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5

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watch



ICT & e-Business in the Insurance and Pension Funding Services Sector

eEurope
Go Digital



European Commission
Enterprise Directorate General
e-Business, ICT Industries
and Services

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Introduction

European policy is in a number of areas, including economic, innovation and SME policies, increasingly focused on promoting the business techniques and new ways of working which will provide the economic and social foundation of the information society in Europe. To help policy makers define their programmes, and to monitor the effectiveness of these policies, some indication of progress and of areas requiring active support is essential. At the same time, many areas of European business lack information about the speed of technological update in European markets, which they expect to have a strong impact on their global competitiveness.

Despite the increasing number of studies and market research on electronic business, and especially on electronic commerce, from a number of authors and research organisations in different European countries and worldwide, there is still a lack of reliable empirical information about the extent, scope, nature of and factors affecting the speed of e-business development in Europe at the sectoral level in an internationally comparative framework. It is the objective of this report to provide such information for the insurance sector.

This report has been published in the framework of the "European e-Business Market Watch" (or, in short, the "*e-Business W@tch*"). This is a market observatory established by the European Commission, DG Enterprise. Laying the groundwork for a continuous facility, the *e-Business W@tch* monitors and assesses the maturity of electronic business in 15 industry sectors across all EU Member States over an 18 month period, including seven manufacturing and eight service sectors. At least two reports will be published on each sector during the lifetime of the *e-Business W@tch*. The sectors and the publication schedule for these reports are as follows:

	Sector	1st Issue Report	2nd Issue Report
1	Food, beverages, tobacco	July 2002	January 2003
2	Publishing, printing and reproduction of recorded media	October 2002	April 2003
3	Manufacture of chemicals and chemical products	July 2002	January 2003
4	Manufacture of Metal products	October 2002	April 2003
5	Manufacture of machinery and equipment	October 2002	April 2003
6	Manufacture of electrical machinery and electronics	October 2002	April 2003
7	Manufacture of transport equipment	July 2002	January 2003
8	Retail	October 2002	April 2003
9	Tourism	October 2002	April 2003
10	Credit institutions, investment firms, leasing enterprises	July 2002	January 2003
11	Insurance and pension funding services	July 2002	January 2003
12	Real estate activities	October 2002	April 2003
13	Business Services	October 2002	April 2003
14	Telecommunications and computer related services	July 2002	January 2003
15	Health and social work	July 2002	January 2003

The research presented in these Sector Reports is intended to help to benchmark progress and to assess how electronic business development can be further enhanced at the European level or at Member State level with the objective of strengthening the competitiveness of European businesses. Special attention is paid to the SME dimension of e-business. More information about the *e-Business W@tch* is available at www.ebusiness-watch.org.

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The *e-Business W@tch* gratefully acknowledges contributions from Dr. Thomas Köhne, executive director of the Institut für Versicherungswissenschaften e.V. an der Universität Leipzig (Institute for Insurance Sciences at the University of Leipzig), who has been appointed by the Market Watch as a sector expert for the insurance and pension funding services sector.

Insurance and Pension Funding Services: Economic Profile & e-Business

1 Economic profile

1.1 Characteristics of the insurance sector

Definition and focus

The insurance sector covers long and short-term risk spreading activities with or without a savings component. The relevant NACE Rev. 1 chapter 66, named "insurance and pension funding, except compulsory social security", comprises three basic activities (see table 1-1): "Life insurance" includes common life insurance and life reinsurance with or without a savings component. "Pension funding" includes the provision of retirement incomes, but not non-contributory schemes where the funding is largely derived from public sources, nor compulsory social security schemes. "Non-life insurance" comprises insurance and reinsurance of non-life insurance business, e.g. accident, fire, health, property, motor, marine, aviation, transport, pecuniary loss and liability insurance.

Table 1-1: Definition of the insurance sector in NACE Rev. 1

NACE Code	Activity
66	insurance and pension funding, except compulsory and social security
66.01	life insurance
66.02	pension funding
66.03	non-life insurance

Reinsurance is not considered as a separate category since many general insurance firms also offer reinsurance services. Reinsurance activities are included in one of the three sections, according to the kind of risk reinsured.

Pension funds offer complex products similar to life insurance policies. If not stated otherwise, our analysis of the impact of electronic business on the insurance sector as presented in this report applies to pension funds as well. A specialty of this sub-section of the insurance business, however, is that pension funds are usually related to the employees of particular companies and that they are therefore not particularly suited to be marketed through the Internet but rather through companies' intranets.

Importance of the insurance sector for the economy

The insurance sector is of particular interest to the *e-Business W@tch* due to its basic economic function, its importance to the national economy, its decentralised organisation and a high level of personal computer usage.

- **Basic economic function:** The insurance sector is one of the most important service sectors regarding its basic function for the whole economy and society. Modern, highly industrialised and technology-driven economies are threatened by higher risks than ever;

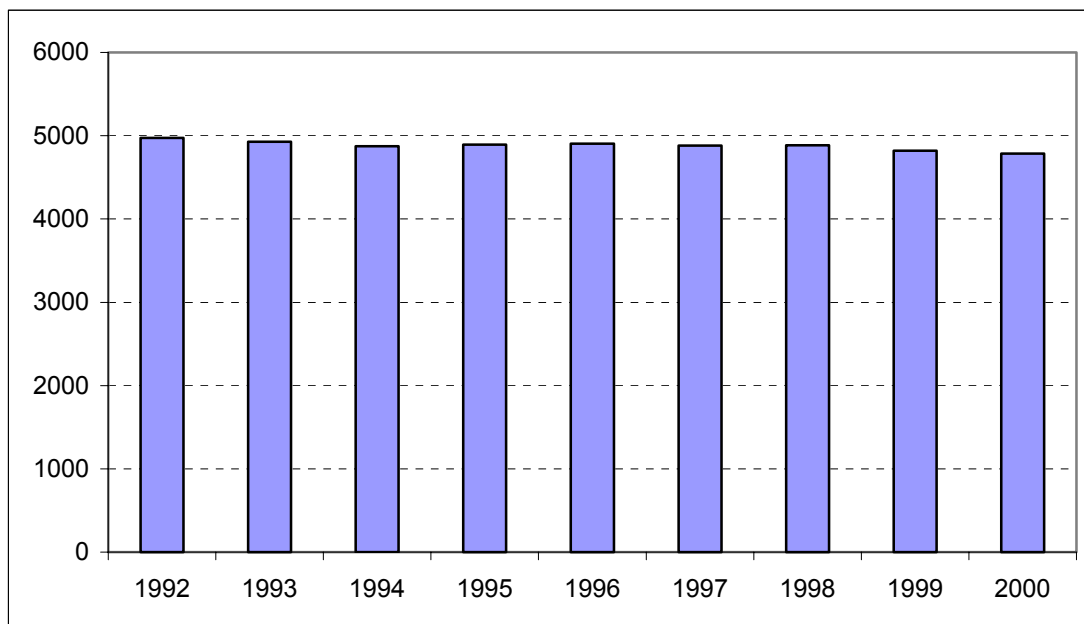
and individuals need to protect themselves against private risks as well as saving individually for their retirement.

- **Importance for national economy:** Insurance companies play an important role as investors and shareholders. The total amount of investments of EU insurance companies in 2000 was 4,823,419 m Euro (European Insurance Committee, 2001).
- **Decentralised organisation:** Since the insurance business is organised in a very decentralised manner, optimising business processes between headquarters, agencies and salespersons is a constant challenge. For this reason, ICTs can play a particularly vital role in the insurance sector – facilitating communication between the individuals involved and allowing immediate access to data from any location.
- **Highest level of PC usage:** In empirical terms, the financial intermediation sector – to which insurance belongs – is the sector with the highest share of employees working with computers. According to the European survey on working conditions 2000 by the European Foundation for the Improvement of Living and Working Conditions, 86% of workers in the financial intermediation sector work with computers at least one quarter of the time, and 55% work with computers all the time.

Number of businesses

In 2000, exactly 4,786 insurance companies were active in the EU, a 3.8% decrease from 4,974 in 1992 – see figure 1-1. The development in the Member States varied: while the number of companies decreased in Belgium (276 companies in 1992, 219 in 2000), Spain (430/348), France (614/520), Greece (161/108), Italy (268/254) and Sweden (525/482), it increased in Denmark (235/260), Ireland (96/163), Luxembourg (72/94), the Netherlands (488/517) and Portugal (80/88). The number of companies remained almost the same in Austria (74/76), Germany (775/773), Finland (57/54) and the UK (823/830).

Figure 1-1: Number of insurance companies in the European Union (1992 – 2000)



Source: European Insurance Committee, own calculations. EU-15 for all years.

According to the most recent available Eurostat data for 1997, the largest share of insurance companies in the EU (62.3%) is dealing with non-life insurance. The share of non-life insurers varies between 49.1% of all insurers in Portugal to 88.2% in Finland. Life insurers made up 8.3% of all insurance firms in Finland and 36.4% in Denmark.

Number of employees

Employment in EU insurance firms is estimated at about 890,000 (2000). This corresponds to 0.6% of the total of 165 million employed in the EU. Germany and UK together account for more than 50% of jobs in this sector in the EU. The number of employees decreased slightly between 1992 and 1999 (by 0.3% on average per year (CAGR)). In contrast, employment in this sector has increased during the same period by 80% in European countries outside the EU.

According to the 1998 Labour Force Survey, the share of female employees in the insurance sector was 47.4%. While an average share of 25.7% of all employees in the insurance sector had a university degree, only 19.3% of women had a university degree and 31.2% of men. Part-time work was done by 21.8% of women employed in the insurance sector, and by 4.3% of men.

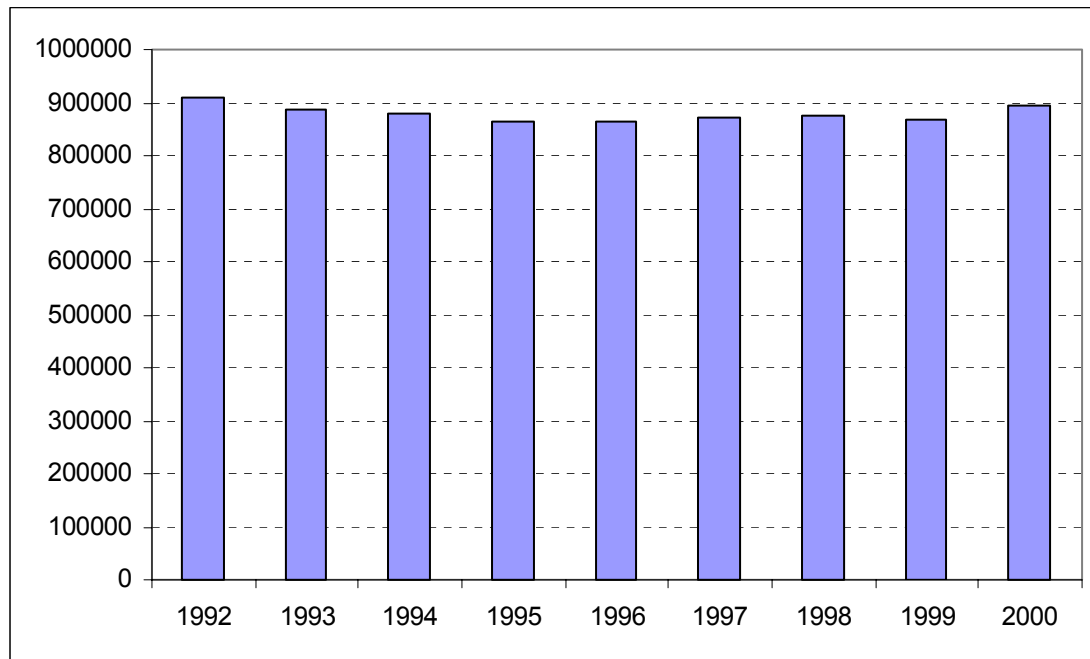
Table 1-2: Insurance company employees in the EU Member States (2000)

	1992 employees	2000 employees	CAGR 92/00 %	Share (2000) %
Austria	31.581	30.675	-0,4	3,4
Belgium	27.920	24.721	-1,5	2,8
Denmark	13.796	13.600	-0,2	1,5
Finland	12.240	11.400	-0,9	1,3
France	138.200	132.400	-0,5	14,8
Germany	258.600	239.600	-0,9	26,8
Greece	10.000	9.500	-0,6	1,1
Ireland	10.118	11.320*	1,4	1,3
Italy	48.253	42.500	-1,6	4,8
Luxembourg	1.050	1.867*	7,5	0,2
Netherlands	41.184	49.950	2,4	5,6
Portugal	13.885	13.777	-0,1	1,5
Spain	46.834	48.897	0,5	5,5
Sweden	21.671	21.036	-0,4	2,4
UK	234.200	239.800	0,3	26,9
EU 15	911.524	893.043	-0,3	100,0

* 1999

Source: CEA European Insurance Committee / own calculations

Figure 1-2: Employment in insurance companies in the EU (1992 – 2000)



Source: European Insurance Committee, own calculations. EU-15 for all years.

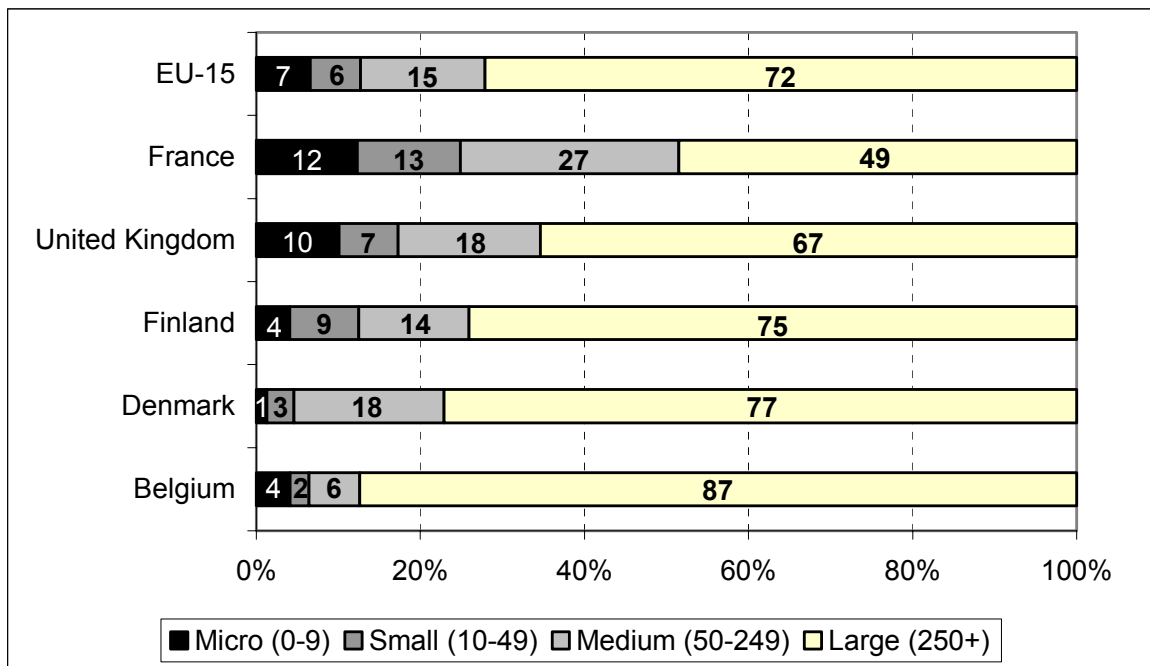
Market structure: trend toward large companies

After the completion of the Single Market for financial services, a wave of mergers and acquisitions took place in the European insurance sector, mainly between companies of the same country. The opening of the common market also made the way clear for mergers and acquisitions between banks and insurers. These so-called “bankassurance” groups no longer allow a clear distinction between banks and insurance firms.

There is a trend towards large insurance or financial groups operating on a European level. The insurance market is dominated by large firms. In 1997, 85.9% of the employees in the EU insurance firms worked with companies larger than 250 employees, and 72.2% of the turnover was generated by large firms (see figures 1-3, 1-4). More recent data about the split of employees and turnover by company size class are not yet available, but there is no evidence that the structure should have significantly changed since. Still, the large companies are leaving space for specialist insurers on a national or even regional level.

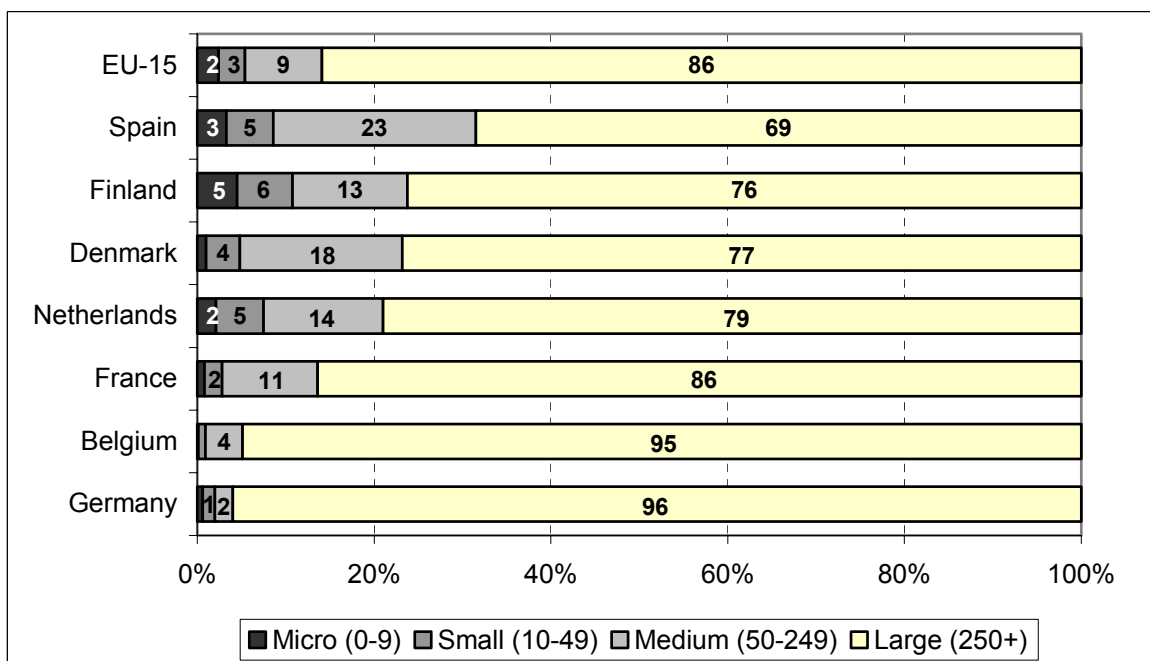
The largest insurance companies in the EU, according to direct written premium gross of reinsurance, are located in the UK, France and Germany (see table 1-3). In 1999, the largest life insurance companies in the EU markets were Barclays Life (UK), CNP (F), and Prudential (UK). The largest non-life insurers were CGNU (UK), Groupama/GAN (F) and Allianz (D).

Figure 1-3: Turnover by size class in the EU insurance sector (1997)



Source: Eurostat, own calculations. Most recent data available. Reading example: In the EU, companies with more than 250 employees accounted for 72% of the turnover in the insurance sector in 1997.

Figure 1-4: Employment by size class in the EU insurance sector (1997)



Source: Eurostat, own calculations. Most recent data available. Reading example: In the EU, companies with more than 250 employees accounted for 86% of employment in the insurance sector in 1997.

Table 1-3: Largest EU insurance companies 1999 (separated country markets)

Largest life insurance companies				Largest non-life insurance companies			
No.	Country	Company	Premium	No.	Country	Company	Premium
1	UK	Barclays Life	20,757	1	UK	CGNU	7,994
2	F	CNP	15,803	2	F	Groupama/GAN	7,193
3	UK	Prudential	15,596	3	D	Allianz	6,696
4	UK	CGNU	11,842	4	F	AXA	6,069
5	F	AXA	10,824	5	F	Allianz/AGF	5,024
6	D	Allianz	8,252	6	UK	Royal + Sun Alliance	4,950
7	F	Predica	7,350	7	UK	AXA	3,410
8	UK	Llods TSB	7,119	8	F	MAAF/Mut. du Mans	3,297
9	UK	Standard Life	7,046	9	UK	Zurich Financial Services	2,339
				10	I	Riunione Adriatica di Sicurita	2,242

Total direct written premium gross of reinsurance (million euro)

Source: European Insurance Committee

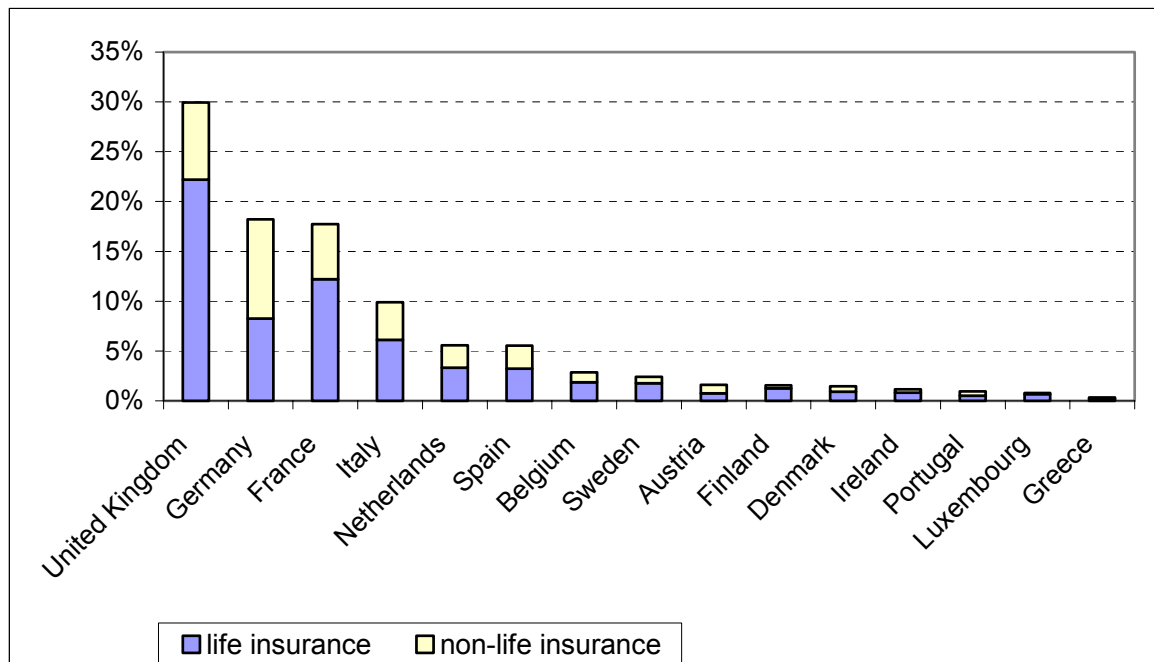
Mapping the insurance sector

The European insurance industry does not yet have a uniform structure. The single insurance market, formally in existence since 1994, has not harmonised all preconditions for market entry and activity, but only a few legal issues – see more details on current affairs in chapter 7. The market remains fragmented and in a way there are as many insurance economies in the EU as countries. The most important insurance nations in terms of premium volume are the UK (around 30% of the EU market), Germany (18.2%), France (17.7%) and Italy (10%). The UK owes its leading position to the large share in the life insurance market. Germany is the largest market in the EU as regards non-life insurance.

In a worldwide perspective (cf. Figure 1-6), the EU accounts for 30% of global insurance premiums, which is slightly less than the US with 35%. Japan accounts for 21% of the world market, and other parts of the world for 14%. Thus the world insurance market is dominated by three large players, the EU being one of them.

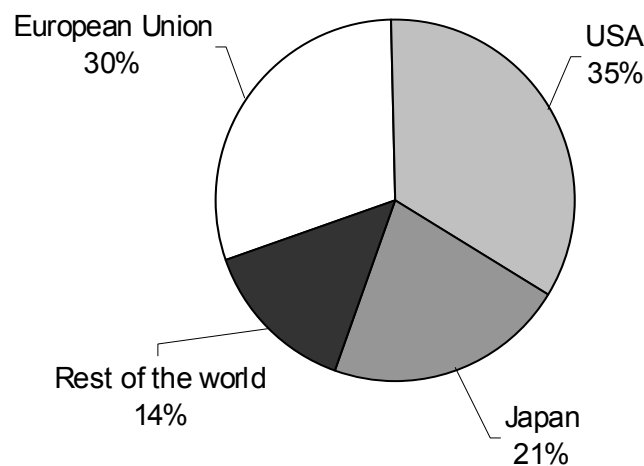
However, in spite of the markets still being currently fragmented, the insurance sector is – like many other industries – becoming more and more global, and many companies do not only serve their home market. Competition is therefore increasing, putting premiums under pressure.

Figure 1-5: Ranking of countries by insurance premiums in % of the EU market (2000)



Source: European Insurance Committee, own calculations.

Figure 1-6: Breakdown of worldwide insurance premiums (1999)



Source: European Insurance Committee, own calculations.

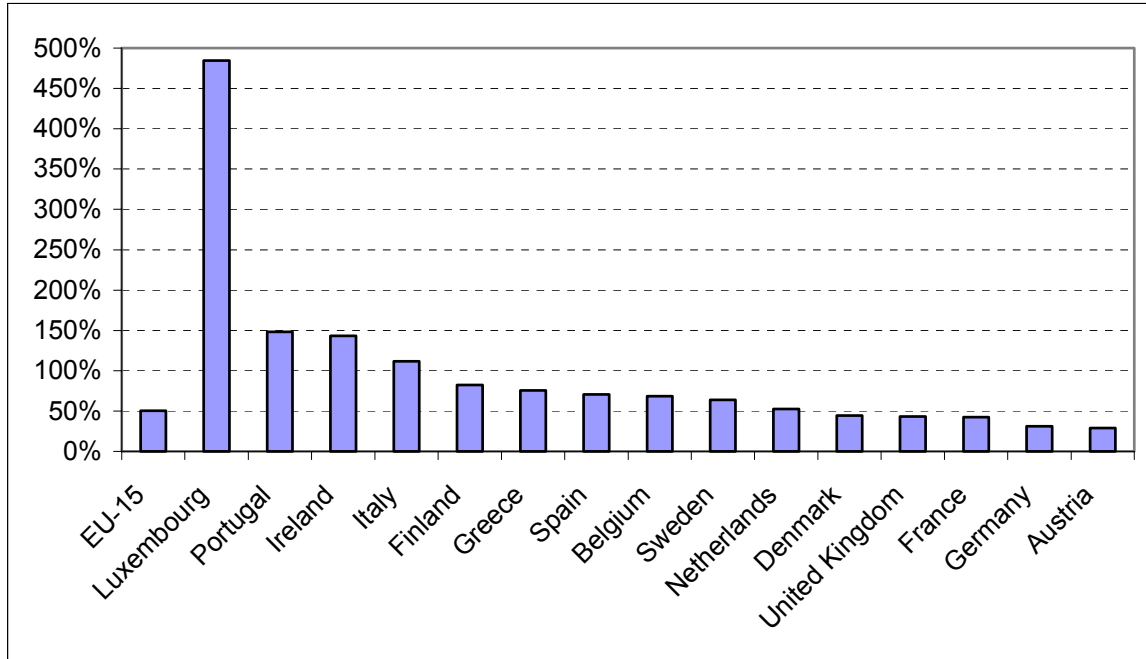
Gross premiums and their development differ between countries and products

In the insurance business, turnover in other sectors equals gross premiums. The amount and development of gross premiums by EU insurance firms was as follows, according to the most recent data available:

- Gross premium growth by country:** Total direct premium in the EU grew by 50% from 1992 to 1999, calculated with inflation-adjusted data. Growth was particularly high in Luxembourg, where direct premiums in 1999 were almost five times the value of 1992 (484% increase). The increase was also high in Portugal (148%), Ireland

(143%) and Italy (112%). Growth was particularly low in the largest EU insurance markets, the UK (43%), France (42%) and Germany (31%) as well as in Austria (29%).

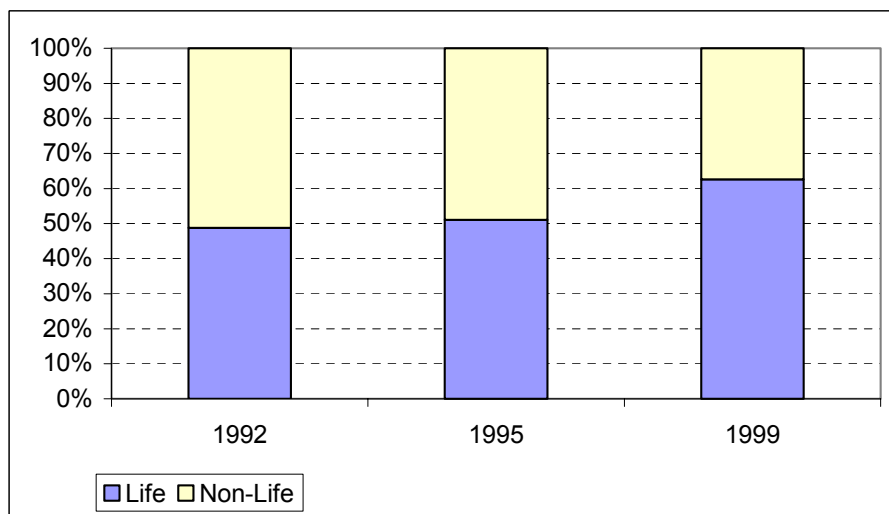
Figure 1-7: Total direct premium income growth in the EU 1992 - 1999



Source: European Insurance Committee, own calculations. Inflation-adjusted base 100 in 1995.

- Gross premium growth by product:** Life insurance premiums developed better than non-life insurance premiums. While life insurance accounted for half of the EU insurance market in 1992 (49%), it increased to almost two thirds (63%) in 1999. The share of non-life insurance decreased accordingly.

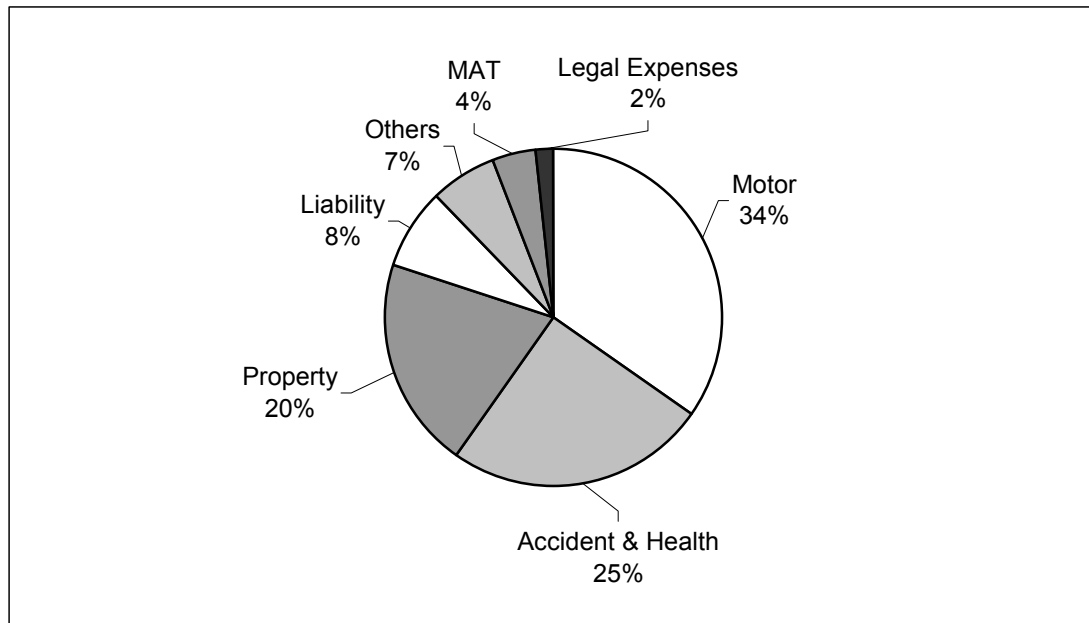
Figure 1-8: Total direct premium of life and non-life insurance in the EU in 1992, 1995 and 1999



Source: European Insurance Committee, own calculations.

- **Composition of non-life insurance:** Non-life insurance premiums are dominated by three kinds of products (see figure 1-9). In 1999, the largest shares of gross premiums in the EU were covered by motor insurance (34%), accident and health (25%) and property (20%), followed by liability (8.0%), marine/aviation/transport (4%) and legal expenses (2%). Other insurance kinds accounted for 7% of premiums.

Figure 1-9: Breakdown of premium per non-life classes in the EU (1999)



MAT = marine, aviation, transport

Source: European Insurance Committee

1.2 Current issues in the insurance business

Consequences of September 11

The terrorist assault on the World Trade Centre in New York has put the insurance industry under huge pressure. The economic damage is estimated up to 60 bn US dollars¹, and due to the enormous sums the insurance companies will have to pay for claims, they are no longer able and willing to account for the risk of incalculable terrorist damages. In extreme cases, terrorism can cause the breakdown of whole insurance companies. Consequently, insurance firms now offer insurance against terrorism only in exceptional cases, with only limited amounts of cover and for significantly higher premiums.

Problem of stock exchange downturn

The stock exchange downturn hit the insurance industry badly. The high stock gains of previous years compensated losses in the core business of insurance. Business models relying on insurance as income source for asset investment have now become detrimental. The stock exchange downturn forced the insurance companies to use up reserves. Customers are also affected, because life insurance returns decrease.

¹ cf. Süddeutsche Zeitung, 13 March 2002: Mehr Geld für die Assekuranz: 50 billion; IVW St. Gallen Annual Report 2002: 60 billion

Growth trends

The life insurance sector is likely to benefit, in the coming years, from the crisis of social insurance systems and pension reforms in European countries. For example, the German government introduced a public support scheme for private pensions in 2001. Insurance companies regard this scheme as a springboard to broadening life insurance business.

The non-life insurance sector is likely to continue to face intense cost pressures. However, together with the current social and economic challenges, individuals and businesses may become increasingly aware of the need to be insured against financial risks. Private customer business is promising more profits than industrial customers and is a preferred field of investment.

Pressure to rationalise

With financial reserves declining or even vanishing, the insurance business is currently experiencing a wave of rationalisation. According to a top management survey by Mummert and Partner Consulting,² every fourth euro of investment budget will be invested in industrialising business processes in the next three years. Personnel costs are to be reduced, automation of processes and standardisation of products are sought. This is where e-business can come in to cut costs.

Proposal for pension fund Directive

The European Council of Economics and Finance Ministers agreed on the substance of a proposal for a pension funds Directive on 4th June 2002. The European Commission has welcomed this agreement. In October 2000, the Commission had proposed a Directive on institutions for occupational retirement provision, i.e. pension funds, superannuation schemes, and the like. The two main objectives are security and affordability. A framework protecting the rights of pensioners and increasing the affordability of occupational pensions is intended to be established in the EU. The proposal for a Directive seeks to enable an organisation in one Member State to manage company pension schemes in other Member States.

Two regulations in particular of the proposal are intended to increase security: national authorities remain entitled to impose quantitative limits to shares and other risky investment forms to pension trusts and direct insurers; and national authorities are granted the possibility for action in case pension fund organisations from foreign countries do not abide by national rules of labour and social law. The Council now has to reach a full common position on a Directive. An adoption of the Directive by the end of 2002 appears to be possible.

² Mummert+Partner: Kein Ende der Rationalisierungswelle in der Versicherungsbranche, Press Release, 22 Jan. 2002

2 Usage of ICT & e-business

2.1 A general assessment of e-business in the sector by Dr. Thomas Köhne

As an introduction to our analysis of how ICT and electronic business will impact on the insurance sector, we present in this chapter an assessment based on several interviews conducted with Dr. Thomas Köhne, Executive Director of the Institute for Insurance Sciences (Institut für Versicherungswissenschaften e.V.), Leipzig. Dr. Köhne has been appointed by *e-Business W@tch* as an expert for e-business in the insurance sector. He has researched and published on the "virtual insurance company" and the specific usage of information and communication technologies by this sector.

Insurance companies are considered to be quite conservative in applying new ICTs. How intensely do European insurance companies apply e-business?

Insurers are generally considered to be conservative. However, they have invested enormous sums in the extension of the Internet activities. Taking into account website design as well as investments in internal e-business processes, some large insurers have spent up to half a billion Euro. To be precise with definitions: One needs to distinguish between online activities at the market and customer interface, which I would call "e-commerce", and online business processes within a company or between companies, called "e-business". The initial Internet presentations by insurance companies in Europe have been useful, interactive and modern, but largely information-oriented and more factual than exciting. This is mainly due to the peculiarities of an insurance product, but also due to the insurance sector's lack of marketing history. Insurers' online presentations are often judged to be conservative and boring, in contrast to other sectors.

In Europe and in the USA, the expectations of e-commerce success (B2C) as well as the success of internal e-business new processes have not yet been fulfilled. Some insurers enabled the customers to conclude contracts for numerous insurance products online, and developed large-scale e-commerce applications, but demand remained low. As far as the implementation of Internet-based business processes is concerned, most insurers are still at the very beginning, with only some in midstream. Only online insurers and online portals are advanced, meaning that insurers cannot yet realise the cost cuts expected.

According to current surveys, insurers draw different conclusions from this lack of short-term success: some continue investing significant amounts, others apply the brakes for the time being. While e-commerce with insurance products may take some more years until a breakthrough is established, numerous e-business initiatives will prove to be effective in the near future. The catchwords already abound: integration of multi-channel processes, relocating data collection to the place of data emergence (that is sales forces, claims agents, underwriters), company networking with brokers and other partner companies, or automated processes in proposal registration and processing, as well as drafting policies and printing contracts in field service.

E-business practice among European as well as American insurers is – except for genuine online insurers – relatively low in comparison with other sectors. However, considering e-commerce functions, the "e-commerce pioneers" in the insurance sectors do not need to hide from other sectors, in my opinion. The lack of sales success is not primarily due to website appearance.

Would it be important for insurance firms to apply e-business more comprehensively?

Yes. And most insurers are, as mentioned, currently in the midst of such projects. An insurance product is an information product – I mean its main production factor is information. Say, for example, an insurer receives information from a customer about his or her risk situation and risk quality. Using statistical data about other customers' claims, the insurer can calculate the expected value of claims, and can submit a risk-adequate insurance product, maybe in the form of an electronic insurance policy. An insurance product is very much suited to being produced, administrated and distributed online. Not until a claim occurs are physical processes like appraisals and services on site necessary. Even these processes can be organised and co-ordinated online with partner company networks. In the same way, Internet-based communication networks can be used in the course of fighting insurance fraud, when police data, insurers' data and official criminal data are combined, as is the case in the USA. Last but not least, important information exchange and communication with sales forces and agents can be conducted more quickly, location-independently and, due to standards, probably also cheaper when using Internet solutions.

What subjects currently dominate e-business application in insurance firms?

In the field of marketing and customer interface (i.e. e-commerce), the standard subjects are information, applications calculating need for life insurance, proposal preparation and online contract conclusion, online notification of claims, address changes, partial access to customer and contract data as well as increasing intranet distribution in companies. The latter is, by the way, a promising approach in B2C. Some insurers are very actively present with online offers and portals.

E-business projects mainly involve contract portfolio management and customer relationship management. Related to this is online access to contract portfolio management systems, e-procurement and distribution assistance through a company's intranet as well as linking external sales forces to websites designed particularly for agents.

What role does the Internet as a distribution channel play in the coalescence of the European insurance market?

Currently, the Internet plays a modest role as a sales channel. This will change by and by, and target groups prone to use the Internet will initially conclude contracts for insurance products suited to the Internet – for example motor, household, private liability, term life insurance and employees' insurance business. Nevertheless, Internet distribution will remain one channel among others, and not the most lucrative one, because the insurance product as such – although a pure information product (and actually predestined for the Internet!) – is and will remain a low-interest product. Furthermore it is connected to unpleasant circumstances. Insurance products that require more intense consulting – for example pensions, occupational invalidity assurance, health and accident insurance – are of long duration. Decisions are binding for a long time, with large financial consequences for the customer.

Considering the coalescence of the European insurance market, other impacts may be more important. I assess the role of the Internet as a distribution channel as relatively insignificant in this respect. As long as insurance law in the Member States is not identical, the EU Directive on distance marketing of financial services is implemented in different ways, and the tax framework for pensions is inconsistent, an insurer needs to develop a local product for every EU market. In order to distribute this product through the Internet, the brand needs

to be well-known in that country, even if no agents are available at the location. And, of course, demand would have to be much stronger. Today's market potential, as mentioned before, does not justify high investments in cross-border Internet sales. Once the framework conditions change, the Internet will offer insurance firms a very favourable opportunity to become active in the EU states without establishing brick-and-mortar distribution facilities.

What opportunities does e-business offer small and medium-sized insurance companies in particular?

E-business processes offer small and medium-sized insurers the opportunity to network with uniform standard interfaces, for example XML, and to compensate for disadvantages of scale. In the same way, they can network with brokers. SMEs have the opportunity to transform their relatively small facilities quicker and less costly into new systems, and to be more quick-witted than large insurers. In the field of e-commerce, their best opportunities will be to focus on particular customer segments or particular products and to do so better than their larger competitors. In mass business, they lack economies of scale and the financial means for being able to achieve a high profile.

Other small and medium-sized companies in the insurance market are the brokers - it is hard to judge if they will profit from e-business. In the field of administration and in employees' personal lines, there are plenty of opportunities for brokers. And then there are the partners co-operating in the course of settlement of claims: insurers, garages, adjusters and the aggrieved individuals. So-called online claims networks – known for example in the United Kingdom, the Netherlands and Germany – produce a significant added value here, because they reduce costs, save time and increase service.

What barriers prevent insurance companies from applying e-business more comprehensively?

On the technical side, the assurance, in contrast to many other industries, is determined by numerous, powerful legacy systems. Applications are often related to business lines and developed by the companies themselves, so they are isolated applications which cannot be merged even within the company itself – let alone being connected to external standard interfaces. Some insurers still believe that they can distinguish themselves from competitors by individual solutions. The development of and agreement on common industry-wide standards, which are offered by the Internet – for example an insurance-related XML to be developed – fails due to this way of thinking. Apart from this, significant investments are necessary to transform isolated applications into systems suited to the Internet.

Due to the losses of new economy companies and numerous failed projects in this area, the e-business representatives in some insurance companies do not have an easy standing at the moment. For the time being, the budgets have often been reduced significantly. The argument of turnover is not convincing: cost savings due to e-business technologies cannot be realised in the short term and are difficult to put across. In times of an increasing orientation towards shareholder value, such framework conditions impede budget provision.

With regard to online distribution, my opinion is that lack of customer demand is the essential barrier – at the moment. Other restrictions – security, data protection, legal problems of concluding contracts – can be solved. Even in the Internet age, the old rule is true: insurance policies are sold, not bought!

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2.2 Potential for ICT and e-business usage

Large impacts of ICTs because insurance business is information-based

The insurance business is largely based on information: Firstly, insurance policies can be digitised. Thus, in principle, insurance policies can be “intangible” and no shipping of physical goods is required. Secondly, insurance contracts are “experience goods”, usually requiring information and consulting before being sold, which can take place via ICTs. Therefore, the new information and communication technologies and e-business practices can have a great impact on the insurance industry:

- **Market transparency:** The Internet can increase transparency of the insurance market, giving customers more market power. However, some insurance firms pursue a strategy of no price transparency by offering insurance contracts with complex details and varying prices.
- **Virtualisation:** The Internet allows virtualisation of organisational networks, increasing the opportunity for systematic co-operative service offers. For example, insurance firms and banks have increased co-operative market supply.
- **Lowered market entry barriers:** The Internet reduces the amount of capital needed to enter the insurance market, so that new firms find lower barriers to compete in the market. Established firms find themselves in contest with newcomers offering insurance policies exclusively through the Internet.
- **Specialisation:** Reduced transaction costs due to Internet applications changes the make-or-buy decision of insurance firms. Special services in the field of product development, distribution, administration, asset management and damage management can be outsourced to special suppliers. New firms can play an important role among these special suppliers.

ICT applications can be important in all phases of value creation

ICTs can contribute decisively to improving insurance business processes, particularly by reaching new customers and tightening relations with existing customers. ICT use gives rise to a wide range of application opportunities in all steps of value creation:

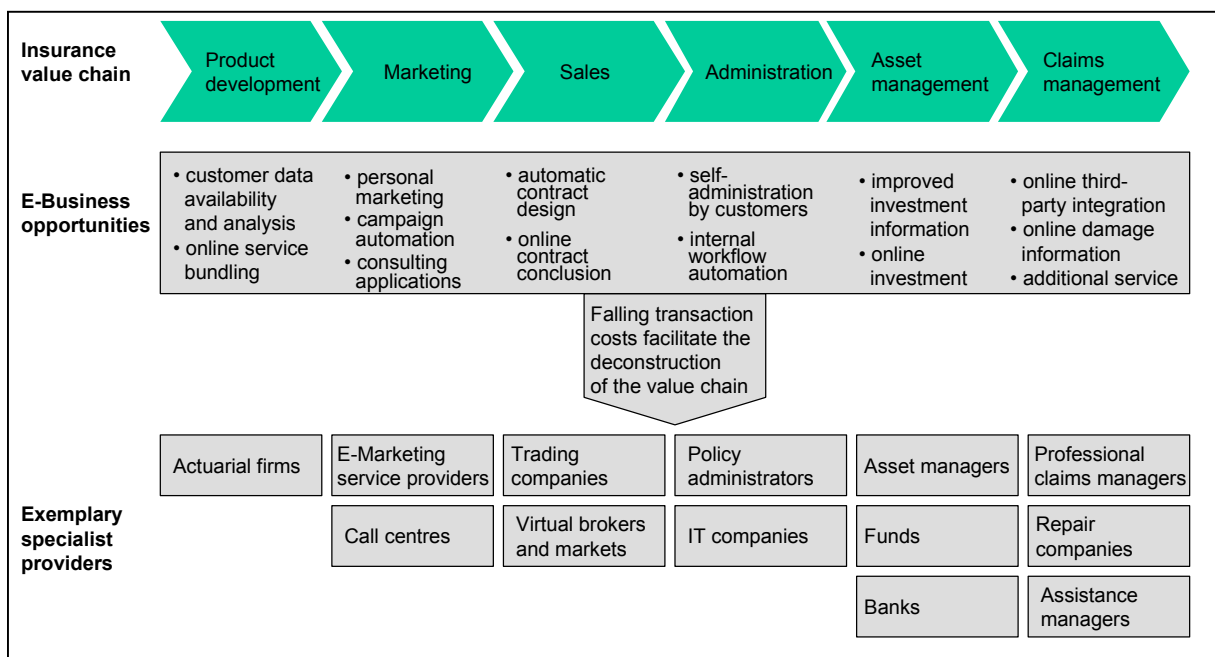
- **Product development:** The availability and analysis of customer data in electronic data warehouse and data mining applications makes it easier to create insurance products suited to the needs of particular groups of individuals.

In cases when insurance is only one product among others in a “service bundle” demanded by the customer, virtual networks can facilitate co-operation between different companies. For example, journeys may imply route and transportation planning and hotel reservation as well as a baggage and travel health insurance policy. Travel agencies and insurers need to co-operate to offer an attractive service bundle, and they can do so via electronic networks. Other examples of such co-operation targeted at particular groups or themes are family foundation, divorce and retirement or housing, mobility and health.

ICTs do not only facilitate product development; product development also needs to meet the demands of the new electronic markets. Insurance policies distributed through the Internet have to be adjusted to the opportunities and restrictions of the Internet.

- **Marketing:** The Internet can reduce the need for personal contacts before concluding an insurance contract. Product presentation on insurance firms' websites as well as online applications, for example for calculating life insurance need, can reduce the customers' desire for personal information and facilitate contract conclusion. Even if nothing is sold, websites can be an important medium for communication between customers and insurers. In case of industrial insurance with several managers involved, the participants can meet virtually in an Internet "Team Room" where contract terms are discussed.
- **Sales:** Automatic premium calculation modules allow individual contract design. Electronic signatures may even enable customers to conclude contracts through the Internet without implying any paperwork. Due to cost cuts in the automated contracting process, insurance contracts concluded through the Internet can be offered at a reduced rate.
- **Administration:** ICT applications allow the automation of parts of the internal workflow with an according reduction of costs. The Internet enables customers to change data such as addresses and deductibles on their own, without an insurance agent being involved. An Internet-based administration can reduce time and costs for both the customers and the insurers. In B2B, customer relations are more bound to personal contact, because it usually involves negotiating conditions and possibly reinsurance terms.
- **Asset management:** ICTs facilitate access to information relevant to investment decisions in insurance companies, and investments can be conducted online.
- **Claims management:** Damage information can be transferred online, for example reports and digital photos. Paperwork for underwriting and claims processing can be reduced. The firm is released from customers' questions, and the customer experiences increasing service quality. Third party companies like garages and tradespeople can be integrated more easily in the damage follow-up by electronic transfer of reports, cost calculations and invoices. Finally, damage payments can also take place electronically.

Figure 2-1: E-business effects on the insurance value chain



Source: Swiss Re, own modifications.

Costs can be reduced significantly

The automation of business processes in the insurance sector can reduce costs significantly:

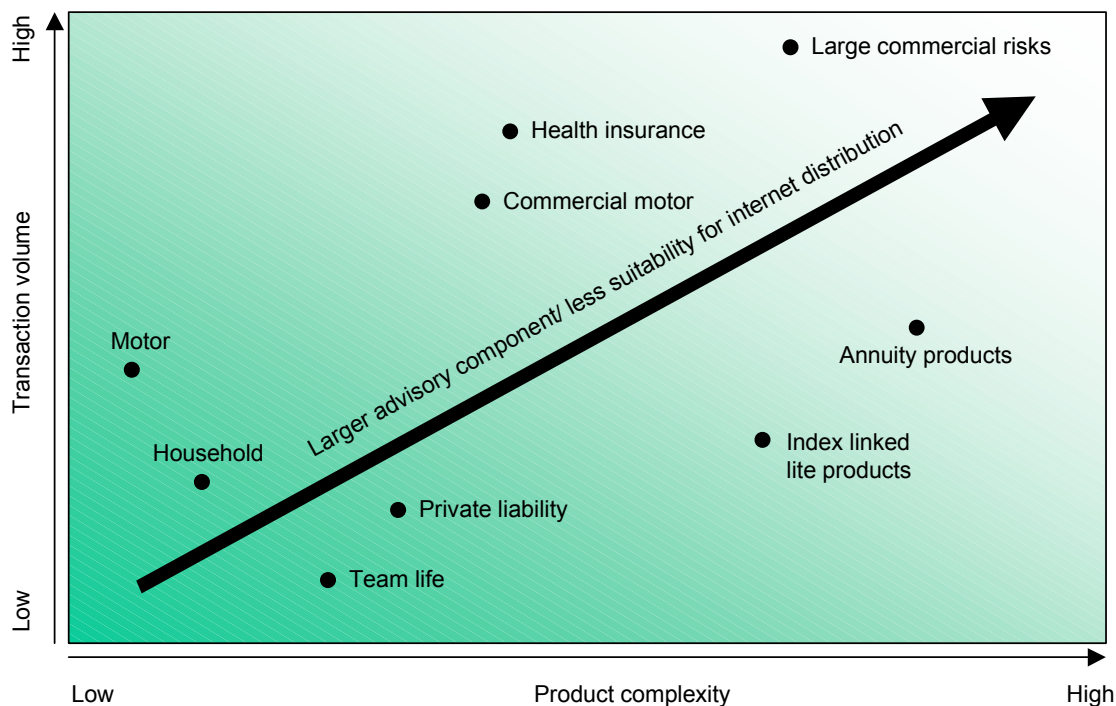
- **Agency and commission costs:** When dealing directly with the customer, the insurance firm can save costs for running agencies and for paying commissions to agents.
- **Paperwork costs:** Processing claims via Internet can save paperwork.
- **Personnel costs:** The automation of processes may result in reduced staff numbers. Processes can partly be outsourced, even internationally to low-wage countries.

Cost reduction can affect the whole value chain. According to a study of US insurance firms, e-business applications in personal insurance allow reduction of 30% of the costs in distribution, 30% in administration, 10% in damage regulation and 5% in damage payments. The respective figures for business insurance are 10% (distribution), 35% (administration), 15% (damage regulation), and 2.5% (damage payments). Consequently, insurance firms not applying e-business comprehensively will face increasing cost pressure. Business models have to be reviewed and reconstructed.

Insurance products vary in their suitability for Internet distribution

The suitability of insurance products for Internet distribution varies, depending mainly on how much individual advice the customer demands. General information can be provided on the Internet, and a few personal questions on marginal issues may be clarified by e-mail or on the phone. But when a lot of individual advice is needed, a personal talk at the insurer's premises or at the client's home may become necessary. Products requiring little information are therefore better suited for Internet distribution than products requiring much information. The more complex the product and the bigger its financial scale, the larger the client's need for advice. With these two criteria of product complexity and transaction volume, insurance products can be categorised according to Internet distribution suitability.

Figure 2-2: Internet suitability of insurance products



Source: Swiss Re.

All in all, standardised products which can be described and tarified easily are more suited for Internet distribution than complex and expensive products. Products particularly suited for Internet distribution are private motor, household, private liability and term life insurance. These types of insurance policies also allow online price comparison – as long as insurance firms mention prices – which makes the Internet even more attractive for customers. Insurance policies not suited for Internet distribution are commercial motor, health, index-linked life products, annuity products, and – in particular – large commercial risks.

With this classification, the share of products suitable for Internet distribution in the insurance policy market can be calculated. Figure 2-3 shows an exemplary calculation for the US market in 1997, figure 2-4 for the German market in 2000 and figure 2-5 for the French market in 2000. Since data provided for these three countries is not the same and, particularly in the case of France, not sufficiently detailed, the kinds of insurance included in the figure varies.

Swiss Re predicts that Internet insurers will become particularly important within the personal line segment, that is insurance written on the personal or real property of an individual, like motor or homeowner insurance. By 2005, 3-5% of the European market in this segment is expected to be represented by Internet insurers.

<p><i>Figure 2-3: Insurance products suitable for online distribution in the US market (1997)</i></p>	<table border="1"> <thead> <tr> <th>Product Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Private motor</td> <td>16%</td> </tr> <tr> <td>Homeowners</td> <td>4%</td> </tr> <tr> <td>Term life</td> <td>1%</td> </tr> <tr> <td>Individual annuities</td> <td>13%</td> </tr> <tr> <td>Others</td> <td>66%</td> </tr> </tbody> </table> <p>Source Swiss Re</p>	Product Category	Percentage	Private motor	16%	Homeowners	4%	Term life	1%	Individual annuities	13%	Others	66%
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Term life	1%												
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Others	66%												
<p><i>Figure 2-4: Insurance products suitable for online distribution in the German market (2000)</i></p>	<table border="1"> <thead> <tr> <th>Product Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Private motor</td> <td>11%</td> </tr> <tr> <td>Household</td> <td>5%</td> </tr> <tr> <td>Term life</td> <td>1%</td> </tr> <tr> <td>Private liability</td> <td>1%</td> </tr> <tr> <td>Others</td> <td>82%</td> </tr> </tbody> </table> <p>Source Swiss Re, own calculations.</p>	Product Category	Percentage	Private motor	11%	Household	5%	Term life	1%	Private liability	1%	Others	82%
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<p><i>Figure 2-5: Insurance products suitable for online distribution in the French market (2000)</i></p>	<table border="1"> <thead> <tr> <th>Product Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Private motor</td> <td>8%</td> </tr> <tr> <td>Private liability</td> <td>0.1%</td> </tr> <tr> <td>Private property</td> <td>4%</td> </tr> <tr> <td>Personal injury protection</td> <td>3%</td> </tr> <tr> <td>Others</td> <td>85%</td> </tr> </tbody> </table> <p>Source Swiss Re, own calculations.</p>	Product Category	Percentage	Private motor	8%	Private liability	0.1%	Private property	4%	Personal injury protection	3%	Others	85%
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Customers can benefit from lower prices and improved service

The opportunities offered by ICT application in insurance companies can also be beneficial to customers. Firstly, if automation and rationalisation lead to significant cost cuts in the insurance firms, prices may become lower. The extent to which insurers pass cost cuts to the consumers depends mainly on market competition. Furthermore, resistance to Internet distribution within the company may prevent insurers from passing efficiency gains to the customers.

Secondly, e-business can improve customer service in many ways: information is available all day long on the Internet, the pool of information may be deeper, information can be gathered anonymously, response times may be shorter, and claims management can become more transparent and quicker.

Thirdly, the Internet offers the customer the opportunity to direct communication between him/herself and the insurer. The customer decides when to visit an insurer's website and when to terminate the interaction. In contrast to other sales channels, it is the customer who decides if he/she contacts the insurance firm at all. Usually, insurers contact potential customers, rather than the other way round.

Insurance markets are "customer markets", that is, demand is lower than the amount companies can supply. Consequently, insurers need to convince customers to buy an insurance policy and they have to win customers in competition with other firms. Customer orientation is therefore very important, and the firms which are able to cut prices due to ICT application and which implement customer-friendly ICT service applications have an advantage over those firms not doing so.

2.3 Adoption of ICT and e-business

Still hesitation to embrace the Internet

The insurance sector is known for being quite conservative in applying new ICTs. Incumbent firms tend to perceive the Internet as only supplementary to traditional distribution channels, rather than fully integrating the Internet into their business processes. According to a study by Accenture and Siebel Systems, "only 33% of the European insurers surveyed believe that they had the right mix of channels to communicate with their customers". A survey of German life insurers by EDS Consulting came to the conclusion that the online services of most firms do not support life insurance sales, but actually damage the firms' reputation.

Barriers to e-business in insurance firms

The importance of the Internet as a distribution channel is questioned because of a number of barriers related to the insurers themselves as well as to clients and the state. As far as the insurance firms are concerned, business priorities, internal conflicts and technical problems may hamper e-business:

- **Different priorities of insurers:** Because of ongoing mergers and acquisitions currently taking place in the insurance sector, marketing strategy and market shares as well as developing new products may be more important issues for insurance firms than the application of new technologies. ICT application implies substantial investments and business process restructuring, requiring large amounts of money, time and effort.

- **Internal conflicts:** The comprehensive use of e-business leads to automating processes and rationalisations which are likely to result in job losses. Furthermore, the Internet as a new distribution channel is likely to conflict with traditional sales channels. Both may cause internal resistance to e-business innovation, aggravated by the insurance industry's large-firm structure.
- **Technical faults and lacking equipment:** Insurance firms may be afraid of the risks of system malfunctions, capacity bottlenecks on servers, and hacker attacks, which all can lead to a breakdown of the whole business process. It may also be that insurers lack the technical equipment for successful online consultation – i.e. computer hard- and software for all employees involved in customer relations as well as a workable intranet for forwarding e-mail requests.

On the customer side, the need for personal information, security reservations and low Internet penetration may hamper e-business:

- **Low-interest product:** Insurance policies are so-called "low-interest products". This means that individuals do not normally think about insurance and concluding insurance contracts in their everyday life, let alone actively searching for insurance information in the Internet.
- **Low Internet use:** The customer segments most interesting for the insurers are those with high income. The tendency is that individuals in advanced age are the ones with higher income, while Internet use shrinks with increasing age. Moreover, Internet users are not always equipped with the most recent technology, so that loading times for Internet insurance information and policies may take too long to be convenient.
- **Product complexity:** Some insurance products are quite complex and require individual consultation which may be inadequately provided on the insurers' websites, particularly as regards life insurance and pensions.
- **Personal consulting preference:** Many customers prefer personal consulting in any case, due to the social contact. In a Datamonitor study about online customer management in financial services in 2001, covering Germany, Spain, France, the UK, Italy, Sweden and the US, customers were asked if they were "prepared to pay more for a service from a real human being". In all countries except Italy, the share of respondents who agreed or strongly agreed was much higher than 50%. In Italy, the share of respondents who disagreed or strongly disagreed was slightly higher than 50%.
- **Security reservations:** Clients may have reservations about data security, because insurance transactions contain very sensitive data. Furthermore, there is the danger of virus infection through the Internet.
- **Digital signature:** The Directive on Electronic Signatures, transposed in July 2001, facilitated the use of electronic signatures throughout the EU. Still, signing contracts on the Internet remains a practical problem, because neither companies nor customers are used to it.

Finally, Internet distribution of insurance policies involves some legal issues which make the Internet a more difficult distribution channel than traditional ones:

- **Cross-country regulations:** National regulations are still an impediment to online insurance business. A Directive on "Distance marketing of financial services" and a "Directive on insurance intermediation", which are further steps towards a Single Market

for financial services, have been proposed and have to be discussed in the European Parliament.

- **Derogation from e-commerce directive:** The “place of establishment approach” of the e-commerce legal framework Directive, allowing companies to sell goods through the Internet according to their home country’s law, does not apply to insurance. Insurers who want to offer policies in other EU countries need to adjust their offers to the other Member States’ national law. (See chapter 2.6 on regulation issues.)

Consequently, in its study on "Frontrunners in Internet insurance", Datamonitor finds that only a few insurance companies are "wholeheartedly embracing the Web and actively seeking to exploit the advantages it offers". However, the highly competitive environment will force insurance companies to increase their investment in ICTs. As the regulatory framework tends to become more liberalised, market entry barriers will decline, forcing incumbent players to innovate or lose market shares.

Already a variety of Internet distribution models

A broad variety of business models using the Internet as a distribution channel in the insurance market has already emerged. While it is not yet clear what models will prove to be successful in the long run, the variety shows that the insurance market is taking up the Internet and experimenting. Currently, the following models of online distribution or facilitation of online distribution of insurance premiums can be distinguished:

- **Online information provision:** Virtually all insurance companies have a website. In the most simple case, the website is used only for product information.
- **Multi-channel distribution:** In more sophisticated cases, traditional insurers use their website for online sales of traditional products or of specialised Internet products. The website in this case is used as an additional distribution channel. Some insurers also allow online administration by clients, e.g. address changes or claim reports.
- **Online sales only:** Some insurers operate only on the Internet, without agencies or agents. Examples are Ineas (NL), www.ineas.com, or Huk24 (D) – see below.
- **Product portals:** The Internet offers a variety of websites with product offers from particular industries, so-called “portals”. On these portals, the web visitor can choose between many companies offering similar or supplementing products. Some portals specialise in financial services including insurance, for example Finacewarehouse (UK), and Bankrate.com (US).
- **Thematic portals:** Thematic portals or “point-of-sale portals” are websites linked to specific events which may make the purchase of an insurance policy necessary. Examples for such themes are weddings, parenthood and retirement (e.g. AutoByTel.com (US) and BabyCenter.com (US)).
- **Market places**, also called "aggregators" or “navigators”, facilitate the comparison of companies’ product offers on the Internet. They can be subdivided into brokers and suppliers of independent comparisons. An example of an aggregator in the European insurance market is Einsurance.de. Further examples in the US are InsWeb.com, and EhealthInsurance.com. For aggregators to be successful it is important to be independent from certain companies and to cover a wide range of players in the market. One of the largest problems of aggregators is the comparability of products. Another is that aggregators can often only refer to the companies or local agencies which do not allow online conclusion of contracts.

- **Online risk markets:** In the business-to-business market, there is the fairly new model of online risk markets. “These Internet providers act as brokers between trading partners – usually insurers, reinsurers and large corporate clients – looking to swap large risks or entire risk portfolios.” Examples include CATEX, www.catex.com, provided by Catastrophe Risk Exchange, Inc (US), and GRX.com (US).
- **Reverse auctions:** The Internet may also be used by clients to call for tenders from insurance companies. This practice can mainly be used by large organisations, rather than by private individuals. An example could be an automobile association using a reverse auction to find the most favourable car insurance for its members (an example in this area is the US firm Ebix (www.ebix.com)).

Table 2-1: Models of online distribution or facilitating online distribution of insurance policies

Category	Business model	Examples
Online marketing and sales	Website information provision	virtually all insurance firms
	online sales as alternative	AXA (F) Allianz (D)
	Online sales only	ineas (NL) Huk24 (D) GenialLloyd (I)
Online portals	Product portals	Financewarehouse (UK) Bankrate (US) aspect-online (D)
	Thematic portals	AutoByTel (US) BabyCenter (US)
Market places (Aggregators)	Brokers	Quotesmith (US) QuickQuote (US) Insurance-City (D)
	Independent comparisons	Einsurance (D) InsWeb (US) EhealthInsurance (US)
Specific online insurance solutions	Online risk markets	catex (US) GRX (US)
	Reverse auctions	Ebix (US) ixsure (D)

Source: Swiss Re (2000), Köhne (2002), own research.

The distinction between product portals, brokers and independent comparisons is not always clear; some companies may fall into several categories. Many of the examples are US companies, since the US still has a wider variety of Internet business models in the insurance sector than the European Union.

As a study by Accenture and Siebel Systems revealed, companies are concerned about Internet competition. Customers can find the lowest prices by using “intelligent agents” and “aggregators”.

Direct insurers challenge the market

A couple of new insurance companies operating completely or mainly via the Internet are challenging the market. Examples are Ineas, based in the Netherlands, the US company GeneraLife, GenialLloyd in Italy, and Huk24 in Germany. These companies operate with a very small workforce - their core competence is the design and structuring of products, as well as operating an Internet sales platform. Although such companies have not managed to acquire significant market share to date, most experts agree that they present a threat to established insurers in the long run because of their potential cost advantages (cf. Swiss Re, 2000).

Europe's first online insurance – Ineas

Ineas is the first pan-European insurer to sell its products exclusively via the Internet and to consistently outsource any functions that are not part of its core competencies. In October 1999, Ineas sold its first insurance policy in the Netherlands. Since then it has expanded its product range and its regional spread. At present, Ineas operates in the Netherlands, Germany, Belgium and France, where it offers private liability, household, motor and accident insurance. Ineas plans to expand into more European countries and to continually extend its product range in non-life business.

The insurance company says it can offer online clients a number of advantages. Apart from attractive prices and increased transparency, the client benefits from 24-hour access to his/her policies and the claims settlement process. Furthermore, Ineas offers an electronic policy and claims folder for the Internet, as well as a personal risk management service named PRIMES. This software module contains information on risks, insurance policies and prevention measures, as well as analysis tools to work out insurance requirements. Practical tools are also provided, such as standard letters, check and inventory lists, and calculation aids to work out the insurable values. PRIMES is not restricted to Ineas products, but also offers information on other insurance products and risks.

Ineas is set up as a company with a lean, flexible network organisation and seeks to focus on the core competencies of developing a business strategy, designing products and underwriting. It outsources all the other parts of the value chain to partner companies, including in particular claims settlement and call centre operations. The advantages of this strategy are considered to lie in the flexibility, the efficiency and quality benefits of partner companies and geographic independence, all of which combine to produce a substantially lower expense ratio compared with traditional insurers. Ineas benefits from the freedom of service provisions of the third non-life insurance Directive, allowing it to operate cross-border through a single insurance licence. Ineas says that the firm uses the Internet not only as distribution channel for selling and for customer service, but also as a back-office tool. The 50 employees in the Ineas offices in Amsterdam, Cologne, Antwerp, Turin and Annecy are co-operating in projects using the Internet.

Sources: Ineas, Swiss Re (2000, p. 19), own research

Besides general reservations about Internet purchases, barriers to be overcome by the new competitors are being known and having a good reputation. Internet insurers may overcome

these hurdles by forging alliances with well-known Internet brands. A further successful example is the German Huk24, an Internet subsidiary of the Huk-Coburg Insurance Group. Around two thirds of the policies sold cover car insurance. Huk24 can offer policies significantly cheaper than its offline mother company: The prices for car policies are around 5% below usual prices, legal expense and liability without consulting 15% and Accident policies even 20% lower.³

Specialised service providers become established

Many new online service providers are currently emerging in the insurance industry. Functions like underwriting, policy administration, claims management, investment or risk management are outsourced to an increasing number of specialised external providers. National borders are becoming less important, so that labour-intensive tasks can be performed more cheaply in low-wage countries. Claims management, underwriting and some parts of risk management are particularly suitable for outsourcing. Increasing cost pressure will force traditional companies to review their business model.

Examples of specialised e-business insurance service providers are Mynd and Cybersettle. Mynd offers various backoffice and electronic business solutions for companies in the insurance and finance sector. Cybersettle negotiates between lawyers and insurers in case of disputes about the appropriate level of liability damages. Lawyers and insurance companies can submit their assessment of the damage level through the Internet. The system compares both figures - if they fall in a predefined range, the mean is calculated to reach a settlement. Prior to this process, both partners agreed to accept such a settlement.

Outsourcing to specialised service providers may be an opportunity for small and medium-sized companies, which gives them a specialisation parallel to the strengths acquired by large business units created by mergers and acquisitions. However, as it is the case with outsourcing in general, there are risks involved, such as late or incomplete deliveries from the business partner.

2.4 Customer relationship management as a core issue

Increased importance of customer retention and attraction for all industries

Customer relations are more and more important to all industries. Customer retention has become an even greater challenge than in former times because customers are becoming increasingly well informed about product features and firms offering the products they want. Furthermore, customers' demand for special characteristics in products and services is increasing, and the tendency is not to stay with one firm or trademark. In this situation, electronic applications allows companies to

- reduce overall costs of customer interaction in a set time;
- personalise customer interaction ("one-to-one marketing") at minimum cost;
- track and analyse customer data in order to focus marketing and service activities on target customers who promise particularly high returns ("customer value approach").

³ cf. Handelsblatt, 29 May 2002

Particular importance of customer relations in the insurance industry

Customer relationship management, that is the management of all customer related activities with the goal of attracting and retaining customers, has become a particularly important issue in the insurance sector. This is because of the insurance industry's structure, a high need for information about insurance products, and a decentralised organisation:

- **Large companies with abundant customer data:** Since the insurance industry consists mainly of large companies, the insurance firms are dealing with a large number of customers and a vast amount of customer data. There is a need to structure and analyse these data.
- **Product information need:** Since insurance policies usually require information from customers, implying huge marketing and administration costs, there is pressure to rationalise customer contact.
- **Decentralised organisation:** The insurance business is characterised by a largely decentralised form of organisation, consisting of large insurance firms, small agencies and external salespeople. ICTs can make the communication between these partners more efficient in order to facilitate the collection and analysis of customer data.

Insurers have identified CRM as important to their business, but funding it is a hurdle. According to an Accenture/Siebel Systems study, "60% of European insurers believe that the cost of CRM spending is so high that it will cause further consolidation of the European financial services industry". The need for comprehensive CRM applications will fuel the mergers and acquisitions process in the insurance business.

Electronic CRM at Touring Assurances / Winterthur

Winterthur Belgium, a subsidiary of the Switzerland-based Winterthur Company, one of the world's largest insurers, has partnered with Belgium's leading automobile association, Touring Club, to form Touring Assurances. Both firms found their respective sectors under serious competitive pressure. The purpose of the new entity is to expand the existing direct channel for motor insurance and, progressively, other products and services.

To maintain, manage and build a loyal customer base, Touring Assurances recognised the need to create a high-powered Customer Relationship Management (CRM) enterprise. The CRM architecture comprises a reporting, data mining and analysis tool, e-marketing software, and a call centre. First, the "front-office" customer interface was transformed, then the "back-office" support, concentrating on claims processing cost reduction. The new system needed to be designed, integrated with existing data systems, and tested. The introduction of electronic customer relation proved to be profitable.

The new system provides real-time online access to comprehensive customer records for all Touring Assurances personnel who may, at any time, interact with customers. With the new system, marketing campaigns have a mailing response rate as high as 60% better than previously. The highly targeted approach eliminated production waste associated with large mass mailings, at the same time increasing customer satisfaction. The exercise has proved the viability of a pan-European rollout of the strategy and system.

Source: Accenture (www.accenture.com)

The goal of CRM is to increase the value of the company by increasing the value of customer relations. Electronic customer relationship management (e-CRM) is the use of ICTs for customer data processing, marketing, sales and service.

Data warehouse

Data warehouse solutions allow extensive collection as well as integration and structure of customer data. Ideally, all departments of a company contribute to the information in the data warehouse. Thus every employee has access to the same information about customers, and everyone can share information collected by others. This may become important, for example, when a customer who has already purchased a motor insurance policy contacts the life insurance department of the same company. Then the life insurance manager can easily find out that the customer is not new to the company, and give him/her appropriate treatment, such as avoiding sending letters with embarrassing greetings like “we welcome you as a new customer to our company”.

Data mining

Data mining can be applied in order to select and analyse customer data for marketing purposes. Data mining software applies statistical methods to the customer data and thereby facilitates customer segmentation, for example creating clusters of customers with shared characteristics. The insurance manager can identify customers who did not purchase certain insurance products while most of the other customers in their “cluster” did. The manager then can apply suitable marketing measures to these customers, for example the call centre may contact them. More generally, data mining identifies profitable and unprofitable customers and enables marketing measures to be concentrated on the profitable or promising ones. To give a further example, the recipients of expensive paper newsletters can be selected by a statistical analysis of customers. Such selection is important, because “Europe’s financial organisations have large numbers of unprofitable customers”, as a survey of senior executives from 52 European organisations, sponsored by Accenture and Siebel Systems, found out in 2001.

E-Marketing

ICT tools allow a concerted design of customer contacting and campaign management. For example, different kinds of e-mails can be sent automatically to customer groups selected in the course of the data mining process. E-marketing also includes customer communication and consulting tools. Managerial issues of e-marketing are developing, as are pricing of online products as well as strategies for establishing online brands.

E-Sales

Internet sales can be supported by electronic catalogues and customisation tools, including prices, terms of delivery and technical information. Due to cost savings in the course of online sales, online insurance policies might be offered more cheaply than policies sold through traditional channels. Sales personnel can make use of electronic order and appointment management as well as data exchange with headquarters. This may be of particular importance for external workers who constitute a significant part of insurance employees and self-employed. Insurance agents consulting and negotiating in customers’ premises are enabled to tap into data from notebook files or, through the Internet, from the company’s databank.

E-Service

Reception and processing of incoming customer requests and reclamation can be supported electronically, e.g. by call centres and e-mail.

Leading-edge customer relationships: AXA Colonia Customer Care GmbH

The AXA Colonia Customer Care GmbH (CCC) is an independent firm founded by the AXA Colonia concern in 1998. At its core CCC is a call centre. However, it wants to be "no conventional call centre", but a "service institution ranking in top position in terms of personal proximity and technology usage in the German insurance landscape". The CCC is a one-stop point for customer service and complaints. The CCC wants to clarify customers' evil mood directly on the phone and introduce appropriate measures. Pre-defined classes of complaints facilitate, directly after the customer call, the registration, evaluation, reporting and transfer to the service quality manager in the specialist department.

CCC employs around 250 persons. They call customers for opinion poll purposes, to present new products, to formulate offers directly on the phone, to prevent contract termination, and to regain contracts that have already been terminated. Traditional insurance agents and the CCC work hand in hand. Through the Internet, around 1,600 customers and prospective customers send demands for offers. The CCC passes on the Internet requests as well as telephone requests to the agents.

According to the firm's presentation, the technology belongs to the "most modern computer system currently available on the insurance market". It consists of three core parts: a specially programmed software, an automatic call distribution device and a computer telephone integration system. The CCC has a central customer databank. In order to integrate all customer contacts and to address all customers successfully, the CCC systems are completely decoupled from the AXA concern's systems. The CCC's databank is synchronised daily with the data set of the host systems in the various departments.

The most important reasons for founding the CCC were to increase customer satisfaction and retention. It was meant to prevent customers being put through to one contact person after the other, and never receiving a satisfactory answer. According to the executive director, in the insurance business almost every third contract which is terminated by the customer is due to unpleasant experiences when calling the insurer. Business turnover, employee satisfaction and motivation were all to be increased, and the department specialists meant to be relieved from calls and routine tasks.

Customer acceptance surpassed the expectations. The projections were for 600,000 calls per year; the reality is 1.6 million incoming as well as 400,000 outgoing calls per year. The tendency is "strongly increasing".

Source: AXA Colonia Customer Care GmbH

2.5 European regulation issues

Directive on electronic commerce

The Lisbon European Council summit set the ambitious goal of establishing an internal market in retail financial services by 2005. The Commission regards an environment conducive to the development of e-commerce as crucial to fulfil this goal. One of the basic documents to provide such a conducive environment is the e-commerce legal framework Directive issued in 2000 (2000/31/EC). It is meant to “ensure that online services can be freely provided throughout the Community”.

The cornerstone of the Directive is the “internal market clause”. This clause enables online providers to offer services throughout the EU based on the rules of the Member State where they are established – in short: the “place of establishment approach”. An alternative approach could have implied that service providers have to comply with 15 different legislative frameworks. The e-commerce Directive applies only to service providers established within the EU, but it was supposed to avoid inconsistency with legal developments in other parts of the world. It entered into force on January 17 2002.

However, the e-commerce legal framework Directive includes a derogation on insurance business. The “place of establishment approach” does not apply to insurance. In practice, this means that Member States have a wider legal scope to prevent foreign insurance firms from offering their products. Insurers who want to offer policies in other EU countries need to adjust their offers to the other Member States’ national law.

Commission’s communication on e-commerce and financial services

Following the e-commerce Directive, the Commission formulated a “Communication from the Commission to the Council and the European Parliament on e-commerce and financial services” in 2001. This communication takes a sectoral look at how the Directive will apply specifically to the cross-border trade of online financial services. The 2005 deadline for an internal market in financial services is named as “central to the Community’s employment and growth agenda” in this paper.

However, hurdles are to be overcome, above all a number of significant divergences in national rules, fragmenting the financial services internal market. Building upon the Commission’s communication, a report of the Financial Services Policy Group (FSPG) on the Community’s objectives in the field of electronic commerce and financial services set out a “road map” to achieve the internal market goal. The Commission has targeted three policy areas: the creation of a coherent legislative framework, improved consumer confidence and improved supervision.

- **Legislative framework:** Central to achieving an internal market in online financial services is a programme of convergence covering contractual and non-contractual rules. The latter include core marketing rules relevant for selling financial services, e.g., unsolicited phone calls. There is an urgent need for legal convergence, because – as stated in the FSPG report – “the current legal framework remains ill-adapted to the e-commerce environment, especially given the legal barriers which exacerbate Internal Market fragmentation”. One measure taken is a comprehensive review of national rules in retail financial services contracts, which is being prepared. Based on this inventory, proposals are going to be made to ensure that financial services can be freely offered throughout the EU with legal certainty.

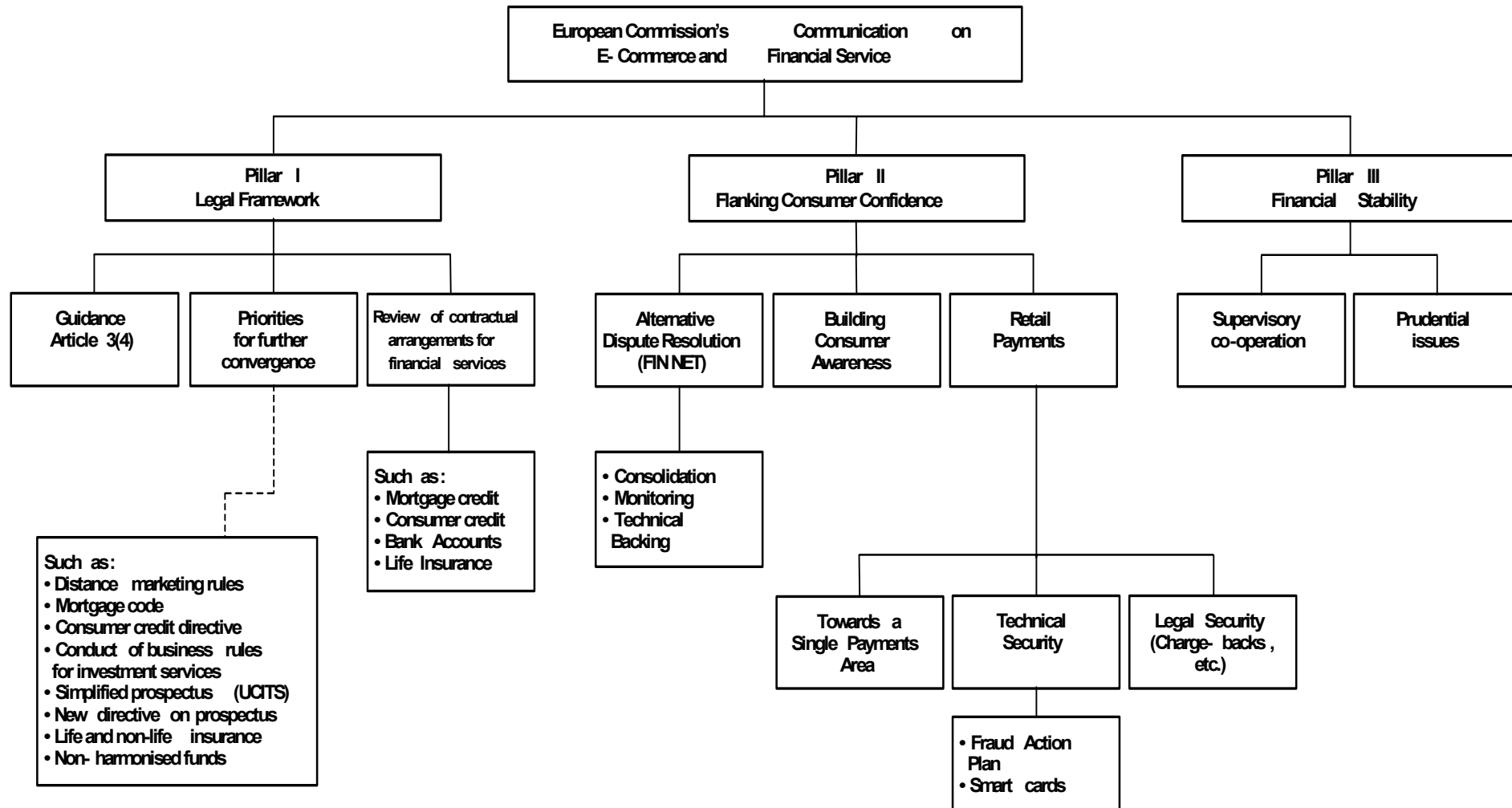
- **Consumer confidence:** The FSPG report mentions a particular problem of the development of the internal market for financial transactions: “Consumers lack sufficient confidence to carry out cross-border transactions, as they have concerns about the security of on-line transactions, about access to redress in the event of a problem, as well as whether or not the provider is reliable and bona fide”. Thus, targeted steps are required to encourage consumer confidence in cross-border redress and Internet payments.
- **Improved supervision:** Enhanced supervisory co-operation between the Member States is necessary, because cross-border service supply increasingly requires monitoring activities by state authorities in both the host country as well as the country where the service provider is established.

Figure 2-6 presents an overview of the three policy areas respectively: the “three pillar strategy”.

Directive on electronic signatures

On 13 December 1999, the European Parliament and the Council adopted a Directive on a Community framework for electronic signatures (1999/93/EC). The purpose of the Directive is “to facilitate the use of electronic signatures and to contribute to their legal recognition” (Article 1), an electronic signature being defined as “data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication” (Article 2). Such electronic signatures shall be usable “in the same manner as a hand-written signature” and be “admissible as evidence in legal proceedings” (Article 5). The Member States had to implement this Directive before 19 July 2001. Electronic signatures enable customers and insurance firms to conclude contracts through the Internet, although, to date, they are rarely used.

Figure 2-6: The EU road to an internal market in financial services



Source: European Commission

FIN-NET

As a “flanking measure to build consumer confidence”, efforts to establish a so-called FIN-NET play an important role in the Commission’s strategy. FIN-NET’s task is to help consumers to “seek out-of-court redress on a cross-border basis without the need to take often costly and lengthy court proceedings”. Unlike many other industries, a wide range of out-of-court solutions are already established in the financial services sector in the Member States. Thus FIN-NET does not reinvent the wheel but consists of pre-existing national consumer protection associations. The activities of the national associations vary from binding decisions to the service provider to mere recommendations for the parties involved. In any case, FIN-NET does not deprive consumers of the right to seek legal action in court.

Directive on distance marketing of consumer financial services

In 1998, prior to the e-commerce Directive and the communication on e-commerce in financial services, the European Parliament and the Council had proposed a Directive on distance marketing of consumer financial services (98/0245 (COD). Its objective is “to approximate the laws, regulations and administrative provisions of the Member States concerning the distance marketing of consumer financial services” (Article 1). The European Insurance Committee expressed concerns about this Directive, because there have been numerous changes in the legislative environment and community priorities as expressed in the e-commerce Directive and the “Communication”, into which the proposed Directive on distance marketing will have to be integrated.

2.6 Scoreboard of basic e-commerce indicators

This Sector Report is one of the first series of seven sector reports published by the *e-Business W@tch*, six months after its launch in 2002. Since desk research and interviews for this report and editorial work was going on in parallel with the preparation and field work for a European enterprise survey on electronic business launched by the *e-Business W@tch*, it was not possible to use the survey results for this edition of the Sector Report. Instead, the report presents in this chapter

- (1) an overview of the e-business statistics that can be expected for the forthcoming edition of this Sector Report (expected for January 2003), and
- (2) an initial benchmarking of industry macro-sectors based on other sources, namely on data collected by (i) the Eurostat enterprise survey on e-commerce in 2001 and (ii) by a survey carried out by the "SIBIS" EU project (www.sibis-eu.org) in 2002. It must be noted at this point, however, that due to differences between these surveys in terms of survey methodology and sample there is only limited comparability of data, particularly on a sector level (cf. information below), to the statistics which the *e-Business W@tch* survey will deliver in the forthcoming issues of sector reports.

2.6.1 Forthcoming: Results of the European e-Business Survey

The European e-Business Survey is a cornerstone to the monitoring activities of the *e-Business W@tch*, as it is the key instrument to collect e-business indicators on a sector level which are not otherwise available yet, and certainly not in a comparable manner across sectors. The fieldwork of this enterprise survey has been carried out in June and July 2002 (parallel to the desk research and editing of this Sector Report). Data are currently being processed and analysed. Results will be reported in the forthcoming edition of this sector report and in the European E-Business Report (both expected for early 2003). A first overview with a benchmarking of the 15 sectors covered by the *e-Business W@tch* based on a number of key indicators may be available earlier in the form of an electronic e-Business Pocket Book on the website of this observatory (www.ebusiness-watch.org).

The European e-Business Survey has been carried out by computer-aided telephone interview (CATI) technology. CATI was preferred to alternative survey methods, in particular postal surveys which are sometimes used for company surveys of this kind, mainly to guarantee sample size. The decision maker interviewed was normally the person responsible for ICT within the company, typically the IT manager. Alternatively, especially in small enterprises which do not have a separate IT unit, the managing director or owner was interviewed. In total, about 10,000 interviews with decision makers in European enterprises were conducted. The questionnaire used for the survey interviews will provide data for the following ICT and e-business indicators:

Table 2-2: Indicators of the European e-Business Survey

Area	Main indicators
Computer and Internet usage by enterprises	<ul style="list-style-type: none"> • Percentage of companies using computers • Percentage of companies having access to the Internet / not yet online but planning to have Internet access (12 months) • "Refusers": Percentage of companies not online and not planning to get online • Type of Internet access
Usage of network applications	<ul style="list-style-type: none"> • E-mail / WWW / Intranet / Extranet / LAN / WAN / EDI • Plans of non-users to use network applications (same as above)
Size of IT and web department	<ul style="list-style-type: none"> • Average number of employees occupied with maintenance of IT and networks • Average number of employees occupied with maintenance of company web site
IT skills gap	<ul style="list-style-type: none"> • Percentage of companies having recruited staff with special IT skills • Percentage of companies having experienced some / great difficulties in recruiting IT specialists
Employees' access to ICT	<ul style="list-style-type: none"> • Employees' access to e-mail for internal / external communication • Employees' access to the WWW / to the intranet
Web site	<ul style="list-style-type: none"> • Percentage of companies having a web site / planning to have a web site
E-commerce: selling online	<ul style="list-style-type: none"> • Percentage of companies selling online / planning to sell online • Starting point of selling online (>2 years / for 1-2 years / for < 1 year) • E-commerce through company web site / electronic market places / extranet / • EDI / mobile e-commerce • Online share of total sales • Method of processing online orders (orders are fully integrated with the back-end system / online orders generate an automatic e-mail / ...)
E-commerce: procuring online	<ul style="list-style-type: none"> • Percentage of companies procuring online / planning to procure online • Starting point of procuring online (> 2 years / for 1-2 years / for < 1 year) • Online share of total procurement
Barriers to e-commerce	<ul style="list-style-type: none"> • Barriers to selling online • Barriers to procuring online
E-business: external business processes	<ul style="list-style-type: none"> • Online collaboration with business partners for designing products / to forecast product demands • Online management of capacity / inventory • Electronic exchange of documents with suppliers / customers • Online negotiation of contracts • Participation in B2B e-marketplaces / Type of activity undertaken on e-marketplaces
E-business: special solutions	<ul style="list-style-type: none"> • Implementation and usage of special solutions in the company / plans to implement: SCM / CRM / Knowledge management / ASP / ERP
E-business: internal business processes	<ul style="list-style-type: none"> • Sharing documents/ to perform collaborative work • Tracking working hours and production time • Supporting the human resources management • e-learning
Impact of e-business	<ul style="list-style-type: none"> • Impact of selling online: Volume of sales / Number of customers / Sales area / Quality of customer service / Efficiency of internal business processes / Costs of logistics and inventory • Impact of procuring online: Procurement costs / Relations to suppliers / Internal business / processes / Costs of logistics and inventory / Number of suppliers • Perception of general importance of e-business today • Impact on organisational structure and work processes • Impact on offer of products and services • Expected beneficiaries of e-business (SMEs vs. large enterprises) • Satisfaction with e-business <p>Trend in expenditure on e-business technologies</p>

2.6.2 The Eurostat survey on e-commerce

Since data from the *e-Business W@tch* observatory's own survey have not yet been made available, this edition of the report presents instead some key indicators and a preliminary benchmarking of sectors based on data provided by the Eurostat survey "E-Commerce in Europe".⁴

The survey was conducted in the context of an effort by DG Enterprise to develop and carry out regular data collections in the area of e-commerce. DG Enterprise therefore supports Eurostat and the National Statistical Institutes to carry out such surveys. As a first step, a pilot survey on e-commerce was undertaken by 13 of the EU Member States and Norway in 2000. It was carried out as a questionnaire survey. More than 100,000 enterprises were contacted and the response rate was close to 50%. In the follow-up survey ("Community e-commerce survey 2002") all 15 Member States will participate and, in addition, several Candidate countries (Czech Republic, Estonia, Latvia, Poland) intend to carry out pilot surveys in 2002 based on the Eurostat questionnaire.



While the strengths of this survey are the large sample size and the broad coverage of countries (in 2002), there are some serious limitations with regard to the comparability of the data delivered by the (first) pilot survey across industry sectors, which is the main dimension of analysis and comparison for the *e-Business W@tch*.⁵ The scoreboards presented below should therefore be regarded as an initial presentation of figures only which, will be largely complemented and, for the sake of a coherent methodology, substituted by the more recent data from the *e-Business W@tch* survey. Summarising, the following table shows the main differences between the two surveys by Eurostat and by the *e-Business W@tch*:

⁴ Eurostat: E-Commerce in Europe. July 2002. Download:

<http://europa.eu.int/comm/enterprise/ict/studies/lr-e-comm-in-eur-2001.pdf>. A summary of main findings is available in an edition of Statistics in Focus: "E-commerce in Europe" (11 April 2002). This summary as well as a number of other resources can be downloaded from

<http://europa.eu.int/comm/enterprise/ict/statistics/e-commerce.htm>.

⁵ For many variables covered by the Eurostat e-Commerce Survey there are considerable differences between 'global' figures broken down by size (category 'All') and 'NACE averages'. The most likely explanation is that this occurs because of gaps in countries' reporting on sectors, as Eurostat confirms: "The data with the breakdown by NACE have often been compiled with a more restricted country coverage than the global (and size class) figures because of weaker data availability. Hence, a direct comparison between the data by activity and the global figures can not be made. For this reason, most of the tables and figures providing data by activity include a second global figure called the 'NACE average'. (...)" A closer look at the coverage of NACE sub-sections shows that in general figures Germany, Finland and Sweden are missing in the NACE related statistics altogether. For some sub-sections other countries are not included either, and for some variables yet another different set of countries is considered. In some tables footnotes state that the UK is not included (for example, Table 2.3.9: Internet e-sales processes). For many of the sectors monitored by the *e-Business W@tch*, however, Germany and the UK account for a substantial part of the production value (often over 40%) in Europe. Hence information that excludes these two countries has only limited value for a sector analysis, for instance in the chemicals or the transport equipment sector where Germany is the largest industry in the EU. This problem becomes evident when figures for the category 'all' are compared with 'NACE averages' which tend to be far below the 'global' averages. This is not surprising when considering that Germany belongs to the countries with the highest e-commerce activity in Europe.

	 European E-Business Survey	 Survey E-Commerce in Europe
Method	CATI (telephone interview)	Questionnaire mailings
Focus	e-business sectors	e-commerce countries
Sample	~ 10,000	~ 50,000 (returned questionnaires)
Time (field work)	June/July 2002	1 st half 2001
Field work organisation	Inra (based on contract with the E-Business Watch)	National Statistical Institutes in participating countries

The following table presents the findings for six basic ICT and e-commerce indicators broken down by business activity (cf. note under table). A vast majority of companies in all NACE sections use computers. In e-business surveys, this indicator is consequently mainly used as a filter for follow-up questions about e-commerce and e-business in order to get a second optional computation base for more significant indicators.

Table 2-3: Basic e-commerce indicators for industries

% of enterprises using / having implemented	Computers	intranet	EDI	Web access	e-purchasing	e-sales
Manufacturing	89	27	12	68	13	8
<i>Food, beverages and tobacco</i>	88	25	17	66	7	9
<i>Textiles</i>	73	16	7	49	6	4
<i>Leather</i>	78	11	3	51	4	3
<i>Wood</i>	90	16	7	61	6	5
<i>Pulp, paper, publishing and printing</i>	95	34	14	77	23	13
<i>Coke, refined petroleum, nuclear fuel</i>	94	54	37	87	27	24
<i>Chemicals and man made fibres</i>	97	43	15	86	16	10
<i>Rubber and plastics</i>	96	31	12	75	19	12
<i>Other non-metallic mineral products</i>	91	25	8	72	7	4
<i>Basic metals, fabricated metal products</i>	91	26	12	66	11	6
<i>Machinery and equipment n.e.c.</i>	95	37	13	82	17	8
<i>Electrical and optical equipment</i>	94	40	14	80	28	12
<i>Transport equipment</i>	94	37	20	74	17	12
<i>Manufacturing n.e.c.</i>	89	24	11	64	11	7
Distribution	94	34	18	71	20	11
Hotels and restaurants	72	12	6	47	11	15
Transport, storage and communication	87	31	18	67	17	12
Business services	93	35	16	73	29	9
Nace average	89	29	14	68	18	10

Source: Eurostat / own presentation

Note: The Eurostat survey presents "NACE average" figures based on the NACE Rev. 1 Sections D (Manufacturing), G (Distribution, i.e. mainly wholesale and retail trade), H (Hotels and restaurants), I (Transport, storage and communication) and K (Real estate, renting and business activities). Since J (Financial intermediation) was not included in a number of national surveys by the NSIs, the "NACE average" does not include this section.

In the table below, the NACE sections and the sub-section "Manufacture of transport equipment" are benchmarked according to the same six indicators as presented above. For each indicator, the highest penetration has been indexed as 100.

Table 2-4: NACE Section benchmarking (best = 100)

Benchmark = 100	Computers	intranet	EDI	Web access	e-purchasing	e-sales
Manufacturing	95	77	67	93	45	53
Distribution	100	97	100	97	69	73
Hotels and restaurants	77	34	33	64	38	100
Transport, storage and	93	89	100	92	59	80
Business services	99	100	89	100	100	60
Nace average	95	83	78	93	62	67

Source: Eurostat / own calculations

The financial services sector has always been a forerunner in the adoption of information and communication technologies. The international stock markets, to use a prominent example, have been one of the first communities of practice to conduct international business based on electronic networks. Integrating new and traditional channels, channels and back office processes, channels and CRM solutions will continue to be important challenges for financial institutions and areas of significant investments in the future. For insurance companies, one of the key challenges and opportunities at the same time is the full digitisation of internal processing of insurance policies and related business, for instance claims management. Paperwork for underwriting and claims processing can be dramatically reduced. Another key issue for e-business applications is customer relationship management.

As the Eurostat data do not include the NACE section J (Financial intermediation) in their activity breakdown, the description of the following paragraphs can only be indicative for the overall situation, but not for this particular service sector. However, data for this sector will soon be available as it was part of the survey by the e-Business W@tch in 2002 and will be reported both in the next issue of this Sector Report and on the website of the e-Business W@tch at <http://www.ebusiness-watch.org/marketwatch/database/database.htm>.

The usage of **intranets** varies considerably across industry sections. The structure of the industry is one of the relevant variables, since large enterprises are much more likely to make use of the intranet than small enterprises. In addition, the value of an intranet is inherently higher for enterprises with a large number of office workers and/or teleworkers and mobile workers who need to access company information from abroad. This helps to explain, for instance, the low percentage of intranet usage in the "hotels and restaurants" sector.

EDI usage also varies, but is usually in a range between 8 and 20% for most sections and sub-sections. In the 1990s, electronic data interchange was one of the first e-commerce instruments to be used by enterprises. Nowadays EDI can be integrated into internet technologies which lowers the cost of usage. Eurostat finds that 19% of the enterprises surveyed used EDI (or 14% of the "NACE average" which excludes Germany and Sweden) at the end of 2000.

Web access is above 60% for all NACE Sections except for H (hotels and restaurants). Again, the type of activity partly explains the lower demand for web access by enterprises from this section. "Web access" must not be confused with the frequently used indicator "having a website", which is basic requirement for conducting e-commerce on the internet. The Eurostat survey reports that 29% of enterprises had their own website (NACE average) at the end of 2000 and 11% planned to have one in 2001. Business services was the most advanced section in that respect with 40% of enterprises having a website, while the other sections showed very consistent figures between 24 and 29%.

Online selling and purchasing, obviously highly correlated activities, are key indicators for the maturity of electronic business and cornerstones in all surveys on this topic. The Eurostat survey – taking into account all the methodological implications discussed above – suggests that almost twice as many enterprises practise e-purchasing (18% NACE average) as e-selling (10%). This is in line with the general observation that B2B electronic commerce has developed faster than B2C e-commerce. Companies are more likely to buy electronically from their suppliers than to sell online. Comparing the industry sections reveals some interesting results. While enterprises in business services are most likely to procure online, hotels and restaurants – the "laggards" in many of the other indicators – are most advanced in selling online (15% of enterprises). Tourism was clearly one of the forerunners in establishing online reservation systems, and this is probably one of the factors reflected by this figure. It is also interesting to see that the distribution sector (NACE G) which could be expected to be a leader in online selling is only slightly above average (11%), but in fact makes more use of online purchasing (18%). Hotels and restaurants are the only sector where online selling outperforms online purchasing, which again reflects the nature of the business.

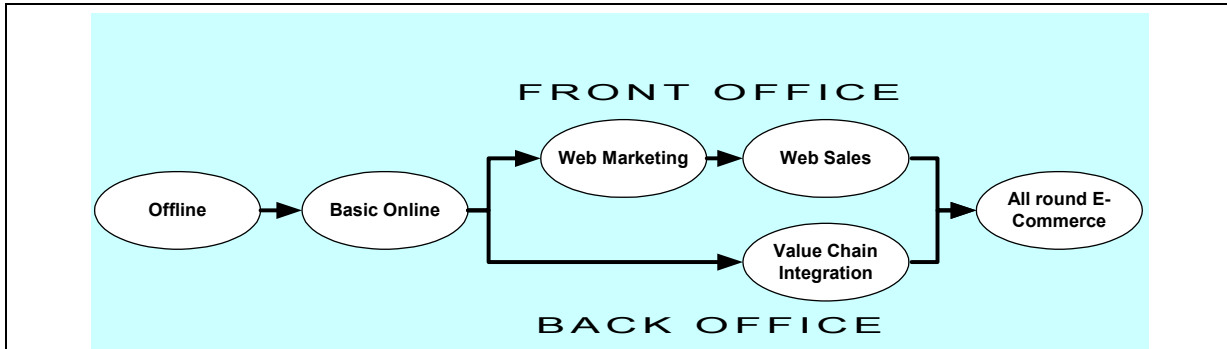
2.6.3 The e-readiness of industry sectors

The "e-readiness" of an industry sector (or, alternatively, of a country or size class) can be described by the percentage of enterprises that have implemented a certain level of ICT infrastructure and actually apply this infrastructure for e-business purposes. empirica has developed an e-commerce typology by using an ordinal scale of six levels ranging from "off-liners" (level 1 – companies that do not have access to the Internet or e-mail and without a web site) to "all-rounders" (level 6 – the most advanced companies that sell online and practise value chain integration).

The model thus distinguishes in the way towards full exploitation of e-commerce potentials between "front office" applications and "back office functions". Companies that concentrate on the development of e-commerce for front office applications use the Internet, often in combination with other ICTs, for marketing and conducting online sales to customers. Companies concentrated on back-office functions, exploit the Internet as a way to integrate business processes (that involve suppliers and distribution partners as well) along the value chain.

Table 2-5: e-Commerce Typology: six stages of sophistication

Level	Type	Description
(1)	Offline	Companies / establishments without access to the Internet, e-mail and without a Website
(2)	Basic Online	Companies / establishments without a presence on the Internet (e.g. Website), but with access to the Internet or e-mail.
(3)	Web Marketing	Companies / establishments with a presence on the Internet (e.g. Website), but none of the following
(4)	Web Sales	Companies / establishments that sell goods or services via the Internet (through own Website and/or via e-marketplaces), but none of the following
(5)	Value Chain Integration	Companies / establishments that use EDI or Extranets for communication with forward or backward linkages in the value chain, but none of the following
(6)	Allround E-Commerce	Companies / establishments that sell online as well as practise value chain integration



Source: empirica

The model works for individual companies as well as for aggregates of companies, e.g. on sector or country level. For instance, the higher the percentage of companies from an industry sector is in the more advanced levels, particularly in levels 5 and 6, the higher is the "e-readiness" of this sector. This e-commerce typology has proved to be useful to monitor progress over time⁶, although the definition of the levels may have to be adjusted in the future once e-business has reached a certain maturity, requiring monitoring activities to focus on other (and probably more qualitative) aspects than simply on whether a company has an Internet presence or sells online. For the time being, however, the model can still be considered as a useful tool to benchmark the maturity of electronic business in various industry sectors or countries.

A recent decision maker survey in establishments of seven EU Member States (Germany, France, the UK, Italy, Spain, Finland and Greece) carried out by the SIBIS project (www.sibis-eu.org)⁷ finds that 13.6% of establishments are e-commerce all-rounders, and another 33.2% have reached the level of value chain integration. Only 6.5% are still off-line. The results are comparable for the macro-sectors covered by the SIBIS survey, especially those for the lower levels. On the highest level, the public and social services lag behind with only 5.7% of establishments being characterised as all-rounders. Financial and business services, on the other hand, are most advanced with more than 50% of establishments having reached levels (5) or (6).⁸

⁶ cf. EC-KMU: Status Quo and Development Prospects of Electronic Commerce in Germany, Europe and the USA 1999 and 2001. Study by empirica for the German Ministry of Economy and Technology.

⁷ SIBIS (Statistical Indicators Benchmarking the Information Society) is a project in the "Information Society Programme" of the European Commission (IST-2000-26276) running from January 2001 to June 2003. SIBIS has taken up the challenge of developing innovative information society indicators to take account of the rapidly changing nature of modern societies and to enable the benchmarking of progress in EU Member States. The SIBIS Decision Maker Survey (DMS) covers the 5 topics e-commerce, telecommunication & access, security, e-government, and Internet for R&D. It is targeted at establishments and carried out in Germany, France, the UK, Italy, Spain, Finland and Greece. The sample taken is a disproportionately stratified sample reflecting labour force distribution across establishment size bands. Sample sizes range from 300 to 500 per country resulting in an overall sample of 3,100. The survey was conducted via CATI (Computer Aided Telephone Interview).

⁸ Important note: These data are only preliminary (the fieldwork was carried out in April and May 2002) and still need to be consolidated by the SIBIS project. They are not yet officially reported. Data have been technically checked e.g. for consistency and for correct filtering.

Table 2-6: E-Commerce Typology: the e-readiness of industry macro-sectors (% of establishments)

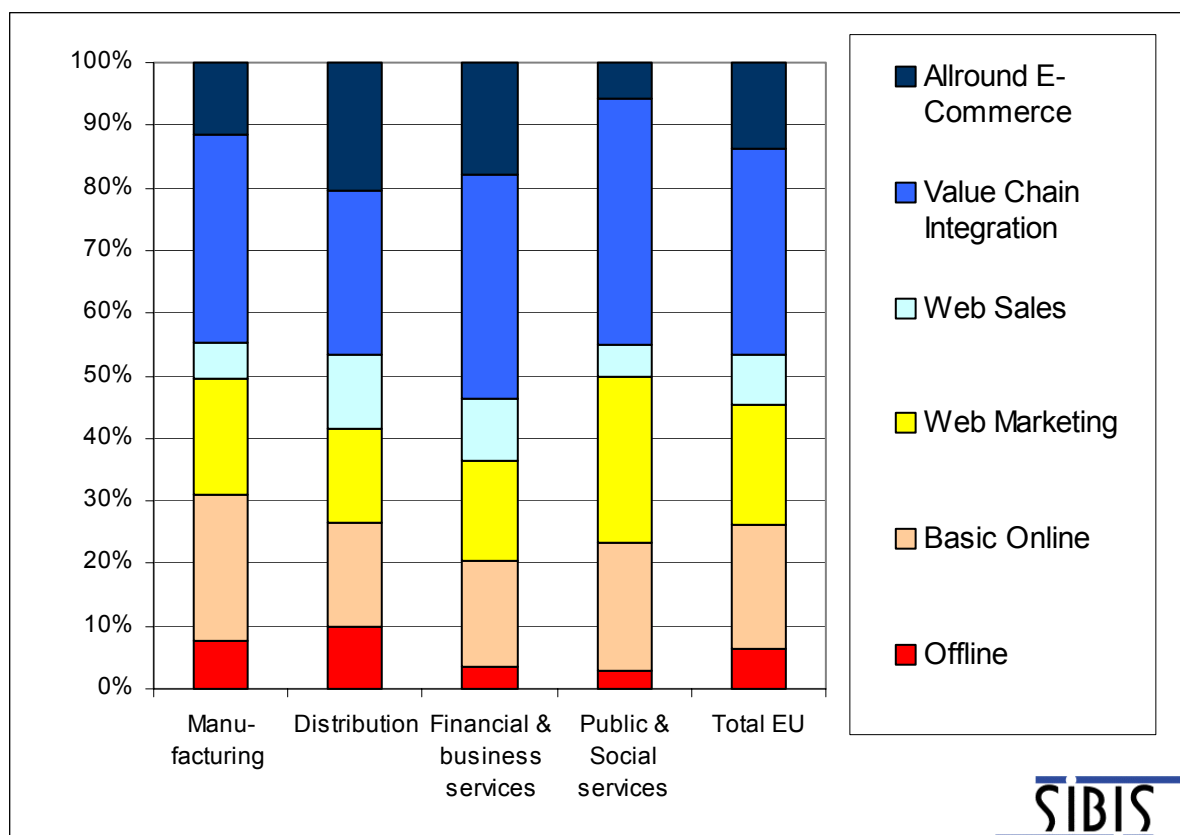
Type	Manu-facturing	Distribution	Financial & business services	Public & Social services	Total EU
Allround E-Commerce	11,6	20,3	17,9	5,7	13,6
Value Chain Integration	33,2	26,3	35,7	39,5	33,2
Web Sales	5,8	11,9	9,9	5,0	8,0
Web Marketing	18,6	15,1	15,9	26,4	19,1
Basic Online	23,1	16,5	17,0	20,6	19,6
Offline	7,8	9,9	3,6	2,8	6,5
	100,0	100,0	100,0	100,0	100,0

Base: all establishments (N=3139), weighted by employment; EU7 additionally weighted by employment per country. Each establishment is assigned exclusively to one e-commerce type. Macro-sectors as defined by SIBIS:

- (i) Manufacturing, energy, mining, construction
- (ii) Distribution, catering, communication & transport
- (iii) Financial and business services
- (iv) Public administration, health, education, other social/personal services

Source: SIBIS (DMS – preliminary data)

Figure 2-7: E-Commerce Typology: the e-readiness of industry macro-sectors (% of establishments)



Source: Source: SIBIS (DMS – preliminary data) / own presentation

Participation in e-marketplaces

An indicator which is not considered in this model, but which may become an important indicator for measuring e-readiness in the future, is the participation of enterprises in e-marketplaces. These are specialised sites on the Internet that allow buyers and suppliers to trade goods and services. Electronic marketplaces can be operated by individual buyers or suppliers, by consortia or by third parties. Access can be public or restricted to selected business partners. The SIBIS survey has investigated whether establishments trade on such electronic marketplaces. As expected, the percentage of establishments doing so is still small, but reaches 9.8% if figures are employment weighted.⁹ Initial results suggest that the main activities on marketplaces are catalogue based offering of goods and services (5.2%) and catalogue based selling (4.2%), compared to a lower level of participation in auctioning (1.6% for bidding, 2% for selling), launching calls for tender (1.8%) and answering calls (2.3%).¹⁰

The Eurostat survey on e-commerce also presents figures about marketplace participation. These are somewhat lower than in the SIBIS survey, but considering that (i) the field work of the Eurostat survey took place in early 2001 (compared to April 2002 for SIBIS) and that (ii) presentation of Eurostat data is not employee-weighted, figures stemming from the two surveys are quite consistent. Eurostat finds that already in late 2000 about 10% of the large enterprises participated in e-marketplaces compared to about 5% of SMEs. Business services seem to be the most active users (6% of enterprises). Furthermore, the Eurostat survey finds that SMEs seem to use marketplaces for procurement purposes more than for selling, while large enterprises were more frequently selling (10%) than buying (7%).

Table 2-7: Use of specialised B2B marketplaces on the Internet (% of enterprises using them)

	Purchases through B2B Internet marketplaces *	Sales through B2B Internet marketplaces *
Manufacturing	2%	1%
Distribution	4%	1%
Hotels & restaurants	2%	3%
Transport & communication	5%	2%
Business services	6%	1%
NACE average	3%	1%

* Note: Activity breakdown excludes D and S – therefore percentages are lower than the figures given for "All" where D and S are included.

Source: Eurostat

The European e-Business Survey of the *e-Business W@tch* will provide fresh data about the usage of marketplaces by enterprises from the 15 industry sectors covered. Considering the high level of attention that the B2B marketplaces receive from policy and industry alike, it will be interesting to see whether trading on marketplaces has actually gained momentum.

⁹ That means that 9.8% of employees work in establishments that participate in e-marketplaces. 1.9% of the establishments surveyed said "don't know", the rest said "no" or were not asked (filter) because of a lack of infrastructure requirements.

¹⁰ Important note: Data reported are only preliminary (the fieldwork was carried out in April and May 2002) and still need to be consolidated by the SIBIS project. They are not yet officially reported. Data have been technically checked e.g. for consistency and for correct filtering.

3 Summary and conclusions – possible policy implications

3.1 Summary of main findings

Economic profile of the insurance sector

The insurance sector is of particular interest for studying the economic implications of electronic business due to its basic economic function, its importance for the national economy, its decentralised organisation and a high level of personal computer usage. In 2000, about 4,800 insurance companies were active in the EU, a 3.8% decrease from close to 5,000 in 1992. During this period of time, the number of companies decreased in Belgium, Spain, France, Greece, Italy and Sweden. It increased in Denmark, Ireland, Luxembourg, the Netherlands and Portugal and remained almost the same in Austria, Germany, Finland and the UK. Employment in EU insurance firms was estimated at around 900,000 persons in 2000, which was slightly less than 1992.

There is a trend towards large insurance or financial groups which operate on a European level and dominate the market. However, these are leaving space for specialist insurers on a national or even regional level. The most important insurance nations in terms of premium volume are the UK (around 30% of the EU market), Germany (18%), France (18%) and Italy (10%)

Intensity of e-business application in EU insurance firms

Insurers have invested enormous sums in the extension of their Internet activities. The “pioneers” in the Member States have realised useful, interactive and modern Internet presentations. However, these are largely information-oriented and more factual than exciting. This is mainly due to the peculiarities of the insurance product, but also due to the insurance sector's lack of marketing history. In contrast to other sectors, insurers' online presentations are often judged to be conservative and boring. E-business practice in European as well as American insurers is – except for genuine online insurers – relatively low in comparison with other sectors. However, the insurance sectors pioneers in e-commerce functions are holding their own well with other sectors.

In Europe and in the USA, the expectations of e-commerce success (B2C) as well as the success of internal e-business new processes have not yet been fulfilled. Some insurers enabled the customers to conclude contracts for numerous insurance products online, and they developed large-scale e-commerce applications, but demand remained low. As far as the implementation of Internet-based business processes is concerned, most insurers are still at the very beginning, whilst others are in midstream. Only online insurers and online portals are advanced. Insurers draw different conclusions from this lack of short-term success: some continue investing significant amounts, others apply the brakes for the time being.

Potential for e-business application

Since the insurance business is largely based on information, the new information and communication technologies and e-business practices can impact greatly on the insurance industry. The Internet increases transparency on the insurance market, giving customers more market power. It allows virtualisation of organisational networks, increasing the

opportunity for systematic co-operative service offers. It also reduces the amount of capital needed to enter the insurance market, so that new firms find lower barriers to compete in the market. ICTs offer opportunities to rearrange all stages of the insurance value chain: product development, marketing, sales, administration, asset management and claims management.

Adoption of e-business

The insurance sector is known for being quite conservative in applying new ICTs. The importance of the Internet as a distribution channel is questioned mainly because insurance policies are so-called "low-interest products", i.e. individuals usually do not normally think about informing about insurance and concluding insurance contracts, let alone actively searching for insurance information on the Internet. Further barriers are: low Internet use of the customer segment which is of particular interest to the insurers, product complexity, security reservations and different priorities set by the insurers, internal conflicts in the insurance companies, fear of technical faults, customers' preference for personal consulting, and regulatory issues.

However, a broad variety of insurance business models using the Internet as a distribution channel has already emerged. Virtually all insurers have a website: many practise multi-channel distribution, some sell insurance policies exclusively or mainly online. Further business models are product portals and thematic portals, brokers, independent comparison providers, online risk markets and reverse auctions. In particular, direct insurers operating completely or mainly through the Internet are challenging the market. Although they have not yet acquired significant market shares, their cost advantages are a threat to established insurers.

Electronic Customer Relationship Management as a core issue

In the insurance sector, electronic customer relationship management is of particular importance - the industry is characterised by large companies with abundant customer data; insurance policies tend to require personal information; and the insurance business is largely decentralised in companies, agencies and external salespersons. Thus the use of ICTs for customer data warehouse and data mining applications as well as for marketing, sales and service currently is an important issue in insurance firms. For example, clusters of customers with particular characteristics can be constructed, allowing marketing to focus on the most profitable and promising ones.

Situation of small and medium enterprises

The rationalisation and outsourcing process currently on-going in the insurance business offers opportunities for small and medium-sized companies supplying special insurance services. Reduced transaction costs due to Internet applications change the make-or-buy decision of insurance firms. Special services in the field of product development, distribution, administration, asset management and damage management can be outsourced to special suppliers. Outsourcing to specialised service providers may be an opportunity for small and medium-sized companies, which gives them a specialisation parallel to the strengths acquired by large business units created by mergers and acquisitions.

3.2 Outlook

With financial reserves declining or even vanishing, the insurance business is currently experiencing a wave of rationalisation. Personnel costs are to be reduced, and automation of processes and standardisation of products are planned. Internal e-business applications are likely to expand in the course of this development.

In terms of IT investment, the insurance market may experience a two-fold development in the coming years. Life insurance is likely to benefit from the crisis of social insurance systems and pension reforms in European countries in the coming years. Growth in the life and pensions market will continue to be one of the key trends within EU insurance. In order to benefit from this development, IT investments to boost synergies in the course of mergers and acquisitions will be called for, as well as to innovate products and policy administration systems. Datamonitor expects spending on packaged software to increase at 14% annually between 2001 and 2004. On the other hand, non-life insurance is currently facing intense cost pressures, keeping IT budgets tight. The IT investment in the property and casualty sector is expected to grow only 9% annually by 2004.

The extent to which insurance products will be sold via the Internet will depend on how much the barriers of Internet sales can be lowered or removed. This applies mainly to impediments on the part of the companies and the customers. For example, companies may introduce automated applications which provide information on more complicated insurance products, like tax-efficient life insurance policies.

Internet insurers are likely to become particularly important within personal line insurance, such as motor or homeowner insurance. By 2005, 3-5% of the European market in this segment is expected to be represented by Internet insurers. This is not much, but the situation is likely to change as generations of individuals who grew up with the Internet become wealthy customers. In the course of increasing Internet affinity in large parts of the population, insurers' investments in intelligent insurance applications will become more likely to pay off. Both developments may lead to a significant increase of the market share of online insurance in the future.

3.3 Policy implications

The findings of the empirical survey carried out in the framework of the *e-Business W@tch* are yet to be analysed, and further desk research will reveal new insights for the second issue of this report. Still, the following set of (possible) implications arising from the impact of electronic business on the insurance sector are likely to be important for the future development and should be considered as policy already relevant at this point.

Implication No. 1: Creating the European legal framework

Considering cross-national legal issues, it continues to be of highest importance to pursue the European policy road map towards an internal market for retail finance until 2005. Currently an insurer needs to develop a local product for every EU market because insurance law in the Member States is not identical, the EU Directive on distance marketing of financial services is implemented in different ways, and the tax frameworks for pensions are inconsistent. Further harmonisation of the implementation of the e-Commerce Directive and the Distance Marketing Directive as well as harmonisation of trade-mark right appear to

be helpful. Such harmonisation would be of particular benefit to small and medium-sized companies which may lack the resources for marketing and selling in a large number of countries with different legal frameworks. Moreover, there should be clarification under what preconditions an online contract has been concluded in legally binding terms.

Implication No. 2: Developing technical applications

In technical terms, IT security standards should be further developed, and electronic signatures should become more economic in order to be accepted by Internet users. Both fields could benefit from publicly funded pilot projects. As regards preferences for personal consulting and product complexity, it is up to the insurers to develop Internet applications that allow in-depth online information about insurance products.

Implication No. 3: Communicating good practice

The e-insurance barriers which may be most important are not of legal or technical nature, but are related to human behaviour. This cannot be influenced directly. Insurance policies are "low interest products", i.e. of little everyday interest to people, and this barrier can hardly be overcome by political measures. However, it can be tackled by indirect means, for example, political bodies can identify and communicate good practice of how insurance firms raise awareness for their products.

Implication No. 4: Promoting specialised education

The education system can contribute to e-business penetration in the insurance sector. The research for this report highlights the fact that there is a lack of e-business expertise in insurance. Student education as well as political and business consulting in the field of insurance may benefit from promoting insurance e-business in university research and teaching. Networks of competence between public research institutions and insurance firms can be established and promoted to facilitate a transfer of knowledge about technology and business practice.

Implication No. 5: SMEs benefiting from general measures

The specialised e-business service providers emerging in the insurance sector may benefit from general political measures to promote start-ups and medium-sized companies. At this preliminary state of research, a need for particular measures supporting SMEs in the insurance sector has not been identified.

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APPENDIX: EUROPEAN UNION INSURANCE COUNTRY GUIDE (2000)						
Country	Number of companies	Number of employees	Premium income in euro	Non-life premium income in euro	Life premium income in euro	Investments million euro
Austria	76	30,675	11,742	6,303	5,439	49,808
Belgium	219	24,721	20,971	7,162	13,809	122,967
Germany	773	239,600	133,958	73,115	60,844	884,535
Denmark	260	13,600	10,780	4,076	6,704	142,124
Spain	348	48,897	40,701	17,021	23,680	90,152
Finland	54	11,400	11,543	2,220	9,323	78,342
France	520	132,400	130,420	40,780	89,640	926,376
United Kingdom	830	239,800	220,249	56,914	163,335	1,732,163
Ireland	163	11,320	8,491	2,405	6,086	42,210
Italy	254	42,500	72,820	27,889	44,932	246,910
Luxembourg	94	1,867	5,777	715	5,062	20,802
Netherlands	517	49,950	41,013	16,509	24,504	248,490
Portugal	88	13,777	7,064	3,274	3,789	23,992
Sweden	482	21,036	17,663	4,619	13,043	209,597
Total	4786	891,043	735,799	264,199	471,600	4,823,419

Source: Comité Européen des Assurance