknowledgement

The opening up of the Indian life insurance market has continued with twelve licences granted to date. All of these companies are new start-ups and most but not all write participating business. This paper provides a brief overview of an integrated framework that may help life companies in India monitor their progress towards their plan and strategic financial objectives. The paper also highlights some key financial issues a new developing life insurance company in India should consider including some issues relating to participating business and the revised Section 49 shareholders' transfer rules.

The authors would like to acknowledge their grateful thank you to fellow actuaries Mr R Ramakrishnan, Mr Mike Wood, Mr R S Rajan, Mr S Rajesh and Mr John Poole for their contribution and assistance in developing this paper. However, we take full responsibility for any remaining errors or omissions.

1 Introduction

1.1 The creation of a new life insurance company is not a simple exercise. It involves a variety of activities ranging from:

- Obtaining a license (R1 and R2) and a range of product approvals from the IRDA,
- Recruiting a head office team whom by and large had not worked together before and coordinating their activities
- Assembling and training a sales management team; recruiting and training agents
- Deploying key specialists to assist and to take up management roles in some cases
- Arranging a range of external suppliers, to create operational processes including the use of technology
- Creating the office facilities for all of the above including branch premises, etc.

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- 1.2 Some of these activities are probably similar to starting up any normal trading company. However, unlike normal trading companies, when a life insurance company makes a sale, a negative cash flow generally arises and an immediate deficiency is created. Shareholders' capital has to be transferred and if the life product is soundly priced, this capital will be slowly recovered and profits emerged over the future lifetime of the policy, which could typically be 10, 20 or even 30 plus years.
- 1.3 The flurry and variety of activities in a start-up can extend over a number of years beyond the initial planning, preparation and pre-operating period. Given this and the peculiar features of a life insurance company, it can be extremely difficult to gauge whether a life company is trading successfully according to plan or slowly working towards insolvency.
- 1.4 This paper attempts to set out a framework that may help life companies in India monitor their progress towards their plans and strategic financial objectives. We hope we have managed to piece together a sometimes-puzzling plethora of financial processes into an integrated system focussing on the key financial management issues that matter during the initial stages of a start-up operation. In addition, we highlight some unique issues specific to the regulatory environment in India.

2. Financial Management : A Jigsaw Puzzle or Integrated System?

2.1 Financial Management : A Jigsaw Puzzle?



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2.1.1 To set up a financial management system can be quite a daunting task for a start-up company and at times can seem like a large jigsaw puzzle. The financial management function can be defined in terms of processes as follows and it is the integrity of these processes that ensure the integrity of the system.

- Financial transaction processes eg. accounts payable, receivable, billings, fixed assets, purchase orders, travel and cash expense reimbursements, etc.
- Financial control processes eg. budgeting & forecasting, financial systems, tax, treasury, risk & compliance, audit, security & fraud, etc.
- Financial reporting processes eg. business and KPI monthly performance reporting, expense allocation, statutory valuation, risk based capital, continuous disclosure, external statutory and investor reports, etc.
- Decision support processes eg. strategic and operational business planning, business and performance reviews, capital management, product pricing, experience analysis, etc.
- Other financial management processes eg. risk management, underwriting, reinsurance, project management, etc.

2.1.2 Although all these finance processes are important, some are more important than others at the start-up phase. Preparation of a business plan and product pricing approval by the regulators are clearly key at the early stages of the planning as these are regulatory requirements before the operating license is issued.

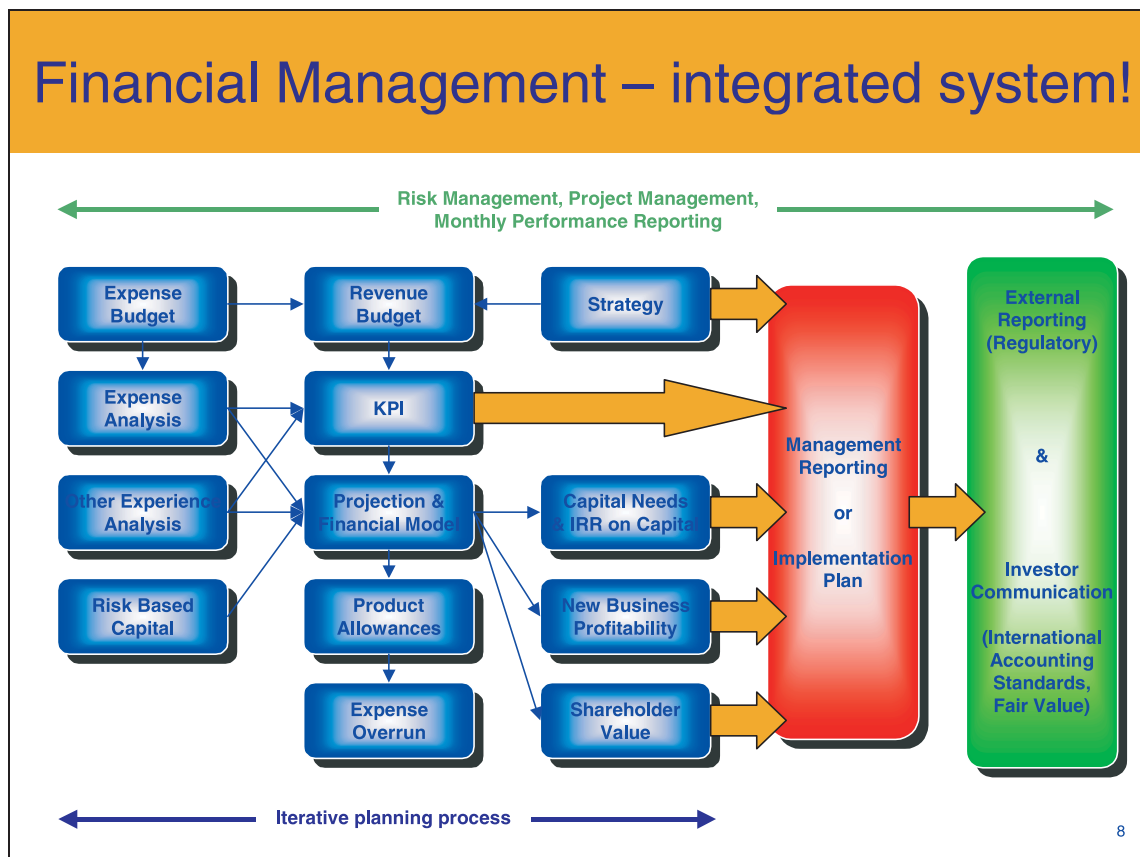
2.1.3 Robust financial transaction and control environments including security processes are also crucial at commencement of business. Financial reporting is not an immediate priority at the start but will quickly gain prominence as business commences and regular monitoring is demanded either by home office or for best practice internal management purposes – “what gets measured, gets done”.

2.1.4 Risk management and project management are probably softer aspects of financial management but are nonetheless important as neglect in these areas is usually financially significant.

2.1.5 In general, an actuary’s primary training and skills set are directly brought to bear in areas such as product pricing, statutory valuation, experience analysis, capital projections and management. In other areas, the actuary’s immediate training and skills set are more or less relevant relative to other professionals such as accountants, MBAs and professional project managers.

2.1.6 Nevertheless, all the finance processes are important and it is incumbent on all actuaries, whether in an actuarial only or broader finance role, to have a holistic view of the entire finance system and take a strong interest in all aspects and expand their existing skills set. This is crucial in order to financially manage their company comprehensively and robustly.

2.2 Financial Management : An Integrated System!



2.2.1 To see the bigger picture and gain a better perspective, the seemingly puzzling plethora of financial processes can be re-expressed in a more orderly manner as shown in the diagram above. This is only but one representation but we hope it will help set the scene for more detailed discussions of some key aspects. We will start at the high level from the right of the diagram and work its way to the left.

3 Regulatory Reporting & Investor Communication

3.1 Clear Communication to Stakeholders

3.1.1 We believe communication is one of the very important deliverables of an integrated financial system. It is important to communicate clearly to regulators and investors or shareholders. It is also equally important to communicate to other stakeholders eg. customers existing and potential, employees and industry professionals like auditors, financial press, etc.

3.1.2 It is crucial to meet regulatory requirements and communicate promptly and clearly to regulators – since they can put you out of business if you do not!

3.1.3 For listed companies, clear communication of business strategy and financial results to shareholders is now an accepted norm of modern financial management. For non-listed companies operating in a commercial environment, the measurement and reporting of shareholder profit has also become an issue as company management and investors need to value and assess the returns on capital invested. Most Indian life companies are JVs and the requirements of local Indian partners and foreign home office requirements will also need to be considered here.

3.1.4 How does clear communication and financial reporting add value? A sceptical actuarial student may think it all seems like rearranging a set of deck chairs.

3.1.5 While a winning business strategy and expert implementation are essential ingredients for creating shareholder value, it is equally important that the company's strategy and results are clearly articulated in the best possible light in clear, simple and understandable terms. This is especially important for life insurance financials that are complex. An analogy is selling a property – the standard advice to optimise the price is to sell in spring and during inspection open the windows, cut the grass, etc.

3.2 Life Insurance Financials is Complex

3.2.1 Communicating financial results for life companies is a particularly complex and challenging exercise.

3.2.2 *Regulatory and Solvency Reporting.* Historically in most countries, life insurance financial reporting regimes were prescribed by Regulators and often incorporate a measure of prudence

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and conservatism. The main objective was to demonstrate solvency and ability to meet obligations to policyholders rather than reflect a true and fair view of the financial performance to shareholders. The current Indian reporting regime falls into this category.

3.2.3 *General Purpose Financial Reporting.* In contrast, shareholders and investors are interested in the profitability of the operations, amount and timing of cash dividends and capital needs and its return thereon.

3.2.4 However, there is no global consensus yet as to what constitutes an objective general purpose financial reporting methodology for life companies. A variety of well-defined systems are in use with US GAAP being the oldest. In UK a Modified Statutory Basis plus a secondary Achieved Profit system are used.

3.2.5 Australia also has such a system that is endorsed both by the Regulator and the Australian Accounting Standards Board. It is known colloquially as Margin on Services (MoS). The Australian system effectively links Regulator reporting and general purpose reporting in such a way that results on the two bases can be reconciled.

3.2.6 An International accounting standard for life insurance is being developed but international agreement and consensus is some way off. It is not the purpose of this paper to go into the details of the international accounting standards or other financial reporting regimes around the world but it is mentioned here to highlight the many systems in current operation.

3.2.7 *Dividends.* Even in a general purpose reporting system, there is no direct linkage between reported profit and dividend paying capacity. The latter is driven by the need to retain adequate assets in the company so as to be able to meet obligations to policyholders, determined on a prudent basis, together with any prescribed solvency margins.

3.2.8 Whatever standard is adopted, the actual production of results is a complex exercise essentially because of the care needed to assess the 'provisions' that need to be made for policy liabilities. These are the out workings of actuarial calculations and assumptions that need to be made about events likely to take place many years in the future.

3.3 Planning and Reporting Financial Performance

3.3.1 "How is the company performing?" This seemingly simple question may necessitate a variety of answers due to the complexity of life insurance financials as described above.

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The following are a suggested hierarchy of financial measures that could be used to assess a company's financial performance.

- General purpose profit eg. US GAAP, UK Achieved profits, Australian MoS.
- A subset of profit known as 'operating margins' which eliminate the distorting effect of investment income fluctuations, and focus on only operating profits which are within management control.
- Economic profit that starts with general-purpose profit but deducts the imputed holding cost of capital.
- Solvency and Capital adequacy related measures and their links to dividend paying capacity.
- Value based measures – affected by the timing of profits and their relative distribution to shareholders ie. essentially discounted values of future dividends and known colloquially as Appraisal Values.

3.3.2 Notwithstanding the complexity, a life company's financial performance needs to be planned and reported for companies in India. However, the extent to which all or some of the above measures will be developed and incorporated into the company's planning and reporting processes, would depend on a number of factors including the current development stage of the company, the demands of the Indian JV and foreign partner, etc.

3.3.3 For most companies at this initial start up stage, we believe the results of some of these high level financial measures may be less useful and confusing. This may be especially so for operational managers who will be measured and rewarded according to their performance. Indeed in managing a start-up company, it may be more practical and meaningful to develop operational measures that experience tells us are the drivers and leading indicators of sound financial performance. This will be discussed in the next section.

4 Management Reporting & Implementation Plan

4.1 Implementation Plan

4.1.1 An integral activity to set up a new life company and indeed to effectively manage the business subsequently requires the completion of a business or implementation plan. The traditional planning model requires management to develop a yearly high level strategic plan followed by a lower level operational plan. These plans are then reported against actual on a regular or monthly basis.

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- 4.1.2 Typically an implementation plan for management reporting purposes would contain a brief and succinct description of the company's strategic objectives and corresponding operational activities planned to support it. The plan will usually also contain a "balance scorecard" which will set out key performance indicators (KPIs) that should be objectively measurable. The KPIs can include both non-financial and financial measures.
- 4.1.3 This planning process usually also requires the company to develop a financial model to help management integrate and project various strategic and operational intent into expected financial KPI and outcomes.

4.2 KPIs

4.2.1 In a start-up it may be more practical and meaningful to develop non-financial KPIs that reflect operational measures that we know are value drivers of sound financial performance. Depending on each company's strategy, typical non-financial KPIs may include the following:

- Customers – no of in-force customers, new customers.
- Distribution – no of in-force advisors, new advisors recruited, advisor retention rates by tenure, productivity rates by tenure, no of sales office established, etc.
- Staff – no of distribution support staff and managers, no of Head Office staff.
- Volumes of business – in-force annual premiums, new annual premiums, new single premiums, average premium size.
- Products – volume by product types and mix.
- Assets under management.

4.2.2 For financial KPIs, we discussed some of the high level financial measures above but we feel they are probably less useful at this initial stage of a start-up company. Other financial measures eg.

- total revenue,
- operational expenses,
- capital expenditure,
- expense overrun, and
- new business profitability.

are probably more useful and need to be included as part of the KPI set. The last two measures in particular, can give useful insights into the financial progress of the business longer term.

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4.3 Expense Overruns & Functional Cost Ratios

- 4.3.1 For a new company, standard expense analysis do not show much apart from the obvious that expenses are too high and business volumes are too low. Also, given the nature of life insurance, comparing revenues as recorded in the accounts with expenses do not reveal useful insights.
- 4.3.2 On the other hand, comparing product expense allowances with expenses and in particular its trend from year to year is likely to give more useful information on a company's financial progress.
- 4.3.3 *Product Expense Allowances* or margins can be assessed as the residual item after allowing for other product related costs including payments to customers and variable expenses such as commissions.
- 4.3.4 *Expense Overrun* is the excess of current overhead or fixed expenses over the product expense allowances generated as a result of business volumes and the design and pricing of the products concerned. The aim is to achieve an expense overrun of zero.
- 4.3.5 *Functional Cost Ratios (FCR)* is another way of re-expressing expense overrun. It is defined as the total expenses (including overhead fixed expenses) divided by the product expense allowances generated. The aim is to achieve a FCR of 100% or less.
- 4.3.6 Management of expense overrun or FCR is a useful financial management tool, especially for start-ups whose adverse bottom line is largely driven by expense overrun. A focus on expense overrun can also provide comfort that progress is being made and this may translate into value assessment.
- 4.3.7 Management of expense overruns also give insights into the adequacy of product pricing and the expense loadings assumed. Analyses of the overrun into its component parts – acquisition, maintenance, distribution and non-distribution related give further valuable insights into the affordability of various activities planned or expenses assumptions made.
- 4.3.8 Expense overrun is a useful single measure, which encompasses both expense management and NB volume drivers. Success in one and not the other can be assessed in a composite manner to determine overall success. For example, expense spend

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exceeding budget may be acceptable if it was effective in generating additional sales and allowances over and above the additional spend.

4.3.9 Managing the expense overrun to zero should result in the overall corporate financial objective being met.

4.4 New Business Profitability

4.4.1 The basic modern pricing technique used for individual products involves a year by year (or monthly in some cases) projection of:

- Premiums, plus
- Investment Income, less
- Claims, less
- Tax, less
- Expenses, less
- Increase in Statutory Reserves,
- to arrive at a projected Transfer signature.

4.4.2 Each company will have their own profit hurdle rate eg. 15%. Discounting these transfers or taking the present value of the transfer signature produces a measure of profitability called “value created”. A value created of zero implies the company’s hurdle rate has been met and a positive value created implies additional value over and above the company’s hurdle rate has been created. This measure is additive across all products and thus is useful in facilitating an overall measure of new business profitability.

4.4.3 NB profitability factors are probably fairly easy to calculate when the product is being priced or reviewed each year. These factors can be applied to the NB volume to obtain the necessary measure that will give an insight into the financial progress of new business written. So far this is fairly straightforward and can be applied easily especially for non-participating business. However, for participating business, the issue is more complicated due in part to the Indian statutory environment – this will be discussed in the next section.

5 Shareholders' Transfer and Product Profitability

5.1 Participating Business

5.1.1 Most but not all life companies in India write participating business. The basic modern pricing projection technique described in the previous section applies equally to participating business but it needs to be adapted and interpreted to reflect the character of participating business. Most pricing projection papers assume non-participating business - this is quite understandable since it was originally developed for testing the adequacy of investment-linked product charges.

5.1.2 The following relevant characteristics of participating business should be noted:

- Given the discretionary nature of participating business, its actual financial performance will of necessity be dependant on the actual bonus declaration. The profitability measures and results shown in any projections are based on the bonus philosophy implicit in the projections completed.
- Regulations restrict the flow of transfers to shareholders from the par fund and treats capital differently depending on whether it is used to support the business within the par fund or as solvency margin outside the fund.
- Unlike non-participating (under the 100% transfer rules), capital required to support participating business do not always have to come from shareholders. Policyholder capital maintained in the par fund could be used to support participating new business in a more mature fund.

5.2 Shareholders' Transfer under Revised Section 49(1) of the Insurance Act 1938

5.2.1 The revised Section 49(1) of The Insurance Act 1938 restricts the percentage of the surplus arising, which can be transferred to shareholders to 10% of such surplus for participating and for non-participating businesses, to 100%.

- “Provided further that the share of any such surplus allocated to or reserved for the shareholders (including any amount for the payment of dividends guaranteed to them, whether by way of first charge or otherwise), shall not exceed such sums as may be specified by the Authority and such share shall in no case exceed ten percent of such surplus in case of participating policies and in other cases the whole thereof.”

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5.2.2 There is some uncertainty regarding the application of this revised 10% rule for participating business. Recent press article suggests that regulations will be clarified such that the distribution of surplus to its shareholders will be:

- one hundred per cent, in case of a life fund maintained for non-participating policyholders;
- one-ninth of the surplus allocated to policyholders in case of a life fund maintained for participating policyholders,”
- Further, an insurer shall not allocate or reserve exceeding 10 per cent of the actuarial surplus to its shareholders.

5.2.3 The first point to note is 1/9th is 11.1% and not 10%. The second and more significant point is whether the shareholder transfer is based on surplus emerging or surplus allocated to policyholders (ie. bonuses distributed out of surplus emerging). In addition, note the further restriction of 10% of actuarial surplus emerging. The financial significance of the second point is analysed in Section 7 Financial Results below.

5.3 Solvency Margin and Capital Requirements

5.3.1 To effect a Section 49 shareholders’ transfer, the policyholder fund must not be in deficit, and any capital transfers from shareholder funds to policyholder funds can never be repatriated. There is an old Indian proverb that says “sugar cane put into the elephant’s mouth cannot be extracted back.....”.

5.3.2 The solvency margin is calculated in Form K of the Actuarial Abstract regulations as 4% of reserves plus 0.3% of the sum at risk. Informally, the IRDA have required companies to show that they have the capacity to support an increase to this solvency margin of 50%, which may be thought of as a capital adequacy reserve.

5.3.3 Table III of Form K show clearly that the shareholders’ capital outside of the policyholder fund is available to support the solvency margin. Section 64VA requires that the minimum solvency margin is the greater of the calculated solvency margin and Rs.50 crores.

5.4 Profitability Criteria

5.4.1 Given the characteristics of participating business, the restrictions on shareholder transfer and capital, we believe the implications for pricing participating business require the following set of profit criteria.

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5.4.2 *Test 1 IRR on Total Capital.* Under this criterion, we believe the product should achieve the hurdle rate of return on total capital from all sources (whether shareholder or policyholder capital) required to support that business allowing for target surplus. In determining the IRR, the subsequent cash flows out would include all transfers.

- For par, this would include 10% of surplus available to shareholder plus the balance 90% of surplus attributable to p/h but not distributed.
- All shareholder transfers and capital strains and releases should be brought into the net cash flow.
- In calculating the shareholder capital required to support the solvency margin and capital adequacy, credit will be taken for any unallocated surplus. The strains and releases in unallocated surplus will be carried through to cash flow.

5.4.3 *Test 2 IRR on Shareholder Capital.* For this test, we believe the product should achieve a hurdle rate of return on shareholder capital required to support the business allowing for target surplus. In determining the IRR, the subsequent cash flows should include only transfers to s/h and be made up of:

- shareholder transfers of 10% of surplus
- shareholder capital required to support policyholder liabilities other than the solvency margin but NOT any releases of such capital
- shareholder capital required to support the solvency margin and capital adequacy reserves, less releases of the solvency margin and capital adequacy reserves.
- As with Test 1, in calculating the shareholder capital required to support the solvency margin and capital adequacy, credit will be taken for any unallocated surplus, but the resulting strains and releases in unallocated surplus will not flow through to cash flow.

5.4.4 For non-participating business, there is no distinction between Test 1 and Test 2. The distinction for par business arises due to the unallocated surplus or policyholder capital support afforded to the business written in the par fund.

5.4.5 Generally, we believe *Test 1 IRR on Total Capital* is the stronger of the two criteria. This is based on the principle that says capital is a scarce commodity and it should yield a return on capital of at least the hurdle rate irrespective of source – whether it is shareholder or policyholder capital is not that relevant as we need to look at the opportunity costs. It can be argued that, given the risk, policyholder capital need to earn a similar return in supporting any new business written as shareholder capital.

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5.4.6 A typical scenario where this could happen is where there may be a view that the fund has an estate or unallocated surplus, which can be used to fund new business, with little call on shareholder capital. This is not a likely scenario for start-up companies with little unallocated surplus but will eventually be more common as companies' life fund matures and unallocated surplus builds up.

5.5 Participating Business – Transfer Signature of Single NB Tranche vs. Model Office

5.5.1 From the discussions in the foregoing paragraphs, it is increasingly clear that it is difficult to view profitability of participating business for a single tranche of new business. This is due to the interacting factors at the fund level eg. tax, capital support. Shareholder capital support for par business written during the early years is likely to be a higher proportion relative to business written in the later years when unallocated surplus or policyholder capital builds up where shareholder capital support could be small or none at all.

5.5.2 The table below illustrates the effect on the internal rate of return, total shareholder capital requirement and the net present value as each year's new business is added. The expenses allowed for are the product allowances and the solvency margin used is the calculated solvency margin and is not subject to a minimum of 500 million. Shareholder capital is assumed to be injected when required and not set to a minimum of 1000 million. The volumes are assumed to be the same every year to remove the distorting effect of additional capital requirement for the increased volumes.

Profit measure	1 year NB	2 years NB	3 years NB	15 years NB
IRR	3.5	5.3	6.9	15.9
Total shareholder capital injected	(28)	(38)	(38)	(38)
NPV	(14)	(13)	(11)	4

5.5.3 As each year's new business is added, the existing business supports the new business and the shareholders' capital injected will reduce each year and the business becomes self-supporting. After a few years, the shareholders will not have to inject any more capital. Because of this, each tranche of new business written in the initial years of operation will have a different transfer signature.

5.5.4 This feature suggests that a proper analysis will necessitate the use of a model office that allows for new business to be written year after year.

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6. Financial Model

6.1 This section describes briefly how a financial model can be constructed for a start-up business and the purpose and scope of such a model.

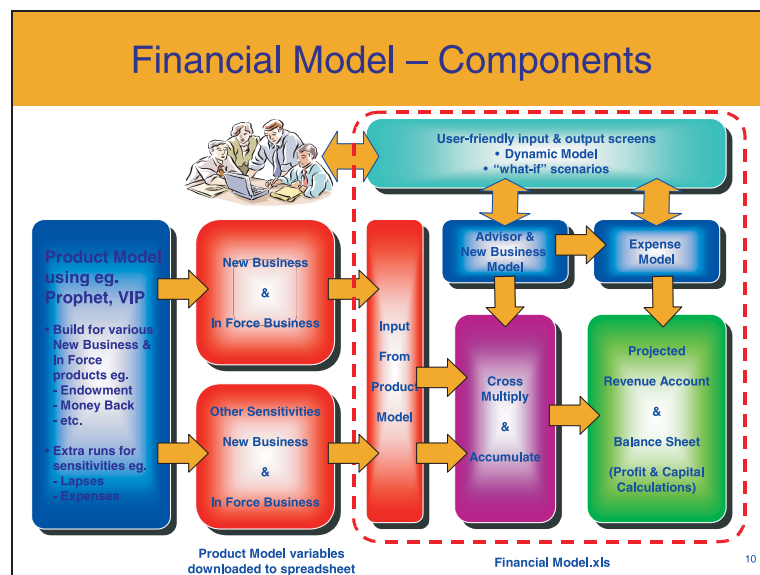
6.2 Purpose and Scope

6.2.1 A financial model can be developed for many purposes as follows:

- To facilitate the planning process described above and to ensure the financial implications of the plan are understood.
- To facilitate the subsequent monthly reporting and reforecast required.
- To project capital requirements likely over the next 5-10 years.
- To estimate future embedded values and potential dividend payments to shareholders.
- To conduct regular business reviews and valuations as required.
- To price products and other product development purposes
- To tests the sensitivity of different parameters and also models different scenarios.
- To investigates the effect on the capital requirement of different bonus philosophies.

6.2.2 If developed appropriately and subject to management buy-in, a financial model can also be used to produce “instant” results to “what-if” scenarios and questions ie. move financial modelling from back-office to front office management use.

6.3 Financial Model – Components



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- 6.3.1 A financial model can be made up of smaller models linked to each other. Each model has a set of clearly identifiable input and output parameters and functions independently within the set of parameters. This makes modifications in the model easier to implement and also helps in understanding how the model works. The most important sub-models are:
- 6.3.2 *Product Model* : Usually, an actuarial software eg. Prophet, VIP is used to build the model for various products eg. Money Back, Endowment, etc. Model points for new business & in force are developed. Extra runs for sensitivities eg. lapses, expenses, bonus levels, valuation bases, etc are also required. The key results are downloaded into an overall spreadsheet that integrates with the other sub-models.
- 6.3.3 *Advisor & New Business Model* : This model is usually used to generate expected new business volumes over a number of years and would depend on the company's distribution strategy. Like most companies in India, this NB Model is based largely on the strength of the traditional advisor force. The traditional agency strength in turn is built bottom-up from number of agents expected to be recruited, its productivity, retention rates, etc. Hence this is also partly an agency model. Modification is possible to reflect other distribution channels eg. alliance partners, bancassurance.
- 6.3.4 *Expense Model* : This model dynamically varies the expenses depending on various factors eg. number of sales offices, new and in-force advisors, rate of NB growth, inflation scenarios, etc. Using these drivers, allowances are made for expenses that vary different according to whether they are fixed, variable or semi-fixed/variable.
- 6.3.5 *Projected Revenue Account & Balance Sheet* : The results of the above models are input through the model office to provide projected revenue accounts and balance sheets for up to 30 years.
- 6.3.6 *Sensitivities* : Different sensitivity runs and scenarios will identify potential capital constraints depending on new business volumes, different product mixes, etc.
- 6.3.7 *User-friendly input & output screens* : A set of front-end screens can also be developed to provide management with user-friendly input and output screens. Subject to management buy-in, financial modelling can be used to produce "instant" results to "what-if" scenarios and questions.

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6.3.8 Appendix 1 provides further details on how the financial model was constructed and the assumptions used for the purpose of this paper.

7 Financial Results

7.1 Base Case Results

7.1.1 Based on the financial model constructed as described in the section above and Appendix 1, we developed some key financial measures and sample results. The 3 key financial measures developed for the overall model office are:

7.1.2 *Internal Rate of Return (IRR)*

- This is the total return to the shareholders' assuming that the initial paid up capital is injected followed by a stream of dividend payments to the shareholders. A Terminal Value is assumed at year 15 equal to the estimated appraisal value of the business at that time.
- The IRR for this stream of cash flows is the IRR for the business.
- Dividend is assumed distributed only if there is a profit in the shareholders' fund and if the balance fund at the end of the year after meeting the expenses and allowing for the capital injection at the beginning of the year is sufficient to meet the solvency margin.

7.1.3 Capital Injection from the Shareholders

- This is the sum of the capital injected (in excess of the initial paid up capital) by the shareholders into the shareholders' fund. If the amount in the shareholders' fund after meeting all cash flows at the end of the year is insufficient to meet the solvency margin at the end of the year, additional capital will have to be brought in by the shareholders to meet this margin.
- This cannot be looked at in isolation and has to be considered with the IRR, because a product may be capital intensive but may provide a high IRR and vice versa.

7.1.4 *Project Payback.* This is the period over which the shareholder capital is returned via dividends payments.

7.1.5 The results for the Base Case are as follows:

- IRR = 17.9%
- Capital = Rs 2109m
- Project Payback = 14 years

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7.1.6 Appendix 2 shows the detailed projected accounts for the Base Case.

- Revenue Account – Policyholders’ Account (Technical Account)
- Profit and Loss Account – Shareholders’ Account (Non-technical Account)
- Balance Sheet

7.2 Scenarios Analyses

7.2.1 The absolute results above are not as important as the trend and sensitivity to certain changes in assumptions. The results of the detailed scenario analyses are shown in Appendix 3. These reveal some interesting insights.

7.2.2 Runs 1-5 : Changes in key revenue drivers have a significant impact on IRR/NPV/Capital especially advisor recruitment.

7.2.3 Runs 6-7 : shows the impact of cost drivers on IRR/NPV/Capital, which can also be significant especially on capital.

7.2.4 Run 11 : SH transfers, shows that the old shareholder transfer basis of 7.5% of surplus gives a higher return to shareholders. This is not surprising for a new office where the surplus distributed is smaller proportion of total surplus as no TB will be paid for some time.

7.2.5 Run 12 : shows the impact of increasing TB as well as using the old 7.5% of surplus. As expected, you will note a negative impact, albeit small as TB is not payable till several years into the future.

7.2.6 Run 13 : increasing TB gives a positive albeit small impact on IRR/NPV. This is counter-intuitive and is due to the SH transfers being on 10% “distributable” surplus ie. up to a point, a higher bonus distribution will lead to higher return to shareholders.

7.2.7 Runs 17 & 18 : shows the significant financial impact of changing valuation basis and increases in bonus rates. Prudent bonus management is crucial.

8 Conclusion

8.1 We hope this paper has succeeded in setting out a possible framework that will help new life companies in India monitor their progress towards their plan and strategic financial objectives. The development of a financial model is an integral part of this exercise.

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- 8.2 The paper recommends some key financial measures that the authors believe are more suitable for new companies and also raises some issues regarding participating business profitability. We would welcome further debate on this issue.
- 8.3 There is some uncertainty regarding the revised Section 49 shareholders' transfer rule. Importantly, is the shareholder transfer based on surplus emerging or surplus allocated to policyholders (ie. bonuses distributed out of surplus emerging). The financial impact for a new company is quite significant if the latter, as highlighted in the Scenarios Analyses above. The regulators should clarify this issue.

Appendix 1 – Financial Model: Further Details and Assumptions

1 Advisor & New Business Model

1.1 What does the Advisor & NB Model do?

1.1.1 This model projects the number of new policies sold in each future calendar year and the new business annualised premium income for the same period. A bottom up approach is used to determine this.

1.1.2 It starts with 5 sets of assumptions that form the base for the projections and it projects the business from the advisors, since business from this channel is assumed to form the major chunk of the business. This value, grossed up by the percentage of the business expected from the advisor channel (in relation to the total business of the company gives the total business from all channels). The percentage used for grossing up is assumed to increase or reduce depending on the plans of the company to branch into alliance marketing, corporate agencies etc.

1.2 Assumptions for the NB Model

1.2.1 First assumption : Total number of advisors recruited each year. This should reflect the plans of the company for the next few years, ie. how soon it intends to increase its advisor force and also by how much. After the first few years, the percentage growth can be assumed to be a constant percentage.

1.2.2 Second assumption : Advisors are divided into a number of major groups depending on retention, productivity and other production related characteristics. We need the percentage of advisors recruited in each of the four groups mentioned above.

1.2.3 Third assumption : productivity level for the sub-groups. The productivity and retention rates are different for each of the sub-groups of advisors. These rates should be based on the experience of the company, but for a start up, these rates have to be estimated and there should be constant monitoring of the productivity rates to ensure that the assumptions are in line with the experience. The problems of analysing experience in the first year of operation are lack of data, advisors joining over the year rather than on a particular date and the seasonal variations in productivity.

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- 1.2.4 Fourth assumption : Explicit retention rates for the first four years after recruitment for each of the sub-groups. For consistency between the assumptions, advisors having a higher productivity level are assumed to have a lower lapse rate.
- 1.2.5 Fifth assumption : x is the average premium per policy and the rate at which this premium inflates each year. This can be different for different groups.

1.3 Problems in Determining the Assumptions

- 1.3.1 For a start-up, there is no past experience to fall back on but can look at other companies who have launched a few years earlier, but information such as the number of advisors recruited, their lapse and retention rates are not available.
- 1.3.2 One can look at the experience of the LIC, but the assumptions cannot be readily adopted as the LIC is in a different stage of development and has an established agency force, predictable expenses, developed products and a wide customer base.
- 1.3.3 Another problem is that advisors are recruited over the year rather than at any one point and so for any analysis on advisor productivity data should be split into smaller groups of advisors recruited at the same time. Productivity levels are also affected by seasonal variations and this makes categorisation of advisors into different productivity level groups difficult.

1.4 How the Volumes Model is Built

- 1.4.1 The year is split into 4 quarters and the advisors are assumed to be recruited at the beginning of each quarter. For each group recruited, the number of advisors in force at the beginning of all subsequent quarters is calculated by using the assumed advisor retention rates.
- 1.4.2 For example, the second group of advisors will be recruited at the beginning of the second quarter. The first year retention rates will apply uniformly for the four quarters after the advisor is recruited. The number in force for this group of advisors therefore is the total recruited less total lapses.
- 1.4.3 The average in force at the end of the year is the sum of all the in force of each sub-group of advisors divided by 16. (since 4 groups are recruited and there are 16 quarters in all for all the 4 groups put together)

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- 1.4.4 Next is the average productivity over the year. Here again, the year is split into 4 quarters. The productivity level is different for each quarter with productivity increasing linearly over each quarter and will blend into the productivity of the next year's first quarter rather than increase in jumps from one year to the next.
- 1.4.5 The average productivity is calculated in the same manner as the average retention of agents.
- 1.4.6 For advisors recruited in each calendar year, we now have an average productivity rate and an average retention rate projected for every year into the future.
- 1.5 Number of new policies and new business annualised premium income
 - 1.5.1 The number of agents recruited in each sub-group is the product of the total number of agents and the percentage recruited in each group.
 - 1.5.2 The number of policies sold each year by one group and by one cohort of advisors recruited in year XX = Total number of advisors recruited in year XX * percentage in force in that year of the advisors recruited in year XX * average productivity of agents in that year for the advisors in year XX
 - 1.5.3 The number of policies produced by advisors recruited in all previous years and the current calendar year is added to arrive at the total number of new policies sold each year in each group.
 - 1.5.4 The number of new policies multiplied by the average premium income per policy for that calendar year gives the total new business annualised premium income for the business sold by each of the groups and then the corresponding figure over all the groups is added for the total new business annualised premium income.

2 Expenses Model

- 2.1 What does the model do?
 - 2.1.1 The output from the expense model is the expenses projected for the next ten years. Here we assume that the expense overrun will not last longer than ten years. Expenses are assumed to be the greater of the expenses projected by the Expense Model and the product allowances generated by the Product Model.

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- 2.1.2 There are many approaches in developing an Expense Model. Using the initial business planning stage, one could take a detailed bottom-up approach of all the relevant operational activities and costs. For an existing operation, an easier approach could be the most recent budget for the year. The expenses for the next ten years are projected using this as the base.
- 2.1.3 The projected expenses should be split into acquisition and maintenance expenses.
- 2.1.4 Since the company is a start up, there is no expense analysis to fall back on and it is more difficult to predict accurately as the expenses will be largely dependent on the size of the growth of the business and the costs will vary a lot depending on the company's strategy. For example, if the company decided to open new branches rather than penetrate into areas where it already has offices, the costs may vary by as much as 50%.
- 2.1.5 The expenses from this model are compared with the allowances in the product for expenses to arrive at the expense overrun. The product allowances are those the company hopes to spend in the long term ie. the expenses used in the profit testing of new products.

2.2 The Structure of the Budget

- 2.2.1 Each company's budget would vary. Typically, the budget may give the expected expenses for each of the streams and further splits these expenses into different account heads. The possible different streams could be Sales and Distribution(S&D), IT, Corporate, Finance, HR and Admin, Operations, Training and Actuarial.

2.3 Projection Basis of Expenses

- 2.3.1 The following paragraphs described a possible basis for projecting expenses. It is by no means the only or best approach. Developing an Expense Model is more of an art than science for a start-up company as the progression of future expenses is difficult to predict.
- 2.3.2 The expenses in each stream for each account head are projected using parameters like number of new offices, number of new advisors, number of in force advisors, number of new policies written, number of in force policies, and size of new business premium income. Listed below are some of the major account heads and the basis of projection.

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- 2.3.3 The projected pay package depends on the number of employees in each stream and also the expected salaries. Other than the advisor force, the company may also have reasonable recruitment plans for the next three to five years. This will be largely independent of the size of the new business the Company expects to write. The salaries of the new staff recruited each year will be added every year and those at the previous year will be increased by a constant proportion every year for performance incentives and bonuses.
- 2.3.4 The staff strength of all the streams except S&D could be remains relative fixed for the first five years. For S&D the strength depends on the number of advisors recruited each year. This is an input into the financial model. The number of advisors depends on the organisational structure of the company. If there is only one level (level 2) separating the advisor and the head office, we have to consider the maximum number of advisors the intermediate person is allowed to recruit starting with the first year. Each person in level 2 can be assumed to be having an office with staff members. If for one office, there are totally 3 staff members, we can work backwards to calculate the total staff under S &D (excluding the head office staff). For example, if there are 1000 advisors and each intermediary has 15 advisors, the office needs to have $1000/15 = 66$ offices and there will be a total of 198 staff manning these branches.
- 2.3.5 Leased motor vehicles, motor vehicle running costs, living away from home allowance, auditors' fees, tax advice fees etc, and overseas airfare costs are assumed to increase with inflation.
- 2.3.6 Computer communications, office mail, stationery, postage etc are assumed to increase in proportion to the new business premium income.
- 2.3.7 Corporate advertising costs are assumed to increase by a constant proportion each year and form an input into the model. A start-up may like to spend more on advertising initially to establish a brand name and consequently these costs are very high for a start-up and vary from 20% to 50% of the total expenses. These costs should therefore be as accurate as possible and it is not very difficult to predict this as the company will have some definite plans on advertisement spending.
- 2.3.8 Computer consultants' fees, production support costs in IT are assumed to be the same as current costs and increase with inflation after a few years, though the prediction may not be very accurate.

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2.3.9 Telephone rental expenses are assumed to increase with the number of new staff added each year in S& D and also with inflation.

2.3.10 Agent training expenses are assumed to increase with the number of new agents recruited each year.

2.4 Split of Expenses Between Acquisition and Maintenance

2.4.1 Almost all expenses are assumed to be acquisition in the first year of operation with the percentage reducing every year depending on the stream and the account head.

2.4.2 Sales related expenses are assumed to be 100% acquisition in the first year with the percentage reducing very slightly to reflect servicing of renewal business in the subsequent years.

2.4.3 Corporate and IT costs are assumed to be 100% acquisition in the first year reducing to 50% in five years.

2.4.4 Actuarial is assumed to be 50% acquisition.

2.4.5 Advertising is assumed to be 100% acquisition.

2.4.6 Each head is further identified as fixed or variable expense.

2.4.7 These percentages are applied to the projected expenses and the total variable acquisition, total fixed acquisition, total variable maintenance and total fixed maintenance expenses are derived for each stream separately.

2.4.8 These values are used as intermediate values to derive the final expense split.

2.5 Final Expense Split

2.5.1 The expenses are further apportioned into the following 6 categories allowing for overheads.

- Variable distribution acquisition
- Fixed distribution acquisition
- New business processing expense
- Variable distribution maintenance

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- Fixed distribution maintenance
- Renewal processing expense

2.6 Expenses Charged to Shareholders' Fund

2.6.1 Allowance can also be made for a percentage of the total expenses to be charged to the shareholders' fund.

3 Cash Flow Items for One Year Derived From Prophet

3.1 The products are built in Prophet and have a set of assumptions for the cash flows eg. interest earned on the investments, commission rates, mortality rates, morbidity rates, accident rates, surrender rates, surrender value paid and valuation bases.

3.2 Model points that mirror the new business expected to be sold in each future year are constructed. The cash flows are heavily dependent on the model points and these were built taking into account the experience of the company and the industry. A start up will not have enough experience and so these model points will be based on the industry experience. For example, if the annual mode of payment is more popular than the other modes, the model points will give more weight age to this mode.

3.3 The new business annualised premium income is fed into Prophet and cash flows assume a fixed level of annualised new business premium income for each of the products.

3.4 The output is the cash flow items premium income, death outgo, surrenders outgo, accident benefit outgo, critical illness outgo etc for the next 30 years assuming an annualised premium of Rs100,000 is sold only in the first year.

3.5 These key cash flows are downloaded from Prophet into an overall spreadsheet that integrates with the other sub-models.

4 Product Mix Assumptions

4.1 This worksheet captures the percentage of business expected from each product. The assumptions for the percentage of business that will be with the riders are also set out here.

4.2 These percentages are used to calculate the percentage of the total new business annualised premium in each of the years attributed to each product for both with and without riders.

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- 4.3 This is used in the cross multiplication process where the cash flow of the company is determined by aggregating the cash flow from each product.

5 Cross Multiplication in Excel

- 5.1 The input from Prophet worksheet has the cash flow items for all the products separately assuming that an Rs100, 000 premium income is sold in the first year of the policy.
- 5.2 The annualised premium income is different for each product and for each calendar year. From the existing product mix assumptions, we can calculate the annualised premium income expected from each of the products for each calendar year.
- 5.3 The cash flows from prophet are then applied to this new business premium income separately for each product to arrive at the cross multiplied values and then aggregated over all the products to give the total cash flow to the office.
- 5.4 Cross multiplication works at two levels; one is to increase or reduce the premium income from Rs100, 000 to actuals and the second is to project the cash flows in the second and subsequent years and add all the relevant cash flows in each year to arrive at the total cash flow for the year for each product.
- 5.5 The cash flows for all the products are added and we get the total cash flow for the new business transacted in that year plus the renewal premiums for the new business.

6 Projected Revenue Account and Balance Sheet

- 6.1 The cross-multiplied values will form the cash flow items in the projected revenue account and the balance sheet.

Appendix 2 – Projected Accounts for the Base Case

The following accounts are shown for the Base Case:

- Revenue Account – Policyholders’ Account (Technical Account)
- Profit and Loss Account – Shareholders’ Account (Non-technical Account)
- Balance Sheet

Revenue Account – Policyholders’ Account (Technical Account)

REVENUE ACCOUNT	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Policyholders' Account (Technical Account)										
Premiums earned - net	52,850	24,310	603,528	1,277,587	2,280,881	3,746,848	5,735,850	8,238,837	11,507,257	14,988,000
Reinsurance	54,850	24,310	603,528	1,277,587	2,280,881	3,746,848	5,735,850	8,238,837	11,507,257	14,988,000
Income from investments	(75,187)	(12,321)	8,712	41,188	110,717	225,810	405,794	695,805	1,118,178	1,728,578
Total Income - (A)	26,705	300,865	608,134	1,298,005	2,491,678	3,871,259	6,100,871	8,602,802	12,417,426	16,713,456
Commission	(75,209)	(71,891)	(750,822)	(205,709)	(218,271)	(179,017)	(1,127,080)	(1,528,887)	(1,899,852)	(2,527,875)
Operating Expenses related to Insurance Business	(29,857)	(111,285)	(230,806)	(240,361)	(243,624)	(242,652)	(1,507,157)	(1,792,221)	(2,265,828)	(2,851,740)
Expenses/Reserves related to products derived from Strategic	(370,428)	(480,282)	(480,824)	(480,824)	(480,824)	(480,824)	(1,675,202)	(1,975,475)	(2,281,876)	(2,854,530)
Expenses/Reserves related to Corporate Model	(370,428)	(480,282)	(480,824)	(480,824)	(480,824)	(480,824)	(1,675,202)	(1,975,475)	(2,281,876)	(2,854,530)
Full Expenses - Greater of Product Approach and Expense Model	(370,428)	(480,282)	(480,824)	(480,824)	(480,824)	(480,824)	(1,675,202)	(1,975,475)	(2,281,876)	(2,854,530)
Total Expenditure - (B)	(381,630)	(533,594)	(895,848)	(895,848)	(895,848)	(895,848)	(2,802,376)	(3,544,802)	(4,253,381)	(5,378,476)
Benefits Paid (Net)	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Death Payout	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Survivors Payout	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Medical Outlay	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Other Benefits Outlay	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Money Back Outlay	(1,278)	(6,278)	(11,280)	(15,300)	(20,300)	(26,300)	(33,300)	(42,300)	(53,300)	(67,300)
Change in unearned and unexpired premiums at close (including cost of business BS only)	(14,214)	(75,826)	(237,868)	(512,878)	(841,384)	(1,258,057)	(1,840,384)	(2,527,522)	(3,440,384)	(4,522,811)
Total Benefits Paid and Change in Liability (D) = (A) + (B) + (C)	(76,130)	(83,861)	(247,723)	(669,871)	(1,058,827)	(1,588,489)	(2,008,980)	(2,562,477)	(3,283,238)	(4,253,381)
Surplus / (Deficit) before Tax (D) = (A) + (B) + (C)	(867,926)	(895,794)	(895,844)	(895,848)	(895,848)	(895,848)	(2,802,376)	(3,544,802)	(4,253,381)	(5,378,476)
Cost of bonus (including BS and TS)	8,215	32,125	88,109	158,432	283,384	480,282	795,852	1,307,805	2,187,805	3,588,308
Cost of AG	8,215	32,125	88,109	158,432	283,384	480,282	795,852	1,307,805	2,187,805	3,588,308
Cost of (D) before Tax and Cost of bonus	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Tax Payable	9,514	37,678	92,071	162,553	283,384	480,282	795,852	1,307,805	2,187,805	3,588,308
Required Surplus before Tax and Cost of bonus	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Carroll's Fund - Required Transfers from	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Transfer (from) Funds for Future Appropriation - Unappropriated Surplus	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Transfer (from) Funds for Future Appropriation - Surplus Reserve	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Transfer (from) Shareholders' Account	(286,288)	(1,125,824)	(2,955,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)	(5,125,824)
Tax	(1,257)	(4,844)	(12,251)	(25,851)	(42,908)	(70,017)	(111,188)	(174,882)	(284,891)	(450,850)
Surplus / (Deficit) after Tax	0	(81)	-	-	-	-	-	-	-	-
Transfer to Shareholders' Account	0	0	0	0	0	0	0	0	0	0
Old Method - 7.5% of Surplus	0	0	0	0	0	0	0	0	0	0
New Method - 10% of Distributable Surplus - given not-for item	0	0	0	0	0	0	0	0	0	0
Transfer to Shareholders' Account	0	0	0	0	0	0	0	0	0	0
Transfer to Funds for future appropriation - "General" Reserve	0	0	0	0	0	0	0	0	0	0
Transfer to Funds for future appropriation - Unappropriated Surplus	0	0	0	0	0	0	0	0	0	0
Appropriations										
Transfer to (from) Shareholders' Account	(386,882)	(380,737)	(270,856)	(210,234)	(174,957)	(143,849)	(103,910)	(70,300)	(50,000)	(35,000)
Transfer to (from) Funds for Future Appropriation - "General" Reserve	(386,882)	(380,737)	(270,856)	(210,234)	(174,957)	(143,849)	(103,910)	(70,300)	(50,000)	(35,000)
Transfer to (from) Funds for Future Appropriation - Unappropriated Surplus	(386,882)	(380,737)	(270,856)	(210,234)	(174,957)	(143,849)	(103,910)	(70,300)	(50,000)	(35,000)
Total Appropriations	(386,882)	(380,737)	(270,856)	(210,234)	(174,957)	(143,849)	(103,910)	(70,300)	(50,000)	(35,000)

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Profit and Loss Account – Shareholders’ Account (Non-technical Account)

PROFIT AND LOSS ACCOUNT Shareholders’ Account (Non-technical Account)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Shareholders’ Account (Non-technical Account)	1	2	3	4	5	6	7	8	9	10
Amounts transferred from / (to) the Policyholders Account	(388,862)	(390,737)	(276,036)	(216,224)	(74,387)	44,849	70,510	101,700	140,668	188,531
Income from Investments	80,000	66,676	58,220	53,781	43,672	59,377	84,563	99,644	113,220	113,220
Total Shareholder Profits (A)	(208,862)	(324,061)	(217,816)	(162,443)	(30,715)	104,226	155,073	201,345	253,878	301,751
Expenses other than those directly related to insurance business	(7,600)	(9,392)	(9,937)	(9,624)	(12,772)	(18,006)	(16,921)	(21,373)	(22,948)	(14,256)
Provisions (Other than taxation)	-	-	-	-	-	-	-	-	-	-
Total Expenses and Provisions (B)	(7,600)	(9,392)	(9,937)	(9,624)	(12,772)	(18,006)	(16,921)	(21,373)	(22,948)	(14,256)
Profit / (Loss) before tax	(296,462)	(333,452)	(227,753)	(172,266)	(43,487)	86,220	138,152	179,971	231,000	287,495
Provision for taxation	-	-	-	-	-	(5,430)	(9,878)	(10,273)	(11,661)	(12,989)
Profit / (Loss) after tax	(296,462)	(333,452)	(227,753)	(172,266)	(43,487)	80,790	128,274	169,698	219,168	274,506
Appropriations (note: negative amount indicates appropriation)										
(a) Balance at the beginning of the year	-	(296,462)	(629,915)	(657,668)	(1,029,934)	(1,073,421)	(992,631)	(863,357)	(693,698)	(693,698)
(b) Interim dividends paid during year	-	-	-	-	-	-	-	-	-	-
(c) Proposed final dividend (net dividend distribution to shareholders)	-	-	-	-	-	-	-	-	(219,168)	(274,506)
(d) Dividend distribution tax	-	-	-	-	-	-	-	-	-	-
(e) Transfer to reserves / other accounts (to be specified)	-	-	-	-	-	-	-	-	-	-
Profit Carried Forward to the Balance Sheet	(296,462)	(629,915)	(657,668)	(1,029,934)	(1,073,421)	(992,631)	(863,357)	(693,698)	(693,698)	(693,698)
Dividend Distribution to shareholders	-	-	-	-	-	-	-	-	(219,168)	(274,506)

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Balance Sheet

	BALANCE SHEET									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	1	2	3	4	5	6	7	8	9	10
Sources of Funds										
Shareholders' Funds										
Share Capital	1,000,000	1,129,915	1,357,668	1,529,934	1,575,637	1,815,632	2,049,572	2,106,912	2,106,912	2,106,912
Reserves and Surplus:										
Other Reserves (to be specified)	-	-	-	-	-	-	-	-	-	-
Balance of profit in Profit and Loss account	(286,462)	(629,915)	(657,668)	(1,029,934)	(1,073,421)	(932,631)	(863,357)	(833,658)	(833,658)	(833,658)
Total Reserves and Surplus	(286,462)	(629,915)	(657,668)	(1,029,934)	(1,073,421)	(932,631)	(863,357)	(833,658)	(833,658)	(833,658)
Sub-Total - Shareholders' Funds	703,538	500,000	500,000	500,000	502,415	823,001	1,186,315	1,416,253	1,416,253	1,416,253
Policyholders' Funds										
Policy liabilities	14,214	90,044	318,043	630,721	1,772,006	3,332,063	5,751,060	9,278,572	14,118,666	20,540,737
Sub-Total - Policyholders' Funds	14,214	90,044	318,043	630,721	1,772,006	3,332,063	5,751,060	9,278,572	14,118,666	20,540,737
Funds for Future Appropriation										
"General" Reserves Account	-	-	-	-	-	-	9,220	46,054	92,687	319,960
Unappropriated Surplus Account	-	-	-	-	-	-	82,962	414,469	1,374,186	2,789,638
Sub-Total - Funds for Future Appropriation	-	-	-	-	-	-	92,203	460,543	1,526,874	3,099,598
Total Funds	717,752	590,044	818,043	1,330,721	2,274,421	4,155,064	7,029,598	11,154,369	17,060,793	25,055,588

Appendix 3 – Scenario Analyses

The impact of the sensitivities is assessed relative to the Base Case and is not cumulative. Some later sensitivities are grouped together to show the cumulative impact taken together.

- (1) The Net Present value (NPV) is based on a risk discount rate equal to 150% of BU WACC (16.5%).
- (2) Capital is the amount of capital required over a 10-year period from 2002-2011

No	Sensitivity	Pessimistic Case			Optimistic Case				
		Detail Description	IRR %	Change in NPV ⁽¹⁾ Rs m	Change in Capital ⁽²⁾ Rs m	Detail Description	IRR	Change in NPV ⁽¹⁾ Rs m	Change in Capital ⁽²⁾ Rs m
	Base case		17.9	474	(2109)		17.9	474	(2109)
Key Revenue Drivers									
1	Advisor recruitment	No growth in recruitment rate – the same number recruited each year	(7.8)	(452)	476	Recruitment rate +10%p extra in the next 4 years	1.9	463	(275)
2	Advisor retention	5%p decline in retention	(0.5)	(118)	(40)	5%p increase in retention	0.5	115	47
3	Advisor productivity	10% decline in productivity	(1.6)	(264)	(475)	10% increase in productivity	1.4	242	352
4	Average premium size	10% reduction in premium size	(0.9)	(151)	(51)	10% increase in premium size	0.8	165	54
5	Alliance distribution	5%p reduction in sales from other channels	(0.8)	(120)	(171)	5%p increase in sales from other channels	0.8	143	227
Key cost drivers									
6	Expenses (experience only no change in	10% increase in expenses in the expense model. Product	(1.4)	(201)	(706)	10% reduction in expenses in the expense model. Product	1.4	176	545

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No	Sensitivity	Pessimistic Case				Optimistic Case			
		Detail Description	Change in			Detail Description	Change in		
			IRR %	NPV ⁽¹⁾ Rs m	Capital ⁽²⁾ Rs m		IRR	NPV ⁽¹⁾ Rs m	Capital ⁽²⁾ Rs m
	Base case		17.9	474	(2109)		17.9	474	(2109)
	valuation basis)	allowances remain the same.				allowances remain the same.			
7	Expense inflation (experience only no change in valuation basis)	1% increase pa. Also salary and promotional expense inflation increased by 1%. Applies to both product allowances and Expense Model	(0.2)	(24)	(122)	1% reduction pa. Also salary and promotional expense inflation decreased by 1%.	0.1	23	117
Other key assumptions – Economic									
8	Investment earnings	1%p reduction in PH fund	(0.2)	(18)	(131)	1% increase in PH fund	0.1	16	129
9	Investment earnings	1%p reduction in SH Fund	(0.3)	(43)	(63)	1%p increase in SH Fund	0.2	17	43
10	Tax rate	Tax on shareholders' funds increased from 12.5 % / 5% surcharge i.e. 13.125% in total to 35% / 5% surcharge i.e. 36.75% in total.	(0.2)	(30)	(11)	Not applicable			
11	SH transfers	Not applicable				10% of distributable surplus changed to old 7.5% of surplus	3.8	929	0

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No	Sensitivity	Pessimistic Case				Optimistic Case			
		Detail Description	Change in			Detail Description	Change in		
			IRR %	NPV ⁽¹⁾ Rs m	Capital ⁽²⁾ Rs m		IRR	NPV ⁽¹⁾ Rs m	Capital ⁽²⁾ Rs m
	Base case		17.9	474	(2109)		17.9	474	(2109)
12	SH transfers & Terminal bonus	<ul style="list-style-type: none"> 10% of distributable surplus changed to old 7.5% of surplus Increase TB by reducing transfers to General reserves. 	3.8	926	0	<ul style="list-style-type: none"> 10% of distributable surplus changed to old 7.5% of surplus Reduce TB by increasing transfers to General reserves. 	3.9	933	0
13	Terminal bonus	Increase TB by reducing transfers to General reserves	0	13	0	Reduce TB by increasing transfers to General reserves	(0.1)	(12)	0
Demographic assumptions									
14	Mortality	10% adverse mortality	(0.1)	(11)	(45)	10% favourable mortality	0	10	45
15	Morbidity & accident	10% adverse morbidity and accident incidence rates	(0.1)	(5)	(22)	10% favourable morbidity and accident incidence rates	0	5	22
16	Lapses	10% adverse lapses	(0.5)	(83)	84	10% favourable lapses	0.4	88	(93)
Other Key Assumptions – Valuation Basis									
17	Valuation basis	Strengthen valuation basis: interest reduced by 1%p, etc	(11.7)	(2555)	(6764)	Weaken valuation basis: interest increased by 1%p, etc.	1.2	75	877
18	Reversionary bonus (both)	Increase RB by 0.5%	(8.6)	(751)	(4898)	Reduce RB by 0.5%	1	46	870

No	Sensitivity	Pessimistic Case			Optimistic Case				
		Detail Description	Change in		Detail Description	Change in			
			IRR %	NPV ⁽¹⁾ Rs m		Capital ⁽²⁾ Rs m	IRR	NPV ⁽¹⁾ Rs m	Capital ⁽²⁾ Rs m
	Base case experience and valuation basis)		17.9	474	(2109)		17.9	474	(2109)
19	Cumulative 1 – key revenue drivers	Combined adverse impact of key revenue drivers 1-5.	(10.9)	(1223)	6	Combined favourable impact of key revenue drivers 1-5.	5.9	1416	391
20	Cumulative 2 – key cost drivers	Combined adverse impact of key cost drivers 6-7.	(1.6)	(243)	(849)	Combined favourable impact of key cost drivers 6-7.	1.6	198	601
21	Cumulative 3 – key revenue & cost drivers	Combined adverse impact of key revenue & cost drivers 1-7.	(12.6)	(1483)	(636)	Combined favourable impact of key revenue & cost drivers 1-7.	6.6	1398	664
22	Cumulative 4 – demographic assumptions	Combined adverse impact of key demographic assumptions 14-16.	(0.6)	(97)	19	Combined favourable impact of key demographic assumptions 14-17.	0.5	103	24

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