BUILT TO LAST: THE ULTIMATE GUIDE TO ERP-CRM INTEGRATION

How to Integrate ERP and CRM Systems Seamlessly



Bridgepoint Consulting

AN ADDISON GROUP COMPANY

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ERP AND CRM: BETTER TOGETHER

ERP AND CRM: BETTER TOGETHER

Over the last couple of decades, enterprise resource management (ERP) and customer relationship management (CRM) systems have done more to shake up the way businesses operate than anyone could have probably imagined in the early days of business automation.

ERP provides a degree of visibility into what's happening in your business, speeding access to deep insights for business improvement. And CRM delivers more tools and capabilities to make sales teams efficient and productive than any technology that's come before.

But the real power of ERP and CRM lies in what they can do together.

Integrating ERP and CRM creates tremendous opportunities for more efficient, productive operations. Integration strips away much of the complexity inherent in operating back end and front end systems separately. It speeds and simplifies data sharing between them, eliminates unnecessary duplicate data and streamlines redundant processes.

It only works, however, if you do it right. Integrating ERP solutions like NetSuite, Great Plains, Intacct and others with Salesforce, Dynamics CRM, Sugar CRM or other CRM solutions can be challenging. There are a lot of moving parts to coordinate, multiple considerations to factor in and many decisions to make.

This guide is all about smoothing and simplifying the integration process.

In the following pages, we'll share the lessons we've learned over countless engagements helping our clients integrate ERP and CRM solutions into their operations.



$41.69 BILLION:

Projected size of ERP software market by 2020

Source: Allied Market Research

We'll specifically show you how to break down your integration into three parts to make it manageable:

Part 1: LAY A STRONG FOUNDATION FOR SUCCESS

The success of your ERP-CRM integration rests on what you get done before you even start.

Part 2: CREATE A CLEAR BLUEPRINT TO FOLLOW

Set yourself up to succeed by carefully planning data integration points and data mapping.

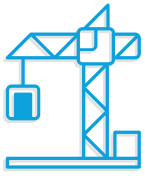
Part 3: CHOOSE THE RIGHT TECHNOLOGY TOOLS

How to define and choose the technology you'll need when it's time to get it done.

You'll discover:

- Key considerations to help maximize your time, resources and investment
- Pros and cons to keep in mind when making integration decisions
- Quick tips to avoid unnecessary headaches
- Real-world insights from companies that have successfully integrated their systems
- A checklist to keep your integration project on track and within budget
- Helpful tools and resources to turn to (and return to) along the way

With this knowledge at hand, you'll have what you need to embark on a successful ERP-CRM integration. We hope you'll find this guide useful!



PART 1: LAY A STRONG FOUNDATION FOR SUCCESS

LAY A STRONG FOUNDATION FOR SUCCESS

When it comes to integrating ERP and CRM systems, preparation really is everything.

If you've prepared properly – by evaluating the costs of the integration project, cleaning up the data you'll be integrating and taking care of any needed process improvements before work begins – you'll be much better positioned for success.

If not, buckle up.

ERP integration can be tremendously challenging, as evidenced by the high failure rate for ERP projects – 75%, according to Gartner,[2] The advisory firm predicts an even higher failure rate of 90% for cloud ERP by 2018.[3] Being unprepared can only add to the risk of failure. In our experience with helping many organizations on ERP-CRM integration projects, the key to success is to lay a strong foundation long before you even begin to build the integration.

Here are some key activities to perform before beginning your integration.



When it comes to integrating ERP and CRM systems, **PREPARATION REALLY IS EVERYTHING.**

DEFINE YOUR INTEGRATION STRATEGY

Having a clear strategy for integration means knowing how you're going to pay for it, mapping out what your IT team needs to do to prepare your data for integration and planning improvements to business processes that will make the integration go more smoothly now and in the long term. The following information provides helpful guidelines for all these activities.

Developing an integration strategy puts you a step ahead on the path to a successful integration. It also, unfortunately, puts you in the minority. Gartner reports that through 2018, "90% of organizations will lack a postmodern application integration strategy" to deal with "the increasing complexity of the enterprise resource planning application portfolio."[4] That's another good example of the lack of preparation that can wreak havoc with ERP implementation and integration projects. Don't let it happen to you!

EVALUATE THE COST

The cost of an ERP integration depends on a variety of factors, and it's important to go into the integration process familiar with these factors and how they apply in your organization. A solid understanding of the influences on cost, will help ensure that you've budgeted appropriately and reduce the risk of a dramatic budget surprise mid-implementation.

Short-Term, Long-Term

When considering the cost of an ERP-CRM integration, you have to think about not only the immediate costs to complete the integration, but also the long-term costs to maintain and sustain it as your company continues to grow and evolve. Immediate software costs may include the cost of any middleware or other supporting software you need, as well as the cost of development. In addition, this may mean payments to a consultant who helps carry out the project or additional internal budgeting to beef up your in-house development staff, or some combination of both. Long-term costs may include software licensing, ongoing upgrades and management/maintenance.

Factors Affecting ERP Integration Cost

Examine how the following apply in your organization to help you determine how much of an impact they will have on your budget planning.

- **Organization Type and Size**
  Generally, the larger and more complex an organization, the more it's going to cost to deploy and maintain the ERP-CRM integration. A small professional services firm, for example, can probably count on lower costs than, say, a large manufacturing company.
- **Third-Party Software Requirements**
  As outlined in Part 3 of this guide, one of the choices to make when planning an ERP-CRM integration is whether you choose to use middleware or point-to-point connections to handle communications between the two systems. Middleware adds software-related costs for application acquisition and ongoing licensing.



CLEAN UP YOUR DATA FIRST, and you'll enjoy a much smoother path to integration; don't, and you'll compromise not only your budget and schedule, but also likely the long-term effectiveness of the integration.

- **Development Resources**
  Will you use internal developers to carry out the integration you're planning, or a consulting firm that specializes in this type of service? If you have in-house staff, you'll still need to consider whether they have sufficient expertise in the ERP and CRM systems to do the job, or if they'll require additional training. In addition, consider whether or not you need to have your internal staff support the integration, or if they should be focusing on other initiatives.

CLEAN UP YOUR SOURCE DATA

No matter how carefully you plan and budget for ERP-CRM integration, if you fail to properly prepare your source data, you risk derailing the entire project – or at least causing big delays and cost overruns.

This is an area where the old adage "Garbage in, garbage out" absolutely applies. Clean up your data first, and you'll enjoy a much smoother path to integration; don't, and you'll compromise not only your budget and schedule, but also likely the long-term effectiveness of the integration. You'll also be paying for a long time to come, as you'll still have to clean up the data – just later on, when it may be much more difficult.

There's no getting around the fact that data cleanup and preparation for integration will require a significant effort. The good news? Chances are many of the people who will be involved are likely already aware of the data gaps that exist and just haven't had the time or opportunity to address them before.

You'll find much more about preparing data for integration in the next part of this guide. Take a look and get your team to work on getting your data ready.



QUICK TIP:

GET STARTED EARLY

Plan to complete the foundational integration activities in this section before diving into your integration – anywhere from 1-12 months prior to integration, depending on the complexity of the activity. Cleaning up data may be the most time-intensive, so give yourself plenty of lead time.

IMPROVE CURRENT BUSINESS PROCESSES

You probably already know where your organization is having some issues with business processes, especially around how different departments operate and the difficulties that can result. Now that you're formally integrating the two systems these organizations use – CRM for Sales and ERP for Accounting – you've got a great opportunity to make it better.

As you plan your integration, take a good look at business processes with these questions in mind:

- What do your process owners tell you about the pains they're experiencing?
- Do your process owners have ideas on how processes can be redesigned so they are less problematic?
- What about the ERP and CRM applications themselves? Are there functionalities that could be changed to support the business needs of both Sales and Finance teams?
- If no one's closely tracking the flow of data from CRM to ERP, what's the effect on the larger organization – not just Accounting and Finance? Are you missing out on business intelligence and insight that might be found in CRM data?
- Just how burdensome would it be for Sales to provide more information when entering and tracking opportunities? Is there a balance to be struck between effort required and insight imparted?

These are the kinds of questions to ask in preparation for the integration effort, so that you can be sure improvements are in place for the end-state integration to leverage.

90%:

Percentage of organizations lacking a postmodern application integration strategy to deal with the increasing complexity of the application portfolio

Source: Gartner



PART 2: CREATE A CLEAR BLUEPRINT TO FOLLOW

CREATE A CLEAR BLUEPRINT TO FOLLOW

Your plan for ERP-CRM integration should provide clear direction as to where the data integration points need to be, how CRM data will tie to corresponding ERP data and what safeguards are in place to maintain data quality moving forward. With a blueprint in place for how these aspects of data integration will be handled, everything will go more smoothly. An effective blueprint for action should answer the following questions.

WHERE WILL YOU NEED DATA INTEGRATION POINTS?

The rule of thumb for determining data integration points in an ERP-CRM integration is to concentrate on integrating data that streamlines the quote-to-cash process and adds real value to both those who rely on CRM and those who use ERP. That's going to require some thought, but ultimately it will be more effective than trying to replicate everything across both systems. If you try to "boil the ocean," you'll not only waste valuable time, you'll introduce more risk of duplicating efforts and spreading errors.

Here are some good examples of how to establish data integration points that benefit users of both CRM and ERP:

1. ***Create an ERP sales order based on data from a Closed/Won opportunity in CRM.*** This eliminates duplicate data entry and reduces the chances for errors when it's time to invoice the customer.
2. ***Synchronize ERP's item master with the products in CRM.*** This ensures that quotes are being generated against the most current product, inventory and cost information.
3. ***Copy ERP sales orders and associated invoices back into CRM.*** This allows people who don't have access to ERP to gain visibility into their customers' invoice data and payment information, ultimately enabling them to better manage clients.



QUICK TIP:

ASK STAKEHOLDERS WHAT THEY NEED

Tighten up your data integration points by asking stakeholders what information they need in the handoff after Sales closes a deal. For example, stakeholders in Accounting will need to know who to bill, as opposed to who's actually using the product (which is what Support needs to know).

DATA FLOW: ONE-WAY OR TWO-WAY?

Data sometimes needs to flow into an ERP system, with no response required back in the other direction – a list of new products, for example. Conversely, data sometimes only needs to flow out of the ERP system – when it's for reporting purposes, for example. Often, though, data needs to flow bi-directionally, sending information to one system, and having a response come back later.

Once you determine how data will flow, identify the source and target system for the objects – orders, invoices, etc. – that will be a part of the integration. For example, if you're integrating Salesforce to NetSuite, NetSuite is likely the source system for invoices and Salesforce the target system.

External Identifiers

Assigning unique external identifiers for matching records across systems allows you to update and insert records without the risk of records duplication. Configure unique external ID fields in CRM to map to internal ID fields in ERP, and vice versa. Then populate external IDs on existing records in both systems before going live. Design your integration to use these external ID fields during upsert operations.

HOW WILL YOU MAP DATA BETWEEN ERP AND CRM SYSTEMS?

Now that you've defined your integration points and data flow, it is imperative that you accurately map field data between the two systems.

Data Mapping

Build a data mapping worksheet to clearly identify the source field(s) and target field(s) for each piece of data that you want to pass between systems. Include the source or target system, the source or target object (table), and the API names and data types of the fields. Tag mandatory fields and any other constraints such as minimum/maximum length. If your updated business process dictates that you capture additional information in CRM to pass on to ERP, then you will need to add the appropriate fields to your CRM system. And of course map the appropriate external ID fields. Get signoff from business owners that you are mapping the correct information!



QUICK TIP:

USE EXTERNAL ID FIELDS FOR MAPPING LOOKUP FIELDS

We saw how external ID fields can be used to tie a source record to a target record. These special fields can also come in handy for populating a lookup field on a target record. For example, you may have your sales reps stored as users in your CRM, and as employees in your ERP. When creating a NetSuite sales order record from a Salesforce opportunity, you could use an external ID on the opportunity owner's user record to populate the Sales Rep field on the sales order.

Data Translation

To account for differences across ERP and CRM systems in field data types, formatting and values, make sure your data mapping includes any necessary data translation. For example, dates may be stored as yyyy/mm/dd in one system, but mm/dd/yyyy in another. Or perhaps the value of two fields in the source system dictate the resulting value of a single field in your target.

Use your data mapping and translation worksheet to inform your integration. In some cases, it may make sense to change field data types and/or formatting in the source system. (Do so with care, though, so that you don't lose any data in the process. Back up the data first.) It always makes sense to clean up existing data as much as possible before going live with an integration.

WHAT WILL YOU DO TO ENSURE DATA QUALITY?

Once you've cleaned up your existing data, the last thing you want to do is introduce data quality problems into your integration in the future. Automation capabilities in the source system will enable you to:

- Implement field validations, workflows and field-level security to ensure quality data entry
- Apply duplication rules or tools to prevent duplicate entries from cropping up

If you use multiple business units or subsidiaries in ERP, you'll need to exercise care to be sure new records are created in the correct one. Implementing logic in CRM will enable you to easily identify the correct target ERP business unit.



QUICK TIP:

STICK WITH ONE SYSTEM OF RECORD

All the data objects in an integration don't have to have the same authoritative data source, or system of record. But each object should have only one system of record at any point, whether it's ERP or CRM. For example, CRM may be the system of record for a prospect, while ERP might be your system of record after you convert the prospect to a customer.

HOW WILL YOU ENSURE A SECURE INTEGRATION?

Because including sensitive data in an integration introduces risk, it's always important to think twice before integrating information such as customers' personally identifiable information (PII) or bank/credit card account numbers. If this sensitive information must be integrated:

- Encrypt the data to prevent anyone from being able to read it if it's intercepted
- Ensure that integration passwords or tokens are kept securely stored and available to only a selected group of trusted users

REAL-WORLD EXAMPLE:

NETSUITE INTEGRATION DRIVES BUSINESS IMPROVEMENT FOR COBB TUNING

COBB Tuning, an automotive engineering company that provides high-end tuning services to the automotive industry, was juggling multiple discrete software solutions to manage its business. As the company grew, this approach led to excessive management complexity and extensive manual effort. COBB selected NetSuite as its new ERP solution, and chose Magento to improve the online customer buying experience. Bridgepoint Consulting helped COBB establish an integration between NetSuite, Magento and the company's existing Salesforce instance — making it possible to manage all major business processes within or through NetSuite.

SERVICES WE PROVIDED

- NetSuite Implementation
- NetSuite Configuration
- NetSuite Integration
- Business Process Automation

BENEFITS REALIZED

As a result of the integration, Magento is enjoying these benefits:

- More standardized procedures and efficient operations
- A single source of information for order management, manufacturing, accounting, item catalog and more



PART 3: CHOOSE THE RIGHT TECHNOLOGY TOOLS

CHOOSE THE RIGHT TECHNOLOGY TOOLS

As your ERP-CRM integration unfolds, there will be opportunities to choose technology approaches, tools and resources based on your organization's needs and preferences. The following describes the key areas where you have choices, as well as factors to consider as you make your decisions.

INTEGRATION: MIDDLEWARE OR POINT-TO-POINT?

ERP and CRM systems need to communicate with each other, and there are a couple of different ways to make this happen. Which you choose depends on whether you want your ERP and CRM solutions to communicate through an intermediary (using middleware) or directly (with point-to-point connections).

Middleware is a tool that sits between disparate systems and handles requests, responses and other communication between them. It can be as simple as a server running PHP on a SQL database or as formal as implementing an ETL tool such as Dell Boomi. Is it the right tool for your integration? The choice may come down to which takes higher priority: convenience and simplicity, or lower cost.

MIDDLEWARE: SIMPLE AND CONVENIENT – BUT AT A COST

Pros	Cons
Convenient central location for code, error handling, maintenance activities	Relatively high cost of maintenance associated with some ETL tools
Simple drag-and-drop interfaces (if using ETL tools) to minimize coding required	Highly variable software licensing cost that can range from free to thousands of dollars a year for a top-tier ETL tool
Typically use standard SOAP and REST web services APIs	Limited ability to deploy custom code, which may make manipulating data more burdensome

Point-to-point means direct communication between systems, with code residing in each system to make and respond to requests – and with no assistance from middleware. Is it right for you? The speed, simplicity and low cost are compelling, but much depends on your ERP and CRM connection functionality.

POINT-TO-POINT: SPEED AND SIMPLICITY – IF YOU HAVE THE RIGHT CONNECTIVITY	
Pros	**Cons**
Faster to get up and running than middleware if you have an in-house developer or a consultant with expertise in your ERP and/or CRM	Not for systems with limited external connections or limited backend automation capabilities
Well suited to relatively small, simple integrations with only a few touch points	Connectivity options are likely to be more limited
No need for ETL expertise or ETL licensing costs	Two potential sources of the problem when something goes wrong, making it more difficult to identify points of failure

PROCESSING: REAL-TIME OR BATCH?

Real-time and batch processing represent two ways of approaching ERP-CRM integration. Their defining difference is between processing in real time (where actions are pushed out right away through the other system, or ETL) and running them at intervals of hours, days or weeks. Keep the following in mind when evaluating whether to use real-time or batch processing for ERP-CRM integration:

- ***Real-time processing*** gets the data in quicker, but with high data volume, it can tax and potentially slow down the system
- ***Batch processing*** runs on a schedule and is better for system performance, but doesn't occur in real-time



QUICK TIP:

HAVE IT BOTH WAYS!

- ***Middleware vs. point-to-point?*** Consider using middleware as a data broker that routes messages and outbound calls, while add/update actions are programmed directly into source and target systems.
- ***Real-time or batch?*** For non-mission critical data entry, consider an approach in which data is inserted into a queue in real time but administered using batch processing.

ERROR HANDLING: WHAT COULD GO WRONG?

Errors happen. What matters is how you handle them, so you can prevent data loss, reduce the risk of negative business impact and ensure the long-term durability of the integration.

Here are some things to consider as you plan for error handling:

- **Retry logic**
  If a request fails, it should be re-attempted automatically. But when will it be retried, and how many times? If a request fails due to a data issue, how will you re-send it once the data is fixed?
- **Continuity**
  When an integration process fails midway, you'll need to take steps to ensure that it picks up right where it left off without losing or unnecessarily duplicating data.
- **Prevention**
  If you can identify why process breakdowns occur, then you can design tools to prevent them. Data validation rules help avoid breakdowns due to missing data, for example. Default values make it possible to raise a flag when required data is missing. Integrated dependencies reduce the risk of problems such as a sales order being created before a customer exists.
- **Responsibility**
  Who will be responsible for recognizing and responding to errors, and for fixing data issues? Assign responsibility, keeping in mind that the owner of these tasks don't have to be the same person.
- **Reporting**
  Errors that go unnoticed or unaddressed can slowly and silently kill an integration. Give some thought to how errors will be reported – through dashboard views of the integration, perhaps, or with email notifications?



BRINGING IT ALL TOGETHER

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While it's true that ERP-CRM integration can be challenging, it's also our experience that good preparation, follow-through and execution will make mastering the challenge much easier. The information and advice in this guide are the lessons we've learned from managing ERP-CRM integrations for many of our clients over the years. By following the information outlined in this guide, you'll be well positioned to benefit from the business insights and improvements that ERP can deliver your organization.

RESOURCES

ERP Providers:

- NetSuite
- Intaact

CRM Providers:

- Salesforce
- Microsoft Dynamics CRM

Bridgepoint Consulting Services:

- NetSuite Consulting
- Salesforce Consulting

Helpful Websites:

- Dell Boomi
- SuiteTalk
- Salesforce API Basics
- Salesforce Integration Patterns and Practices
- Leveraging Automated Workflow to Streamline Processes (CIO Review Magazine)

PRE-INTEGRATION CHECKLIST

8 KEYS TO ERP-CRM INTEGRATION SUCCESS

1. **GET STARTED EARLY**
   Start scoping work and cleaning up data well before integration – as early as 12 months before, depending on how complex the task.

2. **EVALUATE INTEGRATION COSTS**
   Think through short-term costs like middleware licensing or third-party development help, as well as long-term maintenance costs.

3. **IMPROVE BUSINESS PROCESSES**
   Identify differences in sales and accounting processes that could slow progress or limit insights, and institute improvements before integration.

4. **PLAN DATA MAPPING / FLOW**
   Think about where data integration points are (and aren't) needed, as well as when CRM data needs to flow into and out of ERP.

5. **VERIFY DATA FORMATTING**
   Translate data to account for differences in data types and formatting, and be sure each data object has only one system of record.

6. **PRESERVE DATA QUALITY**
   Once data is cleaned up, keep it that way by using automation to ensure quality data entry and prevent duplicate entries.

7. **ENSURE DATA SECURITY**
   Encrypt sensitive data such as customer payment information, and make integration passwords available only to a few trusted users.

8. **CHOOSE YOUR TOOLS**
   Decide if you'll use middleware for communication between systems and whether you need real-time or batch processing (or both).

MEET THE AUTHORS



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ABOUT BRIDGEPOINT CONSULTING

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Bridgepoint Consulting is a leading management consulting firm that helps companies navigate the complexities of growth and change throughout their business lifecycle. We offer a broad range of finance, technology and risk/compliance services to support clients from the startup phase all the way to IPO readiness and beyond.

BRIDGEPOINT ENTERPRISE SOLUTIONS

Bridgepoint Consulting is a Texas-based leader in delivering and integrating ERP and CRM solutions including NetSuite and Salesforce. We have a large team of consultants who are here to help you make the most of your technology investment. If you have any questions or would like help extending, integrating or implementing an ERP or CRM system, please contact us.

SOURCES

1 "Global ERP Software market Is Expected to Reach $41.69 Billion by 2020," Allied Market Research, March 31, 2015

2 "Gartner: 75% of all ERP projects fail – But why?" Office of Finance

3 "Nearly all cloud ERP projects will 'fail' by 2018, reckons Gartner," The Register, March 2, 2016

4 "Gartner Says Through 2018, 90 Percent of Organizations Will Lack a Postmodern Application Integration Strategy," Gartner Newsroom, March 2, 2016

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