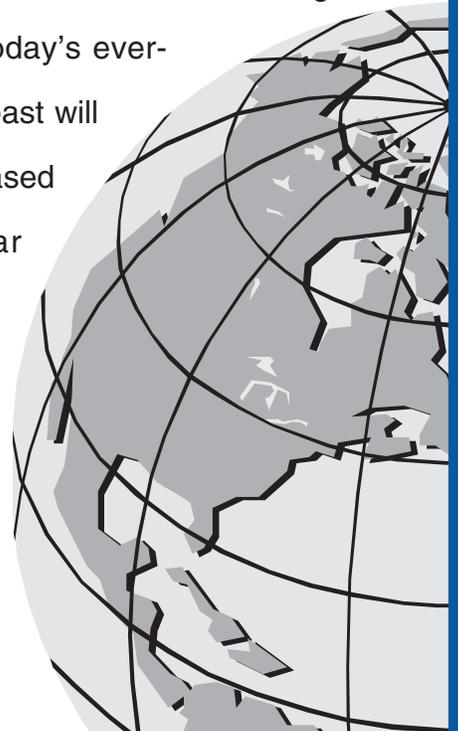




ECSS and Transformation

the way ahead

To effectively support the Expeditionary Air Force, an integrated logistics chain must establish better ways to respond to two critical warfighter questions: “Where is our part?” and “When will we get it?” Clearly, this is no small task in today’s ever-changing world. The solutions of the past will not work for the future. The garrison-based processes born out of the Cold War posture must be fundamentally rethought. Air Force logistics must also become more expeditionary—satisfy operational requirements, be rapid in its response, flexible in its structure, consistent in its delivery, reliable, and economical in its actions.





Enterprise Resource Planning

Introduction

Enterprise resource planning (ERP) systems are information systems that integrate processes in an organization using a common database and shared reporting tools. Simply put, “an ERP system helps the different parts of the organization share data and knowledge, reduce costs, and improve management of business processes.”¹ It is this seamless integration that makes ERP systems so attractive when compared to other information systems. Traditionally, Air Force systems have been developed and fielded as functional silos rather than cross-functional integrated systems. We built maintenance, supply, transportation, or accounting systems with little or no regard for cross functionality or the integration of business processes across the various functions. Each of these legacy systems is primarily concerned with specific functional area requirements and needs and frequently duplicates functions seen in other systems. Further, the outputs from the duplicate functions often do not match. Just ask a supply person to retrieve the top supply drivers and then ask someone from maintenance to extract the same information. It is very likely that you will receive similar, yet different answers. Even within Air Force

functional areas there are multiple systems that sometimes give different answers using the same data. Many studies have pointed out this problem.

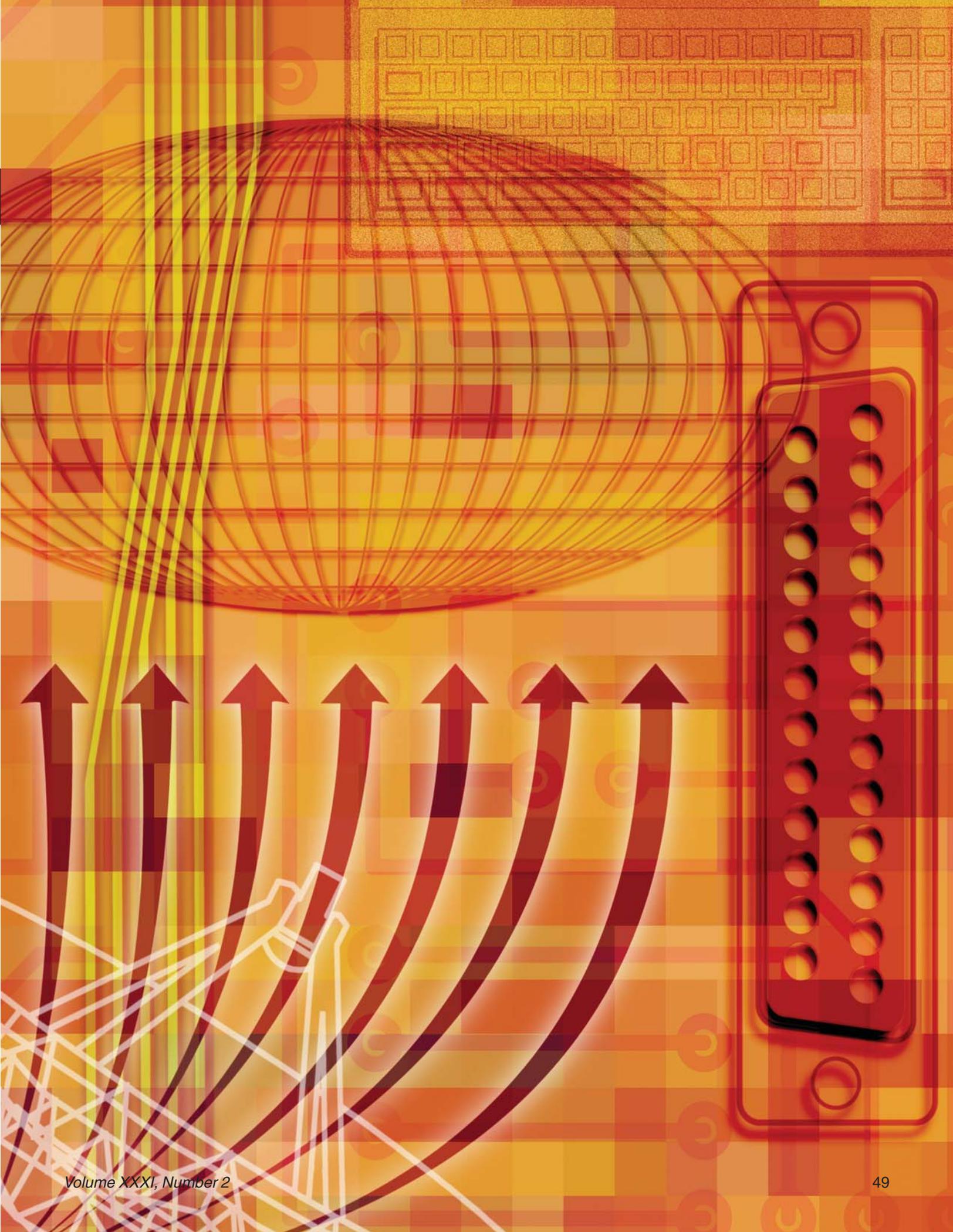
The Air Force has several large maintenance data collection systems, each with strengths and weaknesses. Nevertheless, dissimilarities in the data are all too familiar. ERP systems help eliminate the kinds of problems just discussed by having one database that shares data efficiently and effectively across the enterprise. Since data is shared by all functional areas, it is only entered once as opposed to reentering the data for each function.

With an ERP system, information is available to everyone who needs it, not just users in a particular functional area.

Benefits of ERPs

ERP systems allow software applications that normally do not interact with each other to effectively communicate via integration in a single database. This integration allows the sharing of data from various functional areas across the enterprise. This is a





great improvement over other systems, because it significantly reduces the time to complete a business process. Additionally, departments that would normally be *left out of the loop* are included in the decisionmaking as well as the results. This sharing of information cuts costs, because it helps reduce redundancies and eliminates errors by providing communication and better visibility across the enterprise. Further, it translates into less rework, better decisionmaking, and gets products to the customer faster and more efficiently. In the case of the Air Force, it may mean getting parts to the warfighter more effectively and efficiently than in the past. A final benefit of ERP systems is the use of best business practices.

Although sometimes seen as large information systems projects, ERP projects are in fact change management efforts where basic organizational business processes will change to align with the best practices and processes defined during ERP implementation activities.² This is a paradox for the Air Force, when compared to how it previously developed information systems. Prior development of large Air Force information systems, for the most part, only addressed tasks concerned with specific functions, functional areas, or particular viewpoints vice overall business processes. On the surface, this may not sound like a bad idea; however, it led to stovepiped systems and stovepiped views. Consequently, today, most Air Force systems do not have a cross-functional view. Systems built from a functional viewpoint are concerned with the tasks related to a particular function, whereas cross-functional systems share data across different functions. Business processes are cross functional in nature. For example, getting a new part to a maintainer is not a maintenance, supply, or transportation function. It is a business process that involves maintenance, supply, and transportation, because it takes all of these entities, and perhaps some others, to get the part to the maintainer.

Another reason for stovepipe systems is that prior to the 1990s, limited technology hampered creating a cross-functional system view. However, in the 1990s this all changed. Advances in technology and improvements in Internet capability³ made ERP systems far more viable.

ERP systems help businesses meet the changing needs of customers because they are:

- Dynamically reconfigurable in structure
- Capable of integrating across all processes
- More rapid in response
- Common in application across the enterprise (see Figure 1).

Many commercial companies and other Department of Defense (DoD) organizations experienced dramatic improvements by using ERP. One such case is IBM's Storage System Division, which cut the time it took to reprice its product inventory from 5 days to 5 minutes. Shipping and replacement time was cut from 22 days to 3 days, and customer credit checks were cut from 20 minutes to three seconds.⁴ In another case, the US Navy Air Systems Command saw its implementation of ERP eliminate 52 legacy systems at a cost savings of \$10M to \$15M per year. Additionally, the approval time for aircraft engineering change proposals dropped from 87 days to 25 days.⁵ Nestlé USA saw ERP implementation result in more accurate demand forecasts and the capability to forecast requirements. Other improvements in the supply chain allowed the company to reduce inventory, cut expenses on reallocation of products, and create \$325M in savings.⁶

Why ERPs Fail

Although evidence supports that there are tremendous benefits to implementing an ERP system, there are just as many risks. While the experts offer many reasons why ERPs fail, there are several common factors most agree are essential to the success or failure of an ERP. Probably the most prominent reason ERPs fail is the lack of support from senior management. Changing an organization from being functionally driven to process driven is a monumental undertaking. It requires commitment from top-level management and full employee support throughout the organization. Without this, ERP implementations can be disastrous. Senior management must provide guidance and keep the organization focused throughout the project. Without this commitment and focus the chances for failure are greatly increased.

Data integrity is another vital element in making an ERP implementation successful. There is nothing more important than data accuracy. One can do everything right in an ERP implementation but bad data can make the implementation a disaster. If the data does not have a high degree of accuracy, it can be very costly for an organization. For example, if the inventory data is incorrect, it could cause errors in missed shipments and premium freight charges.

Article Acronyms

DoD – Department of Defense

ERP – Enterprise Resource Planning

Another reason ERPs are unsuccessful is that organizations fail to reengineer their business practices. In their book *Reengineering the Corporation*, authors Dr Michael Hammer and James Champy, define reengineering as "...fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed."⁷ This means that for the Air Force's new ERP to be successful, we will have to dramatically change the way we do business in many areas. As part of implementing ERP, the Air Force will utilize industry best practices to help improve the way we do business. Many ERP implementations have been unsuccessful because organizations vastly undervalued the importance of reengineering current business processes. The misnomer about an ERP is the belief that it is just another information technology solution. However, ERPs are more about changing an organization's business processes or the way it does business than information technology.

ERP implementation professionals note that training is a critical implementation requirement. It must be thorough and occur throughout an organization. Unless employees are properly trained, they will not feel competent using a new system and will do all they can to avoid using it. With continuous training sessions, employees' doubts and difficulties can be overcome. Additionally, training must be ongoing, particularly for an organization as dynamic as the Air Force.

Managing the Change

Organizations who have implemented ERP systems agree that change management is another critical area that can *make or break* the success of a system. This involves getting an organization to embrace the changes involved in converting to an ERP. Even though Nestlé USA's ERP is considered a success, it did not exactly

go according to plan. The \$8.1B subsidiary of Nestlé SA embarked on an ERP solution code named BEST (business excellence through system technology). The purpose of the project was to bring the USA portion of the business together so that it could function as a single entity with common business processes. However, after 6 years, the project had cost more than \$200M and had been fraught with dead ends and costly mistakes.⁸ What happened? To begin with, Chief Information Officer Jerri Dunn assembled 50 top business executives and ten senior information technology professionals from eight or nine autonomous divisions, and came up with a set of best practices that would become common work procedures for every Nestlé division.⁹ On the surface it appeared to be a practical plan; however, it was flawed because it left out the *key users* whom the system was going to affect. Since there was no end-user involvement, the new changes were not well received. Consequently the users resisted the changes. This serious mistake by Dunn's team caused so much chaos and ambiguity that it almost brought the project to a halt.

Any company that is not prepared to change its business processes will find itself with a large bill for software and consulting fees, with no real improvement in organizational performance.¹⁰ To reiterate, this means ERP implementations are really not about software changes, but about changing the way one does business. Dunn stated the primary lesson she learned was that no major software change is about software, but it is about change management.¹¹ The fact is, many businesses operate out of a classical functional or a departmental mentality. Nestle found this out when a team examining the various systems across the company found, among many other troubling redundancies, that Nestlé's USA brands were paying 29 different prices for vanilla to the same vendor.¹² Because the business units were operating functionally and independently of each other, no one even realized that this was happening.

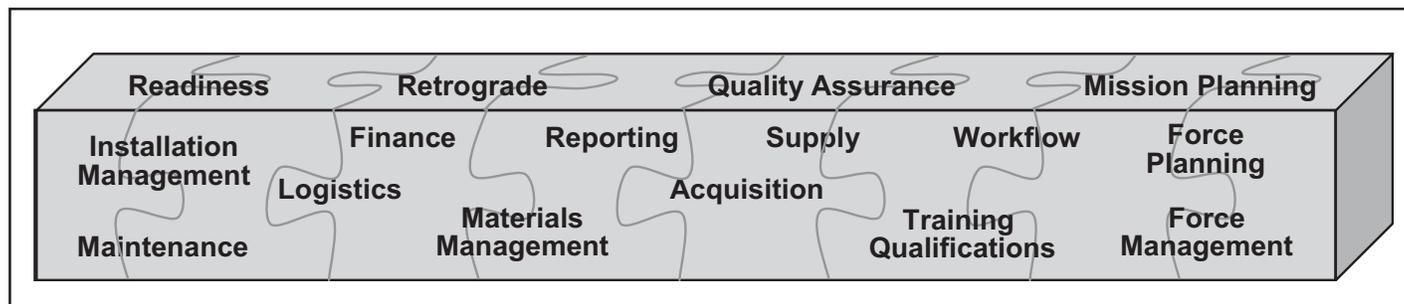


Figure 1. Enterprise Resource Planning Integration

Conclusion

For an ERP to be successful, organizations have to learn new ways of doing business. This means that beliefs and core values have to be changed, and the changes adopted within the organization. Nestlé found out that even when things seemed to get better, change management still needed attention and dedicated resources to ensure its success. The lesson learned here is that changing organizational culture is hard and can take a long time. Further, changing an organization from being functionally driven to being process driven is a huge undertaking and requires support from the top management level in an organization.

Implementing the Air Force's logistics ERP will be a challenging and monumental undertaking from a number of perspectives—collapsing 400 plus legacy systems, change management, reengineering business processes, and adopting industry best practices. However, the Air Force is going the extra mile to ensure a seamless transition. Leadership is providing the support to make it a reality. Lessons learned have been captured from commercial and other DoD organizations. Program governance is in place and change management efforts are ongoing. While ERP implementation will not solve all the problems we face in logistics, it will go a long way in helping us remain the premier Air Force in the world.

Notes

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Bitter experience in war has taught the maxim that the art of war is the art of the logistically feasible.

—Adm Hyman G. Rickover, USN

I have no reason to believe that logistics will ever have much military sex appeal, except to serious soldiers....

—Maj Gen Julian Thompson, Royal Marines

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