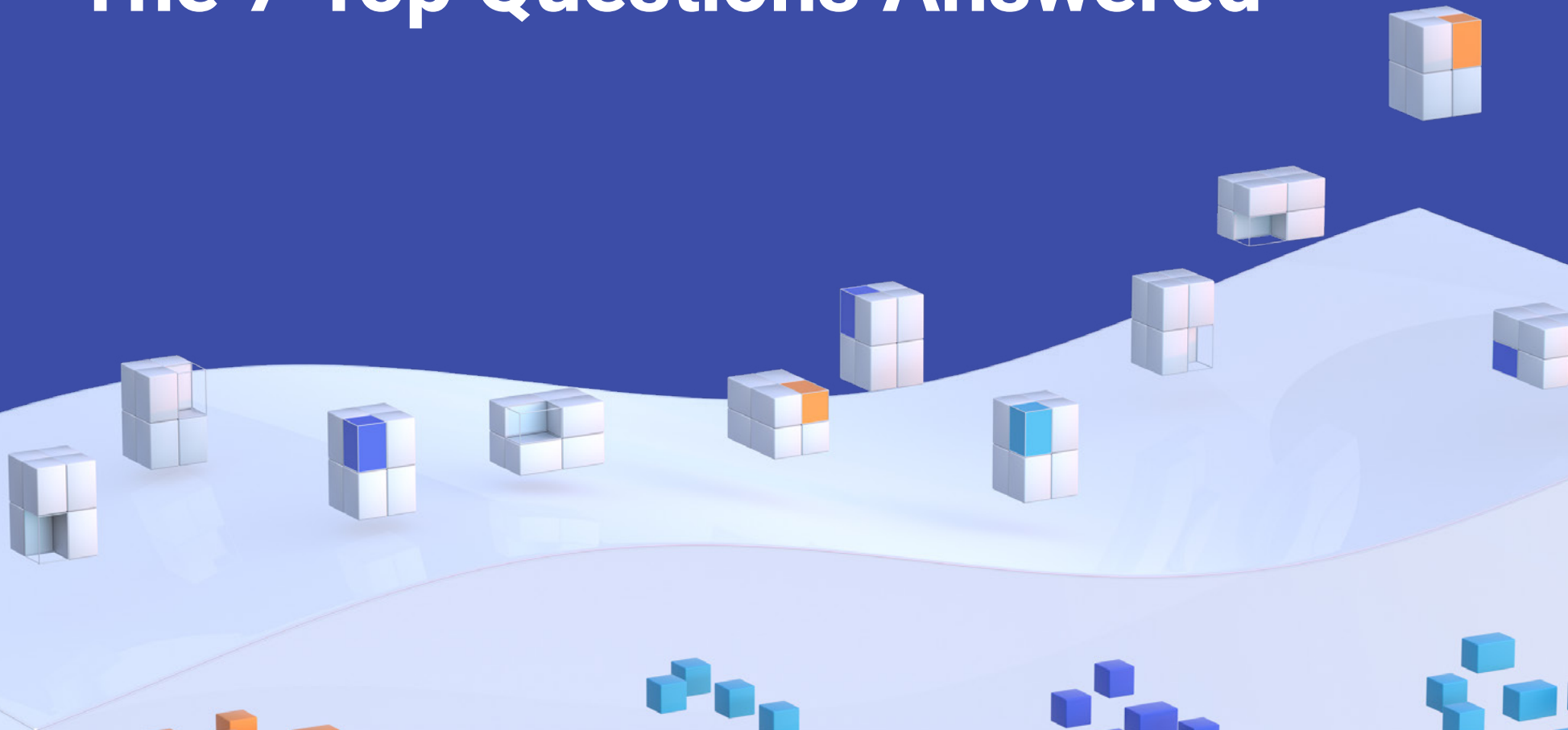


eBook

The Digital Future of Legacy: The 7 Top Questions Answered



Introduction

As the business world continues to move toward offering digital services at ever-increasing speeds, the transformation of the IT organization becomes paramount. However, 80% of organizations have technology that may be holding them back—their legacy systems.

These highly secure and efficient powerhouses hold significant amounts of data but suffer from a number of challenges:

- customized implementations, with an aging resource pool of specialized skill sets,
- a technology base that does not support modern languages and typically does not have tools to support modern architectural principles,
- slow adoption and development times, and much more.

It isn't feasible to defer mainframe integration of migration until the end. The critical and massive amounts of data stored in these systems keep them at the center of the conversation. This, compounded with the time to decompose and move such monolithic applications, can easily span into years.

The problem, however, isn't the legacy systems themselves, but how businesses view them. What if, instead of viewing your legacy systems like an anchor, you see it as a jet-powered engine that rockets the business forward?

This is not just a new perspective but is a feasible one. With Boomi, providing cloud-native integration, and OpenLegacy, extending Boomi's integrated experiences for legacy and core systems, it is possible. Now organizations can move beyond legacy ESBs into rapidly developing, modern digital solutions.



#1: How are organizations addressing legacy technology today to remain competitive?

Legacy technology is the underpinning to a staggering number of modern businesses. While some newer organizations were “born in the cloud”, older companies still rely on workhorses, like mainframes. These are reliable and secure technology solutions supporting the business for decades, and still do.

These technologies are not, in and of themselves, outdated. Instead, they are foundational to the business. Acting as systems of record and holding data and processes critical to business operations, these systems are not easily uprooted to make way for newer technologies. In fact, the evolution of most business systems is the layering of newer technologies, piece by piece, on top of the mainframe or other foundational system. This has, over time, been how many companies modernized their technology stacks while leaving the legacy systems in place.

Of course, there is a need for integration with systems and applications outside of the legacy ecosystem. In the past, layering solutions, like ESBs, onto legacy platforms is how the connective tissue across systems was provided. But an ESB is no less monolithic than the legacy applications themselves.

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The biggest challenge we faced was building a platform that would allow us to consolidate all of the customer's information and provide our colleagues with a 360° view so that they could translate every interaction into a unique experience.

”

David Martinez, Architecture Manager



As the core business and customers demand the delivery of new digital services at an increasing pace, companies may see their legacy systems holding them back. Many businesses consider migrating away from legacy, but such undertakings are time-consuming, costly and not always practical.

Questions remain on what they would even migrate to.

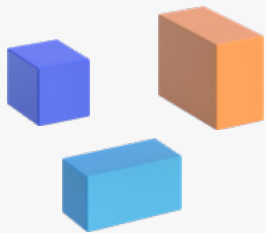
- Will a cloud solution offer the same level of security and reliability as the legacy system does?
- Would the organization be stepping out of the frying pan and into the fire?
- Is it even economically feasible to shift?

Without a move, innovation can take many months and rack up significant costs. Anything more advanced or accelerated than treading water from a digital application perspective is out of the question.

It is exceptionally difficult to innovate when services take a great deal of time and resources to develop. Organizations end up choosing between projects, minimizing the opportunity to build reusable components and services over creating what the digital team should focus on and the needs of the business.

Organizations with a well-developed legacy system have the advantage of a strong foundation on which to build. But without new strategies to unlock the business value within their mainframes quickly and efficiently, it is difficult for these organizations to answer business needs and customer demands in a timely manner.

Automation is the key to building business value quickly and easily. Automate the mundane tasks of parsing the legacy interfaces and building data translation for handling the communication between the legacy and digital side. Then the whole interface building process can be treated the same as you would for any digital assets.



#2: What are the big costs to consider as part of your digital strategy?

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Within an hour, we went from nothing to a working service connected to our payments app, powered by OpenLegacy—80% of the work comes right out of the box.

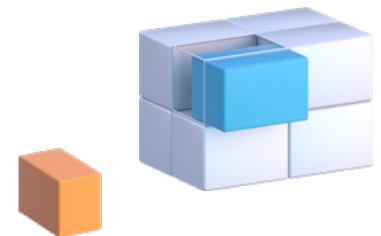
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When viewing a legacy system through the lens of digital transformation, the potential strategies have challenges associated with cost. Worse, many of these challenges overlap regardless of the strategy being considered. These constraints mean organizations must choose one project over another, and choose carefully.

First is the cost of any change, both financial and from an opportunity standpoint. Choosing to develop integrations and services off of the existing legacy system and architecture requires a lot of resources, time, and complexity while the business waits. A single new service can cost \$100,000 to \$200,000 or more, and take as long as nine months to build.

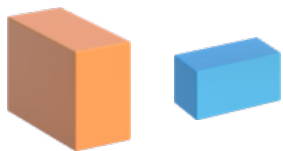
Additionally, legacy system developers, unfamiliar with the digital side of the business, are pulled away for months at a time from other critical tasks to develop services that answer a specific business need. Citizen integrators know better what the digital side needs and should do this task—if only we could automate the legacy integration aspects.



Adding developers on the legacy side that can handle service development and integration isn't a viable option. The skills and experience required to develop and manage legacy systems are increasingly rare. The “silver wave” of mainframe programmers means a reduction in the candidate pool that could be onboarded to take up additional tasks, assuming the budget would permit.

Some organizations might consider a move off of their legacy systems as an alternative to building modern services. However, doing so is a huge undertaking without guaranteed results. A move from your legacy system to a cloud-based offering or microservice architecture requires extensive planning and resources. This means either a standstill of any current initiatives or dedicating resources, time, and budget to throw away solutions.

For citizen integrators to truly contribute, the integration platforms must be easy to use. This allows the integrators to focus on the domain instead of worrying about technology-related questions. Everything related to technology should be handled by the platforms.



A move from your legacy system to a cloud based offering or microservice architecture not only requires extensive planning and resources—it also may put at a standstill other critical initiatives.

#3: What are the future opportunities for legacy?

Organizations struggle to talk about Legacy. Contrary to the typical conversations around legacy systems, which usually center on sunsetting or migrating away from them, the fate of a legacy system doesn't need to be about retiring the technology. Most often these systems are rich in business process, knowledge, and very stable. In fact, given how foundational legacy systems are to most organizations, and how many other technologies are built on top of and intertwined with these systems, the removal of legacy systems may not even be reasonable.

So, when organizations discuss the future of legacy, there is an opportunity to talk about it as part of a stable state of the business' growth and innovation plans, not as a transitional state. Legacy systems can play a key role at the center of digital services and offerings.

The key is to quickly and efficiently make the underlying system, data, and processes available to the digital teams and the business partners that need them. The disconnect comes in the way we look at these opportunities today. We need to ask different questions if we want different answers.

The question of "what can we develop on the mainframe that can help us access the core data and processes" returns us to the challenges of time, cost, and resource constraints. The legacy systems remain an anchor that weighs down the business and slows innovation.

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Within a short two-week pilot, five different use cases were up and running, including the mainframe as a provider and consumer of Kafka events and REST APIs.

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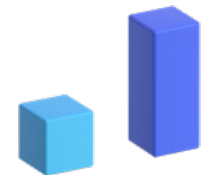
The Union Bank roadmap now includes an ambitious plan to make the bank's mainframe a "first-class digital citizen," capable of both powering and consuming information from digital applications—all while allowing the team to adhere to DevOps and agile principles.

By having composable elements of the underlying systems of record available for use, we turn legacy systems from an anchor to an engine powering agile service development. We are then reframing legacy systems and applications back into being enormous organizational assets as well as competitive advantages.

The key is a shift in mindset, changing the mainframe, conceptually, to a driver of value. It's a change in thinking about the definition of legacy. A monolithic application, built in the cloud, that impedes agility and innovation is just as much of a legacy application as anything built on a mainframe.

Organizations must consider new business and technology models that shorten the road from legacy data to digital. They do this by uncovering systems of record, removing silos, and eliminating the dark areas of data that have little to no visibility for the larger organization.

Development processes have shown the best way to be ready for the future is by building cloud-native services. Systems designed with composable services are easily reconfigurable into any design needed in the future.



#4: From a business perspective, what corporate initiatives need to be solved?

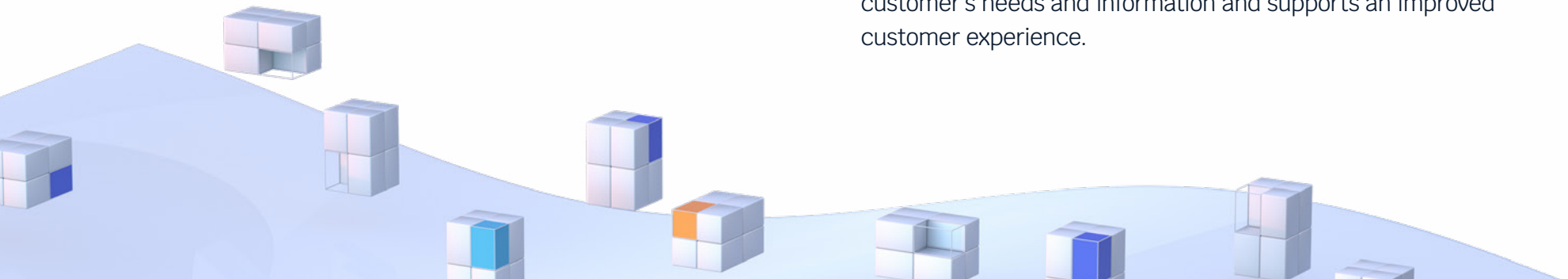
Considering legacy systems as a driver of innovation as opposed to a governor to speed slowing you down, requires a seismic shift in thought from the top down. The organization can no longer view the technology systems as layers that require complex connectivity and silos of data that must be bridged. Instead, the business must reframe itself as an organization that provides services and those individual services can be combined in different ways to create new offerings. In other words, the business must shift to a composable enterprise that digital innovation and legacy systems support, not the other way around.

For example, a bank may traditionally look at the internal organization and its technologies as walled gardens of information and processes. Loan originations are handled by one department, accounts by another. Business accounts are completely separate from personal accounts. They may each have access to demographic information, but little visibility into the other areas.

This organizational structure slows any number of initiatives, and can outright prevent rapid innovation and responsiveness to the market. In extreme cases, it obfuscates important information across organizational lines, resulting in varying degrees of information being available through digital services. Taking the bank example, siloed departments could prevent a customer's 360° view, inhibiting bank team members from fully serving a customer.

On the other hand, organizations that can view the individual elements of their business as composable elements can, at any time, pull together those packages to create new services or access.

A composable enterprise that offers services as packages for consumption across the organization has the ability to rapidly create new applications or views with minimal effort. The bank could rapidly create a 360-degree view of everything from current accounts and loans to demographics to applications and more. This gives the banking team an unparalleled view into the customer's needs and information and supports an improved customer experience.



The key to achieving an effective consumable enterprise is enabling those at the point of need—the business users and digital teams—to leverage these components easily and quickly. Low code solutions, like those within the Boomi platform, are available that simplify the creation of integrations at the business level. But to be effective, there needs to be an underlying library of objects that the platform can access as component elements.

By viewing the enterprise as the services it offers, access to the organization's foundational legacy systems becomes a critical path. Doing this, however, requires stepping outside the tried and tested technology models that expose these processes and data to adopt a new paradigm.

To achieve business goals, integration teams need to involve the business side. The best way to do this is to show them what you are implementing and then make changes quickly. Low code solutions support this paradigm since they use flowcharts that are understandable by the business. Changes can be made and tested on the fly but they also are flexible solutions since people can add in code wherever they need to. This allows for flexibility in the design.

For a major manufacturer, error detection is incredibly important—not only for efficiency, but also the bottom line. Using an innovative business approach alleviates challenges finding the right skills and resources.

#5: What opportunity does this offer to IT and teams designing and managing legacy environments?

There is little reason to make the mental shift if doing so doesn't offer real benefits for the organization's digital teams and legacy teams. Switching to a composable mindset, and re-engineering the way integrations are developed, has significant benefits across technology teams.

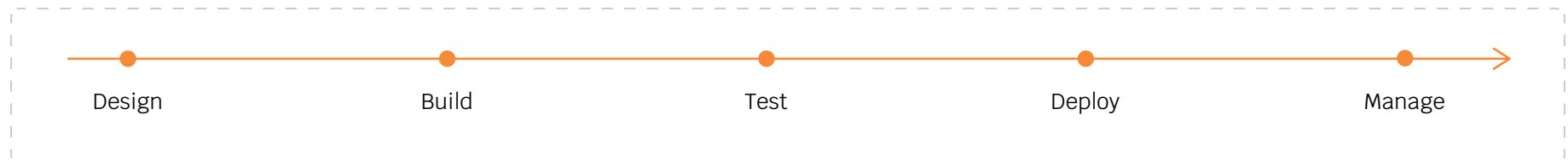
For legacy teams, the shift means a return to focusing on their backlog of existing projects and strengths, instead of spending hours trying to fit a round peg in a square hole. As we've seen for decades, it's possible to create access to the processes and data of these legacy systems, but it isn't always easy, and it's almost never fast or flexible.

For digital teams and, by extension, the overall business, a strategy like this puts control of what they need in their hands. By removing the roadblocks to developing new services, it becomes possible

to offer solutions across the business and to customers quickly—not just to keep up with the competition, but to potentially gain a competitive advantage.

For IT teams, it means focusing on the support of existing investments instead of spending months and millions of dollars on research, proof of concepts, and evaluations of new platforms, only to spend years migrating from known, reliable solutions to something untested and risky.

The below graphic shows a typical development cycle. The need here is to allow your integration teams to go through this process more quickly. By using automation, low code platforms, and other processes you can simplify. In the end, this will free up team members so you can parallelize efforts and get more done with the same resources.



Typical development process

#6: How does this all come together? What do Boomi and OpenLegacy bring to the table to overcome Legacy challenges?

The idea of easy, modern service development and a composable enterprise may be intriguing, but it's only so much fantasy unless organizations have a means of making it a reality. The good news is that legacy systems have not been ignored by the solutions that make this possible. Combining Boomi with OpenLegacy creates a powerful system that transforms monolithic core systems into cloud-native building blocks so that organizations can innovate faster.

The first question, always, when considering new or expanded solutions is what ROI can be achieved. Simply put, the combination of Boomi and OpenLegacy can result in an ROI in as little as 12-months, thanks to both the tangible and intangible benefits of modernizing access to your legacy systems.

Connect people, technology, and processes — regardless of where your system or data resides across your hybrid IT with speed and ease. Boomi's drag and drop visual UI and low code platform ensure the greatest speed and flexibility. Most integrations can be handled via Boomi's out-of-the-box, drag-and-drop interface giving business users access to a low code and easy-to-use self-service marketplace with no need to understand or dive into underlying technical details. For legacy

systems, this can shorten the distance between mainframe and business user, removing the time and budget needs for full-blown integration projects for a single service and reducing the effort required by as much as 75%.

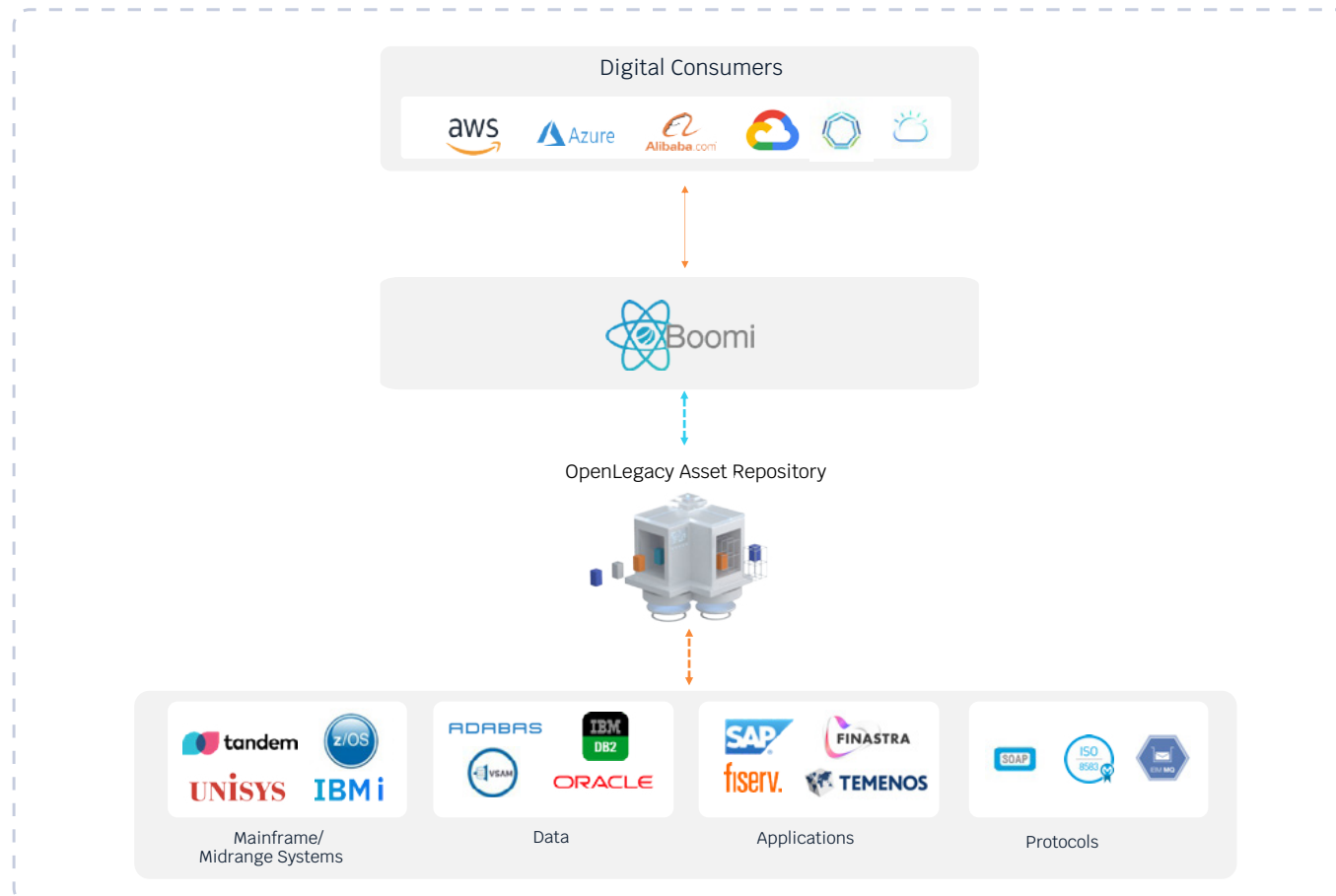
Using OpenLegacy and Boomi, the number of services that organizations currently develop in a year can be done during a single, 2-week sprint. The costs drop drastically as well. A service that would have required a budget of \$100,000 with existing systems can now be developed for as little as \$7,000.

It isn't just about the numbers, however. OpenLegacy's auto-generated services provide building blocks for Boomi's users to access directly, making the concept of a composable architecture a reality. Digital teams and citizen integrators across the organization can rapidly create the services that they need, on-demand, without pulling legacy teams off of other critical projects or waiting for available resources.

There is no longer a need to carefully pick and choose just a few integrations or services to develop in the coming year. The restrictions causing a culture of scarcity around digital services are gone.

To build a truly composable enterprise you need to centralize your legacy assets. This makes integrations that involve legacy systems easier. Automate the building and managing of legacy integrations

assets all in one place: a tested, language-agnostic repository, available for easy re-use, and ready for deployment in any standard environment. Then build this repository of assets as part of powerful workflows in the Boomi platform. This is the power of OpenLegacy working with Boomi.



The Power of OpenLegacy working with Boomi

#7: What does connecting legacy to digital services mean to the business?

The central question to any technology decision is what does it mean for the business. When we're talking about the realization of a composable enterprise through access to every layer of technology – even the foundational legacy systems; this means having an agile, responsive, and efficient business that uses its existing systems to its full advantage. When looking at technologies that minimize the teams needed for creative, innovative digital services creation, the opportunity to accelerate service development and refocus the business to a customer-centric model expands exponentially.

Leveraging every layer of technology, even the deepest legacy assets, easily and efficiently, means that as the business conceptualizes new products and services; the digital team can deliver them – without delay and without months of waiting.

- Gone are the days of choosing only a handful of integration projects.
- Gone are the days of worrying that the wrong projects were chosen and the fear of project failure.

This also opens up a wealth of information that was previously locked beneath layers of technology solutions and only available to a small group. The entire business can embrace the underlying legacy

systems, as automated API creation with OpenLegacy democratizes access to assets. Instead of reaching the assets and processes within legacy systems through a narrow pipe, the business can open the floodgates to the insights and potential that resides there.

This approach goes beyond rapid and flexible access to legacy systems. Once integration creation is automated, teams that spent months laboring over a few services and millions of dollars doing so are now available for other business-critical application development. Legacy developers can focus on the areas where their skills provide the most value, and IT and digital teams can have on-demand API creation that blows away the barriers that monolithic layers of technology previously added.

A solution that includes OpenLegacy and Boomi does more than pay for itself in months instead of years. It lowers the total cost of ownership of the legacy systems themselves. Instead of considering where the budget for migration off of a legacy system will come from, the business can now concentrate on using this asset as a jet engine that drives innovation.

Enterprises are far too slow at generating critical APIs connecting digital services to legacy systems, mainly because they persist in treating APIs as assets rather than products. An asset-based mindset focuses on the supply and internal systems side and inherently limits growth. Product-based thinking focuses on the demand and consumer side to deliver increased value.

Companies should approach services as a product, asking themselves customer-centric questions like “what do users need?” rather than asset-centric questions like “What can I do with the resources at hand?”



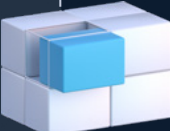
Integrations

Supply-side thinking

- Asset oriented
- Project
- Tightly occupied integrations
- Finite scalability (sized for the known)
- System or function oriented
- Composable process
- Monolithic middleware
- Horizontal teams
- Measured for quality

Products

Demand-side thinking

- Consumer-oriented
 - Continuously managed product
 - Self-service consumable
 - Elastic/infinite resource
 - Productize digital resources
 - Composable products
 - Microservices
 - Cross-functional teams
 - Measured for value
- 

Conclusion

Your legacy system has been a stable, reliable, and powerful asset for the business for potentially decades. Despite the name, legacy systems are actually modern technologies with boundless potential for the organization.

However, the challenge to unlocking that potential is sitting behind processes, resource challenges, and monolithic layers of solutions that were meant to enable access to the rich collection of assets that lie below. Your legacy ESB may have held the promise of streamlined legacy integrations, but has become one more mile of road between your legacy systems and digital innovation.

This creates for many organizations a Catch-22 to meet customer and business demands. Companies need to reach across layers of technology and breach silos across the organization. At the same time, doing so requires one of two things. Either a massive amount of budget and work must be allocated to creating a limited number of integrations. This requires legacy developers to work on unfamiliar technologies while digital teams wait for legacy and middleware developers to produce the services they need. Or, the organization must consider what is required to migrate from their legacy systems to something else, without the guarantee that the new system will be as reliable or as powerful as the current foundational systems.

There is a solution, however, that lets companies leapfrog from slow, cumbersome integration development to using their legacy systems as a powerful driver for a composable enterprise. With automated API creation and simple to use, low-code integration development tools, OpenLegacy and Boomi unlock the digital potential of your legacy systems. Service development sharply declines in both time and cost, with new services taking weeks not months, and reducing the number of resources required.

Boomi with legacy connectivity powered by OpenLegacy exposes the wealth of assets in your legacy systems and will catapult innovation into high gear. This solution creates opportunities for your organization and frees the business to move at lightning speed.

About OpenLegacy

OpenLegacy's Digital-Driven Integration enables organizations with legacy systems to release new digital services faster and more efficiently than ever before. It connects directly to even the most complex legacy systems, bypassing the need for extra layers of technology. It then automatically generates APIs in minutes, rapidly integrating those assets into exciting new innovations. Finally, it deploys them as standard microservices or serverless functions, giving organizations speed and flexibility while drastically cutting costs and resources. With OpenLegacy, industry-leading companies release new apps, features, and updates in days instead of months, enabling them to truly become digital to the core.

