boomi

FROM CHAOS TO ORDER:

Connecting a Fragmented Digital Architecture

A Roadmap for Reducing Digital Application Sprawl Through Modern Integration

Bringing order to your digital application sprawl improves data quality, insights, and security so your business moves faster and can make better decisions. This guide will help you end the digital chaos by showing how integration and automation play essential roles in modern connectivity.

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chaos

[kay·aas] noun

1. State of total confusion with no order

2. Confused mass or mixture

Application Proliferation

Organizations today use a vast set of applications to run their businesses.

- Large companies (more than 2,000 employees) average 211 “best-of-breed” applications, an 8% increase from a year earlier
- Smaller companies use an average of 69 applications
- Multicloud adoption is growing — Amazon Web Services and Google Cloud Platform is the most popular pairing

Source: Businesses at Work, Okta, 2023

Look behind the curtain at the digital architecture of any business today, and chances are something will stand out:

Chaos.

You'll find multiple large-scale ERPs. There are antiquated legacy systems that perhaps date back decades. You'll see dozens or even hundreds of point-solution applications and an explosion of data-producing edge device networks. Some of these are on-premises tools, and others live in private or public clouds. Maybe a few communicate with each other. But as a rule, this hodge-podge of technology probably doesn't play well together.

If you work for a well-established or large company, chances are high that infrastructure fragmentation and digital sprawl have left your business disconnected. Data isn't getting to the people who need it when they need it. The business can't move fast or respond quickly to unexpected changes. You're now at a competitive disadvantage.

How did this digital chaos happen? Two ways: gradually, then suddenly.

From the mainframe era to the emergence of the cloud to the 5G revolution, technology innovation never stops. At points during this digital evolution, the goal was consolidation. The promise of enterprise resource planning (ERP) was a monolithic system that could handle all critical business operations – financials, manufacturing, supply chain, HR, etc.

When businesses couldn't bend their business processes to fit their ERP systems, they began the expensive customization process. When capability gaps still appeared, organizations added other systems, some at the scale and cost of their initial ERP investment.

The result is today's "Composable Enterprise Era. "Organizations add and subtract best-of-breed applications as needed to solve specific problems.

Companies can have hundreds of point-solution applications and data-producing edge device networks. This hodge-podge of technology doesn't tend to play well together.

Many organizations have already embraced composable ERP to modernize their businesses. But expensive technical debt has also piled up. The costs of managing this digital disorder are immense. Code-heavy integrations connecting everything are time-consuming and challenging to maintain. An efficient, comprehensive IT strategy becomes improbable.

Bringing order to this chaos is the biggest challenge technology leaders face. IT professionals understand that unifying systems is essential to creating the personalized, engaging experiences customers demand today.

Integration plays a critical role. But businesses can find it daunting to navigate the many solutions on the market. There are competing visions of how best to address the myriad of problems and create the best outcomes for your business. Just figuring out where to start is bewildering.

This guide won't tell you what solution to choose for addressing your fragmented data landscape. Instead, it's about the essential questions you should ask yourself before starting. The answers can provide a map for what's required on your journey from chaos to order.

10 Questions To Answer To Plan Your Journey From Chaos to Order

1. What Is Your Vision?
2. How Effectively Are You Delivering on Your Mission?
3. What Is Your Cloud Strategy?
4. What Are Your Security Concerns?
5. What Is Your Plan for Scalability, Composability, and Interoperability?
6. What Is Your Philosophy Toward Low Code?
7. Do You Have an Agnostic Approach to Integration?
8. How Are You Working Through Your Technical Debt?
9. What Is Your Strategy for the Explosive Growth of Data?
10. What Is The Human Impact of Modernization?

1

What Is Your Vision?

Vision: The ability to think about or plan for the future with imagination and wisdom.

While organizations have made massive investments in digital transformation initiatives, they've captured less than **one-third** of the value they expected to see from their efforts.

McKinsey Global Survey, 2022

Think Before You Leap

You may have heard of the “Five W’s” of journalism: who, what, where, when, and why. (There’s also how.) Thinking like a journalist is an excellent way to approach the challenge of modernizing your digital architecture. Good questions make you think and prompt discussion.

Arguably, the most important question is why?

No IT leader wakes up one day and decides it’s time to modernize the company’s infrastructure. Why are you doing this?

That will naturally lead to another question: What are you trying to accomplish?

Unifying your technology infrastructure to curtail digital sprawl is critically important today. But it’s also merely a means to an end. What is your ultimate goal — or goals?

For instance, if you’re in consumer manufacturing, is it about operational excellence and high-quality products? Is it about creating the lowest-cost goods? Is it about expanding to a global presence? Whatever the objective, that needs to become the North Star that guides your decision-making process as you design a technology infrastructure to help achieve it.

It sounds counterintuitive because you probably face a looming deadline. But pause, step back, and ask thoughtful questions about the motivations. The answers will define your approach through the modernization process and set the stage for everything that comes next.

Then, you can think about the architecture needed to support your decision-making and the implementation required to make your vision a reality.

Benefit:
Clearly defined goals.

2

How Effectively Are You Delivering Your Mission Now?

Mission: A specific task, goal, or objective to be accomplished by an individual or group.

IDG company Foundry found that CIOs' top business initiatives for 2025 are:

1. Monetizing company data
2. Meeting compliance requirements
3. Improving the customer experience

Foundry, 2025 State of the CIO Survey

Navigating the New Normal

Once you've established what you want to achieve, you need to take stock of where you are today and identify the pain points that must be addressed as you move forward. The first question was about what you want to accomplish in the future.

But how do you do it now?

It's time to shift from your soaring aspirations to today's technical reality.

How are you delivering on your mission today? What are your digital challenges? Where are you succeeding, and where are you falling short? Where are your technology gaps? You may be surprised by some of the answers about your current state of operations.

This will lead you to a broader discussion around a wide-ranging host of potential issues that complicate any modernization initiative. Staffing concerns. Budget constraints. Existing digital architecture complexity. Ability to create seamless customer experiences. It's an exercise that focuses on your use of digital tools today and the need for incorporating new technology that simplifies your landscape rather than adding to the digital sprawl.

Once you've established the vision and taken stock of the tools you have to accomplish your mission, you can start planning your modernization initiatives.

Benefit:
An accurate understanding of current problems.

3

What Is Your Cloud Strategy?

Cloud Strategy: A definitive point of view for an organization on the role of cloud computing.

In 2021, Gartner aptly predicted that more than 85% of organizations **will embrace cloud-first strategies** by 2025, and businesses will struggle to execute without relying on cloud-native architectures and technologies.

> “There is no business strategy without a cloud strategy.”

Milind Govekar

Gartner distinguished vice president

Gartner, Gartner Says Cloud Will Be the Centerpiece of New Digital Experiences, 10 Nov 2021

Moving to the Cloud

Organizations face big architectural decisions when it comes to cloud adoption. Yes, the pandemic accelerated the migration trend as businesses desperately needed cloud computing to enable employees to perform their jobs from anywhere, anytime, and continue satisfying customers. But that was merely another catalyst for a trend that already had gathered speed.

When you “move to the cloud,” it’s not like there’s usually a single destination, or location, as your endpoint. Cloud migration is part of a strategy that fits into your larger, hybrid technology landscape, and it should be defined long before you begin the move.

For instance, you may want to run your business on more than one cloud to avoid putting all of your eggs in one basket. You can use a private cloud and a mix of providers such as Microsoft Azure, AWS, Google Cloud, etc. Distributing your cloud architecture makes sense because each vendor has different strengths and costs. It also increases reliability by spreading out the risk of downtime.

There’s another essential question to consider. Are you cloud-first, cloud-only, or cloud-smart? They’re very different technology philosophies.

Cloud-first: You primarily look to leverage the cloud for services and technical elements of your environment. This approach is typically used by older, more established companies struggling with on-premises infrastructure and looking to offload that burden as part of their IT modernization program.

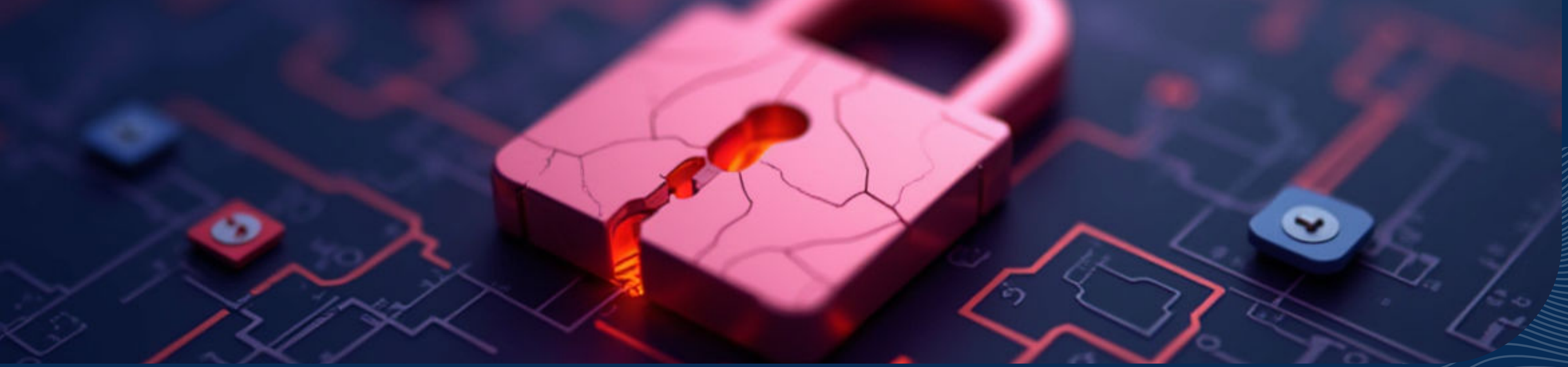
Cloud-only: You only use the cloud for all of your business functions. This is common for younger, digital-native companies that do not have to contend with the burden of legacy technical debt.

Cloud-smart: You have a strategic view of the cloud. You acknowledge that specific processes and data either shouldn't be distributed across multiple clouds or aren't well-served in the cloud. Companies that are cloud-smart demonstrate a maturity that influences their long-term IT strategy.

A cloud-smart strategy looks at the entirety of the environment from behind the firewall to public clouds and private clouds. Once you've adopted this mindset, you can create a strategic imperative around what data to use, when, and how.

The trick is stitching it all together in a cost-effective way. The multicloud approach is more complicated because you require integration expertise in Azure, AWS, etc. That is unless you use a single, independent tool to perform integrations across all clouds and on-premises systems. That will result in better time-to-value, more resilience, and the potential for lower cost of ownership.

Benefit:
Dependability, flexibility, cost savings.



4

What Are Your Security Concerns?

Security: A state of being free from danger or threat.

45% of security incidents in 2024 were reported to have originated from cloud environments.

Sentinel One, 17 Security Risks of Cloud Computing in 2025

The Shadow of Cyberthreats

Staying a step ahead of the bad guys is what keeps leaders up at night. We constantly hear about hacks and ransomware involving stolen personally identifiable information (PII) and intellectual property. Security is fundamental to every decision a business makes. If you want to get funding for a project as a technology leader, tie it to cyber-readiness and the reduction of organizational risk.

Executives at businesses with an over-reliance on legacy tools have good reason to be staring at the ceiling. There's an inherent risk of legacy systems opening digital doors to intruders. Antiquated technology can date back decades to when we couldn't fathom today's world of connectivity.

One benefit of modern, cloud-based technologies is an inherent uplift in cybersecurity. You gain all the operational excellence and vigilance of companies like Amazon, Microsoft, and Google that are simply unavailable in legacy systems.

But to realize this value, you require an integration process that matches all of those cloud vendors' security measures. That means meeting specific security and compliance regulations, such as FedRAMP certification, GDPR support, and high-security encryption. Legacy systems won't allow you to operate that way. But a modern integration platform enables you to connect legacy on-premises systems and the cloud to transport data more securely.

As we think about cloud-smart strategies, it's more than ***how*** you connect systems. It's also ***when*** and ***why***. Perhaps personal information shouldn't be accessible everywhere, all the time. Instead, it should be in one secure location. That way, specific information can only be accessed when needed – in real-time. Modern integration provides that kind of flexibility to support a more secure architecture.

Benefit:
Cyberthreat reduction, improved privacy, compliance.

5

What Is Your Plan for Scalability, Composability, and Interoperability?

Scalability: Designing and building a technology ecosystem to grow with your business.

Composability: Easily interchanging and reusing application building blocks as needed.

Interoperability: Capability for all systems to always work together cohesively.

Future-Proofing

Immediate problems demand your attention. But if you only solve for today, there will be a reckoning tomorrow. Modernization is about the short term and setting a foundation for the future.

The days of five-year IT plans are long gone. We don't know what's on the horizon because technological change has accelerated so rapidly. We can no longer be sure what to expect next quarter, next month, or even next week. When we lack visibility into an accurate long-range forecast, we must do our best to prepare for anything.

Leaders are well-advised to think hard about each of the following points when planning an infrastructure simplification strategy:

- **Scalability:** Designing and building a technology ecosystem to grow with your business.
- **Composability:** Easily interchanging and reusing application building blocks as needed.
- **Interoperability:** Capability for all systems to always work together cohesively.

These three concepts are interconnected when you're architecting a digital landscape that will be responsive to circumstances that you can't possibly foresee or even imagine. Every technology executive knows that innovation is coming. The challenging part is preparing for that unknown disruption as best you can.

Benefit:
Resilience, flexibility, speed.

6

What Is Your Philosophy Toward Low Code?

Low Code: A visual approach to development for applications and processes that involves drag-and-drop, shape-based methodology instead of code.

> 84% of tech leaders say AI won't replace low-code and no-code tools."
>
> App Builder, Globe Newswire release, April 3, 2025

Citizen Integration

Traditional coding is slow, costly, and requires a sophisticated skill set that's in extremely high demand. Yet businesses have to move faster than ever to meet customer expectations and adjust to evolving market conditions. IT departments have become a bottleneck – a modernization chokepoint – for getting projects out the door.

Low code enables developers and less technical people within business lines to move quickly. Productivity increases without hiring more expensive talent – if you can find it. Low code also empowers roles like business analysts to accomplish projects in a self-service manner. These "citizen innovators," who likely don't have coding backgrounds, can tackle integration challenges with minimal IT input.

The most significant impact of low code is simplicity and consistency. If you have 10 developers building out applications, they will all write their code differently. They will test and document differently. But that code still will have to interoperate. Low code substitutes those potentially complex variants of code with one consistent approach. The build is much quicker. Testing is easier. Implementation is smoother.

Undoubtedly, this will change the view of development in the future. The developer will become an orchestrator of systems and processes. Yes, there will continue to be a need for custom coding. But the only way organizations can deliver on the accelerating volume of tasks that meet demanding business requirements without breaking budgets is to limit the complexity of code stacks.

Low code achieves that.

Benefit:
Time-to-value, productivity, cost savings.

7

Do You Have an Agnostic Approach to Integration?

Agnostic: Not preferring a particular device or system.

> If you have an agnostic integration solution, you only have to learn one system. An agnostic toolset connects everything to everyone."

Composable Enterprise Era

We're talking about *technology*, not *theology*. Agnosticism in IT maintains unbiased attitudes toward any specific digital tools to solve business problems. Businesses leverage the technologies that work best for them because one size doesn't fit all. That's how you end up with several major cloud providers, multiple ERPs, and stacks of applications.

Managing it all is a nightmare. A neutral integration strategy makes it easier.

Think Switzerland. You want an independent tool capable of moving data seamlessly between all technologies and avoiding the lock-in that occurs when using more limited integration tools offered by the mega-vendors. An agnostic toolset connects everything to everyone.

Let's say you use five major cloud vendors: IBM Cloud, Google Cloud, Alibaba Cloud, Amazon Web Services (AWS), and Microsoft Azure. If you implement their native APIs for integration, you have to learn how to integrate data from five different tools. But if you have an agnostic integration solution, you only have to learn one system.

Dataflow between environments is seamless. Your distributed cloud architecture across multiple environments is cleaner. You'll have a holistic view of how data moves across your infrastructure. That's because your integrations use one process model and a single layer of connectivity. Then, whenever you make changes in your cloud strategy, you don't have to learn yet another integration system.

The best part is that an agnostic tool doesn't force you to do anything. You run your business as you see fit. It works alongside whatever architecture you've chosen to design. Technology should adjust to you, not the other way around.

Benefit:
Connectivity, manageability, flexibility.

8

How Are You Working Through Your Technical Debt?

Technical Debt: The cost organizations spend on existing digital technology that produces limited results instead of investing in approaches for better market opportunities.

> Only 3 in 10 enterprises feel they have 'fully modernized' their IT applications.

HFS Research Market Impact Report, 2025

Real Cost of Tech Debt

Technical debt is the negative impact due to technology that doesn't meet business needs. That includes software, hardware, maintenance, and staff costs related to maintaining old technology. It's a drain on resources, leads to lost market opportunities, and creates cyber risks.

Modernization enables organizations to make more efficient resource allocations for strategic investments. As technology leaders manage digital transformation, they often attempt to tie those efforts to cost-shifting/savings and market opportunities. The benefits of moving away from on-premises legacy systems to the cloud are apparent. But leaders can't just wave magic wands and instantaneously make those upgrades.

As problematic as they might be, those antiquated systems can be the backbone of organizations. **"Rip and replace"** often is not an option because it's not feasible for the business. **"Lift and shift"** is a more gradual process of reducing the technical debt load. As you make your own architectural decisions and develop timelines around cloud adoption, it's essential to have a plan in place for the smooth transfer of data between modern systems and the existing legacy infrastructure during the transition.

That way, you can continue to get the most from those older systems in the short term – even enhancing what they can deliver. Then, legacy infrastructure can be retired in a less disruptive manner when it makes more sense.

Benefit:
Cost savings, reduced infrastructure, faster time to market.

9

What Is Your Strategy for the Explosive Growth of Data?

Data: Facts and statistics collected together for reference or analysis.

45% of respondents in a recent survey of 370 data stakeholders cited data quality as the biggest obstacle to AI adoption.

BARC Research Study: Preparing and Delivering Data for AI, March 2025

The Modern Data Challenge

Getting your head around the massive amounts of data created today is difficult.

Data is coming from more distributed endpoints now than ever, and it's also used in more distributed ways. The mix of structured and unstructured data is more varied than ever before. And because much of it is unknown data, managing what you can't see is impossible.

How is your organization dealing with data management today while also preparing for what's coming next? There are several ways that organizations do this as part of a holistic strategy that goes behind simply connecting data sources.

Because technology landscapes are fragmented, data is everywhere. In this era of decentralization, seamless data management reduces complexity and creates instantaneous access to the most precious resource in every business.

Discovering and Cataloging Data. Locating and accessing your data is a significant challenge even before considering how to use it.

Synchronizing Data. Data is structured differently in every system. But aligning data to have a single "golden record" creates a commonality across multiple applications. That provides a critical 360-degree view of a customer, transaction, process, etc. Only then can you derive trusted insights.

Data pipelines come in handy for data usability. A data pipeline is a series of processes that automate the flow of data from source systems to a destination like a data warehouse or analytics tool. It includes steps such as extraction, transformation, and loading (ETL) to ensure data is clean, consistent, and ready for use. Data pipelines are essential in modern data-driven organizations as they enable the seamless flow of information across various stages of data processing. They also ensure that data is accurately processed, allowing you to make informed decisions based on reliable data.

Making Data Usable. Automated workflows speed up converting data into the information required for designing the engaging experiences people want.

Benefit:
Business insights, customer experience, time savings.

10

What Is The Human Impact of Modernization?

Modernization: The process of updating systems and making them work in a contemporary setting.

More than 90% of surveyed business leaders believe using technology to improve work outcomes and team performance is important or very important to their organization's success. Yet only 22% believe their organizations are ready to use technology to improve work outcomes and team performance.

Deloitte 2023 Global Human Capital Trends

Remote Work Is Here to Stay

We've reached the most critical question when it comes to modernization. It's vital to consider things like data security, cloud strategies, and scalability. But ultimately, the human element of modernization will determine the success or failure of your initiatives.

Modernization affects everyone. It will impact people uniquely, depending on their roles and groups. Internally, you have IT people, sales teams, production workers, etc. Externally, you have customers and partners. All are touched differently by digital transformation.

Despite the "return to office" mandate some companies are now implementing, remote work isn't going away. For many employees, remote work can have benefits (less commuting) and challenges (more social isolation and home life stress).

For people in IT, modernization might mean low-code technology that can make their jobs easier and raise concerns their development skills aren't as valued. For customers, it can mean consumerized digital experiences such as those perfected by Amazon, Netflix, Uber, and more.

For citizens, it might be more transparent access to government services and better quality of life because things like potholes are fixed quicker.

We often spend so much time focused on technology innovations and not enough thinking about the people who implement, use, and ultimately benefit from them. But it always comes back to human beings. Don't lose sight of the fact that the ripples of modernization radiate far and wide – significantly impacting the day-to-day existence of real people. All of their concerns and needs are valid. They all deserve consideration as you create experiences that everyone can feel positive about as you digitally transform your organization.

Benefit:
Better customer and employee experience.

Boomi can help.

Boomi, the leader in AI-driven automation, helps organizations around the world automate and streamline critical processes to achieve business outcomes faster.

Show a dozen people a screw, and they will likely pick up 12 different screwdrivers. (Or maybe someone will pick up a hammer.) Technology is the same. There's no single way to solve any challenge. It's subjective, based on your business and specific needs. And something that works today might not be the best solution tomorrow.

But when it comes to connecting business processes, a platform for AI-driven automation is extraordinarily efficient and well-constructed to solve the problem of fragmented infrastructure landscapes. It enables organizations to take an agnostic approach to integrate highly complex landscapes in a modular, composable, and scalable way. This type of platform can help you:

- **Manage a diverse, extensive portfolio of integrations**
- **Implement integrations faster to improve time-to-value**
- **Accelerate the modernization of business processes**
- **Keep up with IT and business needs**

Boomi was the integration and automation trailblazer, introducing the concept of a low-code, cloud-native tool. The Boomi Enterprise Platform connects any digital environment containing a wide variety of disparate applications and systems. The platform manages those integrations so everyone can instantly access what they want. It is ideal for harnessing distributed data under one umbrella for clear visibility and easier management – today and in the future.

Organizations can tap into the collective knowledge of Boomi's global network of more than 100,000 users and 65,000 certified developers with experience using the platform to implement integrations – the Boomiverse. Also, Boomi's AI capabilities enable you to tap into the knowledge of

every developer who came before you by offering suggestions based on their experiences in mapping similar integrations.

One of the key technical benefits of the Boomi platform is that organizations can integrate whatever systems they want, wherever they need it, in a more structured way. And Boomi takes the idea of connection one step further. By connecting anyone to anything at any time on any device, you can create the kinds of integrated experiences that people expect – and demand – today. Boomi enables you to think about a seamless journey through every technology touchpoint to create the best, integrated experiences.

Conclusion

Order: A state of working correctly; peace and freedom from confusion.

“We’ve found that **94% of CIOs are under strong pressure to deliver more quickly.** Most just don’t have the tools to do it. Their tools are outdated, and they need new ways to deliver.”

Dion Hinchcliffe

Vice President and Principal Analyst
at Constellation Research

Pressure to Deliver

Today, IT teams have an unofficial role: complexity management. But the task of simplifying digital architectures is difficult. Technology ecosystems are complicated and fragmented. Data is everywhere. Legacy systems are not well-suited to deal with decentralized data. Connecting all applications and systems to unify the entire landscape is challenging. Yet the rewards are immense when you can achieve that goal.

A cohesive architecture gives you the flexibility to deal with changing market conditions and the speed to pounce on business opportunities. In our one-click world, you can create the personal and relevant customer experiences that people crave today.

Fast, secure, and reliable integration is at the heart of modernization efforts, delivering on that promise. That's how you connect fragmented digital architecture and move from chaos to order.

boomi

ABOUT BOOMI

Boomi, the AI-driven automation leader, helps organizations around the world automate and streamline critical processes to achieve business outcomes faster. Harnessing advanced AI capabilities, the Boomi Enterprise Platform seamlessly connects systems and manages data flows with API management, integration, data management, and AI orchestration in one comprehensive solution. With over 23,000 customers globally and a rapidly expanding network of 800+ partners, Boomi is revolutionizing the way enterprises of all sizes achieve business agility and operational excellence. Discover more at boomi.com.