



Expert Insights

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Dynamic pricing with AI syncs insurers with market realities

Pricing automation improves speed and flexibility

IBM Institute for Business Value



Experts on this topic



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Talking points

The cost to customers of switching insurance products and carriers has declined, with a predictable effect of decreasing customer loyalty. Insurers can address this challenge with artificial intelligence (AI)-based dynamic pricing.

AI-based pricing models deliver significant reductions in the time required to introduce new pricing frameworks. Time-to-market can be condensed from months to weeks.

New governance models are required. AI builds speed, flexibility, and reduces the risk of mispricing, but new pricing and calculation models require a next-generation approval process.

The price is right—or is it?

For insurance industry leaders, getting prices right has become intensely complex and sophisticated. When pricing is out of alignment with market conditions or individual behaviors, whether too high or too low, the result tends to be the same—lost revenue and narrowing margins.

Traditionally, insurance premiums have been set using the “cost-plus” method. Cost-plus is an actuarial assessment of the risk premium, a component to cover direct and indirect costs, as well as a margin uplift.

In many cases, especially in personal property and casualty products such as auto and household, cost-plus can still work well by generating an accurate price that a buyer can accept and that also allows insurers to operate at the desired combined ratio at or below 100 percent.

Yet, even though traditional pricing methods work today, they have several drawbacks that inhibit future-readiness. In its relative simplicity, for example, cost-plus lacks the ability to easily incorporate non-technical pricing factors and the adaptability to respond quickly to changing market conditions. These can be factors such as:

- New transparency created by price comparison websites such as check24.de or bizcover.com.au. Transparency, in turn, creates greater competition in more commoditized personal and commercial product lines.
- New unstructured data sources, such as those made available by way of telematics and IoT. These can provide greater context of the insured persons and objects, increasing or decreasing risk and, thus, risk premium.
- Increasing demand for personalization, highlighted in a survey by the IBM Institute for Business Value (IBV), which revealed that 50 percent of customers prefer tailor-made products.¹ Traditional pricing models aren’t designed for individualized products.
- Expansion of insurtechs. By their very nature, born-on-the-cloud green-field players, such as Lemonade, have higher flexibility to react to market changes, showing customers what is possible and increasing pressure on incumbents to react.

Automation can slash sales cost up to 5 percent, thereby enabling easier entry into SMB segments

To take these factors into account and stay ahead of the game, insurers can consider applying “smart pricing” (see Figure 1). Even in product lines where cost-plus is sufficient today, increased adoption of smart pricing is leaving purely “traditional pricers” with lower margins.

Pricing vision and strategy

By moving pricing closer to the market, insurers can gain faster insights into the variables that steer behavior, such as price elasticity. For smart pricing to work, these variables need to be understood and adopted as non-optional.

Smart pricing strategy incorporates multiple pricing models, developed with agile methods and designed for rapid deployment. Smart pricing vastly increases pricing flexibility and circumvents traditional development lag times and time-to-market for both new products and changes in existing ones.

Also, smart pricing is part of the toolkit of the “Cognitive Insurer.” As we write in a recent IBM Institute for Business Value study, “Cognitive Insurers embrace the latest technologies, most notably AI, to make sense of the abundance of unstructured data.”² Incorporating AI and big data in pricing enhances pricing models with non-traditional variables such as weather data. It also more

Figure 1

Moving to smart pricing

Dimension	Traditional pricing	Smart pricing
Pricing vision/strategy	<ul style="list-style-type: none"> – One-size-fits-all model – Unclear impact of features – Purely technical price 	<ul style="list-style-type: none"> – Differentiated price tailored to the pricing/market situation – Transparency on feature impact of the product
Model development	<ul style="list-style-type: none"> – Complex mathematical models – Work intensive data input 	<ul style="list-style-type: none"> – As simple as possible, as complex as needed – Automated data extraction transformation and loading
Adjustments and governance	<ul style="list-style-type: none"> – Manual, long time to implement – Done by IT, not by pricing or other business functions 	<ul style="list-style-type: none"> – Automated – Quick and simple – Governance and exceptions by pricing or other business function

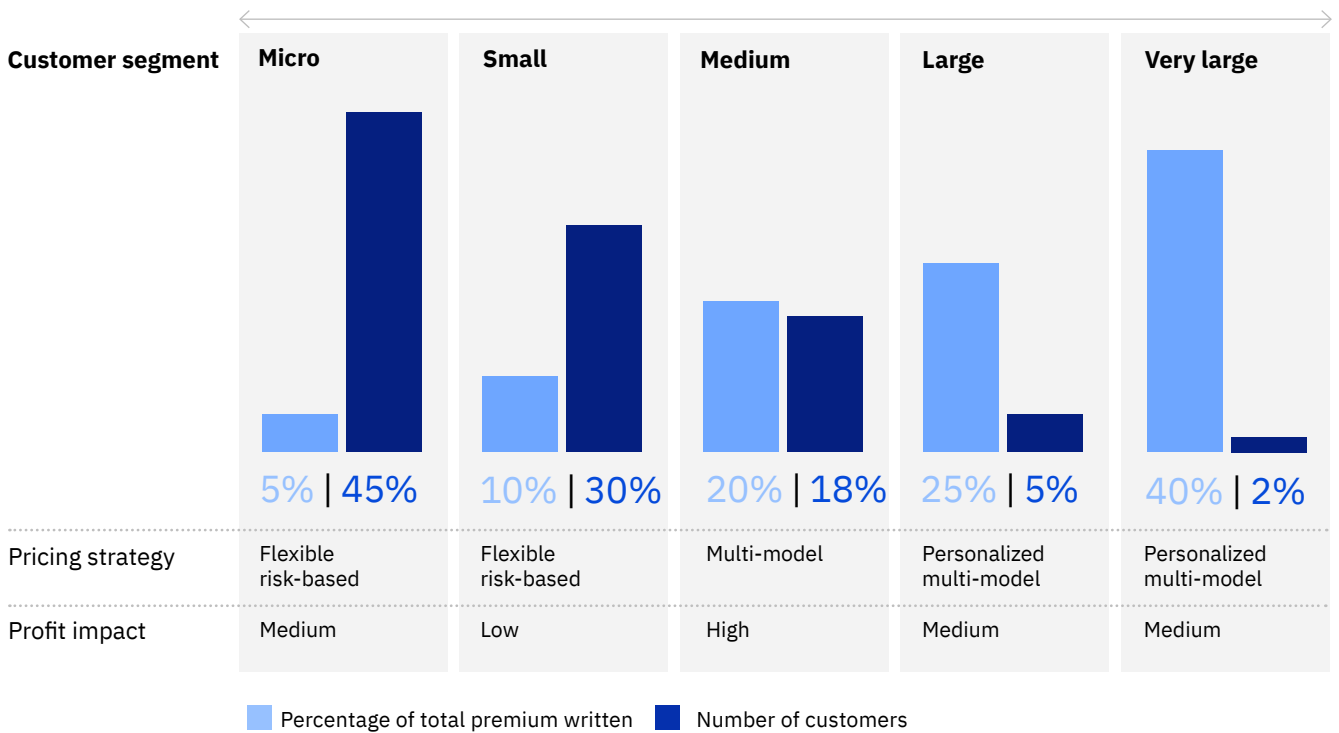
accurately assesses personal risk through context and behavior, and even includes predictive components such as economic and political indicators.

There are excellent examples of smart pricing across industries from which insurers can learn what is possible. For example, a large airline has adopted an AI-based pricing model that predicts a flyer’s potential interest in upgrading to business class and generates an individualized price offer tailored to the customer’s likelihood to accept it.³

In commercial insurance, the small-to-medium enterprise market typically has tighter margins, but strong growth potential. It’s expected to grow from USD 5.9 billion in 2018 to USD 9.8 billion by 2023 (see Figure 2).⁴ The ability to offer automated quotes with a simple pricing model might lead to 10 percent additional revenue in these segments with adequate margins.⁵ Automation can slash sales cost up to 5 percent, thereby enabling easier entry into these customer segments.⁶

Figure 2

Insurers need smart pricing strategies to monetize the small and medium business segments well



Note: Percentages are estimates for a typical commercial insurer based on actual projects
 Source: IBM Institute for Business Value analysis

Losses as a result of climate change and rising sea levels might exceed USD 1 trillion a year by 2050.

As noted, AI uses a broad array of data previously excluded from any pricing models, such as improved weather and climate forecasting, projected real estate valuations, analysis of customer social media activity, and competitive actions.

AI's machine-learning capabilities allow providers to automate complex pricing dynamics with systems trained to recognize the relative price flexibility of specific offerings. For example: two products are frequently sold together; one is highly flexible on cost and the other inflexible. An AI system might create a model that prices the first product low to generate volume while the second product is used to improve margins—with hundreds of thousands of variations calculated for myriad personalized offers.

AI has been shown to bring the offering price closer to a client's willingness to pay, generally leading to premium increases of 2 percent to 3 percent.⁷ Just the mention of AI has benefits. It's been reported that when AI and machine learning are part of an offering's description, willingness to pay increases by more than 12 percent.⁸

With dynamic pricing, customers have immediate visibility to the impact of policy configuration and changes, enabling them to experiment with "if this/then that" scenarios that reveal specific price changes for specific policy configurations.

Model development

Even before the new pressures of digital transformation, insurers have navigated ditches on both sides of the pricing road. On one side, you have customers' desire for pricing simplicity and transparency; on the other, the complexity of capturing, curating, and disseminating massive volumes of data to understand the multi-dimensional nature of risk.

The new approach in developing models makes it possible to navigate this dichotomy. New techniques and simulations accommodate far more complex modeling, with quantum computing's ability to rapidly solve massive optimization problems on the horizon. For transparency, AI allows models (and interfaces) that respond dynamically to changing customer input and circumstances. It's now possible to reprice algorithms and even recalculate premiums after the fact, based on actual figures such as goods transported or kilometers driven.

These AI-based pricing models can vary from simple matrix models to complex, simulation-based models. The aim is a client-centric pricing scheme that gives customers more of what they want while making it easier to do business.

For example, losses as a result of climate change and rising sea levels might exceed USD 1 trillion a year by 2050.⁹ Insurance leaders are building new models that incorporate climate change into their risk portfolios. Commercial customers in any number of industries might choose to deploy sensors that enable dynamic price adjustments based on the risk of weather, providing faster rewards for companies that reduce risk. This can be expanded to other hazards, such as fire or traffic conditions.

AI pilot projects suggest a reduction in time-to-market for new pricing models by 200-300 percent, from half a year to a few weeks in some cases.¹⁰ Such was the case in the airline example previously cited.

Adjustments and governance

More pricing flexibility drives the obvious requirement for greater auditability and new governance mindsets and models. Flexibility shouldn't be interpreted as uncontrolled deployment. The risk with multiple pricing models and quick adjustments and deployments is that if they aren't done properly, flawed prices can result. This can lead to major risks, especially if selling is done by self-service.

Traditional governance and audits take too much time and effort in an environment of speed and individualization. Modern pricing applications foresee the need for control with a clear separation of duties, with strict pre-production version control and release management.

When applying AI to pricing maintenance, automated adjustments can be made more quickly and easily. In many cases, pricing adjustments can be dynamic, based on current data and situations, versus today's highly manual, time-consuming undertaking.

Operating in a hybrid cloud allows the solution itself to help provide pricing model governance by way of release management and security. Outside the model, a lean and simple process for approving price model adjustments is a key component of effective governance.

From concept to market

The move to AI-based dynamic pricing is significant, but it doesn't need to be disruptive:

- *Secure executive buy-in.* Make sure that the entire C-suite is aware, educated and supports AI-pricing plans—not just the leaders directly affected. When asked by employees or customers, it's important they can explain policy. Buy-in from the sales team is equally important.
- *Start building AI skills.* Data science is becoming increasingly important. The effectiveness of AI is a function of the ability to find and harness data. Where those skills exist within the firm, use them as part of the AI team, then work with human resources to choose where you can build these skills internally or secure them externally.
- *Consider finding a technology partner.* AI is taking different forms, from adopting new application programming interfaces, to the implementation of a new pricing platform. As insurance industry standards for AI are developed, joining an ecosystem can be the difference between helping set the rules and having to accept them.

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Questions to consider

- When was the last time you assessed your pricing model to see if it is working to your advantage?
- How would dynamic AI-based insurance pricing affect your business?
- What is your process for making pricing adjustments? Is it proactive or reactive?

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