

5 Planning Considerations for Successful Integration Projects

As applications and data volumes surge across industries, data integration and automation become critical to avoiding problems stemming from inconsistent data and fragmented processes. System integration was notoriously complex and costly in the past, typically involving on-premises tools and complex coded scripts. Today, many solutions exist to tackle these integration challenges, but success or failure still relies on up-front planning.

Implementing integration projects requires careful consideration from IT leaders, application managers, data engineers, and data architects. Amidst the abundance of integration products and services available, selecting the right one depends on various business and technical factors. A well-chosen integration approach can lead to cost savings and improved project success. That's why businesses should evaluate integration options carefully to optimize outcomes and minimize rework.

What to Know Before You Get Started

Before embarking on an integration effort, it's essential to consider some fundamental questions. Understanding the environment, stakeholders, and goals of the data integration project is important. You also need to:

Understand why integration is needed. Determine the necessity for a solution by pinpointing the specific business problems you aim to address. While quantifying metrics for financial justification is crucial, you also want to pay attention to the qualitative impacts on aspects such as employee morale and workload balance.

Identify who will use the integrations and the expected benefits. Identifying who will create and manage integration projects and what technical abilities will be required is essential. It's equally important to remember the benefits for data consumers.



Consider integration options, opportunities, and limitations.

When exploring integration options, assessing the opportunities and constraints involved is crucial. This evaluation extends beyond the choice between in-house development and third-party solutions. It should encompass infrastructure and software costs, deployment and maintenance efforts, and the ability to adapt to future business needs.

5 Questions You Need to Answer for Integration Success

Consider the following five foundational areas before starting an integration project:

1. Why do you need an integration solution?

To ensure successful integration projects, understand your use cases and desired business outcomes – current and future states. Evaluate your existing infrastructure and endpoints and assess the potential impact on applications and systems in your existing or planned environments.

To understand your unique integration needs, consider the following:

- **Capital expenditure vs. operating expenditure:** Regarding integration costs, do you prefer a capital expense model e.g., investing in software, developers, and servers, or an operational expense model, e.g., outsourcing, utilizing SaaS, leveraging cloud services?
- **Integration endpoints:** Does your integration project primarily involve application-to-application (A2A) on-premises, business-to-business (B2B) scenarios such as an electronic data exchange, cloud-centric integration, or a hybrid approach?
- **Internal competency and tooling:** Do you have the expertise and skills to undertake the integration project in-house? Do you need to invest in additional technology? Be prepared to create financial justifications and talent requirements.
- **Time to deployment:** Choosing the right integration approach depends on factors such as the complexity of your integration requirements, scalability needs, and specific time-to-deployment constraints.

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2. Who will use the integration solution?

Know your users and their needs. An integration solution should offer a distinct user experience tailored to all integration roles and stakeholders within your organization, empowering them to derive value from data. Seek solutions that standardize monitoring, management, security, and administration while adhering to compliance requirements.

Some personas to consider include:

- **Integration specialists and data engineers:** These roles are responsible for developing and implementing integration strategies and creating and maintaining data pipelines.
- **Ad-hoc integrator or business analyst:** Line of business developers with experience working with technical systems and data applications.
- **Citizen integrator:** This group requires self-service and includes data and business users. It's not uncommon for this group to want an alternative to spreadsheets.
- **Administrator:** A system administrator is responsible for data quality, governance, and lifecycle management. These duties can also belong to a data engineer or engineering team.

3. What existing business systems and processes do you currently have?

Collecting comprehensive documentation and technical specifications will help you understand your business applications and processes. Integration often necessitates additional hardware or software, which could create compatibility issues.

To avoid this, identify the following when considering an integration solution:

- **Legacy systems:** If integrating with legacy systems, assess their stability, supportability, and long-term viability. Plan for potential challenges associated with legacy technology and consider migration or modernization options, if necessary.
- **Data structures:** Understand the data structure of existing systems and how data is stored and accessed. Determine if data transformations or mappings are needed to align with the integration requirements.
- **Scalability:** Consider the scalability of existing systems and how integration will impact performance as data volumes increase. Ensure that the integration solution can scale seamlessly to accommodate growth.
- **Dependencies:** Identify any dependencies between existing systems and other applications or services. Determine how integration will affect these dependencies and plan accordingly to minimize disruptions.
- **Business processes:** Understand the existing business processes that rely on the systems identified for integration. Ensure that integration aligns with these processes and does not disrupt critical workflows.
- **Regulatory compliance:** Ensure integrations comply with relevant regulations and standards governing data privacy, security, and compliance in your industry or region.

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4. What Technologies Are Available?

Each vendor participating in the project may have its own interpretation of what constitutes an integrated solution. For some, integration entails having standard Application Program Interfaces (APIs) for executing specific functions within their application. Others may define it as the ability to create and exchange file interfaces in particular formats for data interchanges with other applications. These various approaches represent forms of integration with other applications.

However, you should exercise caution and ask vendors specific questions regarding their definition of integration. You should inquire about the integration use cases supported, the types of supported endpoints, e.g., on-premises devices, the cloud, mobile devices, and IoT devices, and the integration domains covered, e.g., applications, data, B2B, edge and process automations. Identify if the solution supports hybrid deployment models, e.g., including cloud, on-premises, hybrid, IoT, and embedded. Lastly, assess if the solution is future-proof, meaning it is versatile, extensible, and agile enough to accommodate changing business requirements.

Before purchasing an integration technology, here are several factors to ensure it meets your organization's needs effectively:

- **Business requirements:** Understand your organization's integration needs and objectives. Identify the specific integration use cases, such as application-to-application, B2B, data synchronization, or cloud integration that the technology must support.
- **Ease of use and implementation:** Consider ease of use and implementation time. Look for user-friendly interfaces, intuitive workflows, and comprehensive documentation to streamline the integration process and reduce the learning curve for users.
- **Customization and extensibility:** Understand the level of customization and extensibility offered by the integration technology. Look for customizable connectors, APIs, and integration templates that enable you to tailor the solution to your needs and integrate with third-party systems.
- **Performance and reliability:** Assess the performance and reliability of integrations under various conditions, such as high data loads, peak usage periods, and network disruptions. Look for features such as fault tolerance, load balancing, and monitoring tools to ensure continuous operation and minimal downtime.

Understand the level of customization and extensibility offered by the integration technology.



5. How will you manage data synchronization?

This step aims to ensure consistency among systems and facilitate ongoing updates to maintain that consistency. It's crucial to emphasize the term "continuous" because data synchronization is not a one-time task; it's a process that requires careful planning, ownership, management, scheduling, and control.

- **Data quality assurance:** Implement measures to ensure data quality during synchronization, such as data validation, cleansing, and enrichment. Monitor data quality metrics and establish acceptable accuracy, completeness, and consistency thresholds.
- **Error handling and logging:** Develop robust error-handling mechanisms to capture and address errors that occur during synchronization. Implement logging and auditing capabilities to track synchronization activities, identify issues, and troubleshoot errors effectively.
- **Monitoring and maintenance:** Establish monitoring and maintenance procedures to continuously track the health and performance of the synchronization process. Monitor synchronization logs, data quality metrics, and system alerts to identify and proactively address potential issues.

Successful integration projects require careful planning and consideration of various factors. It is essential to understand the environment, identify users and their needs, and evaluate integration options and limitations. By answering the fundamental questions and considering the five foundational areas mentioned in this guide, you can implement integration projects that lead to cost savings and improved project success. A well-chosen integration approach can help you achieve consistent data and streamlined processes, contributing to operational efficiency and revenue generation.

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For more information on how Actian can help accelerate your next integration project, visit actian.com.

Why Actian for Integration

Actian's integration capabilities provide multiple ways for customers to address integration challenges. Our ability to solve problems - from the simple to the complex - combined with decades of experience, brings a wealth of knowledge and proven technology to accelerate integration projects. The Actian suite of products covers the entire data journey, from edge to cloud, ensuring seamless integration across platforms. Additionally, Actian offers its products as a service, making them easily accessible and scalable. Whether a company wants to use Actian's products or integrate with other data solutions, The Actian Data Platform provides the flexibility to meet diverse business needs. Ultimately, Actian empowers companies to solve their data integration challenges and achieve their business goals effectively.

About Actian

Actian makes data easy. We deliver cloud, hybrid cloud, and on-premises data solutions that simplify how people connect, manage, and analyze data. We transform business by enabling customers to make confident, data-driven decisions that accelerate their organization's growth. Our data platform integrates seamlessly, performs reliably, and delivers at industry-leading speeds. Learn more about Actian, a division of HCLSoftware: www.actian.com.

