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Hannover Re's Perspectives
Current Topics of
International Life Insurance

Tim Weinert

Enhanced Annuities on the Move

hannover re®

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Contents

1. Introduction

Annuity policies are well-known to the public. They provide an income – usually until the policyholder's death. Commonly, the first payments are made when the insured no longer has a regular income, i.e. at retirement age. Premiums for this product are either paid regularly (during working life) or as a single premium.

Obviously, the better the policyholder's health the longer his life expectancy and thus the more annuity payments he should receive from the insurance company. In order to obtain the same benefits, healthy people should pay higher premiums than those with poorer health. However, as quite a number of people reaching retirement age do suffer from some kind of illness or disease, the insurance industry developed the concept of higher annuity payments for impaired lives.

The development of this type of annuity in the UK will be described below. Starting with its evolution, the different concepts will be characterised and product advances outlined. This will be followed by a description of the current market environment as well as an explanation of underwriting processes and reinsurance options. Finally, an outlook on possible upcoming changes is provided.

2. Evolution of the Enhanced Annuity Market

2.1 Compulsory Purchase and Purchase Life Annuities

Over the last century several governments successively refined the UK pension system. In April 1978, the UK government introduced a two-pillar system consisting of the Basic State Pension and the State Earnings Related Pension Scheme (SERPS). In 2002 SERPS was revised and renamed the State Second Pension (S2P). People are given the option of leaving the S2P (known as "contracting out") by joining a contracted-out money purchase pension vehicle, which includes among others:

- Individual pensions (e.g. occupational, personal and stakeholder pensions);
- Company money purchase pensions;
- Protected rights pensions[1].

At retirement age the accumulated pension fund from these vehicles has to be converted – as a single premium – into an annuity. Based on its compulsory nature the contracts are aptly named Compulsory Purchase Annuity (CPA), alternatively Pension Annuity.

There are two additional components applicable to this regulation. Firstly, the pensioner can withdraw up to 25% from the fund tax-free, while the second component waives the purchase obligation for pensioners owning a fund value of less than GBP 15,000. Additional options are available as of April 6, 2006, onwards (see section 6.5).

In mid-2006 the average pension fund had a value of about GBP 26,000 – after cash withdrawal ([1]).

Apart from the CPA contracts, it is of course possible to buy an annuity on a non-compulsory basis, whereby the (single) premium does not necessarily derive from a pension fund. These contracts are known as Purchase Life Annuities (PLA).

[1] *Where an individual contracts out of SERPS using a personal pension or stakeholder pension, a rebate of some of the National Insurance paid for that person is paid to the pension provider sometime after the end of the tax year by the Inland Revenue. These rebates are known as protected rights contribution.*

2.2 Introduction of Enhanced Rates

Until the beginning of 1995 only standard rates were available in the annuity market, merely allowing for age and sex. At the time "The Times" published the following letter:

"I will be 70 next birthday, am 6 ft 6 in, weigh $18^{1/2}$ stone and have had high blood pressure for 15 years (I'm on the maximum daily dose of my drug). I have had malaria three times, cancer of the larynx five years ago and now have apnoea, which surgery in 1993 has relieved but not cured. So, I am a low health prospect, according to life office. I agree. But let me seek an annuity – and hey presto! I am a normal life with an expectation in line with the standard tables. Nobody can – or wishes to – explain this paradox. Can you? Is there a provider of annuities for impaired lives?"

In May of that year the newly founded Pension Annuity Friendly Society (PAFS) offered a higher annuity income to pensioners suffering from serious illnesses. Shortly thereafter, Stalwart Assurance introduced its Smoker and Special Annuities.

Companies then started offering annuities based on full medical underwriting, known in the market as *Impaired Life Annuities*, as well as annuities based on simplified underwriting, today known as *Enhanced Annuities*.

Nowadays, underwriting for enhanced annuities is questionnaire-based – predominantly using tick-boxes – and covers lifestyle factors (e.g. occupation, smoking) as well as medical conditions (e.g. diabetes, stroke). Impaired life annuities, on the other hand, are based on serious medical conditions requiring either a Personal Medical Attendant (PMA) report or a detailed questionnaire for underwriting.

However, the suitability of an annuity depends largely on the type of pre-existing disease(s) the applicant is suffering from: the more severe these diseases are, the more detailed underwriting is necessary, thus qualifying for an impaired life annuity rather than for an enhanced annuity.

Life companies can benefit from early cooperation with a reinsurer when entering a new market segment, thus profiting from its expertise in product development. This held true for enhanced and impaired life annuities too.

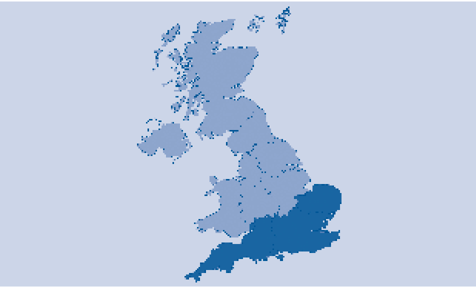
A short abstract of the historical development of these products is provided below.

2.3 Simplified Underwriting-based Concepts

Obviously, entering a new market entails many uncertainties and risks for a life company, including for example the development potential and initial expenses. Thus, the first enhanced annuity products were of low complexity. Distinguishing factors that were easily verifiable were necessary so as to ensure a speedy product development process and minimise investments. In hindsight this proved to be a successful approach.

It was well known from prevailing life tables at the time that, apart from gender, people's smoking habit was – and still is – a further crucial distinguishing factor. Consequently, smoking as a prime cause for a reduced life expectancy resulted in the so-called Smoker Annuities. In order to avoid anti-selection effects, a doctor's report was requested confirming the smoking habit and, in addition, a urine sample was taken.

Furthermore, the factors occupation and residence proved useful distinguishing factors that led to the development of Socio-Geographic Annuities. Reputable surveys and polls by the UK Statistical Office had proven that residents of the South have a higher average life expectancy than residents of the North. This proved to be an efficient factor as applicants are always required to provide their address.



In addition, life expectancy increases with a higher level of education. Generally, those with a higher education are much more conscientious concerning nutrition, less exposed to pollution in their jobs, and see their doctors much more frequently for preventive check-ups. Again, a life company can easily verify an applicant's occupation.

Socio-economic classes in the UK

Class	Description	Examples
A	Professional & managerial	Actuary, lawyer
B	Clerical and lower management	Optician
C1	Skilled non-manual	Nurse, qualified bank employee
C2	Skilled manual	Boiler maker
D	Partly skilled	Construction worker
E	Unskilled	Tyre fitter

Next, an annuitant's health was taken into account and combined with his/her occupation. As this process proved to be slightly more complex questionnaires were developed accordingly. Pre-defined diseases, smoking habit, occupation and the applicant's body mass index (BMI) were determined with simple yes/no questions.

Pre-existing diseases usually result in a reduction of life expectancy. Mortality rates were therefore increased by a set percentage, resulting in annuity payments that could be boosted by up to 15% compared to a standard annuity.

The obvious next step, however, was to focus more closely on each disease and hence further improve the payments.

2.4 Concepts Based on Full Medical Underwriting

Hitherto the severity of diseases had not been taken into account. It is clear that a pensioner suffering from cancer, with a remaining life expectancy of approximately one year, requires a much better annuity return than an increase of a mere 15% or so.

As a first step, impaired life annuities were developed. Applicants had to deliver a detailed official digest of the disease – always based on full medical underwriting. Each assessment then served to calculate the level of an individual annuity.

The insurance industry produced both mortality and morbidity probabilities dependent on age at entry and gender per illness due to the increased number of diseases that the enhanced and impaired life annuity providers take into account. Ten years ago annuity providers were fairly inexperienced in the enhanced annuity market. But with today's experience, the underwriting process has become much more efficient. Annuity payments are now even higher in some cases as providers are no longer forced to be overcautious or conservative.

2.5 Computer-based Underwriting Tool

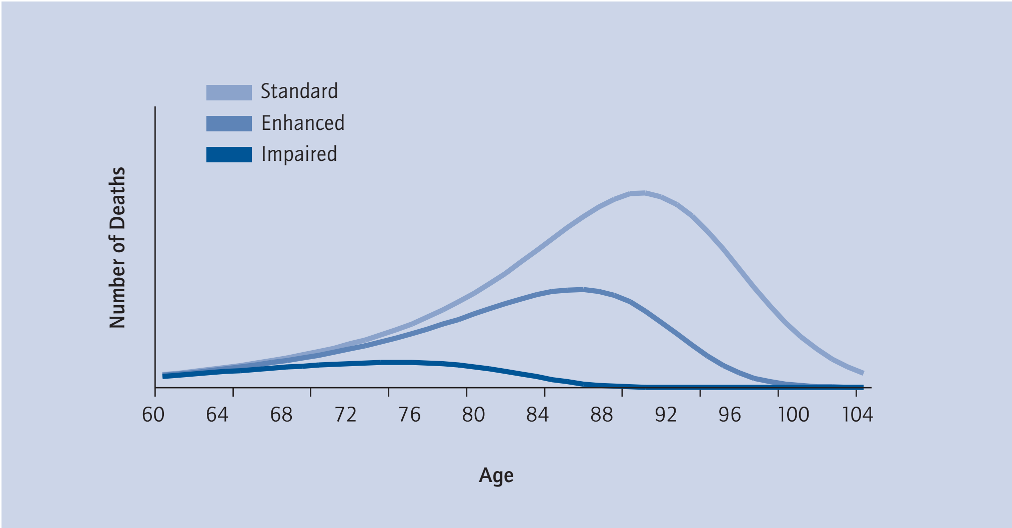
Due to the greater complexity of the products, the workload for insurance companies increased significantly – especially if questions were answered in (hand-)writing or applications required an underwriter's decision on a per-case basis. Hence, a solution was needed that could deal with the majority of cases efficiently and systematically without requiring a medical underwriter.

Fortunately, information technology advanced considerably and computer-based support for medical assessments was soon made available. Computer-based questionnaires were developed in close collaboration between actuaries and medical underwriters. Underwriters developed questionnaires which were then converted and implemented into software.

The systems were designed for and targeted at lay users with no medical background. Since the sales process mainly involves Independent Financial Advisers (IFAs) – who obviously have little medical background – simplicity of the user interface became a key factor in creating the tools. Today it is possible to have the systems installed on a notebook or to obtain access via the Internet.

Enhanced Annuity	Impaired Life Annuity
Underwriting based on questionnaire covering lifestyle factors and medical conditions, PMA report typically only to check for overdisclosure[2]	Underwriting based on PMA report for serious medical conditions
Can be rated using an automated underwriting system; no further investigation necessary	Individual assessment indispensable; further investigation through PMA report
Annuity rate up to 15% higher than the standard rate	Annuity rate 30% or more higher than the standard rate

Typical Expected Distribution of Deaths for Male Annuitants at Age 60



[2] *The term overdisclosure is used if an annuitant overestimates the severity of a disease (e.g. a pensioner pretends to suffer from skin cancer when he only has a melanoma in situ)*

2.6 And today…?

Both the enhanced and impaired life annuity concepts have been refined over the years. Today, more than 1,000 medical conditions qualify for enhanced and impaired life annuity rates – mainly cancer, heart disease, stroke, kidney failure, or major organ transplant.

Life companies have determined further rating factors that allow for additional enhancements such as marital status, the level and source (personal wealth vs. CPA fund investment) of the (single) premium, or family history. Introducing increasingly complex combinations of the various factors was made possible as experience and know-how were accumulated.

Quite recently, however, providers started entering the so-called slightly enhanced market segment by offering improved rates based on rating factors such as postcode etc. This may be seen as a step backwards, although less complex products are easier to sell since consumers often have difficulties understanding insurance products.

Bearing in mind that the UK market is innovative, dynamic and demanding, not to mention fairly complex in terms of its size, distribution channels and regulatory environment, product development in the enhanced and impaired life annuity sector has only just begun. The annuity industry is called upon to design new products in the face of an aging population and, at the same time, higher life expectancy. Market entry barriers are therefore rather high – especially with regard to the underwriting knowledge required; nevertheless, only eight providers are currently active in the market. Life companies can easily diversify their product range by entering another niche so far unrecognised by their competitors.

The potential for enhanced and impaired life annuities is still huge as every pensioner is obliged to invest the CPA fund value in an annuity. Senior executives of enhanced annuity providers believe that up to 40% of annuitants would be eligible for higher annuity payments due to poor health (see e.g. [13]), although only about 20% actually make use of this opportunity. However, with pensioners choosing an enhanced or impaired life annuity provider, this means that those companies offering standard annuities are more exposed to the "healthy" risks and past experience is becoming a less reliable rating source. This will result in lower annuity payments for non-impaired pensioners.

The main distribution channel for CPAs is the IFA market – Watson Wyatt revealed that 97% of CPAs were sold through IFAs in the first three quarters of 2005 ([10]). Market size could quite easily be doubled if the IFAs were to receive improved training and if life companies offering enhanced annuity rates simultaneously increased brand awareness. Still, there is no ignoring the fact about 50% of annuitants buy their CPA policy from the life company with which they had their pension fund.

Finally, the effects of longevity should not be underestimated. Most annuity providers previously used the PXA92 Year of Use tables, although these proved to be insufficient. Shortly after the beginning of the 21st century insurance companies switched to cohort factors (short, medium and long); these factors are applied to basic mortality tables to cater for mortality improvements. In the second half of 2005 the Institute of Actuaries published new tables that insurers will most certainly test against their current assumptions. Furthermore, enhanced and impaired life annuity providers have to closely monitor medical developments and medical data related to their products.

3. Market Survey

In 2004 the UK life insurance market was the largest in Europe (followed by France and Germany) and the third-largest in the world by total premium income (following the USA and Japan). Furthermore, the UK has the highest per capita life insurance expenditure in the world. In the same year UK premium income expressed as a percentage of the gross domestic product (GDP) was the highest worldwide ([2]).

3.1 Players

As of October 2005, 237 insurance companies were licensed for long-term business such as life insurance and pensions ([2]).

In March 2005 eight providers offered enhanced or impaired life annuity rates for pension annuity contracts in the UK: Just Retirement, The Pension Annuity Friendly Society – yet known as Partnership Assurance, Reliance Mutual, Axa Sun Life, Scottish Widows, Prudential, Norwich Union and GE Life. In October 2004 MGM Assurance withdrew from the enhanced annuity market (having previously offered "Select Annuities" aimed at semi-skilled and unskilled workers living in the West Midlands, Northern England, Scotland, Wales and Northern Ireland).

The market share of enhanced and impaired life annuities within the entire annuity market had almost reached 20% by premium in the third quarter of 2005. The market share peaked in 2003, with almost 28% of annuities being sold at enhanced rates. However, after Britannic Retirement Solutions' (BRS) closure for new business, the market share dropped steadily. Now that the management team has re-entered the market under the name of Just Retirement, it is generally believed that the 2003 peak could be topped in due course. Sales volume in this sector was GBP 173 million in the fourth quarter of 2004 compared to the first-quarter peak in 2003 of GBP 217 million ([3]). 2005 saw a small rise in the first two quarters (GBP 178 million and GBP 181 million respectively) followed by a significant drop to a mere GBP 141 million in the third quarter of 2005. The latter fall-off can be attributed to the new options available as of A-Day 2006 (see below): people are waiting for access to more favourable products before they invest their pension fund.

The whole annuity market will face new challenges under the revised regulatory environment. However, the annuitants' acceptance and understanding of the new rules will play a very important role.

3.2 Business Written

The average pension fund for CPA business amounts to some GBP 26,000. For enhanced and impaired life annuity business it had previously levelled off at slightly above GBP 50,000 (2001), then declined steadily and has now stabilised in the region of GBP 40,000. Parallel to the decrease in average premiums, sales volumes increased from about GBP 420 million in 2001 to almost GBP 700 million in 2003.

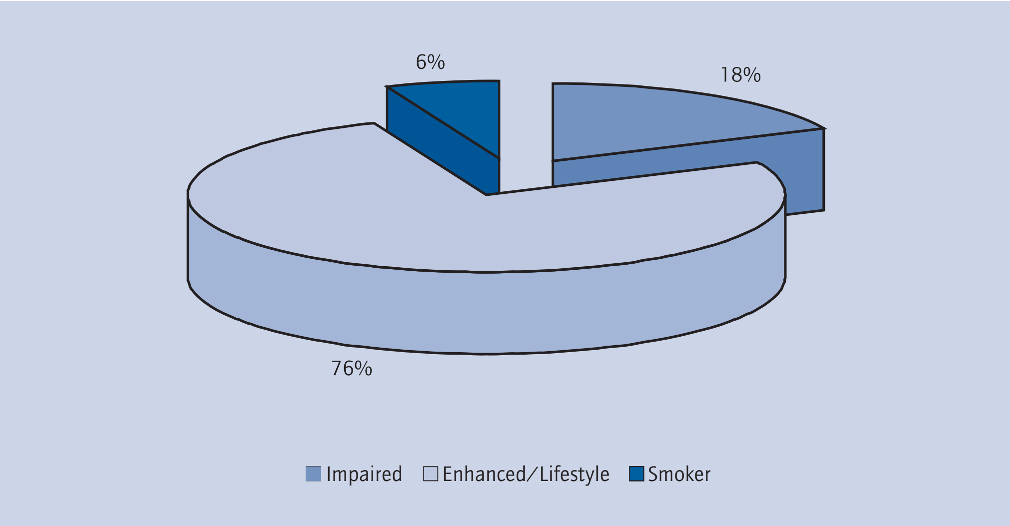
2004 saw a decline to slightly less than GBP 600 million. However, in 2005 sales rose to GBP 640 million and 2006 is expected to exceed this number following A-Day.

Yet almost two-thirds of the pension funds amount to less than GBP 20,000. These small cases are not particularly attractive to IFAs and insurance companies, which are primarily interested in medium-size pension funds, i.e. those between GBP 20,000 and GBP 100,000. They make up more than 50% of single premiums but only about one third of the number of policies ([4]).

Today, more than 80% of annuitants are aged 60 to 70 when purchasing their pension annuity. Only about 5% buy later by availing themselves of the drawdown option ([15]) or for other reasons.

According to Legal & General, premium income in 2005 within the enhanced annuity market split as follows ([1]):

Enhanced Annuities – 2005 Split by Premium



3.3 Products

Today's Enhanced Annuity Market

Providers only sell enhanced annuity CPA contracts if a required minimum pension fund amount is available. Just Retirement and Partnership Assurance start at GBP 5,000, while annuitants are required to have at least GBP 10,000 at both GE Life and Scottish Widows. Norwich Union and Prudential start selling such policies from GBP 20,000 upwards. Finally, a minimum investment of as much as GBP 60,000 is needed to buy a CPA from Axa.

Nevertheless, the choice of provider is largely influenced by the underlying medical and lifestyle conditions as well as by the rates. The following chart outlines qualifying criteria for enhanced annuity contracts applied by some select market players ([5]).

	Diabetes	Overweight	Heart Attack	Multiple Sclerosis	Lung Disease	Kidney Failure	Stroke	Cancer	Smoking Habit	Postcode	GPR[3] duty
GE Life	x	x	x	x	x	x	x	x	x		x
Just Retirement	x	x	x	x	x	x	x	x	x	x	x
Norwich Union[4]							x	x			x
Partnership Assurance	x		x	x	x	x	x	x			x
Prudential	x	x	x	x	x	x	x	x			x
Scottish Widows	x	x	x	x	x	x	x	x			x

[3] *General Practitioner's Report*
[4] *Available only for people whose illness means that their life expectancy is significantly reduced.*

Price-conscious annuitants can check rates either online or in various magazines e.g. "Investment, Life and Pensions". Comparing prices oneself as opposed to making use of the services of an IFA could result in up to a 10% difference in income.

Niche vs. Mainstream

Annuitants can select from a wide range of different products in the enhanced annuity market. Before leaving the market in 2004 MGM Assurance offered ratings according to occupational and geographical factors, while Reliance Mutual offers enhanced annuity rates for smokers and Partnership Assurance focuses on heavily impaired annuitants only. These underwriting criteria cover only niche segments within the enhanced annuity market.

The more specialised an insurer is, the more attractive the terms they can offer in comparison to their competitors who offer the full range. Currently, the latter grouping consists principally of three companies, namely Prudential, GE Life and Just Retirement. They offer attractive rates for a large number of diseases, coupled with lifestyle factors. Mainstream providers have proven to be more successful than niche providers, e.g. in 2002 and 2003 GE Life and BRS had a combined market share of about 75%. Just Retirement, as the successor to BRS, will most likely become a market leader in enhanced annuity business; with gross written premiums of GBP 117 million for the period 1st July 2004 to 30th June 2005 and GBP 298 million for the period 1st July 2005 to 30th June 2006 the company is definitely well on its way.

Some of the standard annuity providers simply added an enhanced or impaired life annuity product to their product range, whereas others focus specifically on these products. However, a formerly well mixed portfolio of healthy and unhealthy risks may now contain predominantly healthy lives – thus cannibalising the standard business. Should this happen the provider's profitability on standard business will be negatively impacted and they will have to provide more supporting capital.

3.4 Actuarial

"Currently, a standard, single life annuity for a male retiring at 65 gives a return of a little over 7% on the sum invested." ([6]) This return could be raised to some 8% or even higher for enhanced or impaired life annuities. How can this be justified actuarially?

The mortality impact is quite obvious: a reduced life expectancy can be taken into account when calculating the policyholder's annuity. The second positive influencing factor is the interest rate, since mid-term investments in the UK yield higher returns than long-term ones (due to the lack of long-dated gilts)[5]. Although additional underwriting comes at a cost, expenses are low due to the use of computer-based underwriting tools.

Once an enhanced or impaired life annuity product has been introduced, these three factors apply without modification. However, determining the correct parameters for the three items mortality, interest and expenses is absolutely crucial to becoming or remaining competitive while simultaneously generating the necessary profits. Past experience on impaired lives, in particular, can help insurance companies to set correct mortality assumptions.

3.5 Competition

Enhanced and impaired life annuity providers segment policyholders into sub-standard (or "unhealthy") i.e. qualifying for the product, and standard (alternatively "healthy") lives. The latter group would obviously buy a standard annuity policy from a standard annuity provider rather than from an enhanced annuity provider. A standard annuity provider covers a portfolio of both healthy and unhealthy customers and can therefore offer better standard terms than the en-

[5] *cf. section 6.2*

hanced and impaired life annuity insurers. For the latter the straightforward solution would be to not offer standard products at all. But it is not quite that simple, as demonstrated below.

Joint lives, where the first life suffers from an impairment but the second is standard – in fact preferred – should ideally receive a better quote from an enhanced annuity provider than from a standard one. However, because of the more homogeneous, i.e. less selected, portfolio structure of the standard annuity provider this may not be the case. Consumers may find this difficult to understand. Hence, enhanced and impaired life annuity providers are sometimes forced to offer standard rates – without them being marketed as such – unless they are prepared to act as niche providers.

However, the existence of enhanced annuity providers means that standard annuity providers are already selected against since their portfolios consist of a less homogeneous mix of healthy and unhealthy lives. Yet, as only about 50% of annuitants make use of the so-called open market option (OMO)[6], standard annuity providers are still able to offer better standard terms than their enhanced competitors.

Enhanced and impaired life annuity players who indeed wish to increase their share of the enhanced annuity market have to be more competitive than their business rivals in all actuarial areas. The product itself points to mortality as the main competitive factor. Assuming that expenses are about the same – although the cost of underwriting cannot be disregarded – the interest rate item is a key driver in competition within the enhanced annuity market. Yet a higher return on investment can only be realised if the investment strategy is more risk-orientated than that of standard competitors – something which frequently runs contrary to the rules of sound and prudent management.

Basically, this scenario would result in enhanced and impaired life annuity providers being forced to merely act as niche players. On the other hand, the homogenous portfolio of standard providers would be cannibalised by their enhanced competitors.

At the end of the day, competition in the market is and will continue to be very fierce. All providers will have to watch the competition closely.

3.6 Underwriting

The accuracy of underwriting is largely dependent on the underlying product. As far as impaired life annuity products are concerned, it is almost indispensable to make underwriting decisions based on a PMA report. In the case of enhanced annuity business, a computer-based underwriting tool can replace the underwriter in most cases (see section 2.5 above). However, even for enhanced annuities, high pension funds and complex diseases still require a per-case assessment of the risk.

Both products require a questionnaire that is filled out by the annuity applicant (partially supported by an IFA). In order to limit its complexity for IFAs and pensioners alike – since both lack a medical background – enhanced annuity providers use a standard questionnaire. However, the more precise the questionnaire, the easier the risk assessment for the insurance company becomes.

3.7 Taxation

The contributions to a pension fund – which has to be used to buy a CPA at retirement age – are deducted from an individual's gross taxable income. It is therefore quite logical that later annuity payments are taxed as income. Taxation is, however, less stringent when paying the premium for a Purchase Life Annuity.

For a PLA, the Inland Revenue splits each annuity payment into two components – firstly,

[6] *The open market option allows a member to transfer his/her pension fund from one life assurance company to another to achieve a higher annuity rate.*

the capital content (which is tax-free) and secondly, the taxable content. The capital content is calculated as the purchase price divided by the life expectancy at time of purchase, with the mortality basis for the life expectancy being determined by the Inland Revenue (currently IM/IF80c 10sel). The taxable content – which is the excess of the annuity over the capital content – is regarded as an interest element earned on the investment and is charged at a savings rate of 20% (unless the policyholder is a higher-rate taxpayer).

In comparison to PLAs, annuity payments from CPAs are fully taxed as income. In 2006/2007 there is a basic allowance in the amount of GBP 5,035. For income above this limit the tax rates are currently set three-fold: 10% of the first GBP 2,150; 22% on the next GBP 31,150 and 40% on any excess.

The following numerical example shows how taxation impacts the pre-tax annuity payments for both PLAs and CPAs, assuming the same pre-tax annuity value.

Single life, 5 year guarantee, purchase price GBP 10,000, annual payment

	PLA[7]		CPA	
in GBP	Male aged 70	Female aged 70	Male aged 70	Female aged 70
Pre-tax Annuity	823	764	823	764
Capital Content	696	594		
Taxable Content	127	170		
Tax payable	-25	-34	-160	-147
Post-tax Annuity	798	730	663	617

3.8 Distribution Channels

A couple of months before an employee retires, the pension fund provider informs him/her that a CPA policy has to be bought. Usually the insurer makes an offer for such a policy at the same time. As this is quite an uncomplicated and convenient way for upcoming annuitants, the majority buy their annuity from their pension fund provider. However, figures from 2005 show that about 46% looked for alternative offers ([1]) – making use of OMO[8].

Since then almost 50% of annuitants have sought a better quote from other providers. Independent Financial Advisers (IFAs) are obliged to look for the best quote in the market and to provide best advice to their customers. However, even within the IFA market there are more and less specialised advisers. Today, there are about 4,300 IFA firms employing about 77,000 advisers in total; the largest 30 IFA companies account for about 80% of registered individuals ([7]). Since 30th November 2001 all IFAs have been regulated by the Financial Services Authority (FSA) in order to protect consumers.

Although bound by their professional code, an IFA's recommendation of a CPA from a specific insurance company is nevertheless still influenced by a number of other factors: most obvious are the annual income provided by the annuity and the commission structure. Less apparent are the provider's financial strength and its efficiency and speed in administering policies. Other criteria, such as the format of the questionnaire or personal relationships with the insurance contacts, also have an impact on the advice provided by an IFA.

[7] *Hodge Life, November 2005*
[8] *cf. section 3.5*

IFAs strongly prefer to complete just one questionnaire and are pushing providers to develop a standard market format. Last but not least, the business relationships between the insurer and IFA firm and the communication channels (call centre vs. direct contact) also have a strong influence on advisers.

The bulk of CPA contracts within the open CPA market are sold through IFAs. Nonetheless, pensioners can choose to use a direct sales force, bancassurance or other means, although to date little use has been made of these options.

3.9 Market Entry Barriers

There are a number of reasons why annuity providers are reluctant to enter the enhanced annuity market:

- As the UK annuity market is one of the largest in the world it favours developments in both the enhanced and impaired life annuity segment. Non-UK resident insurance companies are not able to provide sufficient expertise, in particular concerning underwriting. Obtaining reinsurance support is fairly simple, although only a few reinsurers have adequate experience.
- Capital requirements also represent a major hurdle. Writing annuity business requires substantial capital backing – released over the long duration of policies – since the rates are guaranteed. A new provider must have considerable financial strength to meet reserving and solvency requirements.
- Rates are fixed and guaranteed at inception of each policy. However, the longevity and interest rate risks are inherent in annuity products. With cannibalising margins as a result of possible high competition, new entrants face many uncertainties. Changes to the market due to A-Day (see below) add further uncertainty.
- One of the most important factors is of course the product itself. It should be innovative or at least new to the market, backed by a sound distribution system (usually via IFAs), customer-needs-orientated and coupled with a high level of service. In addition, the insurance company must be in a position to react quickly to market changes and able to generate market awareness. In order to attract potential consumers an insurance company should ideally be financially strong as huge funds are involved in writing the business.
- Finally, an IT-backed underwriting system is absolutely essential for generating quick quotations and high volumes so as to remain competitive.

To meet these requirements it is necessary to specialise in the enhanced annuity market segment. A strong reinsurer provides support grounded in its extensive expertise and offers financing capacity based on sound capitalisation. Close collaboration both with other enhanced and impaired life annuity providers and with the FSA should be ensured in order to influence and respond to regulatory changes.

4. Processes – Underwriting

When the first concepts for enhanced and impaired life annuities were developed back in 1995, the underwriting of each and every case had to be conducted by the insurance company's underwriting team. As technology became more advanced, however, automated underwriting processes were developed. Instead of always referring to an underwriter, appropriate underwriting systems were implemented.

The design and structure of such sophisticated systems should allow for the following:

- Underwriting and rating the qualifying cases whilst rejecting the non-qualifying applications; and
- Usable by medical lay persons such as IFAs, bank tellers, (telephone) agents, brokers and of course annuitants requesting an online quote; and
- Usable at the point of sale (POS), on a laptop, via the Internet, in local or head office and at terminals.

4.1 Underwriting Criteria

There are basically two areas which require underwriting: existing diseases and lifestyle. What is more, an underwriting tool would be even more complete if financial underwriting could also be provided.

The list of lifestyle indicators is almost unlimited. The most common indicators are occupation, smoking habits, nutrition (indicated by e.g. blood lipids or BMI), sports, leisure activities and postcode. A PMA report is usually requested for details concerning medical history. This serves to double-check the application data, discover involuntarily missing data or overdisclosure and, finally, to prevent fraud.

The underwriting system's rating also takes into account interaction between some diseases, e.g. heavy alcohol consumption and liver cirrhosis. A sophisticated system analyses the bulk of information by using standardised rules in order to come up with the same decision that an underwriter would have made.

When developing such systems, it is important to first source the available and necessary data. Consequently, focussed questions have to be drawn up. Furthermore, the validity, importance, and relevance of the information must be carefully assessed.

Finally, and most importantly, the system should be able to be updated easily once medical research impacts underwriting decisions. Should new diseases occur (e.g. HIV) the system must be adapted.

The development of such sophisticated systems is obviously time-consuming and requires in-depth experience of the enhanced annuity market.

Hannover Life Re has been very active in this market segment since it first began to evolve. Due to our thorough understanding of the sales and distribution processes prevalent in the UK, we are able to provide tailor-made solutions targeted at the individual needs of our clients. Our expertise and experience spanning over 10 years have been transferred to a state-of-the-art computer-based underwriting system to the benefit of both existing and new clients, thereby enabling them to write profitable enhanced or impaired life annuity business.

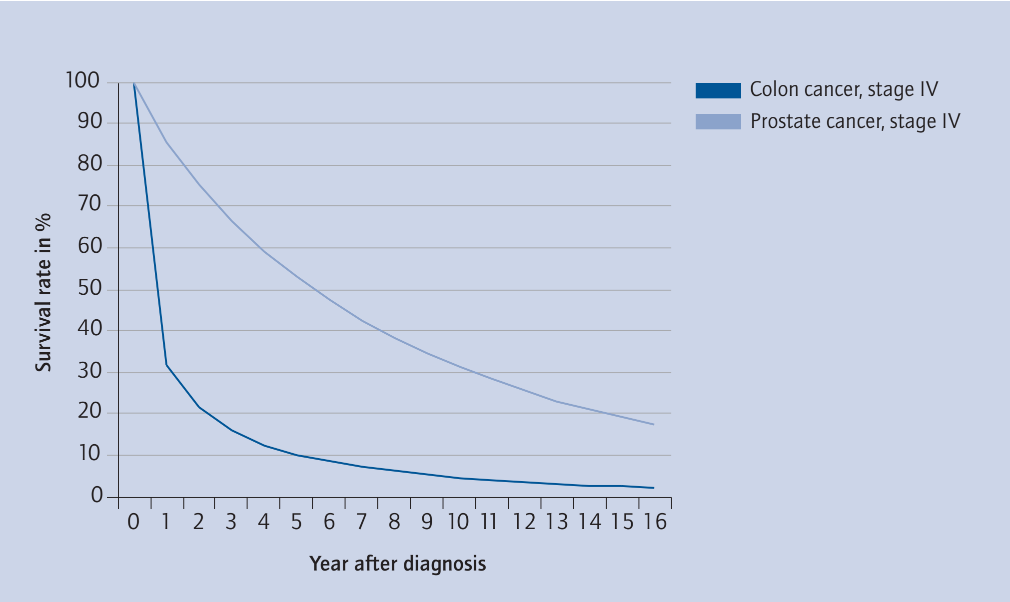
4.2 Actuarial Approach

The development of an underwriting system not only entails close collaboration between medical and IT specialists, but also requires support from the actuarial side. A mere medical assessment – expressed as extra mortality or reduced/ remaining life expectancy – is not sufficient; the actual amount of the annuity payment should ideally also be calculated by the system.

One approach could be to rate the diseases and lifestyle factors by allocating points to each indicator – bearing in mind of course the interaction of diseases (see above). However, merely allocating points based on the existence of an illness is obviously not satisfactory; allowance must always be made for the course of disease including medication, hospitalisation, duration of treatment etc. The resulting points can then be clustered and subsequently converted into a higher annuity.

This approach does not reflect the natural course of a disease. A large number of people suffering from the same illness could die very shortly after diagnosis, but once patients have survived a certain period the impact of the disease becomes negligible (e.g. severe cancer). Other diseases could develop conversely, i.e. no impact on mortality directly after diagnosis but with a rapid increase in mortality after a couple of years, e.g. HIV or diabetes.

Survival function of patients with colon and prostate cancer, males, age at diagnosis 72 years



The points system above would thus focus mainly on average life expectancy and would fail to take into account the shape of the underlying survival curve. Fortunately, sufficient data is now available to model the respective curves for the most severe diseases such as cancer, heart diseases, stroke and kidney failure. However, as far as other illnesses are concerned, data is not so readily available and actuarial techniques such as inter- and extrapolation have to be used.

Furthermore, the probability of survival is dependent on social status – this holds true for at least the vast majority of diseases – as wealthier people have the financial means to receive better treatment and care. Financial underwriting is thus also of importance.

Finally, longevity has to be taken into account. Due to good nutrition and ever improving medical development people will have a higher life expectancy than is the case today. This has to be allowed for by using the most accurate and up-to-date mortality tables plus – where necessary – mortality improvement factors. Mortality improvements for impaired lives may differ from mortality improvements of the general population, which, in the case of some diseases, can be derived separately.

5. Reinsurance Concepts

Hannover Life Re supports its clients in a whole range of areas to ensure the success of an enhanced or impaired life annuity product. Depending on each client's individual needs, Hannover Life Re provides support covering the entire area of product development – actuarial, underwriting and marketing – as well as offering risk transfer and financing capacity through reinsurance.

Each collaboration results in a tailor-made solution. The whole process – from product development to a final reinsurance solution – is aimed at creating a mutually beneficial situation for both parties. Any reinsurance solution will thus be subject to an alignment of interests, i.e. both the insurer and the reinsurer will benefit from the profits in the same way as they share the losses.

5.1 Service

Hannover Life Re supports its clients from the very outset by developing an appropriate product idea which is then converted into a new product according to current market needs.

Having established a large client base in the enhanced annuity sector, we have built up considerable expertise over the past ten years. Mortality developments for impaired annuitants have been monitored particularly closely. We are thus in a position to provide clients with the know-how and experience needed to support them in creating profitable and competitive products.

We go through a thorough needs analysis process with our clients, evaluating their interests and potentials as well as their objectives, and developing an initial product concept accordingly. This also may include a review – and possibly re-alignment – of underwriting processes as well as distribution channels.

5.2 Quota Share

Under a quota share agreement the annuity provider and the reinsurer share all components of the underlying business. The reinsurer participates with a pre-determined percentage in all premiums and annuity payments. Typically, the reinsurer also participates in the expenses via an expense allowance and in commissions via a reinsurance commission. As both parties co-operate closely during development of the new product, a quota share agreement is common – an ideal solution to align the interests of life insurer and reinsurer.

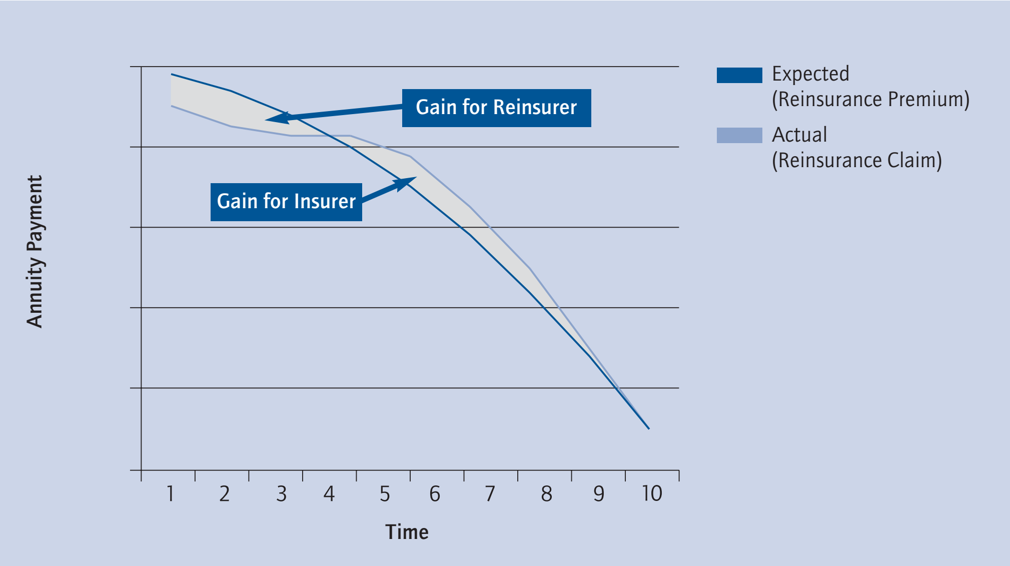
Commonly, the ceded assets supporting the reserves under this arrangement are deposited back with the life company. In some countries this procedure is even prescribed by regulators. It is understood that the reinsurer participates in the interest earned on the assets backing the reserves. A further advantage of a quota share agreement is the reduction in the solvency capital that needs to be put up. Current EU law allows a reduction of up to 15%.

5.3 Mortality Swap

A life company would ideally only pay the expected annuity payments of its portfolio. In real life, however, actual annuity payments are not incurred as actuarially calculated. Hence swapping actual annuity payments for expected annuity payments would be desirable. The reinsurance solution of swapping actual and expected annuity payments is called a mortality swap. It evens out the mortality experience in the books and mitigates the longevity risk.

The structure of a mortality swap is fairly simple. As the life company only wants to carry the expected annuity payments, the reinsurer assumes exactly this item (as reinsurance premium). In return the reinsurer pays the actual annuity payments to the insurance company (as reinsurance claims).

Mortality Swap



5.4 Financing

Several options are available if financing is an issue. Each solution can be tailor-made according to the individual needs of the insurer. However, it often comprises a profit-sharing agreement, a recapture option or a deficit account which monitors the repayment. Generally, the reinsurer prefers the ceding company to retain a certain share in order to reach an alignment of interest between both parties. Two common structures of a financing reinsurance agreement are outlined below.

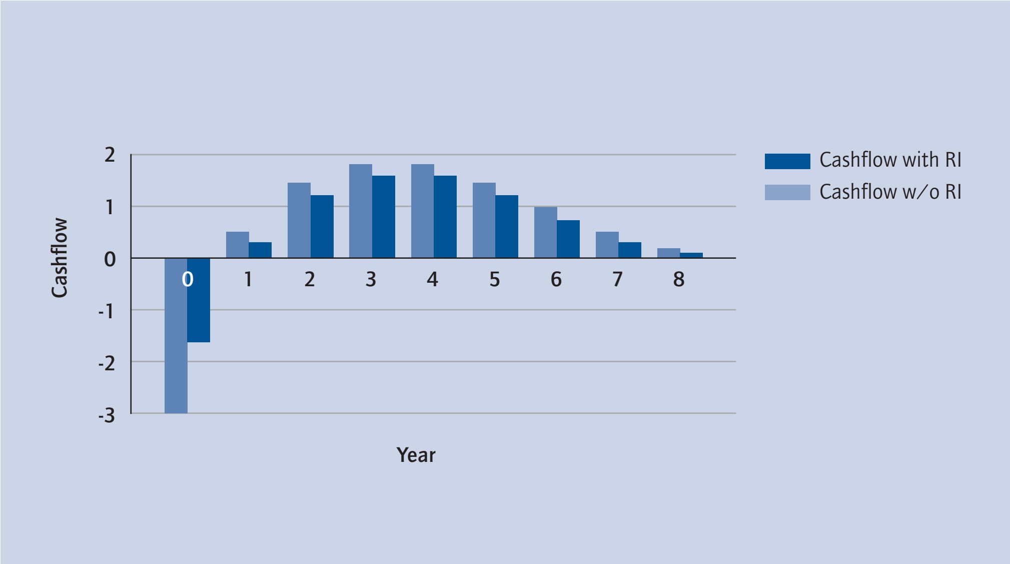
Financing with quota share

A quota share agreement can comprise a financing component. The reasons for a ceding company to add a financing element to the reinsurance arrangement are manifold, with some of them being:

- Covering expenses (product development, marketing activities, development of a new underwriting tool; acquisition expenses, etc.);
- Mitigating the initial valuation strain (equal to the difference between the valuation reserve and the net single premium at policy inception);
- Financing the solvency margin.

The financing amount will then be repaid with the emerging cash flows of the reinsured business over time – hence a risk transfer does take place.

Life company's standardised cashflow with and without reinsurance



Financing with block assumption transaction (BAT)

The idea of an annuity BAT is that a pension annuity provider transfers its annuity payments to its reinsurer – in return paying the reinsurer a "single premium". The reinsurer thereby assumes the liability for paying the annuities. Furthermore, the reinsurer can deposit the underlying valuation or best estimate reserve. Obviously, this concept only works for a block of business that is in run-off.

Annuity business provides policyholders with guaranteed benefits which consequently have to be supported by solvency capital. This ties up capital, which can only be released over the run-off of the portfolio – a period of up to 40 or 50 years. The implementation of an annuity BAT has the great advantage of enabling the annuity provider to use the capital in order to expand into other business.

5.5 Risk Premium Reinsurance

Another reinsurance method is based on the separation of the risk element from the savings element. The ceding company is normally well equipped to deal with the savings element and the inherent investment risks; hence, it makes sense to reinsure only the risk element.

The reserve liability that an annuity provider has to hold includes an allowance for expected mortality, in the sense that reserve liability can be released on death of policyholders. The expected release of the reserve liability is used to the benefit of the remaining annuity business. Therefore, an insurance company may wish to receive the expected reserve release in exchange for the actual reserve release.

The expected reserve release represents the reinsurance claim and equals the expected mortality rate multiplied by the annuity reserve. The reinsurance premium equals the actual annuity reserves released on death of the annuitants. Again, the reinsurance company may want to reduce the expected mortality by a margin allowing for an adequate profit.

6. Is there more to come?

6.1 Market Influence

Recent polls among senior executives of enhanced annuity providers show that only about 10% to 15% of people approaching retirement thought that they would be eligible for a higher annuity return. It is estimated that up to 40% of the annuitants could qualify for an enhanced annuity policy because of their health status or for lifestyle-related reasons ([1]). This is the future market.

However, the most important driving factor in the development of the (enhanced) annuity sector is improved education of the population. As yet, it is estimated that the annual savings gap amounts to GBP 27 billion. A recent poll revealed that people close to retirement age have limited – if any – knowledge about the requirement to purchase an annuity in order to turn savings into income, nor do they know that an annuity provides a guaranteed income for life. In particular, the ageing "baby boom generation" has adopted a "wait and see" attitude. Enhanced and impaired life annuity sales could reach new heights with the aid of targeted education and information schemes.

6.2 Regulatory, Actuarial and Medical Influences

In the case of more than 95% of all UK annuity business rates are determined and fixed at the time when the annuity is bought. They cannot be adjusted at a later date to reflect changes in longevity. An obvious approach on the part of annuity providers would be to invest in long-term bonds, simultaneously avoiding exposure to interest rate fluctuations. However, the current supply of long-dated gilts is insufficient to meet the demand arising mainly from the projected growth in annuity sales. As is to be expected, in countries such as the USA or Germany returns on long-dated gilts have yielded higher rates than shorter-dated ones. Surprisingly, this does not apply to the UK as things stand today. A future increase in demand for long-term bonds and gilts will thus further depress returns.

The UK government announced in 2005's budget[9] its plans to issue ultra-long gilts – with a duration of up to 50 years – from May 2005 onwards. In the meantime a gilt redeeming in 2055 has been issued yielding 3.8%[10]. Furthermore, an index-gilt also redeeming in 2055 has been issued. With the implementation of these longevity financial instruments, insurance companies are less exposed to the interest rate risk and thus higher annuity rates should be possible.

Apart from interest and mortality assumptions (see above), expenses are a further factor to determine the "price" of an annuity. Rationalisation has, however, now also found its way into the insurance industry, thereby influencing both the expenses and margin structure of annuities.

Today, insurance companies generate a profit on premiums of usually not more than 5%. This leaves relatively small margins for a high expense structure. In order to become or remain an aggressive provider, investment policy becomes a more and more important factor in the business model. It is said that a change of 10 bps in the pricing interest rate causes a change of 75 bps or more in valuation. Furthermore, a rule of thumb states that a three-year improvement in male life expectancy has about the same impact on annuity rates for a male aged 60 as a 1% reduction in the interest rate ([8]).

At the end of the day it must also not be forgotten that medical development represents the most insecure factor influencing the enhanced and impaired life annuity business and thus the most immanent risk. A medical breakthrough curing, for example, all forms of cancer would result in much longer annuity payments and hence

[9] Since May 1997 the UK Chancellor has presented a budget in the spring as well as a pre-budget report in the autumn which provides a progress report on what has been achieved so far, gives an update on the state of the economy and government finances and sets out the direction of government policy in the run-up to the spring budget.
[10] Yield as at end of September 2006

in a huge strengthening of reserves, thereby significantly affecting insurance companies' bottom line. However, this is a worst-case scenario and it is always difficult to assess (future) medical trends; still, it is a risk that providers have to somehow reflect in their pricing.

6.3 EU Regulation

2004 witnessed a prolonged discussion in the EU surrounding the introduction of unisex rates for all life insurance products. Both the FSA and the Association of British Insurers (ABI) have lobbied against introducing such changes. No final decision has been reached yet. Negotiations are seemingly on hold for the time being. The elimination of such an important underwriting factor as the distinction according to sex would result in a less efficient market and simultaneously increasing rates. On the one hand, this would represent a challenge to the entire annuity market; on the other hand, additional distinctions such as the medical factor could result in increased enhanced and impaired life annuity sales. It remains to be seen, however, whether the EU will return to this bill.

6.4 Social Environment

The past 30 years have seen a significant change in the average household structure ([6]). The number of single households tripled between 1971 and 1998 (from 5% to 15%) due, among other things, to increased divorce rates and a simultaneous reduction in the birth rate. The necessity of bequeathing property has consequently diminished in importance, resulting in higher equity release sales (see e.g. [14]). If house prices rise – as has been the case in the last couple of years in the UK – the dependence on annuity products is lessened. Pensioners might not be that interested in squeezing the best income out of the market, and this would adversely affect the enhanced annuity market.

As a further consideration, divorces impact the ability of individuals to provide for retirement, strengthening dependence on a CPA income and thereby positively affecting the differentiating factors offered by enhanced and impaired life annuity providers.

The future will show whether these two effects balance each other out.

6.5 A-Day 2006

Effective April 6, 2006, the process of buying and selling annuities has been simplified ([12]). The Inland Revenue replaced the then eight tax regimes in force with a single set of pension rules, the biggest overhaul of the pension industry since introduction of the old age pension.

Simultaneously, new products were introduced such as the Term Certain Annuity where only a part of the fund is converted into an annuity, the Alternatively Secured Pension which enables the pensioner to pass pension assets onto family upon death and Value Protection where individuals can buy an annuity which will pay back to their estates the difference between the purchase price and the amount of income that has been received already.

The A-Day changes are definitely having an impact on the enhanced annuity market. The best indicator is the drop in sales from the third quarter of 2005 onwards while people were awaiting the new options available after A-Day.

6.6 Technological Development

Technological progress will definitely influence consumer behaviour in all areas of life. Today's "eBay generation" is accustomed to online price comparisons and Internet research. In 20 years' time people might even find face-to-face contact with an IFA "strange".

Over the next five to ten years we will witness an effect on the sales process as consumers, today in their mid-fifties, become really Internet-savvy and computer-proficient. Online quotations will become standard and a web-enabled computer-based underwriting tool will be indispensable for staying competitive.

We do not know which electronic methods will be key factors tomorrow, but technological development will have a similar influence on sales of (enhanced and impaired life) annuity business. It is vital that the insurance industry keeps up with technological progress.

7. Summary

More than ten years after the first enhanced and impaired life annuity concepts were introduced, the market has developed and matured substantially: the innovative and dynamic market environment in the UK prompted insurance companies to develop highly sophisticated products. Ongoing changes in legislation will require them to continue doing so.

Technical development on the IT side can ideally be used to support the further development of conceptual solutions, while user-friendliness in underwriting systems can be improved dramatically. Insurance companies have already expanded their databases on the basis of their past experience in the enhanced annuity market. Continuously updated data and statistics from hospitals, care homes and publications nevertheless remain vital for companies striving to retain their competitive edge.

Medical advancements coupled with the mortality experience and new mortality tables are and will continue to be the most important key to remaining a successful and profitable player in the market.

Obviously, insurance companies must learn to address and understand annuitants' needs. However, against the backdrop of the broad-ranging changes in the market, particularly with respect to A-Day, pensioners have to be sufficiently educated in order to be able to understand which product best suits their needs. Along with product design, product awareness and education will both be major drivers of profitable business.

Hannover Life Re, with its extensive know-how, is certainly a more than suitable partner. Our experience, dating back to the sale of the first enhanced and impaired life annuity policies, can make a vital contribution to the successful development of profitable and competitive concepts for the future by simultaneously focussing on and understanding the needs of annuitants.

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