

automation
answers

The Finances of Automation

How to tell if automation makes good financial sense for your operation.

By Mike Porter

Since we are now in the prime season for purchasing automation equipment, I thought I would use my next two articles to address some of the concerns growers have about plunging into automation.

Most growers appreciate that automation is increasingly becoming a necessary part of a successful operation. The marketplace continues to put pressures on prices, and the increasing influence of mass merchants ensures that this pressure is not going to abate. Cost reduction is necessary to maintain or improve margins. Quality and uniformity of material will also remain increasingly important. As the economy improves, difficulties in procuring qualified labor will also increase. Automation can be one of the prime means of dealing with these pressures and thriving despite them.

GROWER CONCERNS

Despite the obvious benefits of automation, growers — particularly those with very limited automation in their operation — have legitimate concerns about making a significant investment in sophisticated equipment. The first of these concerns, and the one I will address this month, is the question of affordability. Many growers are under pressure to expand their square footage to meet potential orders. We all know that mass merchants offer business in large chunks. Sizeable growth like this requires a large, up-front investment and necessitates that the grower decide between increasing production space or automation. I will attempt to show that the decision can and actually should be one of growing space *and* automation.

A second concern often heard from growers is over buying a piece of equipment one year and seeing an improved version the next year. This is a fact of life; as with computers, technology development in automation is happening at lightening speed, causing the best automation companies to constantly improve their product offerings. It is not possible to delay your purchase until product



improvements cease because they never will and never should. However, most improvements are incremental rather than revolutionary and do not render equipment obsolete overnight.

ASSESSING AFFORDABILITY

There are two major components to consider in assessing affordability of automated equipment: payback period and impact on cash flow. Analyzing these components need not be difficult. The best way to illustrate this is by looking at some generic examples.

For the first example, let's look at a transplanter suitable for most medium-sized or large growers who are producing some specialty products. This example uses some initial assumptions that are based on information from real life situations, plus some simple math used to calculate savings per plant and payback periods.

Assumptions:

Machine capacity: 8,000 plants per hour
Labor rate for manual transplanting: \$10 per hour
Rate for manual transplanting: 1,000 plants per hour
Savings: \$.0079 per plant

Payback periods:

1-year payback requires 7,546,400 plants per year
2-year payback requires 3,773,200 plants per year

A two-year payback is within reach of many growers and is considered a rapid rate of return for capital equipment, making it easier to get financing if necessary. The plants needed to achieve a two-year payback could be handled in six weeks of transplanting on a two-shift basis, which is also attainable for most growers.

Some additional expenditures will, of course, be needed for power and maintenance, but these are normally not significant and are not figured into payback period. To offset these costs, additional savings will be achieved through improved quality and reduced shrink.

If the above paybacks seem attractive, but up-front cash flow is a concern due to other capital projects, leasing may be the solution. Leases are much easier to obtain for automated equipment than for structures and related equipment, and they can also be very flexible. Typically, terms can range from one to seven years, and payments can be seasonal. For example, May to September payments would match with grower periods of positive cash flow. Options that exist at the end of the lease include 10-percent purchase, \$1 purchase or walk away.

Using the same transplanter example as above and adding a few additional assumptions, a lease might work as follows:

Assumptions:

Annual payments: \$15,000 per year
5-year lease
Seasonal payments: May to September
10 percent purchase option

Savings: \$30,000 per year based on 3,773,200 plants per year

In this lease example, there is never a period of negative cash flow. You will be realizing cash savings from the first day of operation.

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Let's move away from the transplanter and use another example of a replugger (patcher) similar to that discussed several months ago. If purchased, the replugger would cost approximately \$100,000, and the assumptions and payback period would be:

Assumptions:

Machine capacity: 3,000 plugs per hour
Labor rate for manual replugging: \$10 per hour
Rate for manual replugging: 800 plugs per hour

Savings: \$.0092 per plant

Payback periods:

2-year payback requires 5,434,250 plugs per year
3-year payback requires 3,622,833 plugs per year

If choosing a lease option for the same replugger example as above and adding a few additional assumptions, the lease might work as follows:

Assumptions:

Annual payments: \$22,000 per year
5-year lease
Seasonal payments: May to September
10 percent purchase option

Annual savings: \$33,000 per year based on 3,622,833 plugs per year

Again, there is never a period of negative cash flow when using the lease option, even though volume is only sufficient to provide a three-year payback.


Examples using equipment such as pot planting machines would show similar payback results, while simpler equipment, such as tray fillers or pot dispensers, tend to show even quicker payback periods.

While the above examples are generic, they are not that different from a typical application, so you can easily extrapolate the results to your own situation. In most applications that are suitable for automation the payback periods range from 2-3 years. When the lease option is used savings exceed payments in virtually all cases.

FINAL NOTE

Hopefully, these examples show that buying automation is not a financial drain and need not conflict with adding square footage. In fact, it is the best way to maximize return on the

space added to accommodate mass merchant orders. Like I said before, the decision really can be space *and* automation.

I would like to make a final note on the concern about obsolescence. When building a new growing range, it is normal and reasonable to expect a 20- to 30-year productive life. In the case of automation equipment, this is not reasonable. With proper maintenance and TLC, equipment can last a long time; however, there will probably be more efficient equipment available in a 5- to 7-year time frame, which would justify an update. With 2- to 3-year paybacks and lease arrangements that always provide for positive cash flow, the equipment will pay for itself several times during that 5- to 7-year period. This makes it possible to have a program that continually updates your equipment while providing increased profits. 

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