

A hybrid approach to system modernization

A tier-1 auto manufacturer 's journey from home-grown legacy processes to digital efficiency

Microsoft Windows and Office have over 120 million users worldwide and IBM has a global network of over 150 universities teaching mainframe skills to university students.

It's clear that legacy systems are here to stay. And while some might deem these systems as cumbersome and expensive to replace, legacy systems also represent years of enterprise investment into best-of-class solutions for the business. These systems continue to be supported and invested in by best-in-class vendors.

Among legacy system vendors are names like SAP, Oracle, Salesforce, Microsoft and IBM. These vendors continue to grow their products, and each has users in the hundreds of thousands.

This is why IT consultancies like Cap Gemini [describe the idea of ripping and replacing legacy systems](#) as "a gambit fraught with danger," and why companies that "rip and replace" often find themselves with system and user issues that they never imagined they would have when they first conceived their rip and replace projects.

A "rip and replace" approach presents major risks in intellectual property loss, and in the loss of proprietary system customizations that give companies competitive advantage.

There is also the financial investment that has already been made into these systems, as well as into a workforce that is comfortable and adept at using them.

Despite these factors, if you are in IT or business management, you also know that technology, like business, must move forward.

How do you maintain the value and the advantages of the legacy systems you have invested in, while also positioning yourself for new technological advances that can transform your business?

You can maintain your legacy systems value while moving forward into new technologies by adopting a "hybrid" approach to systems that marries the value of "tried and proven" legacy systems with the advantages of integrating new technologies.

Auto manufacturer moves away from home-grown warehouse system

A tier-1 automotive parts manufacturer relied for years on home-grown warehouse management systems created out of SAP Enterprise Resource Planning (ERP) software, supply chain management systems from SAP SCM, and production planning software delivered by an SAP PP module. The company relied on these systems for internal knowledge of operations, and they used hand-developed Microsoft Excel spreadsheets as their source documents for all communications and reporting with external vendors and business partners.

The employees used Excel spreadsheets as reference documents when they were communicating and conducting person-to-person negotiations with outside parties over the phone. This reliance on manual processes increased the likelihood of errors within the

company's manufacturing process, such as duplicated ordering, missed freight opportunities, emergency expedites, raw material shortages, and labor shortages.

The manual processes, and the limited ability of different legacy systems to exchange information with each other, adversely impacted performance *and* the bottom line.

The company was pushed to make changes when its largest supplier brought in a new cloud supply chain management system that was based on real-time reporting, direct part production visibility, and direct visibility into the packaging and shipping process. The upgrade created the perfect opportunity for overall process modernization.

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3 key steps in achieving modernization

Understanding the financial importance of retaining its legacy systems, yet also recognizing the need to stay in step with new technologies and to adapt to the requirements of its business partners, the company chose to modernize. The company started with the decision to retain its existing legacy systems and bridging all of these systems together. Once the legacy systems were all

integrated with bi-directional communication a single source of truth materialized. That single source of truth could then be bridged onto its supplier's new supply chain management system or any new integration point instead of performing a "rip and replace" of anything existing.

Step 1

Connecting the company's legacy Electronic Data Interchange (EDI) system, a siloed manufacturing execution system (MES) that ran on a legacy IBM AS/400 system, and legacy mobile scanners, into the legacy SAP ERP system for bi-directional communications.

Step 2

Enabling bi-directional communications between the company's EDI, MES and ERP systems and the supplier's supply chain management system, which was hosted on the Amazon EC2 cloud;

Step 3

Integrating the company's ERP system with its SAP SCM software that controlled the warehouse and shipping processes.

Operational improvements include:

- EDI orders could now be fed directly into the MES system that controlled manufacturing execution, the use and replenishment of raw materials during manufacture, and the sequencing and timing of the manufacturing process.
- The MES, formerly a standalone system "silo," was integrated with the ERP system, which now had visibility of manufacturing operations and could more accurately anticipate, weigh, count and package manufactured parts into bins and pallets used because it now had visibility of production workflows. This integration made parts picking in the warehouse smoother, more efficient, more predictable and less labor intensive because downstream operations also had visibility of the production flow.
- Communications from the ERP system and from legacy scanners on the floor, in the warehouse, and in the truck lanes, fed back operational status to the MES system, giving everyone in manufacturing, warehousing and shipping end to end visibility of the entire make to ship product flow.
- Enhanced communications from scanners and the ERP system to the SAP SCM software enabled SAP SCM to more effectively control the process of putting pallets together to create a skid and then putting skids together to create lanes for trucks that were in and out of each bay door every 28 minutes to transport product. These operations had to be conducted safely and accurately.
- Investment was preserved in several thousand Windows Mobile 5.0 scanning devices that already were well hardened, and that would have required several thousand dollars per device to replace. Investment was preserved by successfully integrating the scanners with the company's MES, ERP, SCM systems, and with the customer's supply chain system.



Minimizing the risks and costs of modernization

When it approached its system modernization challenge, the company had a choice of manually integrating its systems with each other and with the supplier's supply chain system—or with working with vendors, some of which didn't support their systems or devices anymore. There was the additional risk of coming across "black box" custom code that no one knew anything about, and that could be discovered in the middle of a systems integration project.

All were palpable risks that the company wished to avoid. The company was also facing a looming deadline for onboarding to its chief supplier's supply chain system.

Concerned about these issues, the company chose HULFT to assist it with its massive integration and silo breaking project.

HULFT began by enabling the company's legacy Motorola/Symbol scanners to communicate with any system. This integration was achieved by placing a piece of software that was custom developed by HULFT on each individual scanner. The software enabled each scanner to communicate with any software package or system API through an HTML format that accessed the HULFT Integrate platform target for dissemination to final destinations so data could be extracted, transformed, and loaded anywhere.

This method of data extraction, transformation, and loading was similarly used, with and without, the creation of custom "connectors" (software to enable siloed data) on the back end of each legacy system that needed to communicate with scanners or with other systems, and on the supplier's supply chain system.

The end result was a total integration of systems and the eradication of data silos in less than 90 days.

Summary

In a new phase of system modernization, HULFT is helping this manufacturing company work towards a paperless environment, and has brought in Parsable, a business partner specializing in digitally connecting workers.

The goal is to create standardized and documented work processes that deliver real-time visibility to any of the company's customers, suppliers or internal business units.

By modernizing business processes that use the newly integrated AS/400, SAP, Motorola/Symbol, Amazon EC2, Toyota SCS, Excel and EDI systems, the company can now function with "single version of the truth" data for all users and gain a level of confidence that authorized users in any company operation can always have all company data at their fingertips.

The efficiencies this new environment produces, coupled with the confidence of knowing that there is no wrong decision as you can get your data out and mingle it as necessary, has this company taking on new technologies and providing greater transparencies and efficiencies to their suppliers and customers. The previous mistakes of duplication and the effort put into error control have been eliminated. Consequently, customer and supplier satisfaction has increased. This has created a more prosperous bottom line and far easier resolution of any business challenge.

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