

Increasing Efficiency through SAP Integration Optimization

Abstract

This paper identifies seven most prevalent ways businesses can achieve a return on investment from integration-related projects. It uncovers typical problems in infrastructure design or lack of design that may go unnoticed, but have a definite and measurable impact to the bottom line.

By Steve Steffen

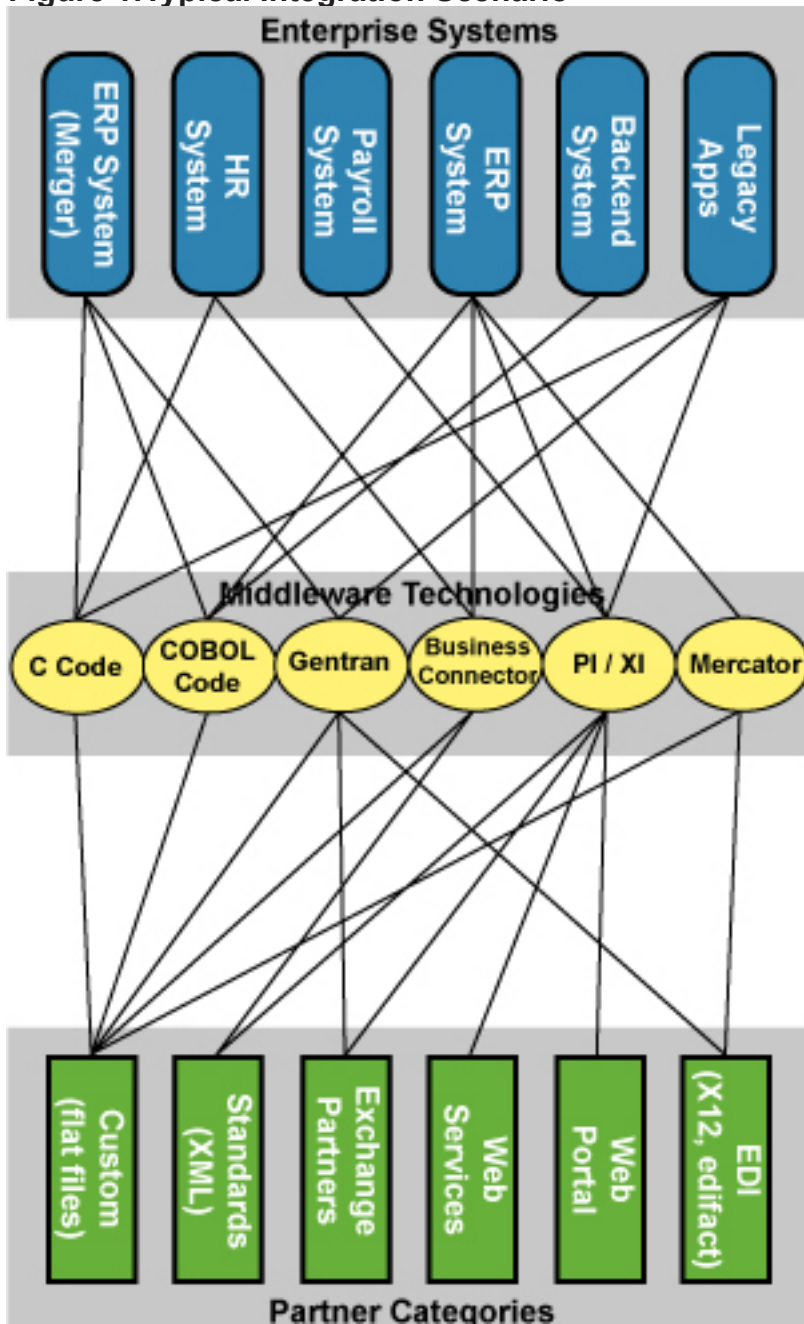
In any SAP implementation, there are a multitude of tasks and specialties happening all at once in preparation for Go-Live. Priority tasks such as business blue-printing and SAP core module configuration (FI/CO, MM, SD, etc.) take precedence over integration technologies such as ALE, XI/PI, and IDocs, as these are widely viewed as the “plumbing” of the SAP landscape. This SAP “plumbing” is needed, but “hidden in the walls” of the ERP system, and is rarely architected and managed at an Enterprise level. In larger ERP implementations, it’s very common for different groups to integrate to various systems independently and without regard to what other teams are doing. Legacy technologies may be incorporated as quick fixes, with plans to decommission later. Some teams may use a custom point-to-point integration approach, other teams will utilize IDocs, others will send messages to XI/PI via BAPI’s, and others may customize standard interfaces or use flat files.

After the system goes live, there may be a time period of stabilization, with a frantic scramble to make the system operational. Additionally, over several years, different projects and technologies will be incorporated. In larger companies, this can mean thousands of interfaces using dozens of different technologies coexisting in the support infrastructure. This “Band-Aid” approach to integration is typically never thought of as inefficiency that can be addressed to save real money in the organization, but merely viewed as a black box, or something the organization has to “live with.”

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Even though the integration may fundamentally work well enough to run the business, there is definite and achievable ROI in re-architecting and optimizing the integration processes. Figure 1 below illustrates the integration scenario described previously. Just looking at the diagram of this simple scenario is complex, larger companies have thousands of interfaces and hundreds of ways to connect them!

Figure 1: Typical Integration Scenario



The return on investment of any project in SAP can have varied measures of success. Integration projects are no exception. Unique problems associated with company specific architecture impact the overall return. Listed below are the top seven identifiable ROI areas in integration technologies:

- 1. Greatly increase cost savings in new development**
- 2. Reduce or eliminate the maintenance cost of multiple middleware technologies**
- 3. Provide better system performance during interface operation, speeding up the effective speed of the SAP system for end users**
- 4. Reduce the workload of users responsible for resolving errors, freeing them up to be productive on essential business tasks**
- 5. Reduce charge backs by retailers for improperly formed EDI**
- 6. Reduce headcount by middleware consolidation**
- 7. Reduce hardware cost**

Cost Savings in New Development can be Greatly Reduced

Cost savings in new development is a major driving force of integration consolidation and re-design. Re-organizing infrastructure on a new tool such as SAP PI can reduce the overall time it takes to develop new interfaces. For instance, Carl Zeiss Group (CZG) achieved an ROI of 362% by reducing the time it takes to develop a new interface or change an existing one by 50%.¹ The cost savings equaled in excess of half a million dollars over a three year period. Much of this cost savings can be attributed to reducing complexity around design and maintenance. Developers do not have to choose which technology to implement, and can readily find previous development templates that give them a jump start. Newer tools, such as PI, have a much better “What You See Is What You Get” (WYSIWYG) user interface and easy error and unit testing tools built in. All these factors combine to deliver the overall savings.

Maintenance Cost of Multiple Middleware Technologies

Many companies have yet to standardize on one integration platform. They may have several technologies patched together in a “spaghetti” infrastructure. The reality of this environment is that it is extremely costly to maintain.

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Costs associated with maintaining this environment arise from multiple annual maintenance fees as well as internal support costs every time there is an error and every time there is a new upgrade in any of the systems.² With the average software maintenance fee at 18%, eliminating the redundancies in just the maintenance costs alone can add up to hundreds of thousands of dollars a year.

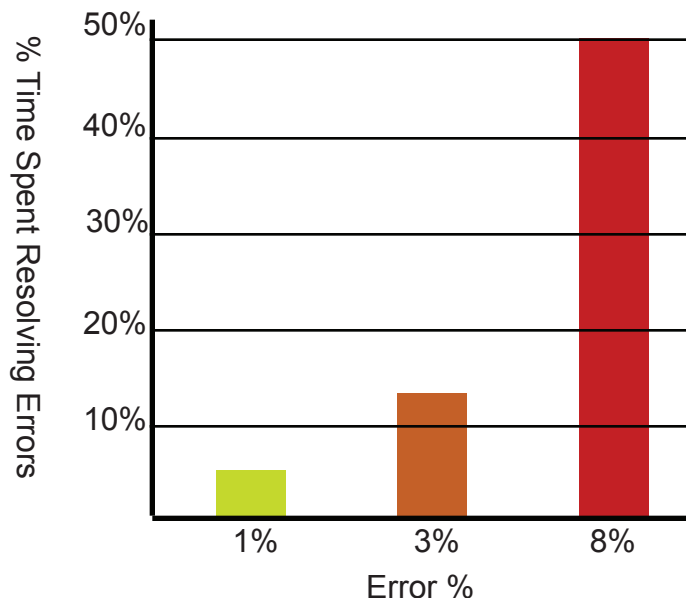
Provide Better System Performance During Interface Operation

Providing better system performance to end-users is a critical component to distributed systems. SAP systems have to share resources for all tasks. Resources used for integration can adversely affect system performance, even locking users out of the system from time to time. For illustration purposes, let's say there are 100 users in the SAP system at any given time doing work. The typical user's salary is an average of \$50K per year. If everyday, due to poor system performance, they lose 30 minutes of productivity, this will add up to \$312K over the course of one year. In larger companies, with 24/7 global operations, the cost of lost productivity is even greater because of system performance issues, especially in distributed environments that have various legacy/3rd party systems that are critical to business operations.

Reduce Workload on Users Responsible for Resolving errors

Excessive error processing can tie up significant resources in an organization. A recent study by the Association of Product Modeling indicates: 12.5% of resources are busy with non-value-add activities when the correctness of data falls to 97%. If the success rate falls to 92% you'll see resources occupied with non-value add activities jump to 50%.³ Any time errors fall below 99%, there are significant savings to be had in optimizing these processes. For instance, if incoming sales orders have a failure rate of 3%, it may not seem like a that big of deal because 97 out of the other hundred posted successfully, but multiple resources have to get involved in resolving the 3 in error. The larger the company, the more money 12.5% equates to. In this era of cost savings and cutbacks, wouldn't an extra 5%-45% of productivity/cost savings look good?

figure 2: Time spent resolving errors



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Reduced Chargebacks by Retailers for Improperly formed EDI

Departments at business partners levying penalties for EDI processing errors have become profit centers in themselves. In fact, SAP has released deductions management software to help manage this revenue. It is very common for “big box” retailers to penalize vendors for inaccurate or miss-timed EDI transmissions. The Credit Research Foundation, a Columbia, MD-based organization that conducts research in the area of commercial credit and collections management, completed a customer deduction survey and identified errors in advance shipment notification (ASN) or electronic data interchange (EDI) as the fourth leading cost of charge backs.⁴ The typical chargeback reduces a manufacturer’s overall revenue by 2% to 10%,⁵ although this could be much greater. For example, one company in south Florida received \$200,000 worth of penalties on \$120,000 worth of orders! Many times, part or all of the deduction can be disputed and refunded, but it is labor intensive (although there is dispute management software that improves the process, like Cforia’s MC2 product). It is also possible to rearchitect EDI messages to incur the lowest penalty possible. After rearchitecting, the company mentioned above went from \$200,000 worth of penalties to only \$750.

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Reduced Head Count by Middleware Consolidation

Any time multiple software packages are used to do redundant tasks, such as middleware programs used for mapping or converting data from one format into another, the process of training and keeping staff for maintenance and incremental changes adds up. Companies need to have more staff available than utilization because of vacation time, illness, retirement, or resignation. It is not uncommon for companies to have three or four people maintaining one legacy integration system that only requires three or four weeks worth of work a year! When a company unifies integration platforms and reorganizes and retrains current personnel, cost savings will be achieved. The amount of the cost savings is equally proportionate to the number of different technologies being used. For example, at larger organizations, it's not uncommon to have ten or more technologies in the infrastructure. These ten technologies could have three or four specialists assigned each. By standardizing on one technology, these 40 people could be reduced to a team of 5-10, a cost reduction of at least 75%.

Reduced Hardware Cost

Poorly written or configured software that runs inefficiently can cripple an infrastructure. Code that might have worked well at lower volume will have performance issues as throughput increases. Instead of fixing or rewriting the software, hardware scaling was used to make the problem less noticeable. When a company has 10 or 12 interfaces, this is a viable solution, but if a company has thousands of interfaces, it soon becomes a losing battle. One customer reached a point where it took 36 hours to do 24 hours worth of data processing. After rearchitecting their integration, the same processes completed in less than 3 hours for a 1200% increase in performance. Looking at the numbers another way, they could either grow 12 times their size, or reallocate 90% of their hardware to other initiatives.

Putting it All Together

This paper has touched on seven areas where a definite ROI is achievable in integration-related technologies. Each one of these topics could be expounded on in much greater detail, with a chapter or book devoted to each one. The purpose of this paper however, is not to list out in detail how the ROI will be achieved, but instead, to open up the walls and show “plumbing” problems businesses may not even know they have or didn’t think were fixable.

The most common question is, where do we start? The hard part about reorganizing infrastructure is identifying the problems. It is easier to bring in outside opinions that are looking at the problem or problems with the infrastructure without incumbrances of typical corporate politics. Someone who has experience with integration design and can identify the best technologies for standardization.

After Identifying the problems, It is important to rank the priorities of the initiatives by the ROI they achieve. It is a good idea to address any problems with quick fixes right away, and then put together a infrastructure strategy that encompasses not only the current state, but also the growth expected in the immediate three to five years. The new strategy is put into a roadmap document that is used to evaluate vendor technologies and determine what approach is most beneficial to the organization.

About DataXstream

DataXstream focuses on integrating software to SAP. With over 10 years of experience and hundreds of successful projects, we have the proven ability to identify problems, architect the solution, implement the design, and manage the project to a successful completion.

Let DataXstream show you how to streamline your integration processes and make your SAP landscape to flourish. Whether you're at the pre-planning stages or in need of a integration specialist, DataXstream can help.

DataXstream Locations

Phone Numbers

Office 757.345.3437
Fax 757.645.2384

Email Addresses

Sales Department Request: sales@dataxstream.com
Request Information: info@dataxstream.com
All Other Inquiries: admin@dataxstream.com

California

4333 Park Terrace Drive Suite 201,
Westlake Village, CA 91361

Indiana

136 E. Market St. Suite 1120
Indianapolis, IN

Virginia

471 McLaws Cir,
Williamsburg, VA 23185

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