

Common Misconceptions of a Controls Upgrade: The Good, the Bad, and the Ugly

Hardware vendors and System Integrators (SIs) tell you new hardware is going to make everything awesome. Unicorns, rainbows, and free candy – oh my! While that is not completely untrue (well, no promises on the unicorns), reality will be different.

The Good

There is plenty of good. Everything is new... it might even have that new hardware smell! All the new toys will be networked. You'll have more data and trends than you know what to do with. Using ethernet to get to everything and having remote access is awesome. The diagnostics are better. You can get spare parts that don't cost an arm and a leg and are available in days rather than months (if the old spares were available at all). Better yet, you don't have to go to the old folks home to find someone that remembers how to work on your old controls or visit a museum to find a PC with the hardware and OS to get online with your antiques.

Don't be lured into a rushed, one-size-fits-all upgrade by the thought of that new hardware smell, though. No one knows your process and machine better than you. I know you have better things to do than worry about geeky engineer stuff, but **get involved**. It's a common misconception that once you've hired an SI, your work is done, and you can sit back and relax. Wrong! The SIs know the new controls and their features, but you know your process, so it really takes both of you putting in some elbow grease to develop an upgrade plan that will benefit you and your operation.

And, don't forget, you can have too much of a good thing. Just because you want *all* the new features (and bells, whistles, and alarms) doesn't mean you need them. Listen to your SI when they suggest, for example, editing which alarms are displayed to prevent overwhelming you with information. On the other hand, make sure your SI is clear on which features of your fancy new hardware need to be implemented, or they might just decide for you.

The Bad

New hardware is wonderful, however, the mechanics of your machine are probably still old and tired. One of the biggest misconceptions customers have is that an upgraded machine is a new machine. New controls do not fix worn out equipment, bad bearings, or poor maintenance and

operating procedures, and your upgraded machine will only have the original performance specs if it is in original condition. Additionally, and this is really important, new controls *do not* make a machine perform better than the original specifications. The machine is the same, the physics are the same. Sure, we've done some engineering to increase line speed by using the oversizing of the old (built back in the day) equipment, but your machine is not going to magically make better and/or more product when this upgrade is done. There is no free lunch. If you need to increase production, keep in mind a controls upgrade is a good time to mechanically rebuild what needs to be rebuilt. Down time is down time, so make the best use of it.

A bit more bad news? Don't be counting on starting up production the moment the upgrade is complete. Unless this is a repeat upgrade on a line identical to the first, there is almost always a bug or two to be worked out. Not to mention there's going to be a learning curve that comes along with all the new toys. This is another great reason to stay involved in your upgrade – if you know what new hardware and features are being implemented, you have a good idea of what all you'll have to learn when the upgrade is complete.

The Ugly

Or rather, the ugly truth – you are going to have to do all of this again in another 10-15 years (on average). Back in the day you could rebuild an M-G set, and you still can (if you have one), but there is no way you can *rebuild* a Motorola 68000 processor to make your PLC-5 work again. Sorry, but it does keep me employed (thank you!). You may be surprised that it is a common misconception that upgrades last forever, but the security gained in an upgrade makes customers feel all warm and cozy inside, and it's hard to recognize that as a temporary feeling.

Manufacturers do have life-cycle charts, graphs, etc. so you can see where a product is in its lifespan. Make sure you and your SI are aware of this information for the products used in your upgrade; that way you can maximize the timeframe of available spare parts and possibly forecast the timing of the next upgrade.

As I said in the first installment of this series – you upgrade because you have to, but the experience does not need to be filled with drama. An upgrade should leave you with a much more manageable machine, if not rainbows and unicorns. Be sure to stay involved and put the time in, get help, and, when it's done – enjoy those new features!

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