Identifying API use cases:
Life insurance and financial services

IBM

Executive summary

Many insurance companies are planning their journey and participation in the API (Application Programming Interface) economy. One of the most common questions from companies starting their API 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 described 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:

- Accelerating digital projects and improving time to market with safe, quick access to business services for both internal and external parties
- Identifying a partnership ecosystem—especially outside your own industry—for formulating new value-added products and services to be more competitive
- Defining a new business model(s) 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
- 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 get policy history

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 life insurance, including related investment scenarios.

### What is a business API?

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. While a few other software programs inside the enterprise could use the API to invoke the program; a partner outside the company could do so only with great difficulty.

This long-standing definition of API is not what is getting businesses excited about an API economy. The excitement is instead around what is referred to as a business API or a 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. Also, a business API extends an enterprise and opens new markets; hence, making it easier for application developers to leverage, publicize, and aggregate a company's assets for broad-based consumption.

Common business drivers for API initiatives

Companies executing successful API initiatives focus on one or more of the following four key drivers: speed, reach, Internet of things (IoT) and domains.
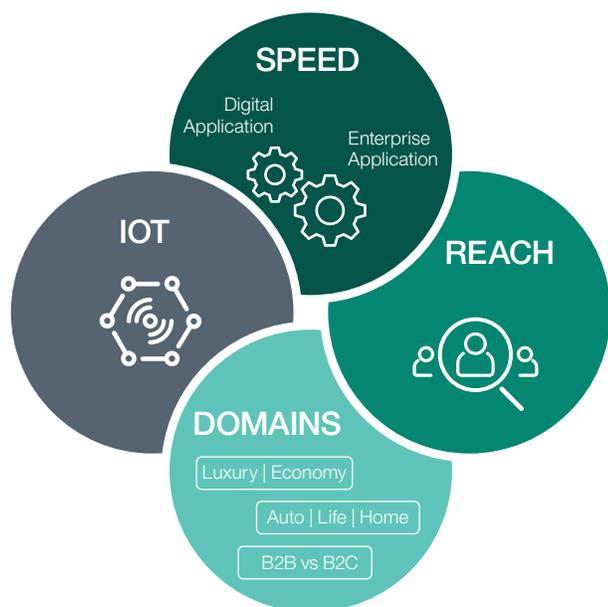
- **Speed (also known as two-speed IT, bimodal IT or multispeed IT):** This driver allows business and IT organizations to operate at different speeds. Traditional IT management of core systems of record can be changed at a certain rate. Trying to force rapid changes into core systems in the enterprise can result in outages or security exposures. Yet, a business organization 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. APIs help prepackage core system assets for consumption by the business to create new and innovative systems of engagement. This driver is often the first one to drive API use in the enterprise.

- **Reach:** To reach new markets and obtain new customers, you can make your APIs available to other enterprises and partners who through their interaction with clients can generate additional revenue and new customers for your enterprise. For example, a life insurance company may partner with a financial advisor to sell their insurance and investment offerings to the clients of their partner. The insurance company gains access to customers looking for financial advice through third parties.

- **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 the following ways:
  - A device sends data via API call, such as devices that monitor driving habits and send results back to the insurer.
  - A device receives 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 either turn it on or off.
  - 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 residing within the enterprise and look for or react to specific situations and events.

For example: Insurers can gather data from a Fitbit device, a scale, or a monitor to obtain preferred rates of insurance, and deliver significant value to the policyholder (financial and health related). This can also help increase customer satisfaction among existing policyholders and create favorable impressions among non-customers—converting them into potential clients. The resulting data patterns from such scenarios can be used by insurers to 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 physical locations. Companies that have multiple locations, including cloud and on-premises data centers, sometimes use APIs as a method to secure and control the flow of data between different 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 move on to address the other drivers. It is common for businesses to benefit from APIs across all four drivers.

API identification methodology

Who should be identifying the APIs for a business? Figure 1 identifies several roles in a high-level organizational structure. It should be noted that several people may be assigned to a single role, and a single person may get assigned to perform multiple roles.
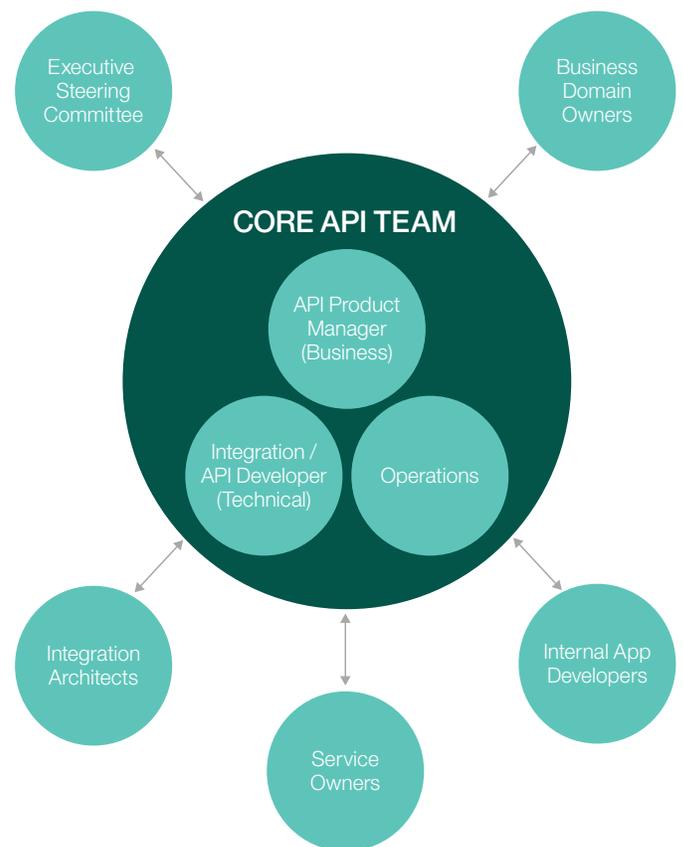

Figure 1: High-level organizational structure for an API development team

The API product manager plays a key role in this team and owns the success of the API and the API initiative. Tasks associated with the role of an API product manager include:

- Working with domain owners to identify the need for a business API
- Working with an 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)
- Communication

"The whitepaper titled "The business of APIs: Best practices", provides additional information on organizational structure and several other important topics. Download it [here](.)."

Identifying good APIs is one of the most critical factors in launching API initiative and achieving business success through it. A good API should be simple and should focus on the needs of the consumers. The key to creating a good API lies in the answer to three questions:

- 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 mention the systems of record; which 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 a layer of API before 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 product manager needs to understand the targeted API consumer (question one). The second question is probably the most important of the three. A clear understanding of what the API consumer wants to accomplish can facilitate the creation of the most effective API. If the definition is focused on consumer needs, then the resultant interface is more likely to address the needs of the target 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. For example, what security measures are required for the API to be used correctly? Or, are there rate limits that need to be enforced?

Once these three questions are answered, the API product manager and the 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—and deliver only the desired result back to the consumer. New business logic may also have 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 needs to write additional code to add business logic to the existing environment.

Next, consider six areas in which APIs are commonly used and the top questions that can help identify potentially useful APIs in each of these areas.

✓	**Internal Developers**
✓	**Partners**
	Public
	Social
	Devices
✓	**Data/Analytics**

- **Internal developers (mobile)**
  - What data and transactions would your own mobile apps need?
  - Is there existing generic data—such as business locations, rates—that is the same for all app users?
  - Should data specific to existing customers—such as policy value or premium payment schedule—be accessible through your app?
  - What features of the mobile device—for example, the Global Positioning System (GPS) or the camera—might be useful in conjunction with your API?
- **Partners**
  - What data and transactions do you share with your current partners? Common existing partner types include banks, brokerages, and independent financial advisors.
  - Is partner or broker onboarding a long, difficult process?
  - Would self-registration of partners, increasing the number of partners and broadening geographic coverage, be of value?

- **Public**
  - What apps might others write that could use your data and transactions?
  - What information are you currently making available on your website?
  - Would you want to be listed as an option on an app that compares you with your competitors? What data would the app need?
  - What other industries or processes might be interested in your products? For example: financial advisors, banks that do not have an insurance business, insurance aggregation quote websites, and more.
  - 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 act on time?
  - Can you gain insights about your brand and your competition through social media?
  - Can you use real-time analytics to map current customer status, behavior and history with their social interactions?
- **Devices**
  - Does your company handle devices such as sensors or meters?
  - What scenarios can apply to the device? For example, sending status information, controlling device behavior, or enabling interaction between the device and enterprise systems.
  - How are you positioned to integrate the next UI, wearable technology, such as 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, existing clients with certain investments and time horizon to retirement may be interested in new financial investments being offered.
  - Can your data identify market segments that would be of interest to an unrelated industry? For example, can it identify high wealth individuals (who opt in) who might be in the market for luxury automobiles, vacations, etc.?

Identifying API use cases in the insurance Industry

Now we will look at some examples that manifest the API identification methodology in the insurance industry.

Internal developer (mobile app development)

General information

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

- Account/insurance types and details
- Investment products and details
- Pricing
- Investment research
- Life planning (retirement/college)
- Education
- FAQs
- Market/investment news
- Calculators and financial tools
- Office/agent hours and locations
- Online forms

Custom information and transactions

Custom information and transactions are tailored to the needs of the customer using the app. These APIs require additional security to help identify the user or to ensure appropriate levels of access. APIs that fit this category include:

- Policy/account list
- Values/balances
- Fund trading
- Transfer funds
- Comparison reports
- Holding analysis
- Agent contact information
- Appointment scheduling

- Electronic statements
- Insurance ID cards
- Manage alerts
- Send questions
- Message access
- Pay your premium
- Recent transactions
- Send questions about service or policies
- 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 the APIs provided by the insurer. Examples include: voice recognition, depositing a check with a photo, and GPS directions to the nearest branch location.

Case Study

An insurance company in Germany needed to streamline and improve their API creation and management processes while also enhancing application development security. They planned to use representational state transfer (REST)-based APIs to facilitate mobile device usage between the open network and the company's internal network in order to securely expose services through APIs to new mobile, Internet of things (IoT) and web applications.

They implemented a solution based on IBM API Connect software to create, assemble, manage, secure, and socialize web APIs. Using the API Connect software, the company can automate API creation and better manage APIs with built-in security and governance functions.

This not only helped the company improve API efficiency and enhance application development security but also enabled them to tap into new sources of revenue through monetization of its APIs.

Another example to support the benefits of a mobile device is the scenario wherein the insurer must provide proof of insurability while purchasing a life insurance policy. APIs could connect insurers with medical labs. A nurse could be conveniently scheduled in real-time to come on-site for the required physical exam or blood work and the details could be immediately shared with the lab for analysis. Faster results delivered to the insurer could speed the process for a quicker policy issue.

Partnering

APIs can help make it easy for partners to do business with you. Providing APIs to partners—banks, brokers, credit unions, employers, lawyers, accountants, financial advisors and so on—enables them to deliver offerings and services to your clients and at the same time pitch your insurance offerings to their clients. This approach is well-suited for generating new revenue streams in the form of referral fees or monetization shares.

Sample API scenarios include banks or credit unions offering life insurance or retirement plans to their customers. Most companies selling financial services also sell financial solutions offered by their partner companies. Exposing your APIs (providing offering and pricing details) allows your partners to integrate your offerings into a consistent user interface available to both set of clients—yours as well as theirs. This also allows you to make your offerings available across more channels. For example, getting life insurance is often recommended and sometimes even required by banks from clients seeking to obtain a mortgage.

Insurance companies also use APIs to connect their clients to law firms (who also use their APIs) for related services such as wills, estate planning or to help family members dealing with the loss of a loved one in sorting out inheritance/financial issues.

Life insurance can also be included in a tax efficient financial plan. APIs that share insurance information with accountants and their clients can be advantageous for all parties. Accountants have relationships with small businesses who may need partnership insurance for succession planning. Extending insurance information through APIs to this community can also extend your reach.

A comprehensive financial plan usually includes disability insurance in addition to life insurance; so partnering with disability insurers through APIs can provide customers with convenient, aggregated services. Education, news feeds and company information that are included in your mobile offerings may be obtained via APIs from partners who provide this information. Companies round out their offerings providing more value to their customers with capabilities supplied by others. APIs to on-board these partners can allow for easier market expansion.

Business onboarding via APIs provides investment and retirement solutions for employees. Providing easy on boarding attracts small businesses with limited IT staff. By providing the ability to set up investment and retirement accounts during the hiring process these companies can reduce manual efforts and provide better benefits to their employees at a lower cost.

The fiduciary rule and changing demographics add to the trend of more open and transparent arrangements between consumers and their financial advisors while putting added pressure on traditional high-commission investment and life insurance products. This, combined with consumer shifting away from traditional patterns—from group products to individual products—underscores the need for companies to build and leverage a new ecosystem of partners that cater to new low-cost distribution channels capable of targeting today's life insurance consumer.

 APIs are a key ingredient in the strategy to meet the challenges in the life insurance industry. They will be used to build life insurance partner ecosystems, to integrate with Fintech start-ups such as robo-advisor platforms, and self-service benefit enrolment platforms. APIs can also be used to improve customer experiences by reducing underwriting times through improved access to accurate risk data.

Case in point: The role of APIs in life insurance and financial services

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

- Corporate clients: Most companies offer retirement benefits to their employees. This includes retirement planning, invest-ments, and disability and life insurance. By making APIs available to such corporations, companies can imbed APIs in their personnel processes and create seamless interactions for their employees. By enabling direct access through APIs, your relationship with the company becomes very "sticky" because they have imbedded your APIs directly into their process.
- Financial advisors: While some individual investors may find your offerings directly through your own web or mobile interfaces, many will be directed to your offerings by a partner financial advisory firm. By imbedding your APIs in the financial advisor's systems, your offerings become part of the user interface the advisor is using on a regular basis. Using APIs allow the on-boarding of many financial advisors providing access to a larger pool of potential clients.

Public APIs

Insurers can also 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 can 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 life insurance and financial investments to clients of banks and credit unions. Life insurers can benefit by offering policies to customers of other property and casualty (P&C) insurance companies that don't offer life insurance.

The P&C Insurer can then be incentivized to offer this to their auto and homeowner clients. By providing APIs to these other industries, the insurer can reach out to new customers who were not thinking about purchasing life insurance. Many companies have public APIs available. Here are a few examples from the ProgrammableWeb[1] website:

- Fundpeak: An investment database provider focusing on managed futures and forex and impact investing. Users can customize and personalize the data they want and run performance reports on investments and funds.
- StrategYard: An investment strategy trial service that allows individuals to test and evaluate potential investment strategies in a simulated environment. The site allows users to work create, test, and delete multiple strategies, see performance metrics and charts, and automate trading strategies.
- S&P Capital IQ: Allows users to integrate information—including investment research, companies' financials, credit ratings, global market data, alpha and risk models, and key developments—into business applications.
- StatPro: A portfolio reporting and analytics service for companies and organizations. StatPro allows users to access and analyze various data, such as investments, portfolios, and stock market.

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.

Social

You might already act as a consumer of 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 life changes such as getting married, having a child, etc. might prompt you to advertise life insurance to the consumer.

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

Today devices are not commonly used in the life insurance and financial services industry. So, as we think about how device APIs can be used, we might innovate into new offerings that do not currently exist. This might include:

- Health or fitness related monitors could provide input on clients that can be taken into account for discounts on premiums.
- Smoking cessation monitoring devices can report on progress and compliance.
- Safe driving devices are used prevalently for auto insurance, but can also apply to life insurance situations.

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 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 and 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 retain existing clients as well as attract new customers through exemplary levels of customer satisfaction. Insurers can also take advantage of public APIs like these:

- Integrate financial markets data and Watson APIs with your own APIs to understand how marketplace trends, customer portfolio and history, and customer sentiment analysis can be combined to provide sales opportunity information. Using that information, you can propose new financial products or keep customers from making poor decisions when the market is in a state of flux.
- Integrate tax data and your APIs to provide insights on tax implications for investments and withdrawals when planning for retirement.

In addition, insurance companies can use APIs to give third parties access to data assets in aggregate—for example, identifying communities where high-wealth individuals live for potential marketing opportunities by other businesses. Access to personal information should be carefully controlled and protected throughout these processes, and opt-in/opt-out agreements with clients should be strictly followed.

Industry standards and regulatory requirements

Many industries, including insurance, recognize the need for and value 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 APIs from multiple partners becomes 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-added services integrated with their partner ecosystems, heightened digital engagement, and personalized offerings to their clients.

Current standards in the life insurance and financial services industries are currently based on technologies such as XML and EDI. Some discussions have started regarding modernizing these interactions to a REST/JSON model. However, no concrete decision to do this has been adopted at this time.

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. Moving to a simpler to use interface seems like a logical step to take. It is just a matter of time and coordination across the member companies.

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 yet, 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 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 IBM's 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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