Assignment X6 Solutions

Solution X6.1

Comment

Contract design is covered in Chapter 24.

(i) ***Unit pricing as a source of risk to the company***

The main risk associated with unit pricing is that different generations of policyholders will not be treated fairly and that their reasonable expectations will not be met. [½]

This may happen due to:

- errors in the calculation of the prices at which units are allocated to or de-allocated from policyholders [½]
- errors in the calculation of the prices at which units are created or cancelled [½]
- the way that compensation for errors of a material size is determined. [½]

There is a risk to the company that it does not change the unit pricing basis, when it needs to, to reflect a change from net allocator to net redeemer or vice versa. [½]

In respect of units linked to BLAGAB contracts, the allowance made for tax on unrealised gains and on realised and unrealised losses is a source of risk. For example, the allowance in respect of losses may be overvalued and the actual tax incurred by the company will differ from that charged to the linked funds. [½]

Where the company allows surrenders to occur at a preceding unit price, there is a risk that anti-selective surrenders may occur if the current unit price would be lower due to a fall in the underlying value of assets. [½]

Further risks can arise where certain internal unit-linked funds invest in other unit-linked funds or in external unit trusts. It is common practice for some rebating of management charges to mitigate or avoid the double charging of management fees. [½]

More generally, systems may carry out of date or inaccurate information, for example, on asset values or expenses and management charges deducted from the fund. [½]

[Maximum 3]

(ii) ***Reasons for offering the guarantees and options***

Incorporating a guarantee or option into a product design should improve new business sales… [½]

… provided it is perceived to be of some benefit to potential policyholders and this benefit is considered to be of greater value than the charge being levied for the guarantee or option. [½]

This will increase profits to shareholders, assuming the products have been priced correctly. [1]

Unit costs may be reduced, allowing better terms to be offered to policyholders, further improving marketability of the products. [1]

Guarantees and options may be necessary for some products, to sell any business, if all other companies are offering them. [½]

(a) *Unit-linked endowment*

The value of units will start off very low and then increase over time as premiums are allocated to units and through unit growth. [½]

Without the guarantee, the death benefit is likely to be the bid value of units … [½]

… and so the level of protection is initially very low. [½]

The guarantee gives a reasonable amount of life cover to policyholders who may be worried about providing a lump sum for their dependants or paying off a loan in the event of death. [1]

For example, a premium of £50*pm* provides cover of £30,000 from outset. [½]

(b) *Term assurance*

A policyholder may be worried that the initial level of cover may not be sufficient at some time in the future. [½]

This may be due to having more dependants or simply the effect of inflation eroding the value of the cover. [1]

The option means the policyholder does not need to worry about their health deteriorating and therefore not being accepted on standard terms. [½]

This option should also improve the persistency rates under this product, assuming such options are not widely available elsewhere. [1]

[Maximum 6]

(iii) ***Risks***

For any guarantee or option to be worthwhile, it must be of some potential value to the policyholder. [½]

This means there is a potential cost to the company. [½]

The main risk is therefore that the cost turns out to be greater than that assumed when pricing the product, leading to a loss for the company. [½]

The risk of making a loss often cannot be reduced by writing more business, since the risk is likely to occur across all polices at the same time. [½]

(a) *Unit-linked endowment*

The risk is that more policyholders die than expected, whilst having a bid value of units below the guaranteed death benefit. [½]

This would mean the mortality charges deducted from the unit fund were insufficient to cover the additional payouts, resulting in a loss. [½]

This could be recouped from the remaining policyholders by increasing the mortality charge, assuming it is variable … [½]

… but PRE will limit the amount by which we can increase the charge. [½]

(b) *Term assurance*

When setting the original premium rates, the company will have allowed for a certain take-up rate for the option (incorporating an average increase in sum assured) and assumed a worse than average mortality experience. [1]

It is at risk of making a loss if either the mortality of those exercising the option is even worse than allowed for … [½]

… or the take-up rate is higher than expected. [½]

[Maximum 4]

(iv) ***Implications of removing the guarantees and options***

If the guarantees and options are removed, the marketability of each product will be reduced. [½]

This means the company may expect to sell less new business. [½]

This would lead to an increase in unit costs. [½]

The impact on profitability will also depend on whether enough was being charged for the guarantee or option to cover the cost. [½]

The revised products should be cheaper and so may appeal to a different target market. [½]

For example, the unit-linked endowment would become a savings product rather than a protection product and so may be more suitable for investors with no dependants. [½]

For the term assurance, removing the option would make the product easier to price and enable lower premium rates to be offered. [½]

If the company did this, existing policyholders might lapse their old policy and effect a new cheaper one. [½]

This would increase costs without generating genuine new business. [½]

Also, it would be the healthy policyholders that would be most likely to benefit, so the average experience of the remaining policyholders would deteriorate, possibly causing a loss. [1]

The underwriting process might not need to be so stringent once the guarantees / options were removed. [½]

In isolation, less underwriting would reduce costs and might attract increased new business. [½]

Administration would become easier for new policies. However there would be both "new" and "old" style policies to complicate matters. [1]

Removing the guarantees / options would also reduce the capital requirement of the new products, and may therefore lead to accelerated shareholder profit. [½]

The solvency position would also be improved. [½]

The improved solvency position could be used to write more new business … [½]

… or finance other business plans (*eg* an acquisition or development of a new distribution channel). [½]

[Maximum 6]

Solution X6.2

Comment

Microinsurance is covered in Chapter 2. The contract design factors covered in Section 1 of Chapter 24 should help with the decision to enter the microinsurance market in part (i). The items of experience to cover in parts (ii) and (iii) can be found in Section 3 of Chapter 24.

(i) ***Factors to consider before entering the microinsurance market***

How to enter the market?

Consider the procedure for entering the market, whether done as a subsidiary or a branch. [½]

Check whether an overseas insurer could gain authorisation in this developing nation. [½]

The insurer may need to partner an existing local insurer; if so, the quality of potential partners must be assessed. [½]

Profitability

Consider whether a sufficient level of profit can be made on the enterprise after allowing for development costs. [½]

There may be grants available from development funds or the government to support microinsurance initiatives and so offset some of the insurer's costs. [½]

Microinsurance (MI) is aimed at those on low incomes and so premiums need to be very low. The profit per policy will therefore be very small. [1]

However, the insurer also needs to include relatively high risk margins due to the high level of uncertainty regarding future experience. [½]

The insurer will need to aim for very high sales volumes and efficient processes if it is to cover its overheads and make a profit. [½]

Achieving this may not be straightforward: in some countries, there may be limited or no trust in insurance companies. [½]

It may take several years before the insurer builds sufficient scale to be profitable. [½]

Marketability

The insurer should consider the potential demand for MI in the suggested country, both now and as the country develops. [½]

By its nature, MI is particularly important for the developing world and is currently well developed in India and some parts of Africa. [½]

It is generally based on a pooling or a community rating approach, and in some countries can be compulsory. [1]

The TA product must be culturally and religiously suitable for the developing nation that the insurer intends to operate in. [½]

Even in a single country, demand and needs will vary between urban and rural populations, as may possible distribution methods. [½]

The success of the product launch will depend on whether the population of the developing nation are aware of a need for insurance. [½]

It may be difficult and costly to persuade people of this need. [½]

People may be more used to obtaining help in time of need through community groups or their extended family. [½]

These problems may be reduced if the government of the developing nation recognises a need for microinsurance and would help to raise awareness. [½]

Suitability to meet customer needs for defined target market

The International Labour Organization defines microinsurance as "…a mechanism to protect poor people against risk (*eg* death in family) in exchange for insurance premium payments tailored to their: [½]

- needs [½]
- income [½]
- level of risk". [½]

So given the low income of the target market, MI premiums, and hence sums assured, will need to be low. [½]

MI enables individuals who would not otherwise be able to afford it to purchase some degree of financial protection. [½]

Those on low incomes are more vulnerable to adverse events, having fewer savings to support themselves in times of need. [½]

MI helps to avoid the need for these individuals to rely on money-lenders, who may be expensive and unscrupulous, in times of financial need. [½]

A possible need covered by the TA policy could be funeral expenses. [½]

Another need could be the repayment of loans on death. Often microinsurance is sold alongside microfinance. Banks may only be willing to give such loans if insurance is in place. [1]

Competitiveness

The insurer should consider the current level and sophistication of the competition, if any, and whether it is provided by long-established large domestic insurers with excellent brand trust or State sponsored providers. [1]

The insurer needs to consider whether it can provide a better, or cheaper, product or better customer service to distinguish itself from local providers. [½]

Distribution method and remuneration

Distribution of products and collection of premiums can be more difficult and expensive than for traditional insurance. [½]

Therefore having a low-cost operating model is vital in order to achieve adequate profitability levels. [½]

Potential policyholders may not have a bank account and so the insurer may need to collect premiums in cash door to door. [½]

Traditional distribution channels may not exist or be unsuitable for the MI market, *eg* even if insurance intermediaries are already active in this country, they are unlikely to be interested in the very small premium sizes typical of MI. [½]

So the insurer may need to use new and unfamiliar channels, *eg* using mobile phone companies to sell insurance and to collect premiums when pay-as-you-go phones are topped up. [½]

The insurer may try to engage with large groups of people by marketing to community, religious or tribal groups. [½]

The insurer will need to decide how to remunerate the distribution channel, *e*g mobile phone companies may receive a percentage of each premium. [½]

Training would be required for those involved in the sales process. [½]

There is potential for fraud by a distributor, *eg* by charging higher premiums and keeping the excess. [½]

Sales literature will need to be produced and translated into the local language. [½]

Financial literacy is often low in microinsurance target populations. [½]

There is a risk that policyholders do not understand what the product offers, *eg* they may not appreciate the difference between insurance and savings products. [½]

This can be particularly difficult in areas with low basic literacy rates, so in some cases pictures and acting might be used to explain how insurance works. [½]

The insurer needs to comply with local regulation regarding distribution practices and with international best practice. [½]

Financing / capital requirements

The insurer would need to consider the amount of investment which will be needed in terms of start-up costs, *eg* market research, product design and training. [½]

Costs may be offset by any State encouragement, *eg* tax breaks or subsidies. [½]

The insurer will also need to consider the solvency regime of the developing nation and ensure that it has sufficient capital to cover the expected new business strain and minimum capital requirements. [½]

The uncertainties involved in this new product may require high margins in reserving assumptions, which increases yet further the capital required. [½]

The interaction of two sets of reporting/reserving requirements may lead to even higher overall solvency requirement. [½]

The insurer should consider whether there are other projects that would make better use of this capital. [½]

Onerousness of any options or guarantees

Options, such as those found in renewable or convertible TAs, are unlikely to be suitable as the product needs to have as low a premium as possible. Added complexity is unlikely to be suitable for a target market that is new to insurance. [1]

Sensitivity of profit

The insurer should consider the sensitivity of profit to different risk factors. [½]

Extent of cross-subsidies

Given that the MI market is characterised by many very small premiums, the insurer will want to ensure that all contracts make a positive contribution to overheads and profit. [½]

Administration systems

The insurer needs to set up systems to record very large numbers of in force policy data, *eg* premiums and benefits. [½]

New systems may be required as MI has different features to the insurer's existing business, *eg* premiums may be of irregular frequency. [½]

The insurer also needs a database capable of holding significant amounts of data for experience monitoring. [½]

The insurer will need to hire local staff with knowledge of the market, culture and language, but it may also need existing staff to relocate to provide the appropriate knowledge and skills. [1]

Service standards

Given the need to keep costs low, the service provided will be at the most basic level that is acceptable. [½]

Company reputation

Consider whether the product fits with the company's corporate brand, strategy and culture. [½]

There may be wider social benefits in providing access to MI for low income groups. This more inclusive approach might form part of an insurance company's ethical strategy. [½]

Treating customers fairly

The lack of financial literacy of the target market may make them particularly vulnerable to be treated unfairly, so the insurer needs to be particularly careful with risks such as mis-selling. [½]

Level of risk

The risks will differ from those under the current product. [½]

Mortality rates are likely to be higher in a developing nation, but may be improving more rapidly too. [½]

Given the small premium size, even a small expense over-run on per policy costs could wipe out profits. [½]

Sales volumes need to be high to cover overheads and development costs, so new business volumes will also be a major risk. [½]

There is also the risk of high lapses, increasing pressure on per-policy expenses, especially as policyholder incomes may be low and irregular. [½]

There is also a currency risk when converting profits into the home currency. [½]

Risks can be very specific to the local target market, and pricing needs to reflect this. [½]

As MI is a relatively new market, there is generally only limited suitable existing data available. So there is a risk that premium and benefit levels are not set accurately. [½]

The insurer's own data from its existing TA contract is unlikely to be suitable even with adjustment. [½]

National statistics may be available regarding the mortality of the population as a whole, but would need adjustment as insured claim experience tends to be heavier. [½]

Data may be available from the statutory returns of local insurance companies (if they exist) or from consultants or reinsurers. [½]

In a rapidly developing country any available data could quickly lose relevance. [½]

There may also be greater political risks if the government is less stable and/or subject to more frequent change, *eg* the risk of a change in the country's attitude to overseas insurers. [½]

Underwriting

Given its expense, it is likely that there will be limited or no underwriting. [½]

Reinsurance

The insurer needs to consider whether it will be able to obtain reinsurance. [½]

Reinsurers may be able to provide technical or underwriting expertise. [½]

Local reinsurers may have a greater risk of failure. [½]

Taxation

The insurer needs to consider the effects on policyholders of the taxation of premiums and benefits. [½]

It also needs to consider the company tax regime, including potential additional tax incurred on repatriation of profits. [½]

Legal and regulatory constraints

The insurer needs to comply with all local regulations, *eg* any restrictions on product design or the sales process. [½]

The insurer needs to obtain local advice on legal issues to ensure that its interpretation is as intended. [½]

[Maximum 20]

(ii) ***Differences in experience between the microinsurance and existing product***

Markers please give credit for alternative examples, for each item of experience being higher / lower for MI than the existing TA business, up to the maximum number of marks for each section.

Mortality

It is likely that the proposed MI product will experience higher mortality rates than the existing TA product for the following reasons: [½]

- less stringent initial underwriting [½]
- lower socio-economic class [½]
- higher accident rate due to manual nature of many policyholders' occupation [½]
- lower levels of medical care [½]
- higher likelihood of civil unrest or wars [½]
- higher incidence of pandemics due to differing climate and sanitation arrangements [½]
- increased exposure to diseases such as AIDS. [½]

[½ for statement that mortality is likely to be higher and up to 2 for possible reasons]

Claim rates may also be higher due to higher levels of fraud for the following reasons: [½]

- large volumes of business make fraud more difficult to spot [½]
- cost of procedures to identify fraud may outweigh savings given the very small size of the premiums/benefits [½]
- local culture may make checking up difficult, *eg* reluctance to talk to investigators [½]
- defrauding a large overseas insurer may be seen to be acceptable. [½]

[½ for statement that fraud is likely to be higher and up to 1 for possible reasons]

There is greater potential for anti-selection and moral hazard. [½]

There may be more non-disclosure as applicants will not be used to filling out application forms and may not understand what is being asked. [½]

Expenses

Expenses may be higher overall for the MI policy due to: [½]

- costs of developing the new product as the MI market is quite different to the existing TA market [½]
- cost of developing new systems to cope with large sales volumes and new product features or distribution methods [½]
- setting up the new venture and training local staff [½]
- relocation costs or flight and hotel costs for existing staff to work in the developing nation to add their expertise [½]
- considerable marketing costs if people are unfamiliar with insurance in this developing nation [½]
- additional costs of operating in this nation due to unreliable IT networks or more frequent natural catastrophes [½]
- additional costs of processing premium and benefit payments for policyholders that do not have bank accounts [½]
- possible need to hire security guards to protect staff in some regions. [½]

[½ for statement that expenses may be higher and up to 2 for possible reasons]

However, costs will need to be kept as low as possible if the MI contract is to be marketable. Expenses may be lower due to: [½]

- lower labour and rental costs [½]
- simplified processes, *eg* limited underwriting [½]
- innovative bulk distribution methods, *eg* mobile phones. [½]

Per policy expenses should be very much lower than for the existing TA product. New business volumes may need to be substantially larger for the MI product to achieve this. [1]

Individual premiums will be small so expenses will be a relatively high proportion of premiums for the MI market. [½]

Expense inflation will be different as it will largely depend on the economy of the developing nation. [½]

Persistency

Withdrawal rates are likely to be higher for the MI product for the following reasons: [½]

- income may be very variable, *eg* depending on the time of year or the impact of weather on farming [½]
- expenditure may be variable and other costs may take higher priority, *eg* healthcare [½]
- lower appreciation of the value of the policy. [½]

However, withdrawal rates may be lower as those on low incomes are more vulnerable to adverse events and so may recognise a greater need for insurance. [½]

Withdrawal rates will depend on the level of competition within the developing nation, *eg* withdrawal rates may be high if a competitor follows the insurer into this market. [½]

Investment return

It may be more difficult to find suitable matching assets and so there is potential for investment losses. [½]

There may be higher dealing costs if the insurer is required to hold reserves in the emerging nation. [½]

The insurer may lack expertise in investment in emerging markets which also potentially increases costs and the possibility of losses. [½]

Investments in the emerging nation may be less stable or secure, so investment returns may be more volatile. [½]

The need to convert between currencies may bring added costs and greater volatility to returns. [½]

However there may be potential to make greater investment returns as compensation for the higher risk of the emerging market. [½]

Emerging market investments will also provide diversification from domestic investments, and so might lead to lower volatility of returns over the insurer's total portfolio. [½]

New business volumes and mix

A large volume of business is critical to the success of the MI business model. If the insurer can break into this market there is the potential to attract a very large number of customers who have not been able to access the insurance markets in the past. [1]

The actual levels of business achieved will depend on the size of the population in the developing nation, the propensity of people to purchase insurance and the level of competition. [1]

The mix of MI business will be very different to that of the existing TA product, as MI is aimed at the very poor in a different country. [½]

[Maximum 14]

(iii) ***Actions the insurer might take to improve any resultant adverse experience***

The challenge in improving experience in this microinsurance product is to keep the costs proportionate to the small size of the policies. [1]

Mortality

Reduce higher claims experience by improving policyholders' health, for example: [½]

- becoming involved in community projects *eg* provision of clean water [½]
- providing preventative health measures *eg* vaccination [½]
- providing education on the overall benefits of healthy lifestyles [½]
- working closely with the government on educational initiatives. [½]

[½ for statement on improving policyholders' health and up to 1 for possible reasons]

Amend the product design, for example: [½]

- limit the sum assured [½]
- appropriately worded exclusions, *eg* AIDS (although difficult to enforce) [½]
- more initial underwriting [½]
- stricter claims management. [½]

The insurer could use reinsurance if available at a reasonable cost. [½]

Clearly worded questions on the application form would reduce the potential for non-disclosure. [½]

Issuing clear warnings that claims will be denied if the application form has not been completed accurately may limit non-disclosure (but may be counter-productive if applicants don't trust the insurer to pay valid claims). [½]

Fraud may be reduced by educating policyholders about the effects of fraud on the availability and cost of insurance. [½]

The insurer could join with other insurance providers to share the costs of these initiatives. [½]

Expenses

Reduce higher expenses by:

- entering into joint venture with distribution partner [½]
- outsourcing some functions using fixed cost agreements, *eg* distribution, policy administration, claims handling [½]
- training local staff, rather than flying in more expensive existing staff. [½]

Invest in good IT infrastructure for efficient payment and record keeping. [½]

Persistency

Reduce poor withdrawal experience by:

- offering renewal discounts [½]
- issuing reminders, *eg* text messages on mobile phone [½]
- having appropriate commission structure depending on distribution channel. [½]

Investment return

The potential for adverse investment performance can be reduced by increasing the level of asset/liability matching, if possible. [½]

Use collective investment vehicles to:

- reduce investment costs [½]
- access expertise [½]
- limit adverse performance relative to other insurance companies. [½]

New business volumes and mix

Reduce the effects of concentration of business by finding a joint venture partner or coinsurer to help diversify. [½]

[Maximum 9]

Solution X6.3

Comment

Contract design and pricing are covered in Chapter 24.

(i) ***Impaired life product variations***

Definition of impaired life

The tighter the definition of impairment, the lower the proportion of annuitants who would qualify for an enhanced annuity ... [½]

... and so the smaller the potential target market for the new product, which would make any sales target more difficult to meet. [½]

The balance between the impaired life business and the company's standard annuity business would also be affected by the definition of impairment. The wider the scope of the definition, the greater would be the effect on the:

- volumes of standard annuity business [½]
- extent of the improvement in the average mortality experience of future standard annuity business lives. [1]

The degree of confidence an applicant, and their adviser if appropriate, can have in being assessed as an impaired life will affect the marketability of the product. [½]

An adviser is more likely to be prepared to invest the extra time taken in explaining the product and preparing any medical evidence the more confident he/she can be that the applicant will be accepted. [½]

The definition used by other companies in the market is important, as being out of line would leave the company open to potential anti-selection. [½]

The company should consider the extent to which factors that it may wish to use in the definition are allowable ... [½]

... for example, the use of genetic information is restricted by the ABI genetic code of practice. [½]

The definition and underwriting approach adopted will determine the mortality experience. [½]

Conversely, if the company has available credible mortality data from some source for use in pricing, it may choose to adopt a similar definition of impairment to that underlying its data. [½]

Automated system

An automated system will give greater consistency of treatment of applicants and remove the element of subjectivity of individual case-by-case decision making. [½]

Once the system has been set up, it will be cheaper to operate as specialist underwriting staff will not be required. [½]

This may prove to be especially significant as the underwriting staff involved in underwriting impaired life annuities are likely to be senior underwriters and possibly the Chief Medical Officer. This is because the lives being underwritten are not the same class as for more typical insurances (in particular they are older) and the medical conditions being assessed are different. [1]

The processing of applications will be quicker with an automated system, which is attractive as delays in offering terms will deter potential customers. [½]

This is particularly important with annuity business as customers may be reliant on receipt of their pension as their main source of income. [½]

If the launch of the new product is successful and volumes are as high (or higher) than predicted, then an automated process is more robust. Reliance on a small number of specialist underwriters may reduce service standards in the event that sales volumes are higher than expected. [1]

The finite number of defined annuitant groupings that result from an automated system should make it easier to monitor the mortality experience after the product is launched. [½]

An automated system may be in line with more general changes required in the annuity market in the light of greater pensions freedoms, in particular more underwriting using a wide range of rating factors. [½]

Individual underwriting

The initial time and effort in setting up an automated system will be greater than with the individual underwriting approach which may result in an individually underwritten product being ready for earlier launch. [½]

Avoiding large upfront systems investment may be particularly wise in the period shortly after the introduction of more pension freedoms and the resultant uncertain outlook for the annuity market. [1]

The use of individual underwriting will afford the company greater flexibility in its approach and may make it easier to refine its approach over time as it determines the most appropriate rating factors and the resulting enhancements to annuities. [1]

It also defers some of the decision-making – as decisions are made on a case-by-case basis rather than requiring complete specification up front, later decisions can reflect any experience gained through earlier decisions. [½]

In practice, a combination of the two approaches may be the optimal solution. The company could use an automated system for the majority of cases, with individual underwriting being used for unusual medical conditions or large policy sizes. [1]

[Maximum 9]

(ii) ***Impaired annuity pricing assumptions (other than mortality)***

Expenses

Initial expense assumption will be based on the latest investigation and pricing assumption in respect of standard annuity business. [½]

The initial expense of the impaired annuity is likely to be higher if either: [½]

- an automated system is being used, because of the spreading of the cost of setting up the initial system [½]

- the individual underwriting approach is being adopted, because of the high level of underwriting. [½]

  This cost will reflect the expense of the senior underwriting staff involved and the costs of obtaining any medical evidence. The company must also recoup the costs of those applicants who are underwritten and offered terms but who do not then take out an annuity. [1]

In addition to the possible automated system cost above, the costs of the development and launch of the product (*eg* production of literature, staff training, marketing) will have to be recovered. [½]

To load for these, estimates are needed for sales volumes and the expected lifetime of the product. [½]

The assumed regular expense associated with each annuity payment will probably be the same as that on the existing annuity contract. [½]

However, the company may find it worthwhile to seek confirmation of continuing survival of annuitants more frequently than it does for standard annuities, in which case renewal expenses would be increased. [½]

Expense inflation could be assumed to lie between estimates of future price and salary inflation. [½]

Volumes and mix of new business

Volumes must be estimated to help with determining expense loadings for development and other fixed costs. [½]

Investment return

The investment return would be based on returns available on conventional gilts or other assets that match the expected annuity payments. [½]

Fixed-interest or index-linked bonds of appropriate durations would be chosen as appropriate. [½]

Tax

The product could be written as either BLAGAB or non-BLAGAB. [½]

Pension annuities written in the non-BLAGAB Fund will have gross investment return and expense assumptions. [½]

Any general annuities written in the BLAGAB Fund and will have net or gross investment return and expense assumptions depending on the current and expected future tax position of the company. [½]

Profit criterion

This is likely to be the same across all products that the company offers and so a product-specific assumption is unlikely to be required. [½]

However, a different criterion *might* be used for strategic reasons. [½]

Risk discount rate (RDR)

If the company adopts a market-consistent approach to pricing, it would use a risk-free, term dependent discount rate ... [½]

... and allow for risks in the other parameters, *eg* by the use of risk margins. [½]

If the company adopts a traditional pricing approach, the RDR will represent the risk-free rate plus a margin for risk. [½]

Since this is a new product, a higher RDR might be used than for existing products. [½]

Basis for technical provisions and solvency capital requirements

This is needed since it affects the capital required to write the business. The company should use in pricing whatever is likely to be used in practice to determine the technical provisions and associated SCR. [½]

[Maximum 7]

(iii) ***Determination of the mortality assumption***

The assumption should reflect the company's expected mortality experience under this product. [½]

Particular care should be taken in establishing this assumption as mortality is the key risk for this product. [½]

In particular, the non-independence of lives is important. [½]

As the level of competition in the group life market is high, sales are likely to be price-sensitive and it will be important for reaching sales targets that the mortality assumption is not out of line with the market. [½]

The company's existing term assurance mortality experience is not directly relevant as the class of lives covered will be different. [½]

In particular, the individual experience will be in respect of people who have made a conscious choice to take out insurance – they may therefore be expected to exhibit worse mortality experience than the group lives. [½]

This effect is lessened to the extent that individual term assurances were taken out in association with certain life events, in particular mortgages or other loans, but also, for example, the birth of a child. [½]

The extent of selection should be less (and so the mortality experience better) with the group life business. Generally, a relevant factor here is whether the scheme is compulsory or voluntary, with voluntary schemes having more selection. [1]

In this case, as the employer is paying the premium, the take up is likely to be high even if it is not compulsory. So there will be relatively little anti-selection. [½]

The fact that this is a new product is likely to lead the company to take a more prudent approach to setting its mortality assumption, which will reduce the competitiveness of the premium rates. [½]

However, the effects of this could be at least partly overcome if the company offered employers some form of profit-sharing arrangement. [½]

If rates are to be guaranteed for the whole term, then it will be more important to consider the likely extent of future improvements in mortality (*eg* due to medical advances) and to have a larger margin. [½]

The assumption is likely to be expressed as a percentage of a standard table, perhaps TMS00/TMN00/TFS00/TFN00 or AMS00/AMN00/AFS00/AFN00. [½]

The mortality experience will depend on the occupation of the insured lives. [½]

It may also depend on location although this may not be very significant in the UK. [½]

Therefore, the insurance company may apply a loading factor to its basic mortality assumption in relation to different categories of occupation and location. [½]

The insurance company may wish to take account of the gender mix of particular schemes in adjusting its mortality assumptions. Whether the rate charged can vary between schemes due to their gender mix is an aspect of the March 2011 Court of Justice of the European Union (CJEU) ruling (prohibiting the use of gender as a rating factor) that would need to be clarified. [½]

The company is likely to be very reliant on its reinsurer for assistance in setting the mortality assumption. The reinsurer may also be able to advise on appropriate occupation and location loadings. [1]

Another area where the expertise of the reinsurer will be useful is in deciding on the level of underwriting that is appropriate for the level of free cover being offered. These decisions will affect the expected mortality experience. The higher the free cover level, the lower the proportion of lives who are underwritten, and so the heavier the required mortality assumption. [1]

If the group life contract contains any options (*eg* an employee may be able to convert to an individual term assurance without further medical evidence on changing employer), the mortality assumption in respect of the option should be determined separately. In particular, the level of associated selection is likely to be far greater. [1]
[Maximum 8]

(iv) ***Other course of action to increase sales***

Extend/improve product range

The company could consider launching other new products to fill possible gaps in its product offering, *eg* guaranteed equity bonds, health insurances. [½]

This would only be successful in achieving the company's aim if any sales generated were genuinely new sales opportunities, rather than just sales diverted from the company's existing product lines. [½]

Also, like several of the other possible courses of action, this would involve upfront costs for the company with no guarantee that the objective of higher sales will be achieved. [½]

Existing products could be redesigned to improve their marketability. For example:

- offer options on products, *eg* renewable or convertible term assurance policies could be introduced [½]
- premium rates or charge guarantees could be introduced or extended [½]
- unit-linked charges could be redesigned, *eg* lower initial charges. [½]

Investment performance

Good investment performance is critical in achieving sales of savings products and the company may be able to achieve better investment performance, *eg* by reviewing its investment strategy or fund managers. [1]

If the company has a poor investment performance history, then outsourcing the investment function or linking to an external fund with a good track record may be possible. [½]

The attractiveness of savings products may be increased by increasing the range of investment funds available. [½]

Administration and underwriting

An improved reputation for customer support and standards of service may help attract new business, so the company may consider ways of improving in these areas (*eg* dedicated helpline, provision of policy information online), particularly if it has received negative publicity or has a poor reputation. [½]

The company could review its underwriting strategy to see if any amendments might improve its sales. If current levels of underwriting are higher than are typical in a particular market, applicants may be being deterred. [½]

In particular, the company could simplify its proposal forms. [½]

Alternatively, if the underwriting is less stringent, then the company's mortality experience may be worse resulting in the company having high and uncompetitive premium rates, which may be limiting sales. [½]

Marketing and sales

The company could increase its marketing and advertising budget in an effort to attract more business. [½]

The executives with responsibility for sales, *eg* the chief executive or the sales director, may be replaced. [½]

Products could be made more attractive for the sales channel selling them. For example terms may be made more attractive for financial advisers. [½]

The level of support offered to financial advisers could be increased, in hope of encouraging more sales. [½]

The company could consider buying or developing a new distribution channel. These two approaches differ in how quickly they can be implemented. [½]

Pricing

If the company is currently losing out on new business as a result of uncompetitive premium rates and charges, the pricing of the company's various products could be reviewed. [½]

Assumptions may need changing to reflect a revised view of likely future experience, *eg* expense assumptions, tax assumptions, decrement assumptions. [½]

Improving the company's expense experience would help in improving the competitiveness of premium rates. The company may look to achieve efficiency savings, *eg* by outsourcing certain activities, but these can be difficult to deliver in practice. [1]

Also, any restructuring or new systems intended to reduce expenses in the long term are likely to result in additional short-term costs. [½]

Alternatively, if the future experience assumptions all seem appropriate, the company may review its profit criterion and risk discount rate as these may be too onerous. [1]

For example, if the company used a high risk discount rate when pricing a new product, it may be appropriate to reprice with a lower rate if the product has now been successfully launched and the company can be more certain of its experience. [1]

It may be better for the company to accept a lower level of profit per policy and achieve higher sales volumes. [½]

Different decisions on premium rates may well be made for different classes of business, depending on the price-sensitivity of the class, *ie* to what extent a change in premiums leads to a change in volumes sold. [½]

The company could review its surrender value scales with a view to making its products more attractive. For example, if the company sells with-profits business, illustration of improved surrender values in the company's illustrations may increase new business levels. [1]

Alternatively, increased maturity values may be considered to be more effective in attracting new business, so lower surrender values may be offered if increased surrender profits can be used to boost maturities, although this would take a long time to feed through to past performance tables. [½]

Payouts could be augmented from the company's estate. [½]

Solvency position

If the reason for falling sales is a worsening of the company's solvency position relative to its competitors, then action could be taken to improve this, *eg* by more closely matching the assets to the liabilities to reduce the capital requirement or by raising new capital. [1]

[Maximum 14]