

Identifying API use cases: Property and casualty insurance



Executive summary

Many insurance companies are planning their journey and participation in the API economy. One of the most common questions from companies starting the journey is about the potential use cases within their industry. This paper focuses on several objectives:

- Identifying the common business drivers for API initiatives
- Describing an API identification methodology
- Supplying insurance-specific examples using the methodology
- Discussing the current state of regulatory requirements and industry standards
- Providing recommendations for starting an API initiative

Determining an API economy strategy and planning a roadmap offer significant benefits, including:

- Consolidating and standardizing common APIs—or simply business services—within an organization
- Lowering cost of operations by having a central repository and index of enterprise business services such as “review claim history”
- Accelerating digital projects and improving time to market with safe, quick access to business services by both internal and external parties

- Identifying a partnership ecosystem—especially outside your own industry—for formulating new value-add products and services to be more competitive
- Defining new business models for monetization purposes such as the mobile marketplace; that is, curating your company’s business capabilities aggregated with your partners’ business capabilities to provide a diverse range of related or complementary services

This paper is intended for business and IT leadership in the insurance industry interested in jump-starting API initiatives by learning about industry use cases. The focus of this paper is property and casualty insurance. A separate paper covering life insurance is planned for a later date.

What is a business API?



Application programming interface (API) is a very old term that has been used to describe technical interfaces for software programs where one software program calls another through its API. Often, these APIs were extremely complicated and not really meant for wide consumption. A few other software programs inside the enterprise might use the API to invoke the program; a partner outside the company might use it as well, but with great difficulty.

This long-standing definition is not what's getting businesses excited about an API economy. The excitement is instead around what is referred to as a *business API* or *web API* (although sometimes the additional qualifier is left off). These business or web APIs are easy-to-understand interfaces for a recognizable business asset—for example, a customer record, an account, a product catalog, a price, an order and so on.

A business API is a public persona for an enterprise that exposes defined assets, data or services for consumption by a selected audience of developers, either inside or outside your organization. Business APIs are simple for application developers to use, access, understand and invoke. And because a business API extends an enterprise and opens new markets, application developers can easily leverage, publicize and aggregate a company's assets for broad-based consumption.

Common business drivers for API initiatives

Companies that are executing successful API initiatives focus on one or more of four key drivers: speed, reach, Internet of Things (IoT) and domains.

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Speed (also known as two-speed IT, bimodal IT or multispeed IT): This driver focuses on allowing the business and IT organizations to run at different speeds. Traditional IT management of core systems of record can be changed at a certain rate. Trying to force rapid changes into core systems in the enterprise can result in outages or security exposures. Yet the business needs to react very quickly to new opportunities and competitive threats. It needs a higher rate of change than can be delivered by the controlled changes required to the systems of record. Using APIs, you can prepackage core system assets for consumption by the business to create new and innovative systems of engagement. This driver tends to be the first one that drives API use in the enterprise.
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Reach: To reach new markets and obtain new customers, you can make APIs available to other enterprises, such as partners who can generate additional revenue and new customers for your enterprise. For example, an insurance company may partner with a local realtor network to provide homeowner's insurance calculation services in its mobile "search for a home near you" app. The insurance company gains access to potential homebuyers who could become new insurance customers.

- **Internet of Things or devices:** In many industries, devices are used in conjunction with APIs to provide new and innovative solutions. This tends to happen in one of three ways:



1. A device sends data via API call, such as a device that monitors driving habits and sends results back to the insurer.
2. A device is sent a command via API call, such as a homeowner using a smartphone function to invoke a secure API to the home security system provider. In turn, the provider sends a device API command to the home security system to turn it on or off.
3. A device sends data through a non-API call using other technology such as MQTT—a high-volume messaging protocol and transport for telemetry devices—because not all data calls require an action. However, APIs can access the data inside the enterprise and look for or react to particular situations or events. For example, windshield wiper data from smart sensor-enabled vehicles may be crowdsourced to provide insight about where major rainfall is happening. The information can trigger an insurer to issue a mobile or navigation-screen alert informing policyholders and non-customers about weather conditions and alternate routes. This action provides value to drivers, but can also increase customer satisfaction among existing policyholders and create favorable impressions among non-customers—potentially helping to convert them into new clients. Resulting data patterns for this scenario and others could help drivers avoid accidents, help insurers identify marketing opportunities or be sold to third parties as an additional revenue stream.

- **Domains:** Typically, domains refer to interactions across multiple lines of business. They can largely work independently, but benefit from sharing data. APIs allow the data to be shared in a controlled, secured manner. Domains can also be seen as physical locations. Companies that have multiple locations, which may include cloud and on-premises data centers, sometimes use APIs as a method to secure and control the flow of data between locations. Considerations for regulatory and compliance constraints based on geographical and country specifications become evident.



Businesses often start by focusing on the requirement for speed. After initial success in this area, they address the other drivers. It is not uncommon for businesses to benefit from APIs across all four drivers.

API identification methodology

Who should identify the business APIs? Figure 1 displays several roles in a high-level organizational structure. Note that several people may be in each role, and a single person may be assigned to multiple roles.



“The business of APIs: Best practices” white paper provides additional information on organizational structure and several other important topics. [Download it here.](#)

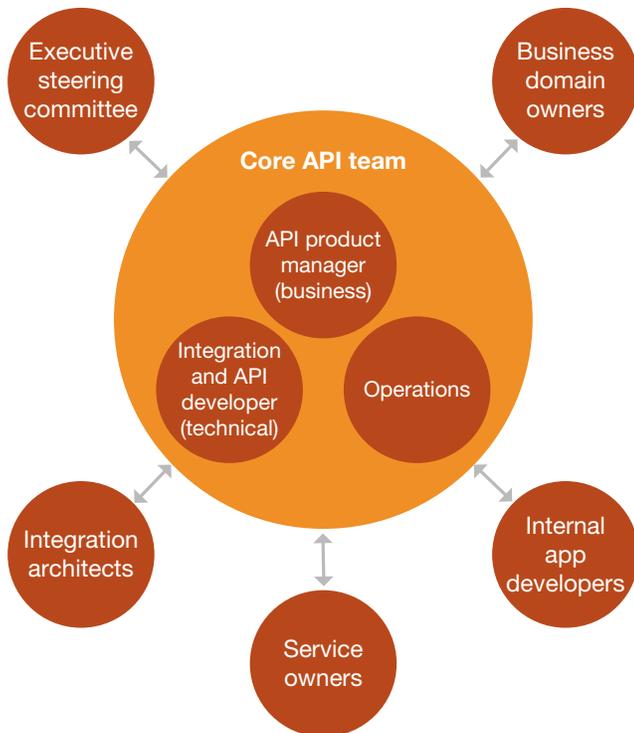


Figure 1. High-level organizational structure for an API development team.

A key role in the structure is the API product manager. The person or people in this role own the success of the APIs and the API initiative. Tasks associated with the API product manager role include:

- Working with the domain owners to identify desired business APIs to bring to market
- Working with the API developer to drive the creation of the API
- Reporting to executives on metrics
- Defining the product characteristics of the API (monetization, rate limits, audience and so on)
- Communication

Identifying good APIs is one of the most critical factors in achieving API initiative (and associated business) success. APIs must be focused on the needs of the consumer and should be simple. Three questions lead to a good API:

- Who is the audience?
- What do they want?
- Under what terms and conditions are you willing to make the asset available?

Notice that none of these questions ask or refer to the systems of record that will ultimately deliver the response to the API request. Many companies incorrectly define their APIs by looking at what the systems of record do and adding an API in front of them. This approach may simplify the process for the API provider, but it does not meet the needs of the consumer.

When identifying a candidate API, the API product manager needs to understand the API user being targeted (question one). The second question is probably the most important of the three. Understanding what the audience is trying to accomplish can result in the best API. If the definition is focused on consumer need, then the interface is more likely to be useful to that audience and also more likely to stand up to change (versioning). The third question is related to the policies you want to have around the API. What security measures are required to allow the API to be used correctly? Are there rate limits that must be enforced?

Once you have answered these three questions, the API product manager and API developer must work together and potentially iterate to define the API. The API developer needs to map the proposed consumer interface for the API to the back-end system of record interfaces—and possibly to many other systems—to provide only the desired result back to the consumer. New business logic may need to be added at a microservice layer in front of the existing systems of

record. If the existing systems do not completely address the requirement, the API developer may have to write additional code to add business logic to the existing environment.

Next, consider six categories in which APIs are often used, along with these top questions that can help identify potentially useful APIs in each area.

- **Internal developers (mobile)**

- What data and transactions would your own mobile apps need?
- Does generic data exist that is the same for all app users, such as business locations, rates and so on?
- Is there data specific to existing customers that should be accessible through your app, such as policy value or premium payment schedule?
- What features of the mobile device—for example, the Global Positioning System (GPS) or the camera—might be useful in conjunction with your APIs?

- **Partners**

- What data and transactions do you share among your current partners? Common existing partner types include banks, brokerages and government agencies.
- Is partner or broker onboarding a long, difficult process?
- Would self-registration of partners be valuable—increasing the number of partners and broadening geographic coverage, for example?

- **Public**

- What apps might others write that could use your data and transactions?
- What information are you currently making available on your website?
- If there was a comparison app for you versus your competitors, would you want to be listed as an option? What data would the app need?
- What other industries or processes might also use your products? Examples include realtor networks, automobile dealers, banks that do not have an insurance business, insurance aggregation quote websites and travel commerce sites.
- Think mashups: What other APIs might make sense with yours? Mapping? Social?

- **Social**

- How do your systems interact with social media? Can you spot trends in social media and raise alerts or take action?
- Can you use social media to gain insight on your brand and your competition?
- Can you do real-time analytics combining current customer status, behavior and history with social interactions?

- **Devices**

- Does your company handle devices such as cars, appliances, sensors or meters?
- What scenarios can apply to the device? For example, needing repair/supplies, needing to send status information, controlling device behavior or enabling interaction between the device and enterprise systems.
- How are you positioned to integrate the next UI technology, such as wearables like smart clothing or augmented-reality glasses?

- **Data and analytics**

- What data do you collect about your clients? Would this data be of value to a larger audience inside the enterprise? For example, property insurers can offer a fee-based digital vault service: the policyholder uploads photos of items they want to insure, and the vault uses object-recognition capabilities—through the web or a mobile device—to offer insurance estimates. This process can increase revenue streams, enhance customer satisfaction and improve service. It can also quicken the insurance policy estimating process for items subject to document verification such as jewelry appraisals. In another example, automotive insurers can capture real-time data from Weather.com® and provide evacuation or exit routes in the event of natural disasters. Moreover, they can reroute drivers based on real-time weather and traffic data, improving the customer experience and providing a competitive differentiator.
- Can your data identify market segments that would be of interest to a non-related industry? For example, can it identify new homeowners who might be in the market for appliances, furniture, home repairs, telecommunications offerings and so on?

Identifying API use cases in the property and casualty insurance industry



Now we will take a look at some examples that apply the API identification methodology to the property and casualty insurance industry.

Internal developer (mobile app development)

General information

General information is information that is not tailored to the specific customer using the app. It may include the insurance company's offerings, such as:

- Auto and home coverage types and details
- Available discounts
- Calculators and financial tools
- Education
- FAQs and helpful advice such as what to look for in a new home or new car
- Home listings
- New and used car comparison
- Office and agent locations and hours
- Online forms
- Pricing

Custom information and transactions

This example offers information and transactions that are tailored to the customer using the app. These APIs require additional security to help ensure appropriate access. APIs that fit this category include:

- Accident or loss claim documentation and information collection
- Agent contact information
- Appointment scheduling
- Check claim status
- Comparison reports
- Electronic statements
- Insurance ID cards
- Manage alerts
- Message access
- Pay your premium
- Recent transactions
- Request assistance or roadside service
- Review coverage and discounts
- Send questions about service or policies
- Submit a claim
- View and update a profile
- View and update beneficiary information
- View a policy
- Watch lists

Mobile advantages

Customers using the app on a mobile device can benefit from using phone or tablet functions in conjunction with APIs provided by the insurer. Here are a few examples:

- **Camera:** Use the camera to take a picture of an accident scene or resulting damage for claim documentation, as well as to capture information on the driver of the other vehicle involved in an accident. For homeowner's or renter's insurance, you can take pictures of belongings and catalog the items.
- **GPS services:** Use these services with APIs to get directions to the insurance office or an agent; identify the location of an accident; record the date and time to automatically time-stamp claim information; and find the nearest insurer-recommended auto repair shop, towing service or car rental location.
- **Microphone:** Use the device's microphone to capture information from witnesses to an accident.

Partnering



APIs can help make it easy for partners to do business with you. Providing APIs to partners—auto dealerships, banks, brokers, credit unions, employers, lawyers, real estate agents, service and repair shops, travel companies and so on—enables them to deliver offerings and services for your clients or give insurance information to their clients. This approach is well suited to generating new revenue streams from referral fees or monetization share.

Sample API scenarios can include banks or credit unions offering vehicle or home insurance plans to their customers.

Travel companies can offer travel disruption and medical insurance as part of the travel purchase. Car dealerships can offer preferred auto insurance rates for their customers. Real estate agents can offer title and mortgage insurance.

Insurance companies can also use APIs to connect clients to certified repair shops for vehicle or home repairs. APIs can be used to onboard the repair shops as partners, gather direct input on the work that is done and bill for reimbursement.

Case in point: The role of APIs in vehicle and property insurance

Here are two examples of business use cases featuring API ecosystem partnerships in different aspects of the insurance industry.

- **Used vehicle scenario:** Consumers purchasing a previously owned vehicle through a media publication such as an auto sales app can benefit from insurance APIs. Using information provided by APIs, they can check the safety ratings of different vehicle models and years and track a specific vehicle identification number to locate prior accident and repair history. Or they can use a quick quote service to compare rates and estimate their insurance needs.
 - **Real estate scenario:** In the real estate field, home inspectors can determine prior home damage due to flooding or other natural causes through APIs that aggregate local weather data and claims history. Home security providers can determine high-risk neighborhoods through theft claims reports.
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Public APIs



Insurers can deploy many of the same APIs used internally and with partners as public APIs to drive additional business. For example, potential customers may be shopping for the best insurance rates. By making an API available to a comparison app, your company has the opportunity to compete for this new business.

One of the most exciting aspects of the API economy is extending your reach to other industries that can send business to you, such as offering travel insurance information during the trip-planning process or insuring jewelry or other valuables during a purchase. By providing APIs to these other industries, the insurer has the opportunity to reach new customers who were not directly thinking about the insurance aspects related to their purchases. Many companies have public APIs available. Here are a few examples from the ProgrammableWeb website:¹

Check out IBM Bluemix for your API needs

If you are exploring the API economy and are interested in public APIs, IBM offers the [IBM® Bluemix® platform as a service \(PaaS\)](#). IBM handles the security, management, operations, scalability and performance for financial institutions that place their APIs on its branded mobile marketplace hosted on the IBM Bluemix Cloud platform.

- **Agencyport Turnstile:** This API provides for extraction of data from the Association for Cooperative Operations Research and Development (ACORD)–compliant forms used in the insurance industry for serialization as XML. It aims to integrate form data and form-based processes into efficient XML-based workflows to transfer data to point-of-sale, customer relationship management (CRM) and other back-office systems. This process is intended to replace manual rekeying and sequestration of data in emailed ACORD forms, PDF files and other inaccessible formats.
- **CGI Insurance Information Services:** CGI is a company that provides a variety of business IT services. One such service is the web-based Insurance Information Services API, which enables clients to view the claims history of drivers and all of their policies. Information is retrieved based on the driver's license.
- **Benchmark Automotive Data API:** Benchmark Automotive provides automotive data and intelligence. They build applications based on this data and also make data feeds available to clients through an API that lets clients integrate automotive data into their own websites and applications. Available data includes vehicle identification data, vehicle specification data, vehicle technical data, insurance group rating data, vehicle history data, vehicle finance data, vehicle valuation data and vehicle statistical data.

- **NAIC Registry:** This API allows automated filing of standard reporting documentation required of insurance providers for compliance with state regulations. The National Association of Insurance Commissioners (NAIC) is a cooperative agency maintained by state governments to encourage consistent regulatory and business practices for insurance companies.

Social



You might already consume social APIs from companies such as Facebook or Twitter, mashing up this information with your own APIs. Acting on specific mentions of your company and trends in social media can provide business benefits that enable you to take advantage of opportunities or head off problems. Among other things, you can combine Twitter feeds that reference your company name with your own analytics to help determine if you need to take action to rectify customer satisfaction issues or promote positive comments.

In addition, references to consumer or business needs might allow you to proactively offer insurance solutions. For example, searches or comments about buying a car might prompt you to advertise car insurance to the consumer. Other examples include searching for travel-related topics, maternity discussions or wedding planning, which all offer insurance opportunities.

Insurers also see social interactions as a way to have positive engagements with their clients. Too often, the only interactions between clients and insurers are to pay bills or file a claim—activities the client would prefer not to engage in. By interacting with their clients through social channels, providing information or highlighting local corporate activities or event sponsorships, the insurance company can engage the client in a positive way.

Device integration and wearable devices



The vehicle insurance industry is already using devices to monitor a driver's behavior and driving habits. These devices use APIs to communicate the data to the insurance company; the company then rewards safer driving and low mileage through lower premiums. Connected vehicles can help communicate dangerous situations such as traffic accidents, slippery roads and weather conditions to others in the area, helping to reduce accidents. For more information about connected vehicles and their potential as valuable data sources, download the [“Identifying API use cases: Automotive industry”](#) white paper or read the IBM Institute for Business Value [“Automotive 2025: Industry without borders”](#) report.

Home security systems and connected home environment devices such as thermostats and smoke alarms also generate important data insurers can use to improve customer service and value. For example, a home alarm sensor could send alerts to an insurance company (as well as to police and the homeowner) when triggered. With this information, the insurance company could proactively prepare claim information for stolen items claims, helping to streamline the process and save time if the homeowner discovers that his or her house has been burglarized.

We know that current user interfaces—mobile devices and tablets—were not prevalent 10 years ago. And we know that this trend toward change will continue as we move to wearable devices and beyond. APIs allow the interface to evolve with much less disruption to business systems.

Data and analytics



Insurance companies gather large amounts of data about their clients and often perform analysis to help identify marketing opportunities. Typically, the activities target a specific internal audience.

Through APIs, organizations can make data and analytics more easily available to other internal audiences and realize additional value from data that has already been collected.

Given the growing demand for innovation for digital transformation in the insurance sector, it is critical that insurers investigate and assess the multitude of open and

public data sources and APIs to create a rich digital experience for their policyholders. This value-added experience helps drive higher levels of customer “stickiness” to keep existing clients as well as attract new customers through exemplary customer satisfaction levels. Home insurers can take advantage of public APIs like these:

- **Integrate Weather.com data and APIs** to warn homeowners of an impending tornado, unusually heavy rainfall, a hurricane and so on that is specific to the home location, and provide a list of precautions to help avoid unnecessary damage claims.
- **Integrate transit score data and APIs** to help give insight into which homes are closest to public transportation—valuable data for renters or potential homeowners who do not own a car, which may enable an easier home rental or purchase decision.

Auto insurance providers can leverage open, public APIs such as:

- **Integrate foreign exchange (FX) rates data and APIs** to provide insurance quotes in multiple currencies for car owners moving from one country to another.
- **Integrate Weather.com data, APIs** and data from highway cameras to provide rerouting alerts and recommendations during severe weather or a natural disaster. Local cities can work with government agencies and insurers to help prevent more accidents in times of natural disasters or bad weather.

In addition, insurance companies can use APIs to give third parties access to data assets in aggregate—for example, locations with frequent accidents can be reported to government agencies that monitor traffic safety. Contractors working in areas with high numbers of homebuilding or remodeling projects may find an insurance company's data useful—for example, allowing them to inform clients about insurance changes related to home improvements and directing them to your insurance company for an updated quote. Access to personal information should be carefully controlled and protected through all of these processes, and opt-in/opt-out agreements with clients should be strictly followed.

Industry standards and regulatory requirements

Both ACORD and NAIC have XML-based interfaces that are commonly used across the insurance industry. The NAIC interface is listed as a public API and was referenced earlier in this white paper.

The NAIC Registry API services include and support filing Online Premium Tax for Insurance (OPTin) reports and paying premium taxes electronically, and submitting System for Electronic Rate and Form Filing (SERFF) insurance product registrations. They also support interaction with the Online Fraud Reporting System (OFRS) by downloading centralized reports and submitting reports to OFRS.

The technology is not the critical factor; it is about how easy it is to use the interface. Be aware that ACORD is discussing whether it should [redo its current standard interfaces \(XML\) to use JavaScript Object Notation \(JSON\)](#) to increase usability.

Many industries, including insurance, recognize the need for and value of API standards. No company wants to get similar but inconsistent APIs from all the other companies they work with. They want standard interfaces so that using multiple partners' APIs will be easy.

API providers do not disagree. They understand that they are not going to differentiate themselves based on their API interface but rather on the quality of the products and services behind the API interface. Insurance companies, for example, can compete on value-add services integrated with their partner ecosystem, heightened digital engagement and personalized offerings to their clients.

If your region of the world has not issued regulatory requirements for APIs yet, industry standards for APIs are likely coming in the future. Just as industries have found standards such as ACORD and NAIC to be useful, APIs are expected to help ease access to commonly used interfaces—without the need for regulatory requirements.

Closing thoughts and recommendations

The insurance industry is becoming very active in the API economy. Insurance is a data-intensive business, and accessing data quickly across the enterprise, using data in new ways and interfacing with partners rapidly can provide competitive differentiation.

If your enterprise has not started strategizing and planning for business APIs, the time is now. Do not wait until you know all the answers and have everything in place to get started—the market is moving too fast. Plan stages for the rollout, and then build on what you learn.

If you have already begun your API initiative, look to build on your successes and quickly identify false starts. Also, look at additional business drivers and use cases to obtain added value for the business. As we move into the API economy, huge opportunities await for new and innovative solutions. IBM brings significant knowledge of the insurance industry and the API economy, and would like to be your partner on your API journey. Let us share our expertise and experiences to help maximize the value for your enterprise.

To understand more about the IBM approach to the API economy, visit the [IBM API Economy website](#). IBM API Connect™ offers a comprehensive foundation for creating, running, managing and securing APIs. Learn more about [API Connect](#) and [download a trial version at the API Connect website](#).

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¹ Examples of public APIs came from a keyword search for “insurance” on www.programmableweb.com. This information is not intended as a recommendation of these specific APIs, nor a statement about their capability or quality. ProgrammableWeb acts as a repository where any company can promote its public APIs. Consumers must evaluate the functionality and quality of any API and decide if it meets their needs before deploying.



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