LOGILITY

White Paper

Avoiding Common Pitfalls
of SCM-SAP Integration

The value of custom integration without
custom development

LOGILITY

Executive Summary

Best-of-breed supply chain optimization solutions can increase service levels, minimize inventory, drive fact-based decisions, handle demand uncertainty and supply volatility, and manage product life cycles for maximum profitability. A crucial question is how to integrate these powerful solutions with the organization's enterprise resource planning [ERP] and advanced planning and scheduling [APS] systems. Some dangers are obvious, while others may remain hidden, then suddenly emerge to put the solution at risk. This paper compares two approaches:

- **Integration of SAP SCM with SAP ERP using SAP standard integration**
  The standard SAP ERP to SAP SCM integration provides a strong, highly complex, technological starting point for SAP SCM integration. The integration provides near-real-time transfer of data between ERP and SCM, tightly coupled with the SAP ERP data model. The integration is typically implemented over 8 to 24 months using standard SAP project methodology and tools by a team of SAP ERP, SAP SCM and SAP integration and ABAP coding professionals.

- **Logility's template-based integration of Logility with SAP ERP**
  Logility SCM – SAP ERP integration projects use proven, pre-built data mappings and logic for as much as 80% of the integration scope, while the remaining 20% is configured based on the organization's unique SCM requirements. This approach reduces the team size, lowers cost, and presents less risk.

Common pitfalls for integration fall into four groups: cost and effort, scalability and speed, sustainability, and flexibility.

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Organizations that rely on SCM software from their ERP vendor can find themselves perpetually stalled, never actually achieving the functionality and visibility needed.

How to Avoid Common Pitfalls of SCM-SAP Integration

Running your entire enterprise from one large suite of seamlessly integrated applications is a powerful vision, and nobody has implemented this vision better than SAP. For supply chain management [SCM], the vision assumes implementation of SAP ERP, and a subsequent implementation of SAP SCM, culminating with all supply chain components implemented in both SAP ERP and SAP SCM.
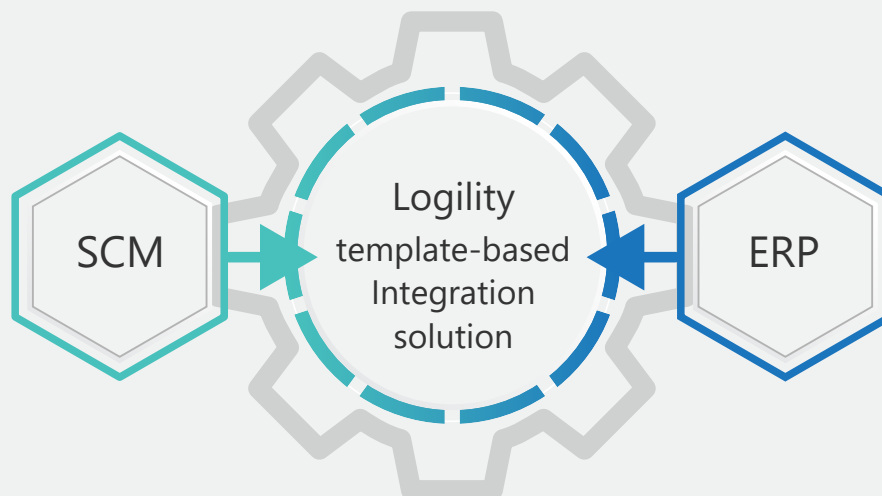
The challenge is that supply chains are never static. They are frequently reconfigured across products, facilities and enterprises. Plants are opened and closed. Products are outsourced or in-sourced. Entities are bought and sold. Today, a truly efficient supply chain requires constant collaboration based on shared visibility to plans across all supply chain components, and often across enterprises.

The benefits of putting the enterprise on a single ERP system are undisputed, but organizations that rely on SCM software from their ERP vendor can find themselves perpetually stalled, waiting for the completion of all ERP roll-outs required to bring the entire supply chain into view, succumbing to inflexible configurations that are tied to financial structuring, and never actually achieving the functionality and visibility needed.

In addition, "non-vanilla" ERP-SAP SCM integrations are not straightforward. When working with various "flavors" of SAP [e.g., SAP AFS, their Apparel Footwear Solution, or other industry specific solution templates], the customized nature of the ERP means that much of the integration to SAP SCM will need to be custom built.

It is important not to let an "all-SAP" vision stand in the way of achieving supply chain excellence through SCM software, which should be implemented and reconfigured as quickly as the supply chain evolves. Logility delivers high-performance SAP ERP-to-Logility integrations in less time, at lower cost, and provides long-term value by continually upgrading software components to maintain currency with data model updates over time.

Integrating ERP with Logility supply chain management

SCM → Logility template-based Integration solution ← ERP

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Cost and Effort

The majority of integration cost is driven by time and labor. Much of the pain associated with software deployments is caused by integration activities, which are notorious for being over budget and delivered late. Consider the following common pitfalls associated with an SAP standard integration approach, and how trouble can be avoided using Logility's approach to best-of-breed integration.

Pitfall: Integration resource lacks broad domain expertise in SCM integration technology.

- **SAP standard approach:**
  The standard SAP ERP-to-SAP SCM integration is a good starting point, but don't underestimate the true effort and complexity. Start by recognizing that SAP SCM, SAP ERP and SAP SCM integration are all different domains of expertise with high degrees of complexity.

- **Advice:**
  Look for integrators who not only "turn on the integration" but who also understand—and can solve—the complexities associated with implementing SCM data-models that are different from a straight AP ERP data mapping. Also look out for whether the project calls for data from sources outside of SAP ERP to be integrated.

- **Logility advantage:**
  The Logility integration team has the required three-domain expertise to ensure successful and efficient project execution. Logility's SCM-to-ERP integration templates are pre-configured integrations designed to leverage the ERP data model to a matching Logility data model. This approach also provides the flexibility to integrate data from many other sources with ease. Embedded domain-specific elements paired with deep knowledge and experience outperforms other approaches.
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Logility's SCM-to-ERP integration templates are pre-configured integrations designed to leverage the ERP data model to a matching Logility data model.

Pitfall: Re-inventing what already exists escalates the cost, time and risk for an integration project.

- **SAP standard approach:**
  A complete SAP ERP-to-SAP SCM integration contains thousands of detailed technical decisions. While the standard SAP ERP-to-SCM interface contains standard mappings for many data elements from SAP ERP, this interface is of little use when integrating with data sources and targets other than SAP ERP. Integrating non-SAP data sources typically requires significant customization. Also remember that the standard field-level mappings provided with the interface assume adherence to SAP-standard business processes. Any deviation from "standard" will likely result in custom interface coding.

- **Advice:**
  Carefully consider your needs for integration of external data sources and targets. As supply chains become increasingly interconnected, a one-data-source integration approach could severely limit the solution's long-term value.

- **Logility advantage:**
  Logility leverages proven integration templates across many customers to meet even unusual requirements. Logility separates the integration component from the underlying ERP or SCM technology, eliminating the need to invent [specify, develop, test and debug] new components. This approach reduces risk, increases integration quality and shortens the pay-back period.

Pitfall: Underestimating the Total Cost of Ownership can cause dramatic cost overruns.

- **SAP standard approach:**
  The standard SAP ERP-to-SAP SCM integration is built by SAP, supported with support packs and more, but plan to perform a lot more testing for every ERP enhancement, patch or upgrade.

- **Advice:**
  Expect to connect to non-SAP data sources. As your business processes evolve and the enterprise becomes increasingly interconnected, there will be increasing needs for integrating and supporting non-SAP databases. This may significantly increase complexity and cost over time.

- **Logility advantage:**
  Logility follows an open integration approach that provides predictable low Total Cost of Ownership [TCO] even as the integration needs evolve over time. Logility's integration templates used for all SCM-to-ERP integrations are based on pluggable objects.

> ⚠ Re-inventing what already exists escalates the cost, time and risk for the project.

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Scalability and Speed

Pitfall: Integrations that employ a "trash-and-reload" strategy, while easy to develop, are also the most likely to fail due to performance issues. File preparation and file consumption can reduce system availability and contribute to data latency even before it is made available to users.

- **SAP standard approach:**
  While mature ERP installations can have millions of item and orders, only a small fraction actually changes on a daily basis. A net change approach typically starts with a large initial load and then switches to a mode that recognizes what has been added, changed or deleted and only sends the updates. The standard SAP ERP–to-SAP SCM integration offers net-change capability, however, that capability does not extend to data sources and targets outside the SAP ERP system.

- **Advice:**
  Carefully evaluate scalability risks related to data sources and targets outside the standard integration scope.

- **Logility advantage:**
  Logility's net change approach synchronizes a very large number of SKUs in less time by only exchanging data that has changed since the last update. This ensures scalability and speed. By reducing the load and return time, more time is available for high-value business optimization of the supply chain. It creates more time to do the important things for the business. Logility's integration templates are designed for net-change capability extending not only to ERP integration points but also to most external data sources.

Pitfall: When the integration encounters production volume data for the first time, it fails.

- **SAP standard approach:**
  A typical SAP ERP-to-SAP SCM installation runs all the integration components on the same servers that host the ERP and SCM applications. High data volume can cause performance issues.

- **Advice:**
  Test high-risk performance-sensitive elements early and often.

- **Logility advantage:**
  Logility's template-based approach ensures the solution can scale to meet even the most data-heavy integration requirements. Data-flows are structured to enable parallel processing early in the project, ensuring scalability. The integration does not have to run on the same server that hosts the ERP system or the Logility application, which provides more scalability.

Sustainability

Pitfall: Real-world businesses do not stand still. The market is changing, processes are maturing—and your integration needs to keep up so that it does not throttle your business.

- **SAP standard approach:**
  SAP provides a path for software upgrades of the standard integration, but those upgrades do not include enhancements to the standard integration and connections for non-SAP ERP integration points.

- **Advice:**
  Remember that upgrading functions can put a very heavy burden on the organization—especially if details of the customizations were poorly documented or were performed by developers who are no longer part of the team.

- **Logility advantage:**
  Logility ensures that updated integration templates are available when customers upgrade their ERP or SCM applications. All of our templates have standard documentation so you will always know how the integration works. Logility's integration approach offers ongoing support for customer solutions, providing one source of accountability and unburdening the IT team.

Inability to upgrade applications is a hidden problem that can limit business flexibility and diminish future supply chain performance.

Pitfall: Key knowledge of the integration solution can become lost over time.

- **SAP standard approach:**
  Enhancements can gradually go from difficult to almost impossible when SAP SCM solutions have been customized or extended to include third party applications. While the standard integration provides a path for how data should be enhanced within the standard integration scope, there is no "normal" way of doing things outside the standard integration scope.

- **Advice:**
  Keep in mind that successive waves of developers will be free to create their own approaches which, over time, can result in convoluted "spaghetti code."

- **Logility advantage:**
  Logility's integration templates contain detailed mappings of associated processing logic. They create a comprehensive framework for successive integration efforts. Because the template itself sets the design direction it is much easier for developers to create enhancements that can be understood and further extended by others.

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Flexibility

Many organizations have supply chains that encompass constraints or capabilities that are not well represented in the ERP data model. To fully unleash the power of the supply chain it is important that a data model is applied that conveys an accurate representation to the SCM application of where the true flexibility and constraints exist.

Pitfall: The integration layer must be able to dynamically translate data from the ERP data model to the right SCM data model. In order to leverage the power of advanced supply chain applications the data must be presented intelligently and consistently.

- **SAP standard approach:**
  The standard SAP integration connects detailed data in the ERP data model with equally detailed data in the SAP SCM. During the transfer from SAP ERP to SAP SCM, "user exits" allow for changes to data mappings relative to the standard integration. While data mapping flexibility is useful, it is of little value if the right model for solving the supply chain problem is at a different level of aggregation altogether. While data mapping flexibility is good, data model flexibility is almost non-existent.

- **Advice:**
  Look for integrators that can provide flexible data mapping and models to transform data as needed.

- **Logility advantage:**
  Logility's integration templates for ERP-to-Logility integration rely on a two-step transfer process: First, detailed ERP data is extracted at the lowest level of detail. Once extracted to a middle layer, the template offers ample opportunity to apply transformation or aggregation logic before the data is passed to the relevant Logility modules. This approach results in a high degree of both mapping and data model flexibility without having to "break" with the standard integration flow.

Look for integrators that can provide flexible data mapping and models to transform data as needed.

Pitfall: If the integration layer cannot facilitate collaboration between supply chain partners [bringing non-ERP data into and out of the SCM application], the failure to connect may become devastating to the success of the global supply chain.

- **SAP standard approach:**
  The standard SAP ERP-to-SAP SCM integration does virtually nothing for inter-enterprise integration. This is outside the scope of SAP's intended integration. EDI messages, XML documents, emails, flat files and spreadsheets for supply chain partners typically end up leading to more and more custom ABAP development, typically producing a sequentially dependent process.

- **Advice:**
  Assume that your integration project needs to support collaboration with business partners. Don't condemn your company to a future rebuild of an unsustainable integration.

- **Logility advantage:**
  Logility's domain expertise and pre-built objects make it possible to create powerful and comprehensive integrations that extend across multiple partners, systems, technologies, and environments. Logility lets you bring business partners into your supply chain planning process more easily.

> If the integration layer cannot facilitate collaboration between supply chain partners, failure to connect may be devastating to global supply chain success.

Custom Integrations without the Custom Effort

Logility's templated integration solution delivers custom ERP integrations without the custom effort for best-of-breed supply chain planning and optimization solutions.

Logility's rules-based application combines standardized connectors with high-performance rules-based data transformations and powerful solution management capabilities.

Logility's modular integration technology saves time, cost and complexity for customers. Pre-built integration templates deliver better performance, simplified support and reduced cost of ownership, cutting implementation effort by as much as 90% for typical integration projects, and delivering results in 30 to 60 days in most cases.

About Logility

Accelerating the sustainable digital supply chain, Logility helps companies seize new opportunities, sense and respond to changing market dynamics and more profitably manage their complex global businesses. The Logility® Digital Supply Chain Platform leverages an innovative blend of artificial intelligence [AI] and advanced analytics to automate planning, accelerate cycle times, increase precision, improve operating performance, break down business silos and deliver greater visibility. Logility is a wholly owned subsidiary of American Software, Inc. [NASDAQ: AMSWA].

To learn how Logility can help you make smarter decisions faster, visit www.logility.com.

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