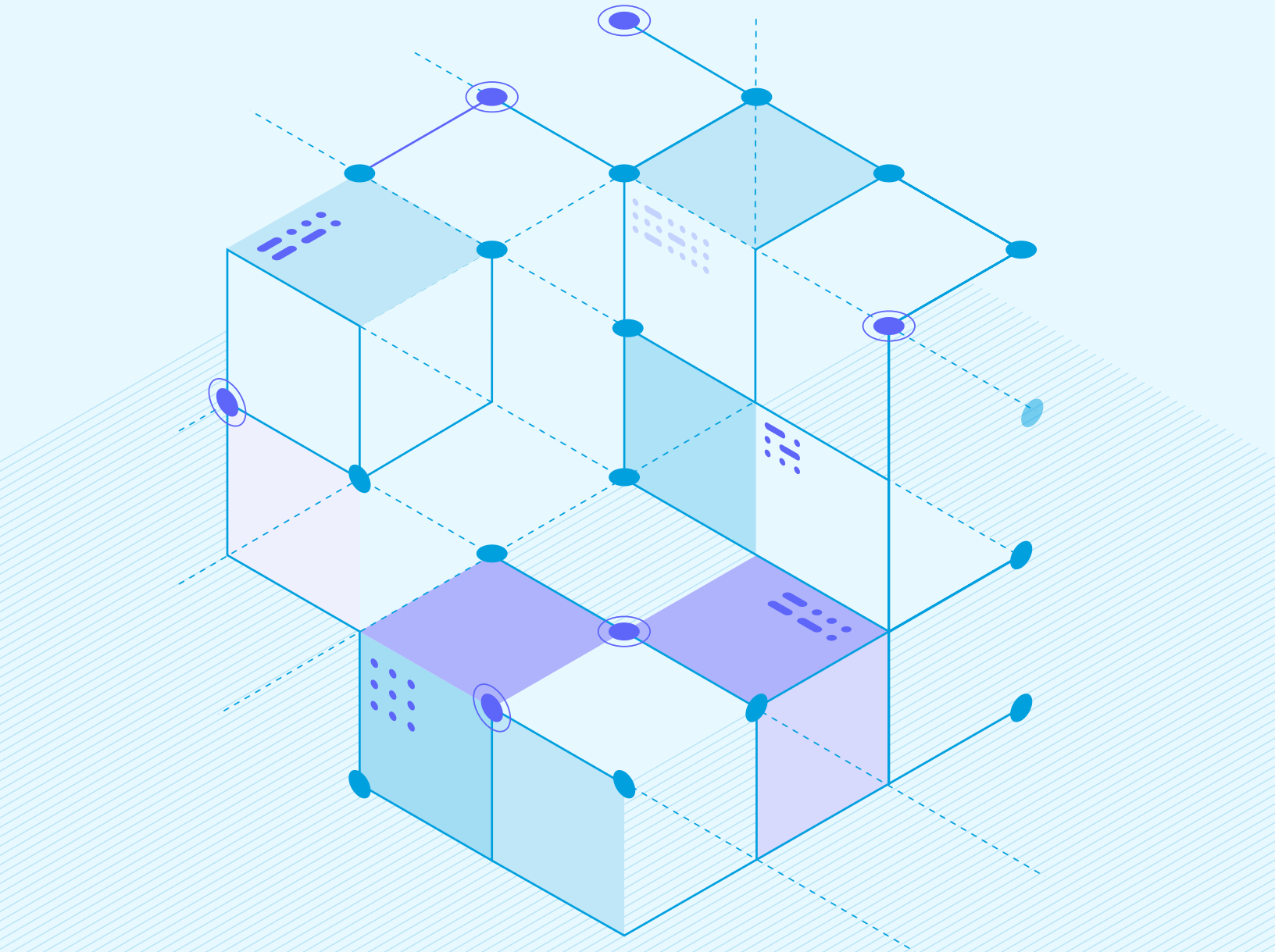
MuleSoft

WHITEPAPER

API strategy essentials blueprint



Contents

Introduction

Companies face many challenges in the ever-evolving digital landscape. New innovations arise; and customer demands shift which makes delivering an excellent customer experience a moving target. Many organizations struggle to keep up due to limitations with their digital architecture and legacy systems.

To overcome this agility gap, companies need to adopt a digital ecosystem that allows them to use data effectively and quickly to create powerful customer experiences. This whitepaper will provide a blueprint for adopting a customer-focused API-led approach that has enabled businesses to thrive in their markets.

At the core of this approach is the customer experience. For example, in an excellent in-flight experience, the airline could anticipate a frequent flier's meal choice and entertainment preferences before they even board the plane. The data to support this effort already exists within the airline's digital ecosystem. However, the real challenge the airline faces is aligning its food service, entertainment, and other partners around a highly-personalized travel experience by processing data from disparate sources in heterogeneous environments.

"APIs are the digital building blocks that compose and orchestrate customer experiences, foster new partnerships, and drive revenue with new business models."

Digital transformation: Then and now

Consider former retail titan, Sears – their bankruptcy declaration in 2018 was in large part to their inability to compete with the digital-first retailer, Amazon. While Sears saw itself as a brick-and-mortar-first retailer, Amazon used digitally-native thinking to create efficient moments online and grow revenue across an ecosystem of internal and external stakeholders. Where Sears and other legacy retailers went wrong was focusing on balancing their online and physical shopping experiences.

Today, Amazon dominates that thriving digital ecosystem. For example, the full conversational capability of Amazon's Alexa technology – used in their Echo brand of voice-enabled personal assistants – can be reused as an on-demand service to non-Echo and non-Amazon products. To achieve this on-demand service, Amazon uses a standard set of APIs to export Alexa's capabilities to an ecosystem of independent software developers, third-party device makers, and even Amazon's own product offerings – like Fire Tablet and Fire TV.

So whether it's Amazon, Uber, or another industry leader, APIs are the digital building blocks that compose and orchestrate customer experiences, foster new partnerships, and drive revenue with new business models.

Digitally-native companies have blazed a trail for others to follow and their success is largely due to their well-publicized ecosystem of APIs. However, IT leaders face significant challenges when it comes to taming their current fragmented solutions and heterogeneous ecosystems to power a digital-first approach. To successfully shift to an API-led approach, leaders must follow best practices, execute essential change management steps, and adjust the mindset of the organization to align the digital platform and ecosystem to better participate in the API economy.

"APIs are the digital building blocks that compose and orchestrate customer experiences, foster new partnerships, and drive revenue with new business models."

API strategy blueprint

Based on MuleSoft's experience with more than 1,000 enterprise customers and ProgrammableWeb's history chronicling the successes and failures of the API economy, this whitepaper provides you with a blueprint to developing your API strategy.

The API strategy blueprint consists of four stages – each covering a critical business and technology building block:

01 ESTABLISH A DIGITAL STRATEGY → **02** ALIGN ORGANIZATION AND CULTURE → **03** EVALUATE AND BUILD SUPPORTING TECH → **04** ENGAGE YOUR ECOSYSTEM

This blueprint won't cover all the activities involved in developing an agile digital architecture. Nor will it touch on every bullet point across the blueprint in detail. Rather, the blueprint will focus on the most critical action items to develop an API strategy.

While there are four distinct stages, some activities will overlap. For example, as you engage with members of your ecosystem in one part of your digital strategy, other areas of this strategy may still be evolving in response to new customer demands or the latest market conditions.

EXECUTE, MEASURE, ITERATE

STAGE	BUSINESS ACTIVITY	SAMPLE DELIVERABLES AND KPIs
01 ESTABLISH A DIGITAL STRATEGY	→ Align stakeholders on problems, opportunities, and competencies → Articulate business outcomes → Determine target audience → Establish business models → Prototyping and mocking → Roadmap development → Secure executive alignment	→ Business case → Prototypes → Roadmaps
02 ALIGN ORGANIZATION AND CULTURE	→ Socialize API vision and executive mandate across the organization → Establish organization-wide values → Drive services-oriented culture → Align teams by service boundaries → Institutionalize product-centric approach to APIs and services → Hire domain experts → Democratize automation and innovation	→ Number of employees certified → Achievement against hiring plan → API consumer NPS/SAT scores
03 EVALUATE AND BUILD SUPPORTING TECH	→ Assemble full lifecycle API management platform/tools → Establish API architecture and automation platforms → Commence KPI consolidation and dashboarding → Activate best practices for universal API management, governance, observability, and discoverability	→ Time to market for new apps/APIs → Availability/uptime → Security KPIs
04 ENGAGE YOUR ECOSYSTEM	→ Build and nurture community → Publish API catalog, developer portal, and productivity tools → Formalize training and certification offerings → Develop hackathon program → Launch collaborative feedback loop for versioning/support → Incentivize community partnership	→ Number of developer registrations → Number of API calls → Number of new apps developed → Developer conversion/retention

STAGE 1

Establish a digital strategy

Establishing your digital strategy is the one stage in the API strategy blueprint that's critical to the success of the rest. While the strategy will morph over time, it will serve as your north star for the other three stages. Without a well-defined and executive-backed digital strategy, it will be nearly impossible to create a thriving API ecosystem.

While you may be looking to engage external partners and customers, remember to focus on your internal API ecosystem first. By developing APIs internally, businesses reduce the limitations from their legacy systems – transforming how they deliver digital products, services, and business capabilities.

Your digital strategy development will be theoretical since it relies on digital instincts and creativity – which can pose challenges for many organizations. Frequently, organizations struggle to come up with realistic business outcomes (like building new customer experiences) based on platform and ecosystem thinking since they haven't done it before.

"Creating a new role sends a firm signal that significant changes are coming."

Being open-minded to calculated risk is key for the strategy development process. One of your first organizational changes should involve working with experts who have a history with game-changing platform business outcomes. This could be a newly created position on the executive team, like a chief digital officer (CDO) or leveraging a consultant that has a strong track record of driving successful business transformations. The aim here is to develop a strategy that is free from the limitations of preconceived ideas of your current team.

Creating a new role sends a firm signal that significant changes are coming. Once key stakeholders including business leaders and an experienced leader for the ecosystem development are in position, the next steps are straightforward.

→ **To learn more, see** Understanding the impact of legacy modernization

Identifying business outcomes

Stakeholders should plan their key organizational competencies and identify areas where they may run into problems to help direct the digital strategy and establish business outcomes. Here are some real-world outcomes that organizations have targeted:

- → Accelerated delivery.
- → Increased new product cadence (number of new products over a given year).
- → Revenue growth due to new products.
- → Recurring/subscription services.
- → Better and well-aligned customer experiences.
- → Improved partnerships.
- → Increased transparency.
- → Accurate/timely reporting.
- → Optimized cash flow.
- → Increased brand awareness.
- → Faster recruiting cycles.
- → Better situational awareness.
- → Improved customer self-service.
- → Backlog reduction.

CUSTOMER STORY

Siemens is the largest manufacturing and electronics company in Europe. The manufacturer was tasked with rolling out 60 million smart meters to accommodate the UK's new climate change regulations. The initiative required a solution that would adapt quickly, connect easily, and enable Siemens to execute its initiatives with increased agility.

Customer data had previously been stored in multiple mainframes, severely limiting their ability to provide industry-leading customer experiences.

The company used an API ecosystem with the smart meter project to unlock siloed services and data. This approach enabled mobile and web applications to consume the data, resulting in a superior partner and customer experience. The API ecosystem also allowed them to share data in real-time with the UK regulatory bodies and removed the need for custom-generated reports.

→ **Read the full Siemens customer story**

Identifying target audiences

Be sure to visualize the API ecosystem and identify its internal and external participants. Let's look at a Salesforce example: operating two different business channels and models across a single ecosystem in the Lightning and AppExchange platforms. Both are enabled by APIs and have access to the company's core business capabilities – Salesforce automation and customer relationship management. But the audiences using these platforms are different.

On Lightning, Salesforce targets both pro-coders and non-coders with the ability to customize their organization's access to Salesforce's core capabilities. Pro-coders include software developers looking to program new, customized user interfaces, while non-coders use a drag-and-drop experience to build customizations. Whereas Salesforce AppExchange is a marketplace where independent software vendors (ISVs) can provide prebuilt solutions that complement the native Salesforce experience. Additionally, AppExchange targets an

entirely different community of developers than the Lightning Platform. These technologies allow Salesforce customers to discover and procure turnkey solutions.

Focus on recruiting individuals to co-create value and aligning that value with the desired business goals. The Salesforce example shows that organizations need to understand each audience in their digital strategy. Identifying your target customers, researching their needs, and understanding their pain points will strengthen the foundation of your ecosystem and business models.

Properly identifying your target audience will also help you develop customer experiences based on their needs. This will drive consumption of your organization's digital capabilities, which will guide and reinforce the value of the ecosystem. While it's important to leave room for innovation, most of your conceptual experiences will be the ones that deeply engage your constituents (customers, partners, and employees) and keep them coming back for more.

Validating ecosystem and business models

The best ecosystems largely focus on value between the host and its ecosystem members. Similar to the Salesforce use case, the value could involve direct or indirect business models.

"Do not rely on internal stakeholders alone for validation since you may fall victim to echo chamber thinking."

Salesforce earns a significant amount of revenue from customer subscriptions to core services. When they build their customizations using Lightning, those new applications enable them to be more successful. This is called an indirect model of API monetization. In contrast, in a direct business model, revenue is driven directly by the volume of API usage.

On another side of Salesforce's ecosystem, ISVs build-and-resell turnkey applications that rely on Salesforce APIs that complement their out-of-the-box capabilities with new experiences. This involves a different business model that includes AppExchange. In this model, value is co-created when ISVs earn revenue by driving increased usage and loyalty to Salesforce while earning from the sales of their solutions.

Organizing ecosystems that involve multiple business models is a massive undertaking. This is why it's crucial to have the right talent lead the process. It is equally important to validate your proposed ecosystems with all relevant constituencies (like customers and ISVs) that will co-create that value. Do not rely on internal stakeholders alone for validation since you may fall victim to echo chamber thinking. Working with individuals in

your intended ecosystem will make it easier to discover flaws in your planning, evolve your offering, and eventually improve your bottom line.

Prototyping and mocking service

After you whiteboard ideal customer experiences, you'll focus on creating a proof-of-concept and prototype. These can help stakeholders envision your digital strategy and any potential flaws. Look into an API management solution that offers mocking services that allow developers to design and build – even though APIs have not been implemented.

Let's revisit the Siemens example and how they migrated from mainframes to an API-led ecosystem solution. The company developed a proof-of-concept to prove that its mainframe could call a cloud-based service. Siemens used a mocking service to test its concept in a safe environment rather than a trial-by-fire on its live platform. Prototyping and mocking services allowed its leader to fully conceptualize and create a plan before prematurely jumping into a costly development phase.

Executive backing

Ideally your organization's leadership will act as key stakeholders and fully engage in the strategic development. If not, proceed with caution. A strong-minded executive that isn't on board with an API ecosystem can impede the progress of a digital strategy.

To maximize success, the ecosystem leaders will need to foster the energy and resources that come with executive backing. The executive sponsors need to know that the strategy has been holistically conceived – with no stone left unturned to identify and validate business outcomes and opportunities. They must be supportive of the required financial investment and the duration of the journey. They also need to reorganize the company, mandate behavioral changes, and fundamentally shift the organization's culture.

Executing your company's new digital strategy will be an extensive endeavor – it will make the metaphor of turning a battleship look simple. In order to survive in the ever-changing digital landscape, organizations will need to reinvent themselves by:

- → Freeing siloed data into 360-degree views of customers.
- → Deputizing knowledge workers into no-code consumers of that data.
- → Assembling previously unimaginable customer experiences.
- → Increase their business agility.

STAGE 2

Align organization and culture

Think about the last time you flew on a plane. You might have seen the airline's mobile app that provides travelers with access to the airline's business capabilities. The app includes several features: from booking new travel, finding your gate and departure time, and access in-flight entertainment options.

Of course, an app like this is commonplace in today's API-connected world. Still, it was not too long ago that a proprietary seatback playback system was the standard across many airlines. This system was prone to failure, frequent updates, and a customer experience that gave customers very little control.

The app adds value to the digital strategy because it incentivizes travelers who might not otherwise download the app and create an account – resulting in a longer-term digital engagement opportunity for the airline. Through the app, the airline can easily notify customers of revenue-driving offers or allow them to place in-flight food orders. Additionally, the app gives the customer more control than the previous generation of technology, all from their device. Meanwhile, the airline is building a 360-degree view of the customer based on their app usage with the long-term objective of providing a more personalized experience.

Consider the effort it takes across the organization to achieve the airline app's desired business outcomes. First, someone envisioned the mobile app as a new business channel to keep customers engaged while growing revenue. Then someone spotted the opportunity to drive app adoption even further by turning the passenger's smartphone into an in-flight entertainment portal. Finally, as gate personnel and flight attendants inform passengers of this new experience, this ensures the app is installed before take-off.

This type of organizational alignment and culture around new digital experiences

does not happen by mistake. It occurs with enterprise-wide adoption of the digital vision that extends beyond the buy-in of the executive and management teams. The entire organization drove toward these outcomes beyond what was outlined in the original digital strategy and created an excellent customer experience as a result.

In the blueprint's second stage, there are several organizational and cultural changes that every organization must consider:

Socialize API vision and executive mandate across the organization

Your digital strategy will require a significant amount of socialization to get the organizations aligned to the same objectives and business outcomes.

The digital strategy and its API vision will:

- → Involve organizational changes.
- → Focus on certain organizational values.
- → Ask everyone to consider the value they can provide in service-oriented terms.
- → Democratize innovation so that all can participate.

To reinforce the intention of the new strategy, consider positioning some of these internal changes as mandates. When an organization goes through multiple changes, it can be upsetting to employees that were previously operating under specific patterns. Open communication will prepare the team for the changes coming to the organization.

The vision and mandate can be communicated through town halls, online FAQs, newsletters, internal blogs, or email communications. The organization should also provide training and orientation programs to help employees take ownership of these changes.

Establish trust, security, and privacy as organizational values

In the digital age, trust is the number one concern of customers. Your product could offer the most comprehensive solution in the market, but without customer trust you won't maintain widespread and sustainable adoption. The quickest way an organization loses trust is if their product or service exposes customers to security vulnerabilities – which can result in a significant loss in market share and revenue.

Malicious attackers prey on enterprises suffering from uncontrolled API sprawl. These hackers target API endpoints by finding gaps in their software and services. Up to 75% of credential abuse attacks target APIs, which makes having a sprawl of ungoverned and unmanaged APIs across the enterprise a dangerous risk. Creating an industry-leading API ecosystem sets your organization up for success, but it would be meaningless if it left its users open to vulnerabilities.

No technology is infallible, and every development of digital technology comes with some risks. With any technology that becomes commonplace, the impact of the technology far outweighs the risks of using

them – and this is undoubtedly the case with APIs.

So while no digital or API security strategy is impenetrable, excellent digital security boils down to:

- → Relying on solutions and tools that are inherently secure by design.
- → Complementary technologies that secure infrastructure tangential to API provisioning.
- → Strictly enforcing best practices and management/governance standards while validating adherence at API design-time and runtime.
- → A security-first organizational culture that's obsessed with security, trust, and privacy.

Consumers are aware of their data. They understand that digital privacy is a concern, which makes it critical that all conversations around digital strategy and execution are framed with the organization's vigilance regarding security, trust, and privacy. Ensure that your organization hires a team that specializes in API security to work toward a consistent and secure design culture.

Security is often seen as a necessary evil, but it is imperative for businesses to start reframing this by treating security as an enabler for growth. For this shift to happen, security and compliance measures must be consistently coded within each component of the ecosystem from the start and from

"With any technology that becomes commonplace, the impact of the technology far outweighs the risks of using them — and this is undoubtedly the case with APIs."

a single control plane. The first step to avoid being the next data breach headline is to ensure universal visibility of the organization's APIs to secure them at scale.

Drive a services-oriented culture

Most organizations consist of departments that are responsible for their respective business capabilities. When developing an API strategy, these capabilities and competencies are reimagined as API-led digital services consumed across a network.

While some of these capabilities will be priorities in the digital strategy, the core competencies need to be leveraged as reusable building blocks called packaged business capabilities (PBCs). This shifts the focus away from building projects from the ground up to using composable building blocks that enable organizations to deliver experiences at the speed of customer demand. It will also depart from a system where capabilities and data are tied directly to other applications through non-standard, non-reusable, custom-built integrations.

We have repeatedly seen these custom-built integrations snowball into expensive monoliths that are difficult to maintain

and nearly impossible to leverage in new opportunities. For example, imagine the complexity and specialized labor needed to maintain Siemens' multiple mainframes and the integrations between them.

Executives leading the charge need to instill a cultural change – where the entire organization is held accountable for transforming its existing business capabilities into API-led services. This shift must ensure that all new capabilities are developed and aligned with the API-led approach.

Amazon faced this challenge head-on:

> *In 2002, Jeff Bezos knew he had to change the culture of his young company before it repeated the mistakes made by so many other enterprises. So, he mandated that all business functions across Amazon must be exposed over the network as reusable services. Without exception, all consumption of business functionality must be through those service offerings. This exposure across the network was so crucial to organizational value that he threatened to fire those that didn't comply.*

Today no new business capability at Amazon, internal or external consumption, can launch unless it's a service. That service-oriented approach is baked into the culture of the entire company.

"We have repeatedly seen these custom-built integrations snowball into expensive monoliths. And this architecture is costly to maintain and nearly impossible to leverage in new opportunities."

Organizationally align teams by service boundaries

As organizations break down their monolithic architectures into modular PBCs, organizations must identify boundaries that will emerge around their services. Organizations need to align their teams to mirror these service boundaries with clear lines of responsibility and accountability for their financial and technical successes.

Institutionalize a product-centric approach

For your digital strategy to succeed, APIs should not be treated as cogs in the organization's technical engine. Building on the concepts of the previous section, it is equally essential for your teams to take those service offerings seriously. The teams must treat the APIs as full-fledged products regardless if its APIs are offered to internal consumers, external consumers, or both.

Typically when a company offers some product to its customers, the product has to:

- → Be designed with the intended customer in mind.
- → Be governed to a consistent quality, regardless of their origin or development platform.
- → Be packaged and marketed to attract targeted customers.
- → Provide the customer with a great experience that inspires confidence in the brand.
- → Be backed by guarantees that it will work as advertised.
- → Come with whatever support is necessary when customers have problems.

When APIs are designed and resourced with these characteristics, the stage is set for long-term service, higher customer satisfaction, and ongoing engagement. Even if the product or service is never presented externally to partners or third-party developers, internal consumers will increase adoption as if it were from an outside vendor.

A product-centric approach will have notable impacts across the entire blueprint: from resourcing and staffing, to technology selections, to the ways you'll engage your ecosystem (including evangelism, training, and support). Additionally, this will prepare the organization for the possibility of exposing these services externally. We've seen repeatedly across organizations (like Amazon) that services should be developed with the assumption that they will be published to your customers.

Hire domain experts

While your company may have already onboarded a chief digital officer to lead this ecosystem journey, the organization may still lack the talent to handle these shifts. If the organization is dedicated to product-centricity, it will need to resource and staff its service offerings appropriately. Attempted shortcuts, particularly within specific domains like API security, could be disastrous.

Some roles need to be brought on earlier in their API journey. The initial focus should be on adding a chief digital officer or equivalent, then API product managers, API developers, and API security specialists as the portfolio of APIs expands.

These roles do not have to be filled on a per-service basis, and there are a variety of configurations that will work. For example, one team might be responsible for multiple services and they may only need one API developer to support them. In comparison, a larger organization might need a central pool of API developers to preserve API development standards across the organization.

On the other hand, API product managers cannot be easily centralized into a pool. The API product manager is the liaison for ecosystem consumers and is responsible for securely provisioning the API. The API

product manager has a broader view that connects desired business outcomes to KPIs, while keeping in mind the intended customer experiences the organization aims to create.

While the organization will hire for many new roles, not every role will require a dedicated headcount. For example, in some organizations the API developer may also have a hand in API evangelism and support. In other organizations, the ecosystem might be large enough that a single API requires a team of evangelists to cover different geographic regions.

Democratizing innovation and organizational culture

When business capabilities are buried within a monolithic architecture that is accessible to a handful of people, these people become the gatekeeper of innovation. Frequently, the bottleneck is the "if it ain't broke, don't fix it" approach, where there is a fear that any attempts to change something complicated will cause it to break. Another concern could be resources, headcount, and priorities, or potentially there is red tape in the way. Many organizations are reluctant to trust solutions developed by third-party vendors, which dramatically stifles innovation.

Democratization of innovation is a cultural issue, and the reasoning for this is three-fold:

1. Like service orientation, security, and product-centricity, the democratization of innovation must be a subtext to every digital initiative.

"The organization should then bring API product managers, API developers, and API security specialists as the portfolio of APIs expands."

2. Which members across your ecosystem are participating in the innovation process? Once you've enabled your business capability, it's necessary to consider which of your constituents can develop value from it.

3. How will the organization foster the innovation process to make it an expected and regular part of corporate culture? The aim is for innovation to drive people to want to work for your organization or join your ecosystem. It isn't enough to open the system up for participation. It has to be a core part of the organization's culture to continually drive participation.

As organizations look to reinvent the digital economy, it's not enough to strategize, install some technology, and wait for the cash register to ring. Critical components like product-centricity, security, and innovation must be embedded in the foundation of your API strategy. Getting the culture right isn't just important – it's fundamental. Once your culture is on the right track, it's time to turn your attention to the technology component.

STAGE 3

Evaluate and build supporting tech

With your digital strategy in place and your organization's culture aligned with that strategy, you'll need the right technology to engage your ecosystem digitally.

It should be no surprise that APIs will be one of the critical enablers for your digital strategy. As you look to publish your business capabilities for consumption across your ecosystem, each of those capabilities will be facilitated by one or more APIs.

Similar to how Amazon has assembled a portfolio of APIs for Alexa, shopping, and cloud computing, your digital platform should consist of APIs that are easily discovered and consumed by the members of your ecosystem. These APIs result from existing capabilities and API-related explorations of new functionality that might lead to new business channels, new business models, and new products.

When an organization commits to a product-centric approach in providing APIs, it should also commit to the universal API management lifecycle – which consists of the following phases:

- → Planning and initial design.
- → Test-driven development.
- → Flexible deployment.
- → Secure operation.
- → Governance and monetization.
- → Analysis and testing.
- → Developer engagement.
- → Versioning and retirement.

The technical team will establish API architecture and standard API design principles to be used across the ecosystem, and this is why it's essential to address specific API-specific roles early in the

process. In addition, depending on the extent that your APIs will draw upon your organization's existing IT estate, other technical stakeholders like database administrators, system architects, and full-stack developers will also need to be a part of the process.

Your successful execution of the API lifecycle will depend on selecting and deploying a universal platform for API management. Many organizations are tempted to create an in-house API management solution from scratch. However, they quickly find that as they progress, they realize how integral the system's functionality must be under the hood.

Universal API management enables developers to consume all of an organization's APIs through a single catalog. This management solution acts as the ecosystem's one-stop-shop single source of truth – regardless of which platform the APIs are developed on. While you are focused on establishing an internal API ecosystem, data indicates that an API ecosystem will eventually encounter new APIs developed externally. A universal API management solution would allow your ecosystem to adopt quickly and incorporate these external APIs promptly and efficiently.

Security is another concern to consider for your API management solution, and at this stage, the ecosystem needs to activate security best practices and technologies. As said earlier, most well-known companies have experienced an API security oversight.

"Your successful execution of the API lifecycle will depend on selecting and deploying a universal platform for API management."

Organizations that attempt to create in-house solutions are virtually guaranteed of inviting hackers in through a back door.

The reality is that organizations are no more suited to building their own API management solutions than they would be building their own database management solutions or an in-house content management system. For this reason, it is critical to test your security practices and technologies for potential issues constantly, even enlisting your ecosystem for help using bug bounties as an incentive. Given the risks to your brand, API security is not something to take lightly.

According to Gartner:

> *"Differentiation does not come from building your own API management platform. It comes from the APIs you publish … full lifecycle API management comprises a very wide set of functionality. At the start of API programs and digital strategies, clients need only a small subset of that … However, API programs and digital strategies quickly require more and more API management functions when they take off – far more quickly than any development shop can keep pace with."*

> *"Universal API management enables developers to consume all of an organization's APIs through a single catalog. This management solution acts as the ecosystem's one-stop-shop single source of truth – regardless of which platform the APIs are developed on."*

→ **Learn more about why Gartner named MuleSoft a leader in 2021 Magic Quadrant for Full Lifecycle API Management**

STAGE 4

Engage your ecosystem

The online engagement phase of the API lifecycle focuses on the features of API management solutions like developer registration, documentation, and sample code. This stage of the API strategy blueprint is concerned with forms of engagement and other activities that represent the totality of your ecosystem engagement efforts.

When it comes to internal ecosystem constituents, each team that developed through the ecosystem journey will have its own communication channels. One internal team may communicate through Slack and email distribution lists, while another might use Jira. Rather than dictate a standardized communication method, focus on engaging where your team members are most comfortable.

Let's look an example of a company engaging with external constituents:

> *When it came time for Uber to support its APIs, the company could have built an in-house support forum and hosted them on Uber.com. Instead, Uber met its target audience where they spent their time: on the forums at StackOverflow.com.*

> *StackOverflow.com is a popular website where developers get expert help on nearly any programming topic. As Uber's community on StackOverflow grew, it started to become self-sustaining with members who didn't even work for Uber – as they began to answer support questions coming from other members. Recognizing this as a crucial part of its overall developer experience, Uber started gifting swag to volunteer mentors, which generated goodwill across the community and more interest in the Uber API.*

Uber didn't attempt to force a community within its domain to grow web traffic or a branded community; by meeting the developers where they were still allowed them to connect with Uber API experts.

Create a single source of truth for all enterprise APIs

As the idea of the composable business has gained traction with business and IT executives over the last twenty years, API adoption across every enterprise has also increased exponentially.

On average, modern enterprises use up to 500 APIs to drive composability, speed, and agility. Many of these enterprises adopted multiple fragmented solutions in their underlying technology stacks. Siloed teams with heterogeneous environments, diverse architectures, and disparate solutions for their different use cases led to what is referred to as API sprawl – the next big challenge for API-led businesses. With API sprawl, it is harder than ever for enterprises to know which APIs exist across the enterprise.

Future-looking organizations need a single source of truth that provides universal discovery, governance, management, and observability across their enterprise, regardless of their origin, environment, or architecture.

Build and nurture community

In this stage, evangelists will be solely responsible for driving your platform's adoption and usage. Yet, regardless of whether the goal is to drive internal or external adoption, API and platform evangelism needs to be a full-time role and each API must be treated as a full-fledged product.

There are several ways to target members across your ecosystem, including traditional marketing, hackathons, swag, and bug bounties. An API and platform evangelist's job is to maximize the community of consumers who are enthusiastic about consuming your platform and APIs. And in turn, they represent the APIs to anyone within their community.

Hiring an API evangelist early on will expedite go-to-market decisions and jumpstart the co-creation of value across your ecosystem. Part of the API evangelist's role is to work with members of the community before launching an API to gauge the likelihood of adoption. If the members of your ecosystem don't see the API bringing ease and value toward meeting their goals, they may reject the offering. The API evangelist is the liaison to this community and is essential to the success of your APIs – and ultimately your business goals.

Another problem enterprises face with fragmented platforms is bringing together their API community. The biggest hurdle in this process is not having a single source of truth for all of the organization's APIs. Having a single consolidated repository for APIs makes it easy for API evangelists to promote your products and build brand loyalty.

Publish comprehensive developer portals and productivity tools

A developer portal is the channel of communication between your organization and your API community. Whether it's a public website or internal portal, it should be a one-stop shop for developers to discover everything about your platform and APIs. In addition to housing technical documentation, the developer portal has the resources needed to enable developers to use the APIs. This can include, but is not limited to:

- → Searchable, browsable API catalog.
- → API overviews with business capabilities, typical use cases, and terms of availability.
- → Self-service registration.
- → Technical documentation.
- → Sample commands and code snippets.
- → Interactive API console.
- → Access to SDKs.
- → Sandbox versions and version navigator.
- → Change log.
- → Blogs and news about your API.
- → Support forums.

Beyond these functions, the platform you use to build a developer portal should have ready-to-use templates to get your portal up and running quickly. A comprehensive developer portal makes a great first impression on developers and demonstrates how you view, promote, and resource your APIs as some of your organization's most valuable offerings.

"A comprehensive developer portal makes a great first impression on developers and demonstrates how you view, promote, and resource your APIs as some of your organization's most valuable offerings."

Establish a training program

Establishing a training program should be one of the key targets of your evangelism efforts. Training content and materials inform evangelists and prevent mistakes across the organization.

Example code is a fundamental piece of training content, which educates software developers on how to use their preferred programming language with their APIs. This training code allows developers who are familiarizing themselves with your APIs to cut, paste, and experiment with that sample code in their programming environments, rather than building them from scratch.

Consider implementing step-by-step tutorials to guide developers through example business problems with programming code that uses your APIs. These tutorials can be published through a content management system like WordPress that

leads to programming code maintained in repositories like Github.com. Here the evangelists can connect with developers to answer questions left in the comments.

Think beyond text-based tutorials and embrace video tutorials, live and on-demand webinars, or in-person training at conferences. Some organizations add a certification to their training programs for developers who have proven they are proficient with the platform. Often these certifications are shared on social media, which is a great opportunity for evangelism created outside the scope of the dedicated evangelist.

There is a range of options for your training offerings, some of which are better suited to specific members of your ecosystem. Focus on what makes the most sense with your initiatives and for the members of the ecosystem.

Hackathons

Hackathons are one of the most popular forms of ecosystem engagement. During a hackathon, software developers build new experiences with the business capabilities offered by your platform via APIs. In some cases, hackathons are contests where the outcomes are judged on concept and execution.

Hackathons participants are often internal members of the platform team and developers from across an organization. They will break away from their usual tasks for a day of highly-collaborative interaction – hopefully resulting in key takeaways for both groups. The platform team may get feedback about the design of an API, while developers might be inspired by new possibilities.

Hackathons also democratize innovation. The entries surface previously unimagined ideas that could potentially turn into business initiatives.

For platform providers, hackathons are an opportunity to find out where developers might be struggling with certain APIs. You may find out that the API's resources are inconsistent, that developers must spend significant time with the documentation or in trial-and-error mode.

APIs enable developers to handle projects quicker since it saves them time writing custom code to create new capabilities. They only need to write one line of code to import the capability from across a network.

For hackathons to be effective, they cannot be one-time events. They must be scheduled regularly and be a regular part of your organization's culture.

Launch collaborative feedback loop for versioning/support

In the early days of API development, some API providers would launch one version of an API. Then without any adequate warning, they'd either change its programming structure or replace it with a new, improved one.

Many API providers learned the hard way that making sudden changes to their APIs was bad for business. Once existing applications rely on an API, changes must occur openly with feedback or risk causing those applications to malfunction. Across the API economy, this unwelcome phenomenon is known as a breaking change.

When it comes to the co-creation of value, the better approach is to overlap versions so that developers can test the new functionality in their apps, while also providing feedback on the latest versions (i.e., bug reports). This feedback can happen on online forums, comments on blogs and docs, Slack and email, or alike communication tools. When you send the message to your community that you're open and welcome to feedback, you are letting developers know that you value their insight.

Incentivize community partnership

In a successful API ecosystem, there is a co-creation of value is between your organization and its community members. This occurs in several ways, one of the most popular being bug bounties where individuals earn rewards for identifying flaws within a system. Yet surprisingly, many API providers do not do this.

Digitally-native industry leaders and companies that are committed to creating an ecosystem with collaborative feedback compensate with cash or recognition. Take Google for example – the company compensated a developer who discovered a catastrophic API security vulnerability within a YouTube API that made it possible for hackers to delete any YouTube video. Cash or recognition is a small price to pay for connecting with the community, especially compared to the time and energy it would cost the company to uncover such an error.

The community can also get involved by developing open source SDKs for languages that your team is less familiar with. For example, the Github public code repository has thousands of SDKs from independent developers (compared to the API providers themselves). An API provider might choose not to build SDKs for less popular languages, like Clojure or Haskell, and incentivize its developer community to make them instead.

Financial rigor and ROI

Creating a new API ecosystem will involve restructuring, increased headcount, and more working hours – which means business leaders must understand that it's impossible to estimate the total cost upfront. On the flip side, it is equally absurd to head in to develop an API ecosystem with a blank check. There needs to be ongoing conversations and planning across the four stages of this blueprint, regarding financial expectations, expenditures, and ROI.

Use this blueprint to shape the financial conversation into compartmentalized discussions, where the cost of each step is tracked to its goals and outcomes. For example, while you build organizational culture, the team can identify domain experts you hope to recruit while you also create the budgets.

However, as you move into tech enablement, you will need to budget for a different class of expenses. These choices, costs, and savings will be unique to your organization's goals and intention for the ecosystems. For example, the engagement expenses involved in a public API economy differ from a private offering that stays within the corporate firewalls or to partners.

Record and map expenses into a dashboard that offers a global view of the ongoing budget, expenses, savings, and ROI across the entire journey.

Defining and measuring success across the API strategy blueprint

The success of your platform also depends on setting objectives for the four stages of the API strategy blueprint, and rigorously measuring and monitoring progress. This roadmap offers some examples of KPIs for each stage, but it is by no means a comprehensive list. It falls on the organization leaders to determine which KPIs will measure the API ecosystem's success.

Each of the four stages will have distinct goals and KPIs unique to the organization. The exercises of KPI identification, goal-setting, and goal recalibration should be revisited by stakeholders frequently. While the API strategy blueprint looks like a waterfall-like model, the activities within are constantly building on each other. Your digital strategy will evolve in response to successes and failures, shifting market conditions, competition, and customer requirements. As your digital strategy develops, so will the measures of digital strategy success.

If the organization doesn't enable rigorous KPI monitoring at the beginning of the journey, the rest of the development will be limited. Lax KPI monitoring also sends a message to the organization that accountability is not part of the process. If an organization is diligent at setting and communicating goals, the entire organization will culturally become a part of the process.

EXAMPLE SCENARIO

Let's say a fictitious airline waits until passengers have boarded their flights before encouraging them to download a mobile application. At the same time, everyone is seated at the gate where there is free WiFi. As a result, that airline's API metrics (available from the API management platform) might reflect low usage, which can be correlated to the number of installations of that mobile app (a metric available from the app store).

Once gate personnel suggests downloading the app while passengers wait at the gate, the airline's metrics improve, including in-flight food and premium entertainment purchases (whose revenue is stored in the accounting system).

Such goals should involve well-understood measurements (i.e., number of developer registrations, API requests, and revenue) and identify and automate the connections between business and technological metrics. While it's not listed as a discreet action item in the technology stage of this blueprint, forging these connections is an integral part of the measurement and testing phase of the API lifecycle. This is your chance to tie technical and business metrics together and may reveal new opportunities or the need to recalibrate a business model.

Aggregating these metrics from their respective sources into a single view makes it possible to correlate specific business outcomes and technical metrics to shape your digital strategy.

Conclusion and next steps

These four stages provide a framework to begin developing your API strategy but are by no means exhaustive. The customer experience is the keystone to your ecosystem strategy and should be kept in mind as your organization moves forward through the four steps.

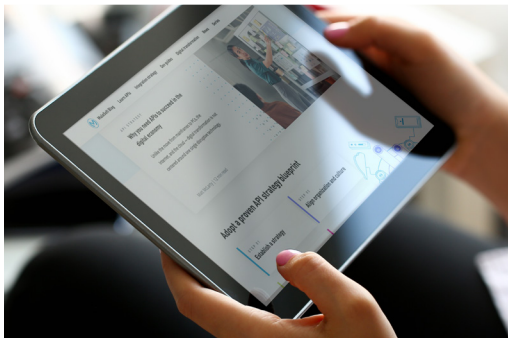
No matter where you are in your API strategy journey, universal API management through Anypoint Platform can help. This solution increases agility, improves governance, and delivers innovations quickly.

RECAP

To successfully shift to an API-led approach, leaders must:

- → Follow best practices.
- → Execute essential change management steps.
- → Adjust the mindset of the organization to align the digital platform and ecosystem to better participate in the API economy.

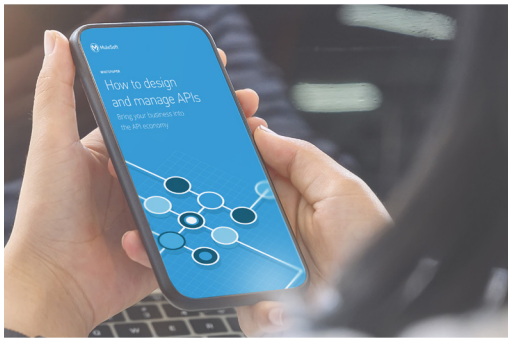
Learn more about MuleSoft



Visit our API strategy hub

Discover the role APIs play in your digital strategy, get a step-by-step blueprint on how to build an API ecosystem, and get insights from leading organizations applying the latest API trends.

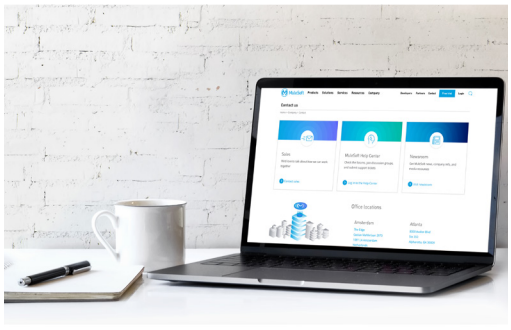
Learn more



Learn to build and manage APIs

Learn industry best practices for designing, analyzing, and managing APIs. Find out how to evaluate API management tools to govern the full API lifecycle and drive consumption, collaboration, and reuse in your developer ecosystem.

Read more



Adopt a trusted platform for API management

Learn how Anypoint Platform – a six-time Gartner Magic Quadrant leader – can help your team quickly design, test, and publish API products, including those developed outside MuleSoft.

Get started

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