

# THE ROLE OF ELECTRONIC COMMERCE IN FINANCIAL SERVICES INTEGRATION

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## ABSTRACT

In recent years, the combined effects of deregulation in financial services, along with advances in telecommunications and information technology, are forcing far-reaching changes upon the insurance industry. The result is the industry is becoming more competitive. The emerging role of electronic commerce (e-commerce) is particularly important and interesting to study.

I offer a brief survey of the role of e-commerce in the insurance industry. The paper is organized in the following manner: Section 1 summarizes Internet trends and discusses various related public policy issues; Section 2 addresses online insurance supply and demand; Section 3 discusses the economics of disintermediation and reintermediation and explains how this applies to e-commerce in the insurance industry. Finally, Section 4 offers a set of concluding remarks.

## 1. INTERNET TRENDS

Although the Internet is far from ubiquitous, there is no question that it is having a major impact upon markets and business organizations. One only has to consider statistics concerning the growth and penetration of Internet connectivity to understand the reasons. Worldwide, the number of Internet users has increased more than tenfold since 1995. This represents an average annual compound growth rate in the world online population of nearly 60% per year. As of March 2000, Nua, Ltd. estimates that more than 300 million people were online throughout the world, representing just over 5% of the world's population.<sup>1</sup> Less than half of the total world online population lives in the United States and Canada,<sup>2</sup> more than one-quarter lives in Eu-

rope, nearly one-quarter lives in Asia and the Pacific Rim, and only one-twentieth lives in South America, Africa, and the Middle East. Figure 1 summarizes how the number of Internet users worldwide has grown since 1995.

Early (1996–97) demographic studies indicated that the online population was not very representative of the general population; specifically, the online population tended to be disproportionately white, male, educated, and affluent.<sup>3</sup> This gave rise to early concerns about the potential use of the Internet by insurers and other financial service organizations to engage in online redlining, or "weblining."<sup>4</sup> Just as the redlining hypothesis is not well supported empirically in the real world,<sup>5</sup> similarly the weblining hypothesis does not appear to be

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<sup>1</sup>See Nua's "How Many Online" survey ([http://www.nua.ie/surveys/how\\_many\\_online/index.html](http://www.nua.ie/surveys/how_many_online/index.html)). The numbers presented in Nua's survey represent a composite of research studies from a number of different sources, all of which are documented at this website.

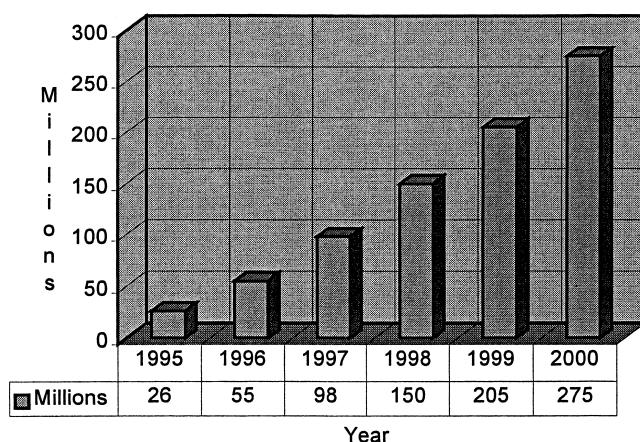
<sup>2</sup>Although North America accounts for less than half of the worldwide online population, the degree of Internet connectivity within the North American general population is much greater than on any other continent. Statistics collected by Nua, Ltd. show that roughly 45% of U.S. and Canadian households were online as of March 2000.

<sup>3</sup>The reader should note that all references to "online" and "general" populations from this point forward are to the U.S.

<sup>4</sup>See "Regulators Should Watch Out for 'Weblining' in Internet Marketing" (1997) for one of the early references in the insurance trade press to "weblining."

<sup>5</sup>See Grace and Klein (1999). It is important to note that there is little disagreement that inner city residents tend to pay higher insurance prices and purchase more limited coverage. At issue is whether these differences are due to risk and demand conditions or whether they are due to discrimination. However, results of recent studies using rigorous analytical methods are not consistent with a discrimination theory and suggest that higher risk and lower demand for coverage are the principal causes of high rates and limited coverage in urban areas.

**Figure 1**  
**Number of People Online Worldwide,  
 1995–2000**



Source: Nua Internet Surveys (<http://www.nua.ie>)

based upon a well-grounded empirical foundation. Perhaps the most important factor is the Internet's changing demographics. The current online population more closely resembles the offline population in terms of ethnicity and gender. Walsh, Morrisette and Maraganore (1999) find that ethnic background does not materially influence the rate at which people adopt and use the Internet.<sup>6</sup> Furthermore, the "gender gap" appears to have all but disappeared. A year-end (1999) survey by Nielsen/NetRatings finds that while men and women differ in their uses of the Web, roughly half of all Internet users are female (Reuters, 2000). Although the online population is still more affluent than the offline population, the differences could become even more muted as the competition for Internet users continues to drive down the cost of Internet connectivity. The telecommunications industry's significant infrastructure investments over the past few years are beginning to pay off handsomely by providing greater bandwidth capacity at significantly lower prices. Broadband access (such as, cable modems and digital subscriber lines) is becoming increasingly more common, as are alternative (and typically lower cost) Internet access devices such as Internet appliances and Internet-enabled telephones, per-

sonal digital assistants, televisions and game players. While it has become fashionable lately to speak of a "digital divide,"<sup>7</sup> the market incentives for solving this problem are extremely compelling.

Although the original version of the weblining hypothesis is largely passé, consumer activists have given the concept a new lease on life by directly tying it to privacy issues. Now, a firm is said to practice weblining by simply collecting and analyzing consumer data so that it can decide how to personalize its product offerings and pricing for individual consumers (Stepanek 2000). The basic premise behind this view is that firms acquire detailed personal information about consumers so that they can malevolently manipulate consumers' economic decisions (MacDonald, 1999). While a detailed analysis of Internet privacy is well beyond the scope of this paper, this is obviously a very important and emerging public policy issue that will be studied and debated for some time, and likely result in some combination of legal, regulatory, and market-based consumer protections. Although this new version of the weblining hypothesis transcends insurance and financial services, it nevertheless is an emerging area that will present new and unique challenges to insurers and regulators alike.

## 2. ONLINE INSURANCE SUPPLY AND DEMAND

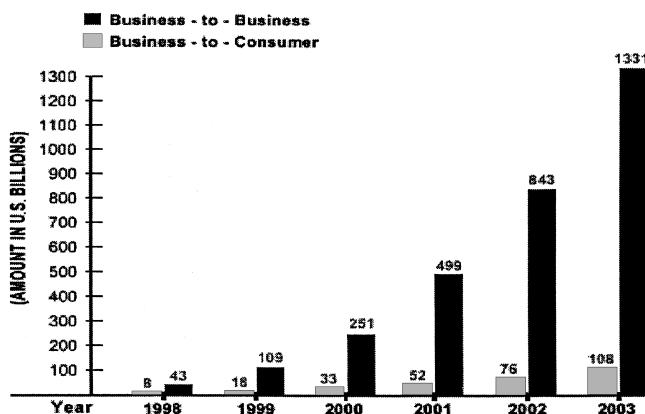
In a very short period of time, the Internet has emerged as a viable commercial medium. Survey evidence demonstrates that Americans are showing increased acceptance and interest in shopping online (Bernoff, Morrisette and Clemmer, 1998). When compared with other forms of commerce, the overall impact of e-commerce is still relatively small; however, it is growing rapidly. Figure 2 provides data and forecasts for the growth of business-to-business (B2B) and business-to-consumer (B2C) e-commerce in the United States for 1998–2003.

Figure 2 shows that e-commerce has had, and will continue to have, its biggest impact in the so-called B2B sector of the Internet economy. For example, technology companies, such as Cisco and Oracle, now handle most of their purchasing and sales on-

<sup>6</sup>These authors find that factors such as income, education, and attitudes toward technology better explain Internet adoption and use than ethnicity.

<sup>7</sup>Indeed, this character string appears in over 200 articles published in major newspapers tracked by Lexis-Nexis during the past six months.

Figure 2  
**E-Commerce in the United States:  
 1998–2003**



Source: Forrester Research, Inc. (<http://www.forrester.com>)

line. B2B websites such as *Freemarkets.com* have sprung up to enable industrial firms to manage their own online auctions. A number of major industrial companies, such as Ford and GM, have announced very ambitious plans to transfer virtually all of their purchasing online within the next few years. During the next few years, the B2B sector of the Internet economy is expected to grow twice as fast as the B2C sector (Peet, 2000).

In view of these trends concerning the growth of e-commerce in the general economy, it is interesting to consider what the impact has been and is likely to be for the insurance industry in particular. Although other online financial services have already taken off quite vigorously,<sup>8</sup> the insurance industry's involvement with and commitment to electronic commerce lags far behind competitors in the banking and brokerage industries.

Table 1 lists the findings of a recently published survey by the Meta Group (Hann, 1999). The results are not surprising. It is widely recognized that e-commerce will enable insurers to significantly lower costs, realize business process efficiencies, improve customer service and brand loyalty, and enable insurers to better position themselves com-

Table 1  
**Electronic Commerce Benefits and Concerns  
 for Insurers**

|  |
|--|
| <b>Top Obstacles for Insurance Industry</b>                |
| ◦ Resistance to change                                     |
| ◦ Threat of agent/broker disintermediation                 |
| ◦ Lack of technology infrastructure/regulatory hindrances  |
| ◦ Threat of insurance company disintermediation            |
| ◦ Lack of industry vendor solutions                        |
| <b>Top e-Business Benefits</b>                             |
| ◦ Business process efficiencies, improved customer service |
| ◦ Competitive positioning                                  |
| ◦ Lower customer acquisition costs                         |
| ◦ Improved brand identification/loyalty                    |
| <b>Top e-Business Concerns</b>                             |
| ◦ Costs/impacts of moving off legacy systems               |
| ◦ Impact on legacy channel investments                     |
| ◦ Lack of skilled information-technology personnel         |
| ◦ Lack of an e-business strategy                           |
| ◦ Lack of an enterprise technology architecture            |

Source: Meta Group

petitively. However, insurers cite as top obstacles factors such as resistance to change, threat of agent/broker/company disintermediation, lack of technology infrastructure, regulatory hindrances, and lack of industry vendor solutions. An earlier study by Booz, Allen & Hamilton (1998) reports similar findings, and also notes that the insurance industry's sluggish Internet pace can also be attributed to industry concern about unleashing price competition, channel conflict with agents, and the commoditization of insurance products.

### 3. DISINTER-REMEDIATION

For several years now, insurers have been wrestling with the problem of how to develop more efficient distribution systems without alienating their primary source of business—their agents. Some of the early evidence on multi-channel distribution from other industries (such as, online brokerage) suggests that the Internet often creates opportunities for firms that position themselves to exploit channel complementarities. A notable example of this type of business strategy within the insurance industry is Allstate's recent decision to launch Internet and phone sales channels that complement its agency distribution system.<sup>9</sup>

The process of removing the middleman from a

<sup>8</sup>A good example is retail stock trading, where more than 30% of all trades in U.S. markets now occur online. J. Joe Ricketts, CEO of Ameritrade, notes that what brings people on-line is "... sex, gambling, and financial services." (See Gazala, Weisman, Doyle, and Trevino (1998)).

<sup>9</sup>See Lohse (1999) for more details concerning Allstate's Internet strategy.

transaction is commonly referred to as *disintermediation*.<sup>10</sup> When the notion first arose that firms could actually sell goods and services over the Internet, there was a widespread belief that this would mean the death of the middleman (see Baatz 1996). The conventional wisdom that emerged at the time was that by making it technically possible to interact directly with consumers, firms could bypass wholesalers and retailers altogether. The resulting cost savings would, depending upon how competitively structured product markets were, be enjoyed by producers and consumers.

Of course, as was the case with many of the early predictions concerning electronic commerce, this disintermediation hypothesis has proven to be completely wrong. In practice, disintermediation often changes rather than eliminates jobs. Furthermore, the process of disintermediation often creates opportunities for new and different forms of intermediation. This dynamic process in which disintermediation and reintermediation occur simultaneously is referred to in Saffo (1998) as *disinter-remediation*.

A simple hypothetical example will demonstrate how disinter-remediation creates opportunities for new and different forms of intermediation in the context of an online insurance transaction. Suppose that a novice Web user named John Doe decides that he wants to buy a term life insurance policy on the Internet. Because Mr. Doe's recently purchased computer came with the Netscape Navigator web browser software already installed, he will end up at the home page for the Netscape portal site, Netscape.com, when logging onto the Web. In the search box, he types the phrase "term life insurance," and since he recalls the Snap.com commercial that he saw earlier that evening on television, he selects "Snap.com" from the list of available search engines. This transports Mr. Doe to the Snap.com site where his search results are posted. The first search result lists a life insurance center, which is described as follows: "Make sure your loved ones have a secure future. Everything you need to find the right life insurance policy. Quotes, tools and features to help you protect your family and gain peace of mind." Since this sounds like what he is

looking for, Mr. Doe clicks on the life insurance center, where he finds a link that will enable him to get a term life insurance quote in "three easy steps." By clicking on the term life insurance link, he is transported over to a quoting application that resides on servers operated by InsWeb Corporation. After answering a few questions he is offered instant quotes from three insurance companies. Mr. Doe selects the quote with the lowest price, and after providing some more information on the interactive web form, he is subsequently called by a call-center-based insurance company representative who completes the transaction over the phone.

While this represents a fairly routine buying expedition on the Internet, consider the array of intermediaries that made money off the purchase of Mr. Doe's term life insurance policy in addition to the life insurer. The entire transaction began on the Netscape portal site because Mr. Doe's web browser software was preprogrammed to automatically start at this particular destination on the Internet. By putting various search services on its home page, Netscape receives a "micro payment" in the amount of a penny or two every time a visitor clicks through to their sites. Therefore, because Mr. Doe was transferred to Snap.com, Snap.com must pay Netscape. Snap.com, for its part, participates in strategic partnerships with various e-commerce companies that give them preferred treatment on searches that are initiated and processed on the Snap.com site. In this case, since InsWeb is Snap.com's "preferred" vendor for insurance quoting services, Mr. Doe's request for a quote was completed on InsWeb's servers.

No fewer than three intermediaries collected transaction fees for Mr. Doe's purchase of term life insurance. Of course, the traditional insurance transaction might have involved only one insurance agent, but in all likelihood this would have been a more time-consuming process and Mr. Doe would have had no way of knowing how competitively priced the insurer's product offerings were.

Another important aspect of this transaction relates to the increased level of transparency of insurance pricing from the consumer's viewpoint. When Mr. Doe received his online quotes, he was presented with a listing that identified the name of each company, the initial annual premium under the policy being offered, the number of years for which the initial rate was guaranteed, and the company's S&P rating. Of course, one of the traditional

<sup>10</sup>This term first gained popularity in financial markets during the late 1970s when consumers began to favor money market accounts marketed by the securities industry over traditional financial products offered by banks and thrift institutions.

rationales for regulation of insurance policy forms and prices derives from the difficulty with which consumers typically shop for insurance coverage and observe cost/quality tradeoffs in the off-line world (see Grace 1998). In the off-line world, consumers might be tempted to shop based solely on price while not realizing that (1) contracts might not be directly comparable across companies, and (2) the low-price insurer may provide terrible claims service and have a higher likelihood of insolvency. However, in the online world, the consumer is better able to make an informed purchase decision based upon credible and meaningful comparisons of cost and quality.

Although the online experience described above offers several advantages over the traditional way that people shop for insurance, unfortunately Mr. Doe had to go offline to complete the transaction with the insurance company. There are several reasons for this. In spite of the fact that numerous states have enacted digital signature legislation, the insurance industry remains cautious about accepting digital signatures in lieu of wet signatures because the common and statutory law in this area is still very much in its early stages of development. Second, the industry continues to rely heavily upon legacy computer systems that do not integrate well with online commerce. As a percentage of revenues, the insurance industry currently spends only 40% of what the banking industry spends on technology (see Green 2000). Insurers need to think more strategically about technology spending, particularly "Web-enabling" their processing systems so that they can better position themselves competitively in the future.

Another way that disinter-remediation might be played out would possibly involve the unbundling of traditionally packaged policies into their component parts; for example, one might find it advantageous to purchase uninsured motorist coverage from one carrier and third party bodily injury liability from another. With lower information costs, this might make it possible for insurers to become much more highly specialized in their underwriting and risk pooling activities, and presumably competitive forces will compel firms to implement such strategies if there are any further gains from specialization. However, if there is a market demand for bundled policies, this creates yet another opportunity for reintermediation.

Specifically, one might expect that a new class of intermediaries would come into being that specialize in rebundling the component parts of unbundled policies. Such an arrangement would be viable and economically desirable if the gains from specialization exceed the transaction costs associated with supporting such an arrangement. Furthermore, an important rationale for bundling coverages is that a bundled policy generates lower agency costs than an unbundled policy. However, whether this would continue to be the case in a world with significantly lower information costs is not the least bit obvious.

One possible consequence related to the increased transparency of pricing might be the introduction of reverse auctions into insurance markets, where consumers name the price they are willing to pay and carriers bid for this business. Priceline.com has popularized this concept already in the areas of travel and financial services, and it is now common for banks to hold reverse auctions for certificates of deposit.<sup>11</sup> Indeed, ebix.com has implemented a reverse auction system for placement of various insurance coverages from its website.

#### 4. CONCLUDING REMARKS

Winston Churchill once described the former Soviet Union as "a riddle wrapped in a mystery inside an enigma." Historically, this same description has held true for the insurance industry. The emergence and growing importance of e-commerce represents a watershed event for insurance markets and institutions, as it does for many industries. The Internet creates many opportunities as well as challenges for insurers. E-commerce will cause insurers to move away from a product-oriented approach to more of a consumer-oriented approach. This will be a natural conse-

<sup>11</sup>For example, USABancShares.com Inc. and PNC Bank Corporation hold reverse auctions on certificates of deposit from their websites. The results that are yielded by these auctions have been very favorable for consumers, with rates typically ranging from more than one to two percentage points above the national average as determined by Bankrate.com. For example, recent (February 2000) online auctions conducted at the PNC Bank website (located at <http://www.pncbank.com/auction>) yielded the following results: a 6.79% yield for a 12-month CD (compared with a national average of 5.08%) and a 6.08% yield on a six-month CD (compared with a national average of 4.68%). See Lee (2000) for more details concerning reverse auctions in banking.

quence of the higher degree of transparency in pricing brought about by the Internet. With more transparent pricing, companies will be compelled by market forces to experiment more with alternative pricing methodologies such as reverse auctions, in which insurers bid for the insureds' business. Although many agents and brokers will not survive in an e-commerce-enabled environment, many more will adapt and prosper. Furthermore, by reducing transactions costs, e-commerce will cause insurance products and services to become even more highly intermediated than they are currently; thus new intermediaries will come into being. E-commerce will also have important implications for product design; in many cases, it will make it economically attractive to unbundle and repackage various forms of coverage.

E-commerce also presents opportunities and challenges for regulators. By making it easier for consumers to compare prices and product attributes across companies, e-commerce will enhance the private market's ability to solve informational asymmetry problems that exist between policyholders and insurance companies. In such an environment, the case for price and policy form regulations becomes somewhat tenuous, because e-commerce may render such regulations redundant at best and intrusive at worst. By enhancing the informational efficiency of insurance markets, e-commerce provides a very compelling rationale for insurance price and policy form deregulation. The good news for regulators is that this may free up resources that can be focused on addressing market conduct and solvency issues.

A particularly important regulatory challenge posed by e-commerce relates to the potential of the Internet to dramatically reduce the government's ability to regulate. Companies will find it increasingly easier to engage in a form of regulatory arbitrage by "shopping" for regulatory jurisdictions that maximize share value. In spite of these limitations in the power to regulate and because consumers nevertheless demand regulatory protections, I believe there will be an evolution of alternative models of regulation. Specifically, insurers will find it in their best interests to develop alternative institutions that provide consumer protection. Because governments suffer from so-called government failure, these alternative institutions might better protect consumer

interests than the current government consumer protection regulation.

Overall, the Internet will significantly enhance the informational efficiency and transparency of insurance markets and institutions. The Internet will also enable firms to realize significant cost savings, that will be passed on to consumers in the form of lower prices. By making insurance more affordable, e-commerce will help to increase the overall level of private insurance coverage in society. Thus, insurance will be able to more fully live up to its potential as a mechanism for not only funding the costs of accidents, but also providing society with incentives to invest optimally in loss prevention and mitigation.

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