

# Working With Your Automation Vendor:

9 Steps for Success



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# BEFORE YOU BEGIN

Before continuing, we recommend that you start by defining your automation strategy and choosing an integrator. If you need help with this step, download our step-by-step guide.

Download the Guide



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# Introduction

Your automation project is underway – congratulations! With the work of defining the project scope and selecting a vendor behind you, it's tempting to sit back and watch the new equipment come together. But there's still more to do on your side of the project. From scheduling, to preparing your employees, to reviewing the design, you as a client are vital to the project's success. The tips in this guide will help you maintain a strong working relationship every step of the way.

## 1. Identify Your Internal Team

Assemble a team to answer questions, provide expertise on the process being automated, and to prepare your whole organization for the coming changes. It can be helpful to include people who were involved in the initial stages of defining the project and selecting a vendor since they are familiar with the project's evolution to this point. To this core group, add those who will be involved in the details of planning and implementing the equipment. It's important that everyone on the team is committed to the success of the project and the amount of work involved beyond their regular duties.

When building your internal team, keep these points in mind:

- Several roles are required for a robust and informed team
  - Depending on the size of your company, team members can include:
    - project manager

- manufacturing, design, and/or controls engineers
  - maintenance managers
  - operations managers
  - safety personnel
  - quality assurance staff
  - purchasing agents
- Make the team large enough to have a diversity of expertise and input, but small enough to work together efficiently
- Team members must commit to being responsive to the vendor
  - Answer questions clearly and provide documents on time
  - Ensure that design reviews are completed on schedule
  - Build a long-term relationship with mutual trust that you'll both get the details you need
- You may have gaps in your internal expertise
  - Plan how you will provide training, technical support, programming, and maintenance for the new equipment
  - Your vendor may have suggestions for filling new skills and roles you can't provide for day-to-day and periodic needs
- The internal team is critical to getting the entire organization on board with automation
  - Keep the rest of the company informed about how the project is going and major milestones
  - Provide clear information and be open to questions – a willingness to talk about it combats resistance and reassures concerned employees
- The team can help prepare employees for operational shifts
  - The impact on workflow and how far those changes reach



- depend on how many processes are being automated and the extent to which your new equipment changes tasks and jobs
- In many cases, the mindset of an operator must change from pacing their manual activity for eight hours to maximizing machine uptime
  - Expect improvements to safety and ergonomics
- The team can help employees buy into the coming culture shift
    - Emphasize being part of a positive change for the whole company and a mindset of continuous improvement of operations and end products
    - Early on, provide everyone with opportunities to get familiar and comfortable with the equipment and trust they will still have a role to play
    - Address concerns common to groups of employees
      - Operators and other manual laborers will probably feel the changes most acutely. Directly address their concerns of being replaced by emphasizing the shift in the nature of the work and the opportunities to learn more skills
      - Engineers need reassurance their existing work will not be interrupted or derailed by programming or troubleshooting equipment or by changes to the workflow
      - Management and company leadership prefer to see how current issues and metrics will be positively affected by automation
      - Safety personnel will want to understand how the equipment improves ergonomics and avoids injury risk
      - Quality assurance employees will want to see how part consistency will be improved and how human error will be reduced over time

# 2. Collaborate to Stay on Schedule

The project schedule contains critical deadlines for the integrator and for you as a client. Both of you want to finish the project on time and on budget, which means keeping an eye on the larger picture and an understanding of how each deliverable and task affects the others. The obvious consequence of missing important handoffs or failing to supply materials on time is a delayed installation or even a slower time to market (TTM).

There are many moving parts to an automation project, so you can expect some deviation from the original schedule. If you're unable to meet one of your responsibilities, get in touch with the integrator as soon as possible to adjust the schedule and incorporate changes.

Keeping up your side of the schedule includes:

- Understanding what you need to provide and when
  - Review the dates and deliverables you agreed to during quoting, and develop a plan to provide everything on time (e.g. prepping of parts/supporting equipment/raw materials, scheduling subcontractors, etc.)
  - Ensure utilities and physical spaces are prepared on time
  - Do your part to keep information flowing by providing drawings, models, and documentation when requested
  - Be sure both teams are clear on expectations and details of deliverables to avoid surprises at critical points
  - Know what equipment and outcomes your integrator is responsible for, including cycle time, consistent part quality, changeover time, and number of parts produced during testing
- Avoiding changes to the design of parts or changes to the process, whenever possible
  - Changes are sometimes unavoidable, especially if your product

goes to a customer with changing needs, so, communicate any changes to your integrator as soon as possible

- Planning ahead for installation
  - Will installation coordinate with a planned shutdown (i.e. holidays)?
  - How would an unplanned shutdown impact production capacity?
  - Are you able to temporarily adjust production in preparation for the upcoming downtime so you don't get behind?
- Noting all milestones and their dates on the schedule clearly
  - Major milestones for you as a client include design reviews and evaluating approval packages, as well as supplying some raw materials and parts for testing
  - Consider how staffing factors like vacations and planned time off impact major milestones
- Realizing that the schedule can, and probably will, change at some point
  - Communicate as soon as you suspect you'll be unable to meet a deadline, so the integrator can make adjustments
  - Remember this is a time of extra work for everyone involved and assume best intentions
- Including key information like dates, deadlines, milestones, and specific deliverables in the schedule, regardless of the tool used to create it (i.e. flowchart, calendar grid, Gantt chart, project management software)



You should expect some deviation from the original schedule. However, if you're unable to meet one of your responsibilities, get in touch with the integrator as soon as possible.



# 3. Streamline the Procurement Process

By this point, you should know exactly what equipment and materials to purchase for your project. There may be lingering final decisions to make about some options in the proposal, and these should be made and approved as quickly as possible to keep the project moving.

Clear, timely communication between your team and your integrator remains critical so that orders, payments, approvals, and ultimately product shipments happen according to schedule.

The following tips can help keep purchasing and payments efficient:

- Set up all vendors in your automated purchasing system, if you use one, or gather all vendor information in a central location for easy access
  - Ask for any information you need from your integrator as soon as possible in order to add them to your system and create requisitions, POs, and other documents
  - Make sure any banking, financing or insurance arrangements are established by this point
- Understand and reach an agreement regarding your integrator's payment schedule and terms
  - Know who in your organization is required to give approval or sign off on payments and any additional expenses associated with changes
  - Discuss the details of payment to avoid misunderstandings later (i.e. your integrator may expect a payment schedule in 30 percent increments at major points throughout the project, with the final 10 percent due upon completion – if your company generally follows a different schedule for payments, such as 100 percent of the fee one month after completion, you'll either need to adjust your policy or see if the integrator is willing to negotiate)

- Reach final decisions about any quoted options that are not resolved yet (e.g. vendor/ brand, model, or options to repurpose a machine you already have)
  - Most decisions about equipment and materials are made during quoting, but it's a good idea to double check before issuing requisitions or POs to avoid duplication or confusion later
  - Plan the time frame for ordering multiples of parts or equipment, placing subsequent orders later, and timing deliveries or other dependencies
- Recognize that making changes at this point has consequences including missed deadlines, delayed design reviews, deferred completion dates, additional costs, and even renegotiation of the terms of the work
- Be aware that, depending on the circumstances, software, hardware, concepts, and processes may be subject to patent and intellectual property rights of the integrator or proprietary rights of the client. Discuss these matters as early as possible and definitely before final sign off.



# 4. Coordinate Responsibilities

While your integrator is doing the bulk of the physical work on the project, your internal team has a role to play in managing it too. As we noted in step 1, you'll already be busy keeping your employees informed and making the shift to an automated environment (from general buy-in and reassurance to practical training). But don't forget to carefully outline the roles and responsibilities your team has for working with the integration team. Planning this as early as possible will make you more responsive and efficient later when questions arise and reviews and approvals are needed.

Some ways to plan roles and responsibilities are to:

- Identify point people for key areas such as the project schedule, purchasing, and engineering
  - Consider listing each person's name, area(s) of responsibility, and contact information in a central location for easy access (your vendor may even have a form for gathering this information, or you can create your own)
  - Defining roles and responsibilities helps you see who should participate in meetings and decisions

## Tips to Plan Your Team Roles

- ✓ Identify point people for key areas
- ✓ Document who has the authority approve changes
- ✓ Encourage direct communication
- ✓ Bring new team members up to speed quickly
- ✓ Determine where there is overlap between vendors

- Document who in your organization has the authority to approve stages or changes
  - Find the right balance of team members: try not to overload one person with keeping track of everything, but also avoid creating so many layers and “red tape” that decisions and approvals become complicated and time consuming
- Encourage direct communication between area experts (e.g. let your in-house engineers meet with the vendor’s engineers if questions come up)
  - Don’t play telephone! Limiting the number of people passing along information reduces miscommunication and forgotten details
  - If area experts (e.g. purchasing or engineering) aren’t decision makers, they must know and follow the next steps for seeking approval regarding changes, etc.
- Bring new team members up to speed quickly
  - Provide a complete picture of the project’s current status to avoid revisiting decisions
  - Document (and share) the background information and rationale for why and how decisions were made
- Determine where there is overlap between multiple vendors on a project (e.g. contractors for building/facility preparation, suppliers of conveyors, robotics, racking or cabinets)
  - Plan how to keep vendors informed of each other’s progress and needs
  - Whenever possible, communicate changes proactively and early (e.g. updates to your internal processes, new point people, changes made by your suppliers or customers that impact the project such as a part redesign or new production deadlines)

# 5. Monitor Progress

As the work on your automation project gets underway, you'll want to pay attention to how things progress over time. Both client and integrator have a role to play. As you approach and pass key milestones, communication and information sharing are as important as ever.

Ideally, you won't encounter problems with your vendor (or anything else!). Just in case, we'll point out some red flags to look for and provide tips on how you, as the client, can intercept challenges.

Here are some ways to make sure the project is on track:

- Be available and prepared for major milestones such as the kickoff meeting, concept review, design review(s), and runoffs
- Provide requested information promptly (e.g. documentation, specs, samples, finalized information that was previously pending, and updates)
  - Designers are heavily involved at this stage and may require more detailed information than was provided at earlier stages
  - Remember that while you rely on the integrator for automation expertise, the integrator relies on your team for expertise about your product, process, and needs
- Monitor the progress of all vendors involved, including contractors working on facility layout, utilities, and other equipment
  - Notice how the different parties communicate with each other (or not) and take steps to keep everyone in the loop, if necessary
- Resolve any communication challenges between you and the integrator as soon as they are apparent (e.g. preferences for email vs. phone calls vs. site visits)
  - Periodically check in with the automation team to gauge how everyone is feeling about their progress and work – this is

especially important if you have not worked with this vendor previously or if new staff are involved

- Request progress reports from your integrator, or make sure scheduled progress reports are provided on time
  - Written reports and photos are often used to show progress, but in-person visits to the vendor or installation site are reasonable too



- Watch for “red flags” that may indicate a problem, such as:
  - Changes in the vendor’s communication patterns, especially if their staff is unresponsive or develop a minimal or reluctant communication style
  - Attempts by the vendor to change the project scope or shift responsibilities back to

your team despite having outlined responsibilities (see section 4)

- Missed milestones without a clear reason
- Frequent changes to staff or team members
- Be aware of ways you can facilitate the project (or hinder it):
  - Provide information when it’s requested - if you’re asked for more or different information or you get repeated requests, be sure you fully understand what is needed
  - Limit changes and new requests unless they are essential, this will minimize changes to the design or equipment (e.g. if you supply parts to another company, communicate any changes to design or production requirements as soon as you are aware of them)
  - Keep tabs on the vendor’s progress but stay mindful that being overinvolved can undermine their comfort and trust in the relationship.

# 6. Prepare for Runoff Testing

Your new equipment will be tested at two key points: first at the integrator's facility and again after installation in your facility. In both cases, the goal is to see that the machine does what it is supposed to do as stated in the proposal and to ensure the parts and/or assemblies created meet all specifications. This section focuses on initial testing and runoff at the integrator's site. We'll address points specific to installation in your facility in section 7 and final runoff at your facility in Section 8.

Runoff testing answers these key questions:

- Does the machine do what the integrator's proposal said it would do?
- Do the parts or assemblies created meet all specifications?
- Does the equipment meet the client's safety requirements for operation?
- Are the human-machine interface (HMI) and other operator controls clear and intuitive, and do they cover all necessary functions?

Areas covered in runoff testing are usually specified by the client in the proposal. Unless specific arrangements are made, testing is physical with actual parts rather than virtual or computer simulated. Testing includes items like:

- Ergonomics and safety concerns
- Gauging of completed parts (e.g. dimensions and part geometry, correct assembly, weld strength, penetration, and length)
- Confirmed operator process with the equipment
- Process capability index (CPK), or how much variation a batch has within the acceptable tolerance range
- Software validation

- Power, air, and other utility inputs
- Cycle time and uptime
- Failure and error rates
- Aesthetics of the machine

You can support efficient and accurate testing in these ways:

- Verify the exact type and quantity of parts the integrator needs for testing
  - Supply parts on time, and consider providing extras just in case
  - Always supply sound parts that pass inspection (i.e. not scrapped or poor quality) to simulate actual production conditions
- Have your checklist ready and share it with the integrator in advance so they can prepare
- Understand changes to the equipment or process are not possible at this stage without delaying final installation and incurring additional costs
- Expect a second runoff if significant errors happen or if parts do not meet the specs as agreed on, in the proposal
  - Document any items to fix and revisit, and make sure the integrator notes them as well
- Be ready to coordinate shipping and installation plans once you've signed off on the equipment



# 7. Expedite Installation

One of your biggest goals during final installation and setup should be allowing the integrator's team to get the equipment in place and running as quickly as possible. The more you prepare in advance, the easier it'll be for them to work efficiently. You'll also minimize your own downtime and have less to catch up on later.

Take these actions to ensure delivery, installation, go well:

- Prepare the space and all supplies
  - Make sure the space is clear, clean, and ready for the equipment
  - Make sure there is sufficient space for the equipment to enter your building (e.g. wide doorways, loading dock) and move it into position (e.g. hand truck, dolly, forklift)
  - Have all power supplies, wiring, compressed air, etc. in place and ready to use
  - Have all parts, materials, or subassemblies needed for runoff, including some extras in case of adjustments to the machine
  - Ahead of delivery, ask your integrator if they need any other information from you during installation and have it ready (e.g. drawings, checklists, floorplans, or layouts)
  - Notify your integrator of any and all facility safety requirements and checklists before they arrive
- Schedule all relevant staff to be present or on-call to help as needed
  - Have a staff member who is familiar with the project present to oversee delivery and unloading, escort visitors, and answer questions
  - Ensure that anyone involved in the final sign off or training is present or on call
- Remember that installation sometimes happens during off hours

- Plan for access to the building and security
- Make any adjustments to the production schedule ahead of time to create extra parts for testing and to avoid falling behind during this downtime
- If necessary, coordinate with other departments or work cells to maintain production
- Determine, in advance, if you will hire your preferred machinery movers or if the integrator will be responsible for transportation of the equipment.
  - The integrator will usually send a team member familiar with your project and facility along with the equipment

## Installation Checklist

- ✓ Prepare your space and gather all supplies
- ✓ Schedule staff to be present and available as needed
- ✓ Plan for accessibility during off hours (if applicable)
- ✓ Finalize and confirm transportation for the equipment
- ✓ Keep your staff updated

- Keep the rest of your staff informed of the timeline
  - Avoid surprises and confusion - let staff know when to expect delivery and installation crews in the facility
  - Especially if this is your first automation project, consider inviting staff to view the new machine and see how it works (but only after installation and training are complete, not during)

# 8. Signoff and Training

You're in the final stages of the project now! At this point, it's not unusual for the integrator to make small adjustments to the machine and supporting equipment due to shifting during transportation, but because the equipment and its configuration has passed comprehensive testing at the vendor's site, most of the setup is has already been finalized.

As you prepare for the final handoff and you become responsible for your new equipment, take advantage of all the training and support your integrator offers. This is the time to "test drive" the machine, learn how to troubleshoot problems, and ask any questions your staff has. You should also make sure you receive and understand all of the documentation that goes with the equipment, especially while the integrator's team is with you to clarify the information.

Final signoff and start-up are an important process. Keep these points in mind:

- Your vendor will conduct another runoff at your facility. Make sure you allow enough time for this testing, and supply all needed parts and material
- Signoff criteria are usually the same as those followed during the initial runoff at the integrator's site
- Few if any changes are made to the equipment, only minor tweaks or adjustments (e.g. parts that shifted during delivery, recalibration of parts)

Your integrator should include comprehensive training specific to the project and application, including:

- Tailored hands-on training and practice for all staff working with the machine in any capacity (e.g. operators, overseeing engineer(s), maintenance staff, technical support and programmers, safety and security (physical and IT) staff)
- How to operate the machine and peripheral equipment
- How to use the human-machine interface (HMI) computer screens and menus
- Applicable functions and options of the equipment
- An overview of data collected and how it integrates with your asset management or enterprise resource planning (ERP) software, if any
- Safety features including proper shutdown and start-up procedures
- Ample opportunity for your staff to ask questions and get clear answers
- A thorough review of preventive maintenance procedures
- Programming information, when applicable
- A review of the manual and other documentation

During the quoting phase, you probably arranged for [support services](#), such as:

- Having a member of the integrator's staff on-site during the first day or two of regular production just in case of problems
- Phone, text, and/or email access to the integrator's team
- The ability for the integrator to access the equipment remotely for troubleshooting
- A warranty on the equipment and the integrator's work
  - Be aware there is a difference between repair work and making changes extensive enough to be considered a new project or total reworking of the machine
- Full documentation of the completed equipment/machine/cell (e.g.



mechanical and electrical drawings, code and programming notes, as-built description, the sequence of operations, recommended preventive maintenance schedule, spare parts list)

- Usually, the code belongs to the client after final signoff, which means the client may then make changes and updates to it

# 9. Make it Your Own

You've made it! Now that your equipment is installed and running, it's time to make the most of what it can do. Depending on the application, you may be able to collect operation and production data and adjust your processes to be more efficient. There might also be ways to expand the use of machines like collaborative robot arms or vision cameras to complete more than one type of task.

Automation equipment often causes a shift in perspective. Once you start to understand how the equipment impacts one area, it becomes easier to think creatively about other possible applications up and downstream. Once you start analyzing the data that the machine provides, you'll become better at identifying areas for improvement and adjustment too.

As you fully integrate your new equipment into your facility:

- Reduce unplanned downtime with good maintenance practices
  - Downtime is unavoidable, but with information gathered from ["smart" components](#), more of your downtime will be planned
  - Make preventive maintenance part of your facility culture
    - Follow schedules for things like cleaning, applying grease/oil, checking valves and supply lines, inspection for wear and tear
  - Monitor equipment condition to predict maintenance needs
    - Equipment operation data such as output, vibration, temperature, or visual sensor data, can help determine if parts need to be replaced according to schedule or sooner/later
    - This kind of machine-condition monitoring is especially important with expensive or hard-to-access parts

- Ask for and be open to insight and feedback from operators who work with the equipment closely for extended periods
  - o They often notice the earliest signs of a problem or think of ways to improve a process, because they have so much exposure to it
- Maximize your use of the equipment
  - In addition to the documentation and training your integrator provides, consider sending key staff for in-depth training or certification in programming or equipment use
    - o Manufacturers, technical schools, and community colleges are great sources for this kind of continuing education
  - Look for additional areas and tasks with which to use the equipment (e.g. some equipment is easy to reprogram by hand guiding, and can switch between activities easily)
  - Learn to use machine data to take a more nuanced look at output, adherence to parameters, and patterns of production or slowdowns (e.g. it's much easier to track and compile historical output by the hour or shift with a computer than by hand)
  - Create dashboards and other reports to illustrate KPIs and details of use (and possibly build a case for additional automation in the future)
  - Consider how the equipment impacts employees in terms of ergonomics, productivity, job satisfaction, and think how other tasks may benefit from automation
- Learn about remote access and data security
  - Your integrator may have a remote access hardware/software



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package to connect and integrate “smart” components and transmit production and operation data to a central computer

- Mobile access and cloud-based servers mean you can connect to equipment and data offsite at any time
- While the details are usually discussed during the early quoting stages of a project, be sure to involve your IT department
- The ability to access equipment remotely helps your integrator provide service and support by reducing time and cost for service calls
- While you can always physically check on the machine, it’s convenient to monitor from a control room or even offsite with mobile access
- Real-time data helps you catch and correct problems as they happen, rather than at a shift change or by chance when you’re on the floor
- Set up alerts and notifications for major or minor issues to stay on top of (or prevent) problems and downtime
- Retrieve historical data and create charts to look at performance over time
- Smart and connected computers and equipment are susceptible to cyberattack and careful password and firewall protection are two easy and effective ways to [secure them from unauthorized access](#)
  - Change default passwords immediately and avoid distributing them widely
  - Designate an administrator to control who has access to the software and equipment and at what level of access (e.g. some can only operate, some can view data, some can edit or manipulate data)
  - Whether cloud-based or in-house through your local area network (LAN), make sure the system is behind firewalls



# It's Not the End...

This project may be finished but as your team sees the equipment in action over time, you'll notice ways to expand and extend how you use it. Maybe parts and assemblies come together faster, or quality improves, or workers find the work easier to do. You'll also start to see more opportunities for automation in your facility and opportunities for continuing education and new types of tasks for employees. You might even be able to keep making adjustments or redeploy equipment and improve your metrics continuously.

In many ways, you're only at the beginning of the story. And if you've followed this guide and stayed involved during the entire installation process, things are likely to unfold even faster. Being an active participant throughout the project makes you comfortable and familiar with your machines sooner, and lets you reap the benefits right away.

**Ready to get started?** Connect with us, and we'll help create an automation strategy that helps you meet your manufacturing goals.

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