HARVARD | BUSINESS | SCHOOL

9-602-175
REV: APRIL 29, 2004

FRANCES X. FREI

Innovation at Progressive (A): Pay-As-You-Go Insurance

Our motive … was to delight the customer, maybe even shock the consumer a little for competitive advantage. We wanted to deliver the unexpected.[1]

—Peter Lewis, CEO, The Progressive Corporation

Progressive Unveils Pay-As-You-Go Insurance

"It's very simple. The less you drive, the less you pay," explained Robert McMillan in early 2000.[2] McMillan, a Progressive Corporation executive, had dreamed up a high-tech method for calculating auto insurance premiums on a pay-as-you-go basis. The company called it Autograph. Rather than price insurance according to traditional, easily measured risk factors such as a driver's gender, age, and driving record and vehicle make and model, Progressive was experimenting with using global positioning systems (GPS) and wireless technology to record the actual use of policyholders' cars including times during and conditions under which they were driven. Progressive was committed to technological leadership in an industry that was growing increasingly excited about employing technologies such as GPS and cellular modems for calculating policy premiums. The company prided itself on running cutting-edge experiments such as McMillan's data-heavy program that could become the basis for customized, differentiated services.

Customers were responding to Progressive's eighteen-month Texas pilot, which was drawing to an end, with enthusiasm. Autograph systems had been installed in 1,100 cars and users had saved on average about 25 percent. "I use some cars intermittently, and when I do, I pay," explained one Houston resident with four cars insured by Progressive.[3] The positive response to the pilot had led Progressive to consider rolling the program out nationally. But some wondered whether conditions specific to Texas—a preponderance of rural and suburban driving, which were less expensive to

[1] Marcia Stepanek, "Q&A with Progressive's Peter Lewis," *BusinessWeek*, September 12, 2000.

[2] Anne Eisenberg, "What's Next: Paying for Car Insurance by the Mile," *The New York Times*, April 20, 2000, G7.

[3] Eisenberg (2000).

Professor Frances X. Frei and Research Associate Hanna Rodriguez-Farrar prepared this case from published sources. This case derives from an earlier case prepared by Professor Frances X. Frei and Research Associate Hanna Rodriguez-Farrar, "Innovation at Progressive (A): Pay-As-You-Go Insurance," HBS No. 601-076, which it replaces. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

insure—were responsible for Autograph's success. It was suggested that perhaps the company should expand the pilot to several other states before attempting a national roll out. Others worried that Progressive was becoming distracted by the functionality of new technologies, and losing sight of the insurance business.

Progressive and the Insurance Industry[4]

Progressive had sold auto insurance exclusively since its founding in Cleveland, Ohio in 1937. Recalled Peter Lewis, founder Joseph Lewis' son and chief executive officer since 1965:

> My father…sort of fell into it. He was a lawyer but he got an idea. Car insurance at that time was rather novel. It was only sold in the carriage trades…. He said, 'I'm going to sell it to factory workers and let them pay for it [over] time…. I'm going to have a whole set of policies that are very different.' The company started out as a maverick company.[5]

In 1956, Progressive started writing auto insurance for high-risk (non-standard) drivers, who typically made up 20 percent of the insurance market in any given year. In 1971 the company went public and moved its headquarters to Mayfield Village, Ohio. By 1987 it exceeded $1 billion in premiums.

The U.S. property-casualty (P/C) insurance industry, although it comprised thousands of companies all vying for a share of the multibillion-dollar market for personal and commercial insurance coverage, was dominated by only a handful of companies. The ten largest P/C insurers (based on premium volume) accounted for nearly 44 percent of net written premiums, approximately $290 billion in 1999. The two largest insurers—State Farm Group and Allstate Corporation—captured close to one fifth of the market.

The insurance business was one of shared risk. Insurers set aside a portion of the premiums collected from policyholders to cover losses. These premiums, called earned premiums, were insurers' primary revenue source. The second-largest component of their revenues derived from investment income. Insurers invested funds set aside for loss reserves, unearned premium reserves, policyholders' surplus, and shareholders' equity.

Insurers' expenses included commissions paid to agents and salespeople, usually deducted immediately from collected premiums, losses (also called claims), and claims-related and loss-adjustment expenses including adjusters' and litigation fees. Insurers also incurred underwriting-related expenses, such as salaries for actuarial staff. The underwriting profit (or loss) was determined by subtracting these expenses from earned premiums.

Of more than a dozen property-casualty product lines, auto liability and auto damage accounted for nearly 40 percent of premiums written (**Exhibit 1**). Auto insurers had historically found it difficult to make money on the insurance side of the business, but maintained profitability by investing premiums. (**Exhibit 2** breaks down revenues and expenses for auto insurers.)

Auto insurance was sold through both dedicated (single company) and independent (two or more companies) agents as well as directly to the consumer via telephone and Internet. (**Exhibit 3** tallies

[4] Some of the industry information in this section draws on Standard & Poor, *Industry Surveys Insurance: Property-Casualty*, January 11, 2001.

[5] Stepanek (2000).

numbers and types of agents for selected competitors.) Progressive, the largest writer of auto insurance in the independent agency system (with 10 percent of the market) wrote more than 80 percent of its auto premiums through independent agents.

Auto insurance premiums were traditionally rated on attributes of vehicle (age, manufacturer, and value), customer (age, gender, marital status, place of residence, driving record), and types of coverage and deductibles selected. Insurers used this information to establish a driver and vehicle "class" and loss experience with that class to set a rate.

Progressive operated in every state except Massachusetts and New Jersey and competed with industry behemoths such as State Farm and Allstate as well as with smaller companies such as Berkshire Hathaway subsidiary GEICO. (**Exhibit 4** reports market share data for 1999; **Exhibits 5-8** provide selected financials for Progressive and its competitors.)

In 1956, with the formation of Progressive Casualty Insurance Company, Progressive was one of the first insurers to enter the non-standard (high-risk) market, in which it quickly became a dominant player. Progressive's strength lay in its ability to finely segment its customer base. Lewis maintained:

> We're very good price segmenters. We built our business by out-segmenting the competition…. We're now the largest insurer of motorcycles in the world. We got into the motorcycle business in 1969. At the time, people who write motorcycle insurance did it based on the size of the motorcycle. We figured out how to also write it based on the age of the driver. What happened when we started adding that bit of information to the equation is that we got all the old drivers and the other companies got all the younger ones. The older ones are better risks. Competitors at the time got their clocks cleaned so they raised their prices. See, they didn't have the information to show them how their mix of customers was shifting. We did. We were the first to offer discounts for four-doors and add surcharges for convertibles. Using information, we've been able to out-segment everyone else. Now we're always looking for new ways to use information to segment prices.[6]

Progressive's price segmenting consisted of data mining and extensive statistical analysis of customer behavior. As an example of how Progressive differed from its competition in this regard, consider the following example. Two elderly drivers with identical driving records each have a moving violation (elderly driver A failed to yield while elderly driver B was speeding). Progressive's competitors are likely to treat these two violations equally in terms of increase in insurance. At Progressive the *average* impact on insurance for these two drivers would be the same as the competition but importantly, one driver would be priced above the competition and the other below. Through extensive analysis, Progressive has found that failure to yield should result in a higher premium increase than speeding.

Progressive's ability to segment depended upon its sophisticated underwriting software, which allowed agents to set rates at finer levels than its competition. While most insurers would simply reject an application from a 19 year old driving a motorcycle with a history of accidents and a poor driving record, Progressive had a rate for that driver because of its ability to factor in other aspects giving a more accurate price for the risk. All insurance companies looked at driver and vehicle location factors to set premiums, but most companies merely looked to their customer history based on zip codes to ascertain the risk. Progressive's software, however, looked for correlations between

[6] Stepanek (2000).

drivers, 12 vehicle characteristics, risk, and 16 variables in a credit-scoring model, and extended most risk models to include factors such as typical weather and number of intersections per mile of road.[7]

In 1993, after its growth in non-standard drivers leveled out and competitors entered the market, the traditional underwriter of nonstandard and high-risk policies moved into the standard and preferred sectors.[8] Low-risk policies, an eighth of Progressive's business in 1995, accounted for almost half of its business by 1999 (**Exhibit 9**). Between 1993 and 1999 Progressive advanced from ninth largest to fourth largest auto insurer in the United States. By 1998, Lewis declared:

> We're in the big league now, up there with State Farm and Allstate. The question is, can we win the pennant? Today four out of a hundred cars in the United States are insured with Progressive. People laugh when I talk about 100 percent market share. But if we get better than everybody else in every aspect of the business, why would anybody buy from another company? Of course, I'd settle for 25 percent. People tell me that 25 percent can't be done either, but people have been telling me things like that my whole life.[9]

(**Exhibit 10** plots growth rates for Progressive, the auto insurance industry, and the property-casualty industry.)

A History of Innovation

Freedom to experiment was ingrained into Progressive's culture early in the company's history. Lewis recalled his father's approach, "The obsession he had, . . . was having the freedom to experiment, to figure out how [we could be better]."[10] Lewis recalled making some crucial investments upon becoming CEO:

> The first thing I did was hire a guy from Travelers [Insurance] who had been in their data processing unit. I recognized that getting in the lead on this stuff would be a competitive opportunity…. Our attitude is that we will try almost anything that makes sense and we'll stop it when it stops making sense. We've spent a lot of money on dumb ideas, but we had the flexibility to stop it early … and the conversation and the idea-storming [went] on constantly. … It's ingrained in our culture to experiment, but to do so responsibly. We reward people for taking risks, but punish them for not spotting bad ones early and pulling the plug.[11]

In 1988 Lewis and the rest of the insurance industry got a "wake up call" from consumers. That year California passed Proposition 103, a referendum designed to regulate auto insurance companies, and roll back escalating rates. Twenty percent of Progressive's business was in California and the company paid out $60 million in refunds.[12] It also reduced its workforce by 19 percent. But,

---

[7] Gary H. Anthes, "Setting the price of risk," *Computerworld,* July 8, 2002 <http://www.computerworld.com/softwaretopics/software/apps/story/0,10801,72446,00.html> accessed February 24, 2003.

[8] Michael E. Porter and Nicolij Siggelkow, "Progressive Corporation," HBS No. 797-109 (Boston: Harvard Business School Publishing, 1998) examined the company's decision to enter the standard auto insurance market.

[9] Chuck Salter, "Progressive Makes Big Claims," *Fast Company*, No. 19, November 1998, p. 176.

[10] Stepanek (2000).

[11] Stepanek (2000).

[12] Salter (1998).

according to Lewis: "It was the best thing that happened to this company…. I decided that from then on, anything we did had to be good for the consumer or we weren't going to do it."[13]

Immediate Response

A major innovation was Progressive's implementation of fast service. Lewis reasoned: "Two things happen when you deliver fast: You give better service, and the better you do things, the less they cost in our business. The faster we get to the losses, the fewer the lawyers that get on the other side."[14]

Soon after Proposition 103 Lewis challenged his company's claims department to find a way to respond immediately, in person, to a policyholder involved in an auto accident and be able to do it anywhere, anytime.[15] Less than two years after Proposition 103, Progressive had rewired itself for round-the-clock service, created new positions such as special investigators and outside representatives who visited policyholders, and launched Immediate Response (IR). Teams now handled claims 24 hours per day. Progressive's Ohio state general manager Moira Lardakis, recalled the internal resistance Lewis' directive met:

> The claims people were in shock when they were told, 'We want you to go out and inspect the car and measure response time in hours, not days.' They were used to the 8-to-5 day and dealing with Monday morning loss reports and then going out to inspect vehicles.[16]

Lewis recalled the skepticism with which his idea was met.

> For three years, people said, 'It's crazy; it's too expensive; nobody will do it.' And for the same three years, I sat here and said, 'We're going to do it, no matter how much it costs and no matter how much you don't like it.' Other businesses go the extra mile. Why not an auto-insurance company?[17]

Advances in technology, particularly wireless technology and cell phones, made Progressive's leap into 24/7 service possible. Claims representatives relied on their cell phones in the early days of IR calling dispatchers to relay data and retrieve coverage information from the claims center and the company's mainframe. When representatives did not return to their office to update a file with their estimate, the job would be held up until the next day.

In 1994, Atlanta Division Claims manager Jose Benitez experimented with "mobile claims offices." Using response vehicles placed in the field, an agent could verify information, soothe policyholders, and expedite the claims process at the site of an accident. The first Immediate Response Vehicle (IRV) was a Ford van outfitted with a desk, file cabinet, drapes, cell phones, generator, computer and printer, chairs, fax machine, and small refrigerator. Recalled Benitez: "It was a tight fit."[18] The white

---

[13] Salter (1998).

[14] Stepanek (2000).

[15] Lynna Goch, "Surpassing Lane," *Best's Review*, October 1999, www.bestsreview.com.

[16] Goch (1999).

[17] Salter (1998).

[18] Goch (1999).

vans, with the Progressive name emblazoned in blue in six places (including on the roof) soon became ubiquitous.[19]

When a customer who had been in an accident called Progressive's 800 number, a telephone agent took down the necessary information and handed the claim off to one of the 350 local claims offices, which shared the information on the accident and customer through a centralized database. The local claims office dispatched one of the 1,400 IRV vans, and the claims representative in the van, after arriving on the scene, wirelessly accessed the company's central database to process the claim.

The seamless flow of information facilitated by the IR system enabled Progressive claims representatives to work up estimates immediately, often writing a payout check at the scene of an accident. With Claims Workbench, the company's proprietary software application (rolled out in 1997), a parts database, and a laptop and modem were all claims reps required to complete their jobs. With these they could access the company's mainframe, file police reports, and calculate parts and labor hour estimates.[20] Although checks were often written on the spot, claims were not entirely "settled" until days later. By 1997, Progressive was settling 50 percent of claims within seven days.

Claim handling was assigned according to complexity of the claim and experience of the claim representative. Newer reps handled single-car accidents and other minor fender-benders. More experienced reps were assigned multi-car accidents involving totaled cars and injuries. A two-car accident with damage to both cars and both drivers was logged as having four "features." One rep "owned" the claim and was the main point person. Other team members assisted with the reported "features." In the Houston office, a team consisted of ten persons with five in the field doing Immediate Response and five in the office answering phones, dispatching agents, and processing long-term claims.

Good software and information, however, was nothing without good claim representatives. Accordingly, Lewis had two simple operating principles: "hire the best" and "pay the most." Lewis explained further:

> We have the best people in the industry as measured by education, intelligence, initiative, work ethic, and work record. We find them and go after them. Then we put them through our crucible. This is a highly competitive, challenging place to work. We work harder than most companies, and that becomes sort of seductive. Many people wash out. The ones who remain are fantastic. … The other side of hiring good people is firing people who aren't good. We evaluate people against their objectives, which they negotiate with the company and then put in writing. If people aren't doing their job, it's good-by. This is not a bloodthirsty place. It is a humane environment. But we do not suffer nonperformance.[21]

For Immediate Response to work effectively claims had to be reported; customers, however, were not necessarily accustomed to reporting accidents to their insurers in a timely manner. Progressive consequently set out to encourage policyholders to report accidents immediately. It instituted a Claims Reporting Index (CRI) that monitored how long it took a customer to report an accident.[22] Progressive's innovative Gold Card could be broken in half, facilitating the exchange of information

[19] Goch (1999).

[20] By 1990, Progressive claims reps were able to inspect vehicles and write claim checks within nine hours of an accident report 15 percent of the time; by 1997 this increased to 57 percent of the time. Salter (1998).

[21] Salter (1998).

[22] Salter (1998).

between drivers after an accident.[23] Within six years of implementing these changes Progressive doubled the number of customers that reported claims within 24 hours. Glenn Renwick, developer of the CRI observed:

> It's like FedEx: Customers know that it delivers overnight. More and more people know that we handle auto-insurance claims differently, and quickly.[24]

Quick claim turnarounds and increased number of customers between 1994 and 1997 grew the ranks of claim representatives from 3,093 to 7,561. This growth in claim representatives combined with the two years it typically took for a claim representative to get up to speed resulted in lower claim-handling quality and increased loss costs.[25]

Comparison Quotes: 1-800 AUTOPRO

Lewis realized the industry was competitive, but not for customers. In a 1993 meeting with 14 consumer groups, arranged by college friend Ralph Nader (a Prop. 103 supporter), consumers' frustration was made clear to him. Essentially, Nader had drawn attention to the lack of information transparency across insurers.[26] Recalled Lewis: "The consumer could not access the competition. The process of getting insurance for yourself was impossible to do, so no one did it. We relied on agents to do it, and they were irresponsible…. [I realized] it would be great if we could give people comparison quotes."[27]

Comparison Quotes provided prospective customers who called Progressive's toll-free number with rates from Progressive and up to three competitors. More than half the time a competitor's quote was lower than Progressive's. Observed Alan Bauer, Progressive's Internet-process leader: "Time and again, people don't believe we do this. They think it's a gimmick. But it's part of information transparency. We are exposing our data to the customer."[28]

Soon after Comparison Quotes launched, Progressive's Web site went live, one of the first in the industry. Bauer continued: "We want to provide the information that customers need—and to provide it on their terms. We don't care if it's in person, over the phone, or online."[29] While Progressive had success selling insurance directly to consumers, in 1998 it still relied on a network of 30,000 independent agents for 90 percent of its premiums. (**Exhibit 11** provides a breakdown of direct and independent agent premiums.)

No matter the channel, Progressive's underwriting process was highly automated. Agents (or customers using the Web site) input unique customer information and Progressive software

---

[23] The card grew out of Progressive's research on credit cards, from which the company concluded that the durability and prestige of a physical card imprinted with personal information were important to consumers. Salter (1998).

[24] Salter (1998).

[25] Company annual report, 1999, p. 18.

[26] Salter (1998).

[27] Stepanek (2000).

[28] Salter (1998).

[29] Salter (1998).

calculated the appropriate premium using input information as well as data from third parties such as other insurers, credit bureaus, and driving records vendors.[30]

Autograph

McMillan conceived Autograph in 1994 based on observations of the automobile industry's creative uses of GPS technology, which had originally been developed for the military. As the technology became available for civilian use, cars were equipped with GPS-based satellite navigation and theft-recovery systems. McMillan believed this space-age technology had the potential to support a novel approach to calculating and setting insurance premiums. Autograph relied on GPS satellites, mapping technology, and internal computers to determine when and how much a vehicle was driven.[31] This information was uploaded monthly, in a matter of seconds via a cellular phone link, to Progressive's database. Autograph then set premiums based on the amount of driving done within the billing period. Explained Willy Graves, a Progressive executive: "[It's] more like a monthly utility or telephone bill, with the consumer paying by the month based on actual usage rather than on historical data derived from groups of similar people and vehicles."[32]

The patented Autograph system tracked mileage, time of day, and where driving occurred.[33] "Our data show accident rates per mile are much higher late in the night," McMillan pointed out. "A mile driven at 2 a.m. [is] four or five times more expensive than one driven at 7 a.m."[34] Consumers also paid less if they used routes on which fewer accidents occurred. Progressive began a limited market test of the new product in Houston in August 1998, and one year later expanded the test throughout the state of Texas. Progressive absorbed the cost of installing in the policyholders' automobiles a GPS transponder, cellular communication system, and small computer as well as cabling and connectors (roughly $500 per vehicle). The system was powered by the vehicle's battery.[35] Three quarters of Autograph customers' premiums were calculated using data captured by the system, the remaining quarter on the basis of traditional underwriting considerations (e.g., driver's gender, age, driving record, and vehicle make and model).[36]

Drivers who signed up for Autograph were offered (for a monthly fee) an additional set of services (some GPS-based) that were unrelated to insurance. These service features, which included theft recovery, remote door unlocking, travel directions, low-battery detection, and emergency assistance help, were also available to consumers through services such as GM's OnStar.[37]

---

[30] Anthes (2002).

[31] Consumers who signed up for Autograph agreed to give Progressive access to their driving data, and were assured that it would be accessible only to the company and consumers.

[32] Anonymous, "Progressive Testing New Product in Texas," October 28, 1999, <www.theautochannel.com> (accessed November 11, 2000).

[33] The piloted version of Autograph included only mileage, time of day, and where driving occurred. The patents, however, covered a much broader range of driving behavior as described in **Appendix A**.

[34] Eisenberg (2000).

[35] Eisenberg (2000).

[36] Eisenberg (2000).

[37] OnStar provided drivers with information and assistance with a press of a button usually located near the rear-view mirror. Drivers connected to the OnStar Center where live advisors were on hand to help with services such as giving directions, emergency services, roadside assistance, information, and online concierge. For more, go to www.onstar.com.

About 1,100 policyholders signed up for the strictly voluntary program. Graves noted:

> In Houston, consumers… are paying an average of 25 percent less [on premiums] using Autograph than they paid using a "traditional" auto insurance product. Houston consumers tell us three things: they're paying less; they're in control; and the system makes sense to them.[38]

Claimed Gus Kopriva, the Autograph policyholder with four cars: "I'm saving lots of money."[39]

Autograph could also be a vehicle for data mining. Progressive's patents mentioned two examples of sharing knowledge of drivers' whereabouts with other companies.[40] The owner of an Autograph-equipped vehicle that traveled to a resort, for example, might subsequently be targeted to receive travel-related literature, the owner of a vehicle recorded at a sporting event made a target of marketers of sports-related products.[41] (**Appendix A** excerpts from the Autograph patent.)

How Far to Go?

Progressive management pondered whether expanding Autograph nationally could help the company reestablish its industry-leading underwriting record. Expansion beyond Texas would require major expenditures of time and money. Auto insurance was regulated at the state level, requiring Progressive to seek approval from the insurance commissions of every state in which it planned to implement Autograph (save Texas, which permitted certain auto insurers to operate without regulatory oversight).[42]

An even larger question was *whether* Progressive should make Autograph available to its millions of policyholders. Clearly a breakthrough in terms of technology and innovation, per-mile policies such as Autograph were also viewed as more equitable than conventional insurance.[43] But was it in Progressive's interest to market policies for which consumers would pay, on average, 25 percent *less* in premiums?

---

[38] Eisneberg (2000).

[39] Eisneberg (2000).

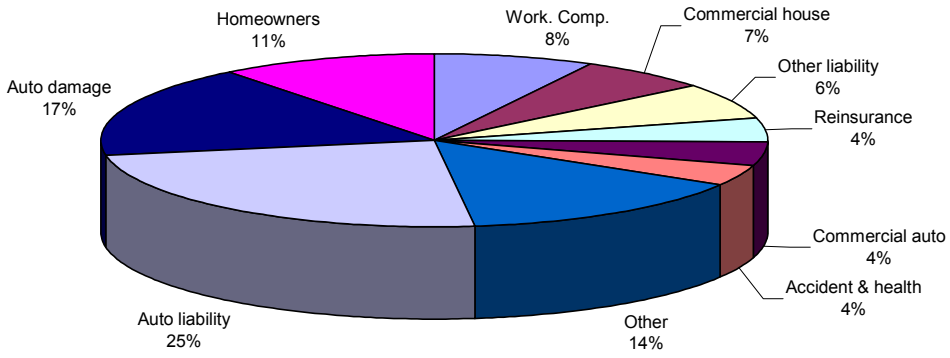
[40] Patent no. 5,797,134, p. 19.

[41] Progressive assured consumers in the pilot program that all data would be kept confidential.

[42] In Texas, exemption from state regulation was intended to provide "county mutual" insurers with an incentive to sell policies in remote agricultural counties and other underserved areas.

[43] According to the National Organization of Women (NOW), traditional auto policies discriminated against women, the elderly, and low-income groups who drove less than average. NOW proposed legislation in Texas and at the federal level to force insurers to give consumers the option to enroll in distance-based insurance programs. Daniel Hays, "Progressive Tests Per-Mile Auto Policy in Texas," *National Underwriter Property-Casualty Edition*, April 26, 1999.

Exhibit 1 Property-casualty Net Premiums Written by Product Line, United States, 1999



Source: Adapted from Standard & Poor's, *Industry Surveys Insurance: Property-Casualty*, January 11, 2001, p. 18.

Exhibit 2 Auto Insurance Costs and Profits

Revenues and Expenses	**1999 Industry Average**	**1998 Industry Average**
Premiums (earned)	$100	$100
Payments to injured persons		
Medical	(10)	(9)
Wage loss & other economic payments	(1)	(1)
Pain & suffering	(6)	(6)
Lawyers' fees	(13)	(12)
Other costs of settling claims	(3)	(3)
Subtotal	(33)	(32)
Payments for damaged vehicles		
Property Damage Liability	(16)	(16)
Collision claims	(18)	(16)
Comprehensive claims	(8)	(9)
Other costs of settling claims	(3)	(2)
Subtotal	(45)	(43)
Total claims	**(78)**	**(75)**
Expenses		
Commissions and other fees	(17)	(17)
Costs of operations	(5)	(5)
State premium taxes	(2)	(2)
Dividends to policyholders	(1)	(2)
Total expenses	**(25)**	**(26)**
Total claims and expenses	**(103)**	**(101)**
Investment gain	10	12
Pre-tax income	7	11
Federal taxes	(2)	(4)
Net profit[a]	**5**	**7**

Source: Adapted from *The Fact Book 2001* (New York: Insurance Information Institute, 2001) p. 50; *Best's Insurance Reports, Property-Casualty,* Volume 2, M-Z (Oldwick, NJ: A. M. Best The Insurance Information Source, 2000).

Notes:

[a]The Insurance Research Council-Insurance Services Office estimates that "soft" fraud (smalltime cheating by normally honest people) siphoned off 11 to 30 cents of every claim dollar and hardcore scams steal only a small fraction of that. See http://www.insurancefraud.org/media_center_set.html

Exhibit 3 Auto Insurance Distribution Channels by Agent Type, 1999

Company	Dedicated agents	Independent agents
Progressive	0	30,000
GEICO	0	0
Allstate	15,200	13,000
State Farm	16,000	0

Source: Company Annual Reports, 1999.

Exhibit 4 Top Ten U.S. Auto Insurers by Market Share, 1999

Company	Market Share (%)
State Farm	18.9
Allstate	12.2
Farmers	5.7
Progressive	4.8
Nationwide	4.4
GEICO	4.1
USAA Group	3.1
Liberty Mutual	2.2
American Family	2.0
Travelers	2.0

Source: Adapted from *The Fact Book 2001* (New York: Insurance Information Institute, 2001) p. 48.

Exhibit 5 Progressive Selected Financials ($ in millions)

	1999	1998	1997	1996	1995	1994	1993
Company-wide net premiums written[a]	6,110	5,274	4,644	3,399	2,875	2,430	1,794
Auto net premiums written	5,769	4,978	4,368	3,157	2,669	2,392	1,755
Auto as % of business	94%	94%	94%	93%	93%	98%	94%
Revenues and expenses							
Premiums earned[b]	5,660	4,916	4,161	3,161	2,693	2,168	1,645
Loss and loss adjustment[c]	4,240	3,364	2,968	2,225	1,931	1,391	1,027
Underwriting expenses[d]	1,495	1,314	1,085	778	708	633	513
Other expenses	0	0	0	0	0	0	0
Dividends to policyholders	0	0	0	0	0	0	0
Net underwriting income	(75)	238	108	158	54	144	105
Net investment income	268	247	216	168	143	103	108
Other income	150	133	130	106	95	90	61
Pre-tax operating income	343	618	453	431	292	337	274
Net realized gain on security sales	(20)	3	23	(1)	20	7	0
Income tax	123	293	208	157	116	112	97
Net income	200	328	267	273	196	231	177
Loss ratio[e]	75%	68%	71%	70%	72%	64%	62%
Expense ratio[f]	24%	25%	23%	23%	25%	26%	29%
Combined ratio[g]	99%	93%	95%	93%	96%	90%	91%

Source: Adapted from *Best's Insurance Reports: Property-Casualty,* Volume 2, K-Z (Oldwick, NJ: A.M. Best The Insurance Information Source, 2000).

Notes:

[a]Premiums, excluding reinsurance ceded to, but including reinsurance assumed from, other companies.
[b]Premiums collected for a period of coverage that has elapsed.
[c]Expense of paying, plus expense of processing, insurance claims.
[d]Expense of underwriting policies plus commissions paid to agents.
[e]Losses and loss adjustment as a percentage of premiums earned.
[f]Underwriting expenses as a percentage of premiums written.
[g]The sum of an insurer's loss and expense ratios.

Exhibit 6 Allstate Selected Financials ($ in millions)

	1999	1998	1997	1996	1995
Company-wide net premiums written	20,855	19,101	18,294	17,821	17,506
Auto net premiums written	15,559	14,554	14,103	13,417	12,662
Auto as % of business	75%	76%	77%	76%	72%
Revenues and expenses					
Premiums earned	19,569	18,889	18,096	17,937	17,088
Loss and loss adjustment	14,488	13,249	13,136	14,052	13,317
Underwriting expenses	5,250	4,614	4,482	4,358	4,044
Other expenses	0	179	49	(3)	0
Dividends to policyholders	0	42	0	3	20
Net underwriting income	(170)	805	429	(473)	(293)
Net investment income	1,847	1,833	1,817	1,873	1,885
Other income	225	151	312	242	217
Pre-tax operating income	1,823	1,815	2,934	2,544	1,629
Net realized gain on security sales	537	935	1,134	781	888
Income tax	489	754	1,098	805	290
Net income	1,870	1,996	2,970	2,520	2,227
Loss ratio	74%	70%	73%	78%	78%
Expense ratio	25%	24%	24%	24%	23%
Combined ratio	99%	94%	97%	103%	101%

Source: Adapted from *Best's Insurance Reports: Property-Casualty,* Volume 1, A-J (Oldwick, NJ: A.M. Best The Insurance Information Source, 2000).

Exhibit 7 GEICO Selected Financials ($ in millions)

	1999	1998	1997	1996	1995
Companywide net premiums written	4,877	4,121	3,538	3,080	2,816
Auto net premiums written	4,859	4,103	3,501	2,995	2,635
Auto as % of business	100%	100%	99%	97%	94%
Revenues and expenses					
Premiums earned	4,681	3,972	3,432	3,050	2,747
Loss and loss adjustment	3,854	2,993	2,642	2,430	2,260
Underwriting expenses	878	733	517	428	384
Other expenses	(108)	0	0	0	(10)
Dividends to policyholders	0	0	0	0	0
Net underwriting income	(51)	246	273	193	113
Net investment income	374	315	285	250	224
Other income/expense	(23)	(20)	(14)	(10)	(8)
Pre-tax operating income	37	244	517	513	408
Net realized gain on security sales	170	175	212	8	32
Income tax	212	161	378	168	116
Net income	(5)	257	351	353	324
Loss ratio	82%	75%	77%	80%	82%
Expense ratio	18%	18%	15%	14%	14%
Combined ratio	100%	93%	92%	94%	96%

Source: Adapted from *Best's Insurance Reports: Property-Casualty,* Volume 1, A-J (Oldwick, NJ: A.M. Best The Insurance Information Source, 2000).

Exhibit 8 State Farm Selected Financials ($ in millions)

	1999	1998	1997	1996	1995
Company-wide net premiums written	34,208	34,755	34,842	34,559	33,310
Auto net premiums written	23,349	24,153	24,458	24,184	23,232
Auto as % of business	68%	69%	70%	70%	70%
Revenues and expenses (auto)					
Premiums earned	34,027	34,641	34,843	34,010	32,878
Loss and loss adjustment	28,879	28,388	25,703	27,473	27,982
Underwriting expenses	8,556	8,215	7,795	7,084	6,977
Other expenses	0	0	0	0	0
Dividends to policyholders	5	894	692	0	0
Net underwriting income	(3,413)	(2,857)	652	(547)	(2,081)
Net investment income	3,428	3,493	3,494	3,377	3,224
Other income	109	132	(92)	(142)	129
Pre-tax operating income	123	768	4,055	2,688	1,272
Net realized gain on security sales	806	413	256	239	64
Income tax	137	184	730	570	242
Net income	792	996	3,581	2,356	1,093
Loss ratio	85%	82%	74%	81%	85%
Expense ratio	25%	24%	22%	20%	21%
Combined ratio	110%	106%	96%	101%	106%

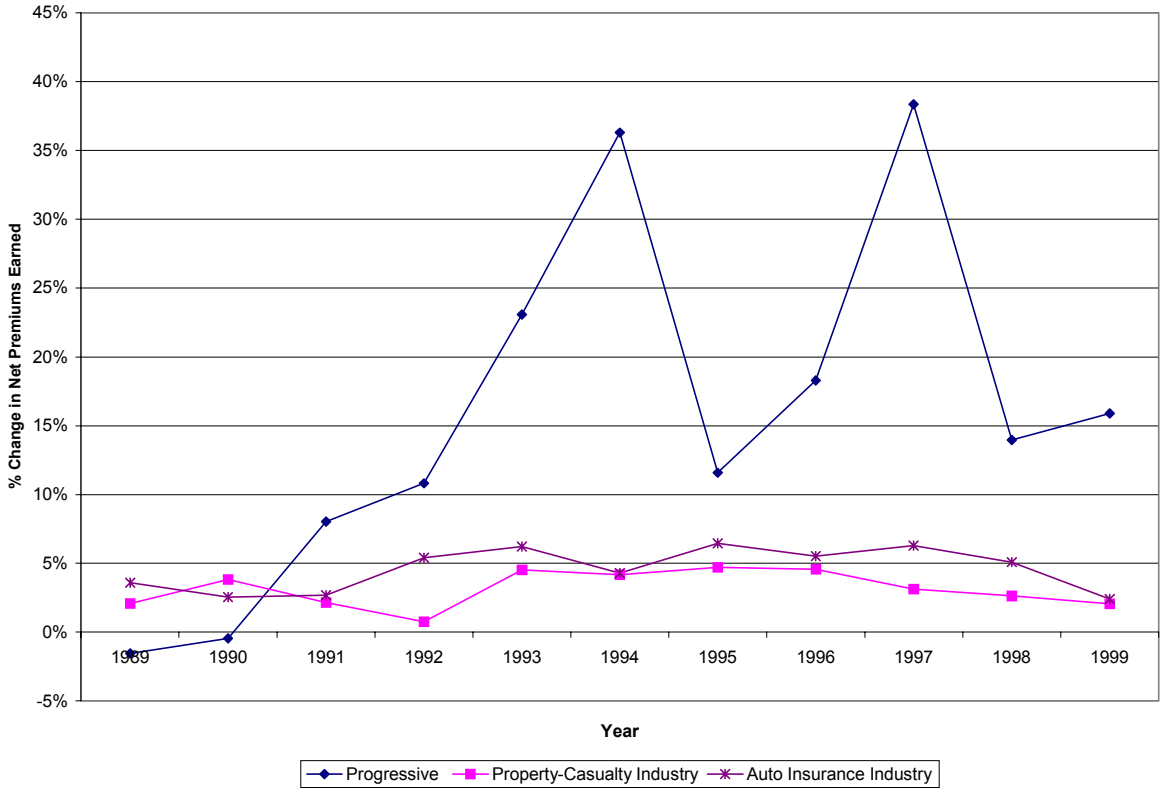
Source: Adapted from *Best's Insurance Reports: Property-Casualty,* Volume 2, M-Z (Oldwick, NJ: A.M. Best The Insurance Information Source, 2000).

Exhibit 9 Progressive Corporation, Percentage of Standard and Preferred Business

	1999	1998	1997	1996	1995	1994
Percent of premiums from standard and preferred sectors	46%	32%	22%	13%	7%	7%

Source: Adapted from The Progressive Corporation, 2000-1997 Annual Reports.

Exhibit 10 Growth Rates of Progressive, Auto Insurance, and Property-Casualty Insurance



Source: Adapted from Standard & Poor, *Industry Surveys Insurance: Property-Casualty*, January 11, 2001, p. 18.

Exhibit 11 Progressive Corporation, Percentage of Direct (Telephone and Internet) Sales

	1999	1998	1997	1996
Percent of premiums derived from direct sales vs. through agents	17%	10%	6%	5%

Source: Adapted from The Progressive Corporation, 2000 Annual Report.

Appendix A Excerpts from Progressive Patent for Autograph

United States Patent 5,797,134—McMillan, et al.—August 18, 1998

The present invention will use information acquired from the vehicle to more accurately assess vehicle usage and thereby derive insurance costs more precisely and fairly. Examples of possible actuarial classes developed from vehicle provided data include:

Driver Total driving time in minutes by each driver of the insured vehicle; number of minutes driving in high/low risk locations (high/low accident areas); number of minutes of driving at high/low risk times (rush hour or Sunday afternoon); safe driving behavior, using seat belts, use of turn signals, observance of speed limits, and observance of traffic control devices; number of sudden braking situations; and number of sudden acceleration situations.

Vehicle Location vehicle is parked at night (in garage, in driveway, on street); and location vehicle is parked at work (high theft locations, etc.).

These new and more precise actuarial classes are considered to be better predictors of loss because they are based on actual use of the vehicle and the behaviors demonstrated by the driver. This will allow the consumers unprecedented control over the ultimate cost of their vehicle insurance.

In accordance with the present invention, additional discounts and surcharges based on data provided by the insured vehicle will be available. Examples of surcharges and discounts based on vehicle provided data include:

Surcharges Excessive hard braking situations occurring in high-risk locations; and intermittent use of a safety device, such as seat belts.

Discounts Regular selection of low/high-risk routes of travel; regular travel at low/high-risk times; significant changes in driving behavior that results in a lower risk; vacation discount when the vehicle is not used; regular use of safety devices; and unfailing observance of speed limits.

The type of elements monitored and recorded by the subject invention comprise raw data elements, calculated data elements and derived data elements. These can be broken down as follows:

Raw Data Elements

Power train sensors RPM, transmission setting (Park, Drive, Gear, Neutral), throttle position, engine coolant temperature, intake air temperature, barometric pressure;

Electrical sensors brake light on, turn signal indicator, headlamps on, hazard lights on, back-up lights on, parking lights on, wipers on, doors locked, key in ignition, key in door lock, horn applied;

Body sensors airbag deployment, ABS application, level of fuel in tank, radio station tuned in, seat belt on, door open, tail gate open, odometer reading, cruise control engaged, anti-theft disable;

Other sensors vehicle speed, vehicle location, date, time, vehicle direction, IVHS data sources.

Appendix A Excerpts from Progressive Patent for Autograph (cont'd)

Calculated Data Elements rapid deceleration; rapid acceleration; vehicle in skid; wheels in spin; closing speed on vehicle in front; closing speed of vehicle in rear; closing speed of vehicle to side (right or left); space to side of vehicle occupied; space to rear of vehicle occupied; space to front of vehicle occupied; lateral acceleration; sudden rotation of vehicle; sudden loss of tire pressure; driver identification (through voice recognition or code or fingerprint recognition); distance traveled; and environmental hazard conditions (e.g. icing, etc.).

Derived Data Elements vehicle speed in excess of speed limit; observation of traffic signals and signs; road conditions; traffic conditions; and vehicle position.

This list includes many, but not all, potential data elements.

Trigger events are divided into two groups: those requiring immediate action and those not requiring immediate action, but necessary for proper billing of insurance. Those required for proper billing of insurance will be recorded in the same file with all the other recorded vehicle sensor information. Those trigger events requiring action will be uploaded to a central control center which can take action depending on the trigger event. Some trigger events will require dispatch of emergency services, such as police or EMS, and others will require the dispatch of claims representatives from the insurance company.

The following comprises an exemplary of some, but not all, trigger events:

Need for Assistance These events would require immediate notification of the central control center.

1. Accident Occurrence. An accident could be determined through the use of a single sensor, such as the deployment of an airbag. It could also be determined through the combination of sensors, such as a sudden deceleration of the vehicle without the application of the brakes.

2. Roadside assistance needed. This could be through the pressing of a "panic button" in the vehicle or through the reading of a sensor, such as the level of fuel in the tank. Another example would be loss of tire pressure, signifying a flat tire.

3. Lock-out assistance needed. The reading of a combination of sensors would indicate that the doors are locked but the keys are in the ignition and the driver has exited the vehicle.

4. Driving restrictions. The insured can identify circumstances in which he/she wants to be notified of driving within restricted areas, and warned when he/she is entering a dangerous area. This could be applied to youthful drivers where the parent wants to restrict time or place of driving, and have a record thereof.

Appendix A Excerpts from Progressive Patent for Autograph (cont'd)

Unsafe Operation of the Vehicle These events would be recorded in the in-vehicle recording device for future upload. Constant trigger events would result in notification of the driver of the exceptions.

1. Excessive speed. The reading of the vehicle speed sensors would indicate the vehicle is exceeding the speed limit. Time would also be measured to determine if the behavior is prolonged.

2. Presence of alcohol. Using an air content analyzer or breath analyzer, the level of alcohol and its use by the driver could be determined.

3. Non-use of seatbelt. Percent of sample of this sensor could result in additional discount for high use or surcharge for low or no use.

4. Non-use of turn signals. Low use could result in surcharge.

5. ABS (anti-locking braking system) application without an accident. High use could indicate unsafe driving and be subject to a surcharge.

Source: Excerpted and adapted from United States Patent #5,797,134 (August 18, 1998).