

## Telematics

Driving the automobile insurance  
market through disruption



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# Executive summary

Telematics has enjoyed enormous buzz in the auto insurance marketplace in recent years. The goal is to capture and analyze data about customers' actual driving to more effectively write usage-based (mileage) or pay-as-you-drive (mileage plus behavior) insurance. To accomplish this, telematics harnesses satellite and/or cellular technologies, along with a standalone device, the auto's onboard computer and mechanics, or a mobile application. The outcome is that insurance rates, deductibles, and coverage features are tied directly to lower usage and/or safer driving practices, new territorial factors, and other indicators of reduced risk.

At first glance, the advantages accrue to virtually all sides. Insurance companies benefit from matching premiums more closely with actual risk. Drivers benefit from the opportunity to lower their insurance rates by driving less or more safely. Society benefits from more thoughtful driving and more economical auto usage. However, telematics represents a disruptive technology. To date, it's been largely driven by engineers and providers of telematics products and services, rather than insurance business strategists. Many questions remain to be answered. Major insurance carriers are scrambling to better understand telematics and its potential implications for their business overall, as well as for the future of personal auto insurance, underwriting and product development.

Insurance executives can benefit from taking a step back and analyzing the very real and significant business issues surrounding deployment of telematics. In what ways is the disruption good for their companies, and what challenges does it raise? Which aspects of deploying telematics are inevitable, and which ones can possibly be controlled? Answering these — and many other — questions is an essential first step in deciding how and when to play in this new game with entirely new rules. This does not suggest a prolonged delay. Instead, insurers should consider a brief pause or a parallel analysis to determine if they have an effective strategy in place.

This paper introduces important aspects of the disruptive potential of telematics and both the opportunities and potential competitive threats it represents. We also briefly describe a phased approach to the adoption of telematics to help companies in their efforts to address specific risks and return on investment. With a deeper understanding of costs and business models, privacy concerns, and regulatory considerations, insurance executives may be better positioned to leverage telematics, proactively and strategically, for competitive advantage.

# A strategic sword that requires careful handling

The personal automobile insurance line of business is the largest insurance market segment in the United States. It's a somewhat fragmented market, with 80 percent of the approximately \$150 billion in annual premiums underwritten by 25 insurance companies,<sup>1</sup> and many dozens of other companies underwriting the remaining 20 percent of the business.

With relatively short purchasing cycles — policies typically come up for renewal at six and 12 months — the industry had a churn rate of 40 percent in 2011,<sup>2</sup> and competition has often been fierce for the more profitable low-risk drivers in the more favorable geographies. Traditionally, insurers determined what premiums to charge individuals based on a number of factors, including driving record, credit record, education level, territory, and other demographic and biographic data found to be statistically predictive of drivers' risk.

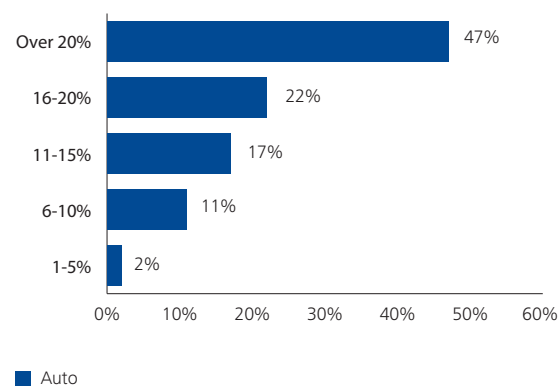
This basic model was shaken up when telematics was introduced to the U.S. market in the early 2000s. Rather than using data correlated to high-risk drivers, such as credit scores, insurers began to evaluate causal data, including actual usage and riskier driving behaviors, such as rush-hour commuting, high speed driving, or high-lateral-acceleration cornering. In this way, telematics began giving insurers actual data about individual driving habits to guide underwriting and pricing practices. Some insurers also used early telematics capabilities to encourage safer teen driving, a practice that has endured and has proven to be highly valued by parents.

Today, telematics devices can gather data on when and where an individual drives (e.g., rush hour and late night vs. lower risk times of day or in rural Northern vs. urban Southern California), on what type of roads (highways

vs. suburban neighborhoods), how frequently (daily vs. occasionally), and actual driving behavior (rate of acceleration, braking force, cornering, and speed).<sup>3</sup> Insurers can then use analytics to rank and weigh the hundreds of potential variables, as well as create new synthetic variables, to come up with a highly statistically accurate prediction of an individual's accident risk and the potential for a high number of claims, both possibly having a material impact on profitability.

This represents a potentially radical shift in how automobile insurance premiums are underwritten in the U.S. — one that on the surface is very enticing. In fact, although telematics is more prevalent today in Europe (see "Europe: A sign of what's to come in the U.S.?" ), some U.S. insurers already offer discounts of up to 30 percent for pay-as-you-drive products that collect data on drivers such as time of day, vehicle speed, and braking tendencies. Other carriers give discounts of up to 50 percent based on driving

**Figure 1: How much of a discount would auto respondents require to install a telematic device to monitor their driving experience?**



Source: Deloitte Automobile Consumer Survey 2012

<sup>1</sup> "Where's the Growth in the Auto Insurance Market?" Seeking Alpha. <http://seekingalpha.com/article/84160-where-s-the-growth-in-the-auto-insurance-market>.

<sup>2</sup> J.D. Power and Associates 2011 U.S. Insurance Shopping StudySM, <http://businesscenter.jdpower.com/news/pressrelease.aspx?ID=2011061>.

<sup>3</sup> Telematics also are being used increasingly in commercial fleets, such as package delivery vehicles. There, tracking devices monitor and reduce drive time and gas consumption through strategic routing; monitor driver behavior as a safety measure; and schedule vehicle maintenance.

behavior, vehicle condition and operational efficiency. Recent Deloitte research indicates that nearly half of the drivers surveyed would allow installation of a telematics device if a healthy discount accompanied it (Figure 1). No wonder telematics is causing such a stir in the industry. Yet rather than carefully considering the strategic implications of telematics, such as the degree to which it might change the economics of the business, some auto insurers seem to be more concerned with learning the tactics of deploying and using telematics. Others seem to be taking a wait-and-see attitude.

Both approaches carry risk. Insurers that rush into telematics without a carefully considered strategy potentially face premium and profit erosion, business model and operational issues, and regulatory issues. On the other hand, insurers that wait too long, continuing to underwrite their business without using telematics — where the last major innovation was the use of controversial credit scores in individuals' risk profiles — potentially face competition that possesses actual driving data, as well as the sophisticated tools required to analyze it. Those companies (the "haves") are likely to find themselves in a more favorable position to others (the "have nots") due to a more precise understanding of each customer's risk profile.

#### **Europe: A sign of what's to come in the U.S.?**

European telematics-based insurance offerings appear to be evolving considerably faster than those in the U.S., potentially providing a glimpse into the future of the U.S. markets. European insurance companies are delivering an advanced service strategy through innovative business models with strategic partners in a receptive environment — many contributing to the increasing effectiveness of telematics-based insurance. The confluence of market dynamics contributing to European market effectiveness include:

- Low-cost technology making adoption of telematics affordable
- High cost of driving leading to consumer behavior changes
- Improved solutions from telematics suppliers
- Insurers developing market-differentiating offerings
- Start-up insurance companies innovating on traditional business models
- Significant product purchasing via direct channels.

U.S. markets appear to be starting to give off analogous signals that could lead to similar results in a few years.

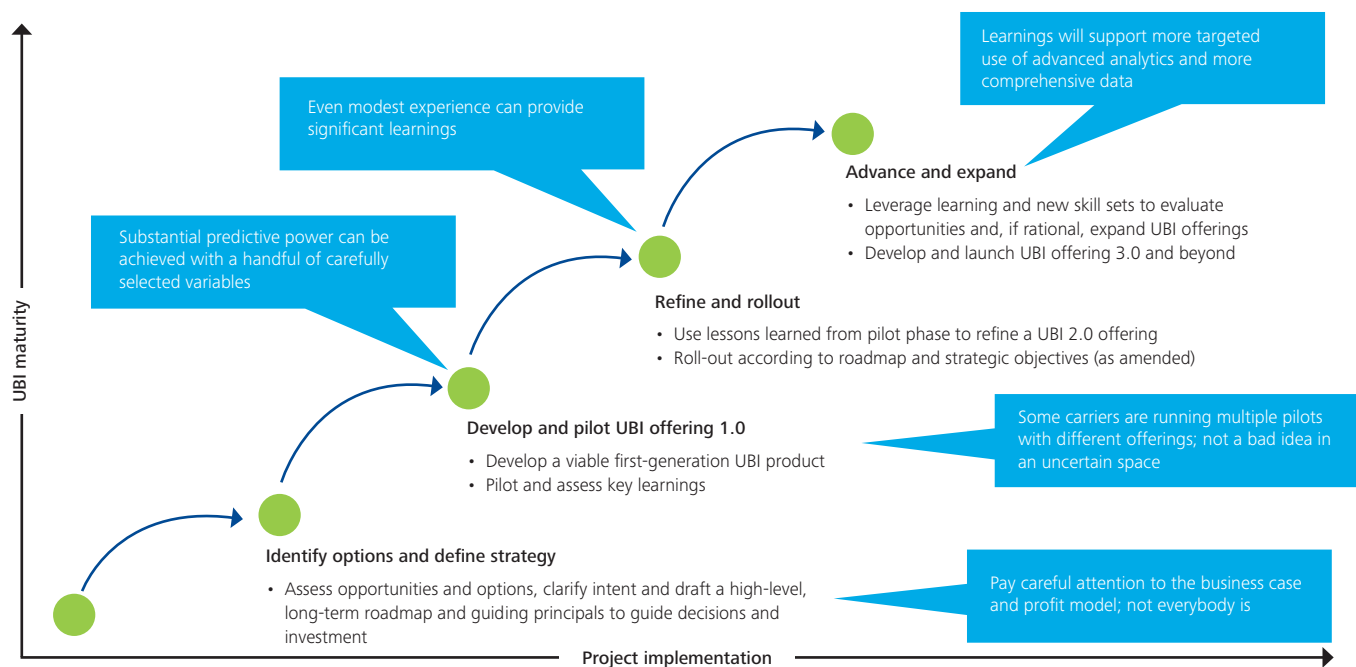
# Strategy first: A staged approach

Insurers that are only now entering the telematics market should start with a specific strategy and consider a staged approach (Figure 2). Such an approach can be effective yet pragmatic because it has the potential to mitigate risks and upfront investments while maintaining an aggressive speed to market. Also, lessons learned early on can be applied to future offerings, potentially reducing the risk of costly missteps.

After strategic considerations, data management concerns should be considered: What data about drivers' behavior and vehicle use should be collected? How should it be collected? How will it be cleaned, organized, and stored?

Finally, insurers can then dig into examining the use of predictive analytics to understand the information gathered and calculate how actual driving behavior can impact pricing, types of coverage, policy options, services, profit margins, and business processes. Such analytics results can then, in turn, feed back into strategy. But strategy should come first.

Figure 2. A staged approach to telematics-based insurance



A phased approach can provide meaningful pricing gains and rapid market entry with lower investment requirements. Learnings — especially those from different pilot offerings — can be applied to future offerings, reducing the risk of a costly misstep.

# The telematics conundrum

One especially problematic strategic consideration is that the costs and margins associated with telematics-based auto policies shift dramatically. Investing in the necessary infrastructure is not cheap, and telematics-based policies could well generate less revenue overall unless insurers strategically shift costs from the best drivers to the remaining drivers or until the company's overall volume offsets policy discounts.

Consider this scenario: Two older women, neighbors, share similar educational backgrounds, credit records, and driving records, yet one aggressively drives 25 miles every day during rush hour to her job. The other, retired, only uses her car on weekends and is a slow and cautious driver. Both drivers, in aggregate, drive a similar number of miles per year and both are currently accident free. Under traditional pricing models, these two women would likely have paid virtually the same premiums. But under a telematics-based policy, the premium of the weekend (and safer) driver could go down.

Many insurers that have telematics programs today make no mention of adding surcharges for drivers that opt against the telematics program or opt in, but are identified as riskier drivers. This "natural selection" process, in which safer drivers volunteer for the telematics program, may create a disproportionate decline in premiums among the best drivers without allowing for an offsetting increase for the worse drivers. So, unless the insurer simultaneously raises the premiums of higher risk drivers, its overall revenues are likely to decline unless revenue lost to discounts is offset by an influx of new customers or the sale of services.

Another scenario that might impact insurer revenue involves the more precise tracking of miles driven that is often a component of pay-as-you-drive programs. Previously, insurance carriers asked customers to estimate the number of miles they drive each year and then rounded up to the next mileage band. Otherwise, they risked underestimating mileage and thereby created potential premium leakage. Using this roundup approach, insurers have enjoyed getting paid for a certain number of miles without the corresponding risk. With more precise telematics-based pricing programs, this cushion could disappear. The lost revenue could be exacerbated by customers who opt out of the telematics program and either accidentally or deliberately underestimate the miles they drive, creating even more revenue leakage.

In spite of these issues, not implementing telematics means that an insurer runs the risk of having its best (i.e., safest, most profitable) drivers poached by companies that have the capability to recognize and reward good driving. Under this scenario, premium prices are likely to decline overall due to competitive pressures. Telematics, in fact, could put pressure on the entire industry, and revenues could decline for virtually all insurers.

Some insurers may assume, however, that the predictive powers of telematics will allow them to avoid risk, which would likely result in fewer claims. Their assumption in this case being that they may collect less revenue in premiums but make more money because payouts may also be less, and less frequent. But, for these results to have a chance of happening, insurers should be prepared to begin shifting premium costs based on a radically different paradigm.

# Needed: New business models

Another critical strategic element is the necessity to rethink the underlying business model of automobile insurance. Early adopters of telematics-based auto products are largely competing on cost: they have the capabilities, scale and distribution networks necessary to play a customer acquisition-and-retention game based on price alone. But, companies without a cost advantage are likely to struggle. Again, with telematics-enabled insurers stealing away their best customers with low-cost offers, these companies will likely need to find a way to increase margins on riskier drivers — or come up with value-added services for which people will be willing to pay more without an offsetting risk to the insurer.

For example, an insurer could sell policies to the parents of teenage drivers that include weekly email reports on where the teenagers have driven, how fast they drove,

and how well they operated the vehicle. The concept of a teen driving “resume” could be an attractive product for parents to evaluate the driving of their loved ones. Many parents might be willing to pay a reasonable fee for this service. However, configuring the technology to distinguish one driver from another (i.e., teen vs. Mom) may prove challenging.

Telematics also offers the possibility of automatically notifying authorities and repair crews of accidents, as at least one telematics-based roadside assistance program built into some cars already does. Or of offering proactive advice or audible/visible feedback to drivers while they’re actually driving — for example, on encountering slippery road conditions a verbal “slow down” message might sounded by the telematics device.

Strategically rethinking telematics-influenced business models includes internal operations in addition to products and services offered. With telematics, underwriting — evaluating the riskiness of any one driver — is no longer an art. The telematics data could feed new analytic systems where the science takes care of the predictive aspects of the task. In effect, manual underwriting tasks are no longer needed, and the strategy of underwriting becomes all-important to the business. In this case, a significant shift of job roles and responsibilities within an insurers’ organizations could likely happen.

## **Beware potential patent infringement**

One early adopter of telematics in the U.S. patented certain processes that support its telematics program. The insurer recently filed suit against two other insurance companies for alleged infringement of its patent rights — a clear warning to other carriers that they should consult legal counsel regarding this issue before launching new telematics-related products and services.



# Privacy concerns remain

Privacy issues inevitably arise when discussing telematics. Will people allow a third party — in this case, the insurance company — to monitor their personal lives to such a degree? After all, telematics systems can collect everything from where customers drive and how long they spend there to whether they habitually exceed the speed limit. Resistance appears to be breaking down as people grow used to lower priced insurance and the idea that personal information is already collected and used when they post on social networking sites or participate in drug store or grocery loyalty programs. It seems that many consumers feel the discounts more than offset the loss of privacy.

Still, consumers might balk when they understand all the implications of telematics tracking. For example, many insurers require policy holders to allow them to release information to authorities in the case of legal action or a court order, such as an accident-related lawsuit. As publicized cases in which such agreements (and the underlying telematic data) are used against drivers become more widespread, consumer opinion about telematics' value and appropriate use may shift.



# A raft of regulatory considerations

If insurance becomes unaffordable for certain individuals or certain classes of drivers due to cost shifting across the overall book of business, regulators may be likely to raise a red flag. Moreover, if telematics causes disproportionate impacts to particular social, ethnic or demographic groups, expect an outcry from consumers and consumer advocates that regulators may feel obligated to respond to.

Sustainability issues may play into this discussion, too. By setting premiums on a pay-as-you-drive basis, insurers in effect reward people who drive less. Further, when people realize that how they drive will likely directly impact their insurance costs, they tend to drive more carefully – the so-called “halo effect.” This could have positive social effects that could receive a warm reception from regulators.

How regulation will contribute to the changing paradigm is as yet unknown.



# Think strategically before going too far down the path

Although the concept of telematics isn't new, the pace of adoption is. The fact is, several leading U.S. insurers have been aggressively working for more than a decade on telematics-based insurance underwriting. Today, however, the underlying technology is more readily available and less costly, solution providers offer services to support insurers' telematics offerings, and consumers are increasingly comfortable with sharing information in exchange for tailored pricing and services. To compete, many insurers realize that they should make a move soon.

But many seem to be leaping into telematics more out of competitive fear and intimidation than strategic thinking. With recent research indicating that globally the number of insurance telematics users could reach 89 million by 2017,<sup>4</sup> you might not think you have much of a choice. But there is still time to carefully consider each angle and develop a thoughtful and well-planned strategy before making your move. We strongly encourage this brief pause and strategy roadmap creation process.

## Specific questions to ask about telematics

**Is this the right move for our customers?** You should consider how the new pricing options and services are likely to appeal to your customers. Which customers are likely to find telematics-based policies attractive? And, what are the implications for customers who don't switch?

**What are the other external factors we should consider?** You should also be aware that your actions are likely to trigger competitive responses. You should anticipate these, and be prepared to respond accordingly. Also, how are regulators likely to view the new policies, services and pricing you offer?

**What would be our go-to-market strategy?** Think carefully about your business model. As revenues from the safest drivers decrease, where can you shift the costs of claims? How will you rationalize the natural skewing of rate distributions? What value-added services might you be able to add to raise your policies above the commodity level? Can our internal capabilities support this? Keep in mind that you may need new technology infrastructure and expert personnel to deploy telematics to full advantage. How will you manage the installation, support, and retrieval of data and devices from customer vehicles? Do you have the internal data mining and modeling capacity to support this? Do you have the analytics expertise?

**What are the risks? Can we handle them?** Finally, try to anticipate and mitigate the various risks that might arise. Although the technology is advancing, you still take certain technological risks with any new type of system. Then there are the business risks, exacerbated by the fact that the industry is moving into brand new territory. No one knows for certain what will happen, so be prepared.

<sup>4</sup> ABI Research, February 2012: <http://www.abiresearch.com/press/3845-89+Million+Insurance+Telematics+Subscribers+Globally+by+2017>.

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