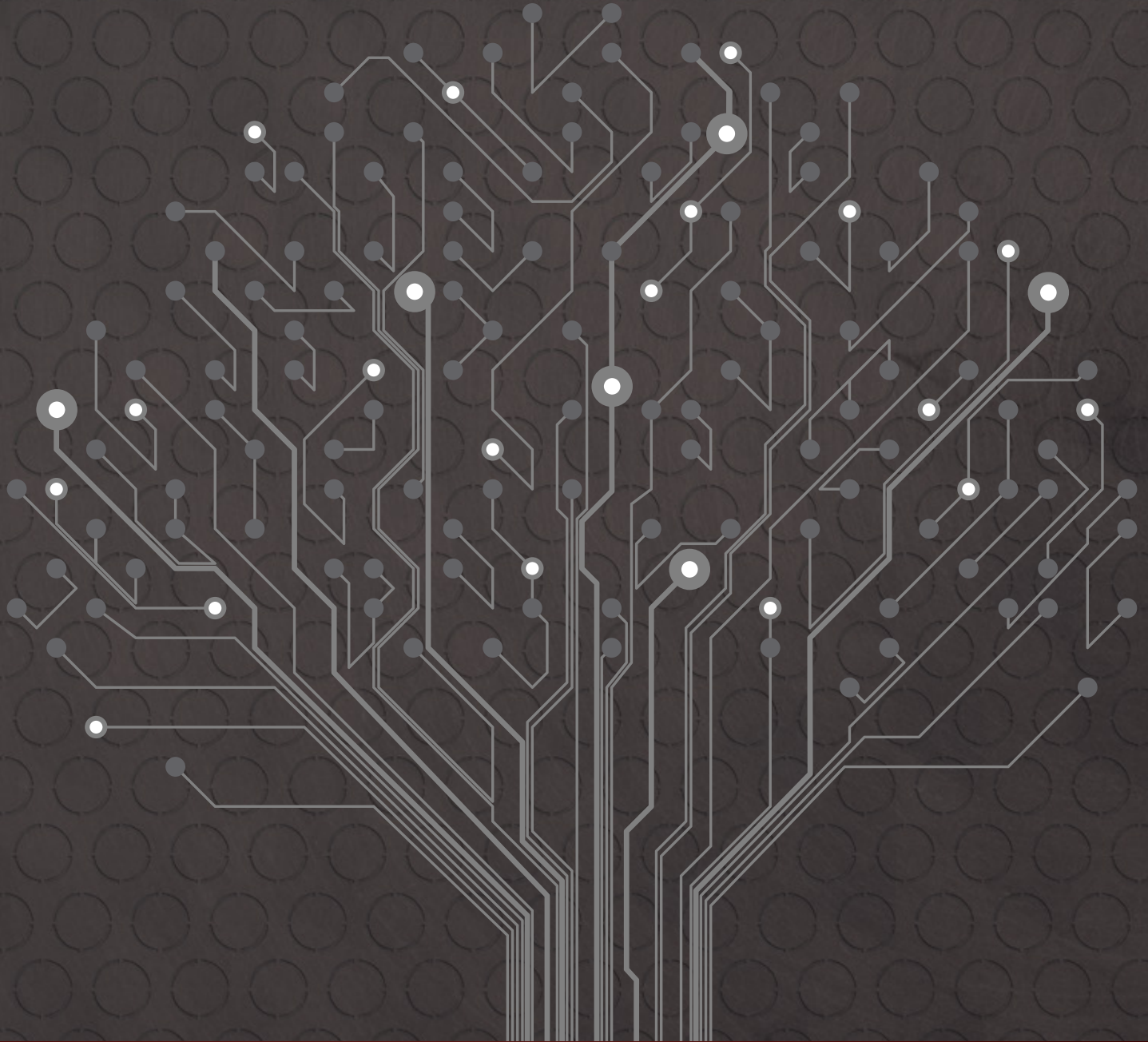


# INTEGRATE

## YOUR APPLICATIONS



**Gain Efficiency Through Dissemination of Data**

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## Introduction

There are many reasons to integrate your automation and information systems. Fortunately, you don't always have to rely on an automation hardware and software vendor.

If your process plant is like most, you have components and applications from a variety of automation hardware and software vendors. While it's possible to run some of these applications separately, there are a number of reasons to integrate them.

Every process plant has real-time controllers, I/O, field devices, and one or more human machine interface (HMI) applications. Common field devices include instruments, analyzers and valves.

In addition to HMIs, other typical process plant software applications include database and historian, asset management, alarm and event handling, data analysis, enterprise resource planning, simulation, non-linear loop tuning, plant performance monitoring and specialized vertical market process control packages — such as distillation column control. Large process plants often have many of these applications, typically purchased from a wide variety of vendors.



Large process plants typically use components and applications from a variety of automation hardware and software vendors.

By necessity, HMIs are tightly integrated to controllers, and controllers are closely linked to I/O as well as to smart devices, often through digital communication links like Ethernet and fieldbus. But a number of the software applications mentioned above aren't integrated in many process plants, foregoing significant benefits and adding considerable costs. By fully leveraging investments to integrate these software applications, significant improvements can be made in plant operations.

Table 1

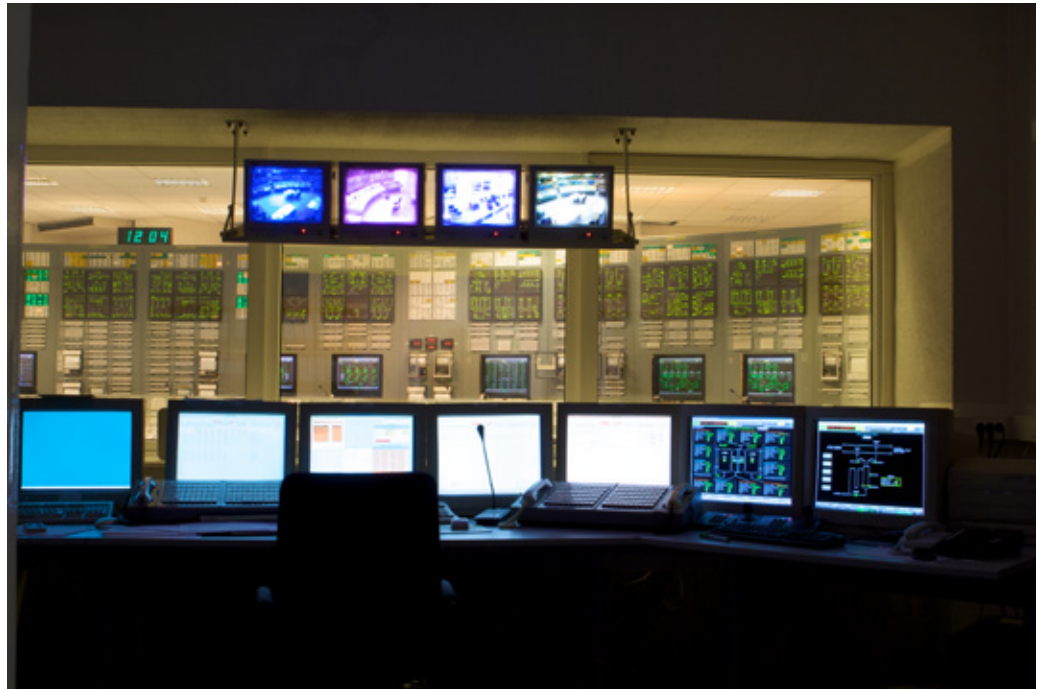
**Why Integrate?**

- 1 Makes data immediately available to all relevant parties
- 2 Provides data for real-time analysis
- 3 Enables proactive maintenance
- 4 Simplifies remote access
- 5 Improves security by reducing interfaces to outside world
- 6 Eliminates manual data entry
- 7 Reduces labor costs

As noted in Table 1, integration among applications makes data immediately available to all relevant on-site and off-site parties, including but not limited to management, engineering, and operations and maintenance staff.

While operations staff typically has access to plant data via HMIs, it often makes sense for these personnel to be able to access data through other software platforms that are directly related to plant performance, often in a control room environment.

These platforms could include applications such as alarm and event handling, non-linear loop tuning and plant performance monitoring. In addition, management and engineering personnel often need to access data through different applications, both on- and off-site, depending on their exact requirements and location.



Integrating various automation and information software applications allows operations staff to access plant information across a wide variety of applications, often in a control room environment.

Once this data is made available, it can be used for analysis and process improvement. For example, providing smart device data to an asset management system — either directly, via a controller, or via an HMI — allows the asset management system to be utilized to the full extent of its capacity, namely for performance optimization and proactive maintenance. This in turn helps a plant maximize return on assets, a key financial metric for most companies.

Once applications are integrated, a single point of data storage can be selected, often a historian. The historian can then become the focal point for both local and remote access across a wide variety of hardware platforms and software applications.

For example, a historian might be integrated with a company's intranet to provide real-time and historical process data to an Excel application running on a process engineer's desktop PC. This

would allow the engineer to support multiple plants from one central location, increasing his or her productivity.

Consolidating data storage using a tool such as a historian cuts costs by reducing remote access interfaces from many to one, and improves security by reducing the points of vulnerability that could be exploited by hackers and other intruders.

When applications are linked electronically, manual data entry is eliminated, cutting errors and reducing labor costs. Instead of spending time on data entry, plant personnel can instead concentrate on improving operations.

As outlined above, there are many benefits of integration among automation applications, but the task isn't always easy, and it's essential to select the right partner.

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## PLAY NO FAVORITES

To perform integration among applications, a process plant can either rely on internal resources or seek outside assistance. For many plants, not all of the required expertise resides in-house. For others, sufficient expertise may be in place, but not available to devote the time required to implement and support an integration project. In these and other instances, outside assistance is often required.

When seeking assistance, the first place many turn is to one of their automation vendors, but this approach can be problematic. Try as they might, automation vendors will naturally favor their own solutions, and they will always know much more about their products compared to their knowledge of other solutions.

Realizing this disconnect, systems integrators are increasingly stepping into the void, and providing a better source of outside assistance for the reasons listed in Table 2 and detailed below.

A truly independent systems integrator won't favor one vendor over another, which is critical when selecting and implementing applications, and often when integrating. Most process plants are continually adding to and improving their automation applications, and an independent systems integrator can provide valuable assistance in these endeavors.

If a new application needs to be purchased and integrated, a vendor will tend to suggest one of its own products, even if it's not the best tool for the job. On the other hand, an independent systems integrator is not conflicted in this manner, and can thus provide truly impartial advice.

When functionality needs to be added to an installed automation system, it can often be implemented on a wide variety of applications. For example, advanced process control features could be added in a controller, or in a third-party application tightly integrated to the controller. The integrator can make unbiased recommendations based on plant requirements, regardless of which vendor's application is affected.

Table 2

### Reasons to Use a Systems Integrator Instead of an Automation Vendor to Integrate Applications

- 1 Won't favor one vendor over another
- 2 More knowledgeable across a wide range of solutions from different vendors
- 3 Can often provide superior local support
- 4 May be able to provide 24/7/365 support, both on- and off-site
- 5 Can supplement staff for extended periods of time, if required
- 6 May be more cost-effective

The larger systems integrators are often more knowledgeable across a wide range of solutions from different vendors, as opposed to vendors who typically know their own products very well but are usually less familiar with third-party solutions. This knowledge can be critical when integrating applications, as the nuances of integration often require significant experience with each application, as well as substantial domain expertise.

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## BETTER SUPPORT

Integration among applications is typically a labor-intensive task — with close coordination required among the plant’s hardware and software automation vendors, the selected systems integrator and plant personnel. Integrators can have an advantage over vendors in this respect. Both automation vendors and large systems integrators typically have multiple offices covering wide geographical areas, but systems integrators will often be able to offer superior local, in-depth technical support over a wide range of automation vendor products. By contrast, vendors will often have to bring in support from far-flung locations.

When support is local, costs are reduced as travel-related expenses are much lower, and service tends to be more immediate and personalized. Also, many systems integrators have lower rates than vendors for services, as the provision of services is their primary business, instead of a sideline to selling products.

Once an integration project is up and running, a large team of outside experts is no longer required, but continuing support is often needed from one or two individuals, often members of the original external support team. Systems integrators are quite used to providing this type of long-term support, often to the point of having one or more of their staff members assigned to the plant and physically present on a long-term basis, working alongside end user personnel as a trusted resource.

Some systems integrators also offer off-site 24/7/365 multi-platform support, which can be valuable when dealing with integration issues. Automation vendors continually upgrade their offerings, sometimes to add features, and other times to fix bugs and other problems. Upgrading one application often leads to problems in integration among applications, with immediate attention required from personnel familiar with the nuances of all of the applications. Off-site monitoring and support can be an ideal way to address these types of issues, and is often more cost effective than adding permanent in-house staff to handle what are typically intermittent problems.



Some system integrators offer off-site monitoring and support on a 24/7/365 basis, and can thus provide ongoing assistance for automation integration projects.

Integration among automation and information hardware and software applications provides a host of benefits, but many process plants need help to implement integration projects, and to maintain the integrated system. An independent systems integrator is often best positioned to provide this assistance, as they aren't beholden to any particular automation vendor, and can therefore provide truly unbiased advice and services across a wide range of automation and information components and applications.

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**MAVERICK Technologies, LLC**

265 Admiral Trost Drive | P.O. Box 470 | Columbia, IL 62236 USA

+1.618.281.9100 | Fax +1.618.281.9191

[mavtechglobal.com](http://mavtechglobal.com)



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