Technical Article

Competitive advantage today.

Competitive imperative tomorrow?

Stranded. Most people can imagine it – stuck in the middle of nowhere, out of gas, with no wallet or phone. Not coincidentally, that word also describes factory production assets with old, obsolete components.

Take, for example, industrial control systems (ICSs) with legacy controllers far past end-of-life or with diminished support, draining the company's wallet to pay for ever costlier maintenance and repairs and unable to communicate with higher-level systems.

Rolling on "aging wheels"

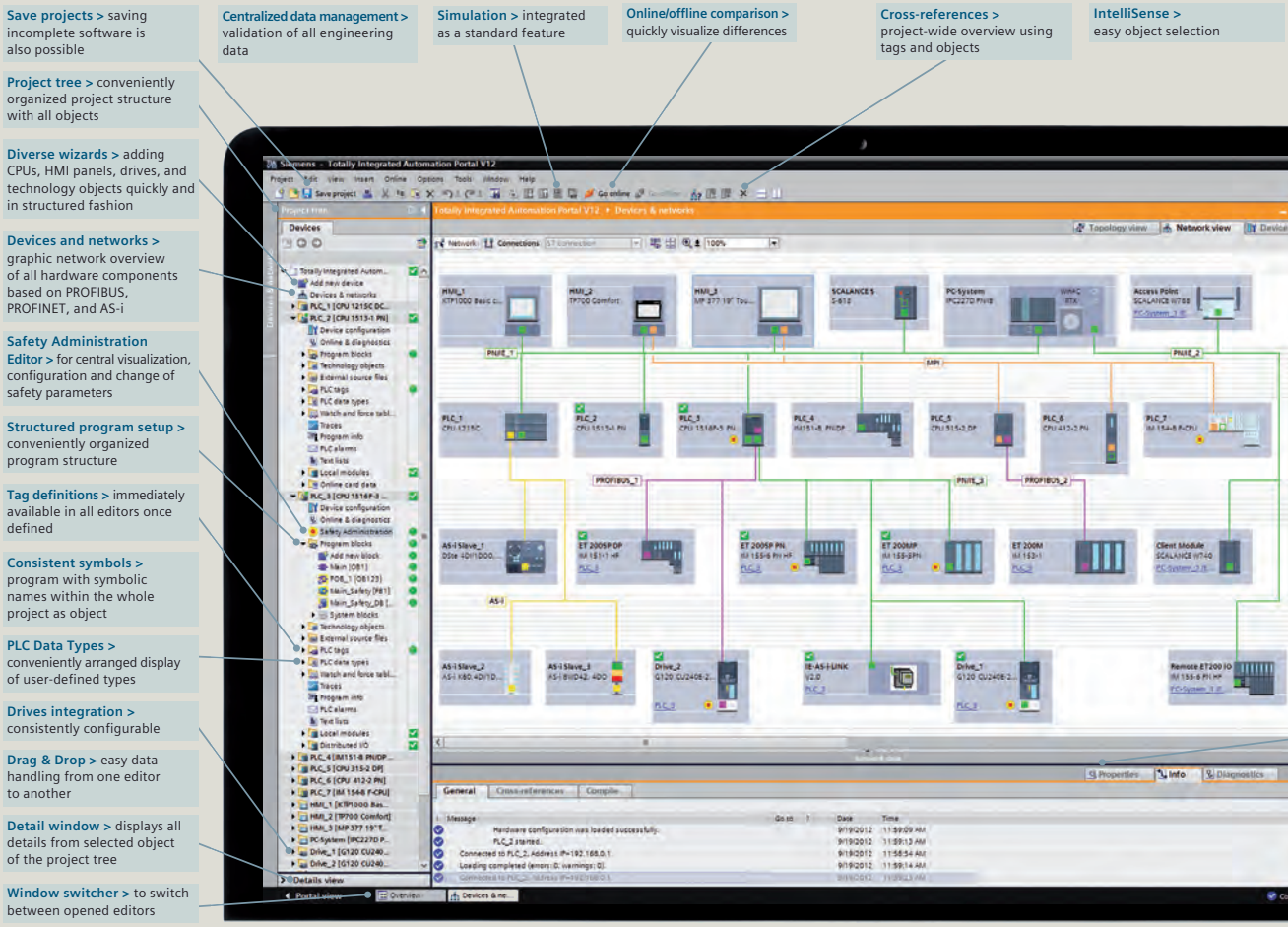
No less than *The Wall Street Journal* considers much of America's manufacturing assets to be out of gas, too, publishing an article "U.S. Manufacturing Is Rolling on Aged Wheels." Cited was a Morgan Stanley report that the average age of the nation's industrial equipment was the highest it's been since 1938. In fact, U.S. Bureau of Economic Analysis data showed that going into 2014, industry's fixed assets were pushing an average age of 22 years.

But stranded production assets can also be considered an opportunity, if considered with a forward-looking, investment mindset. Ultimately, ICS modernization can cut time to market, enhance production flexibility, and boost efficiency – helping manufacturers sharpen their competitive edge.

No time to stand still

Today that competitive edge can deliver a distinct advantage. Waiting for tomorrow can reduce it to where modernization is needed just to stay competitive.

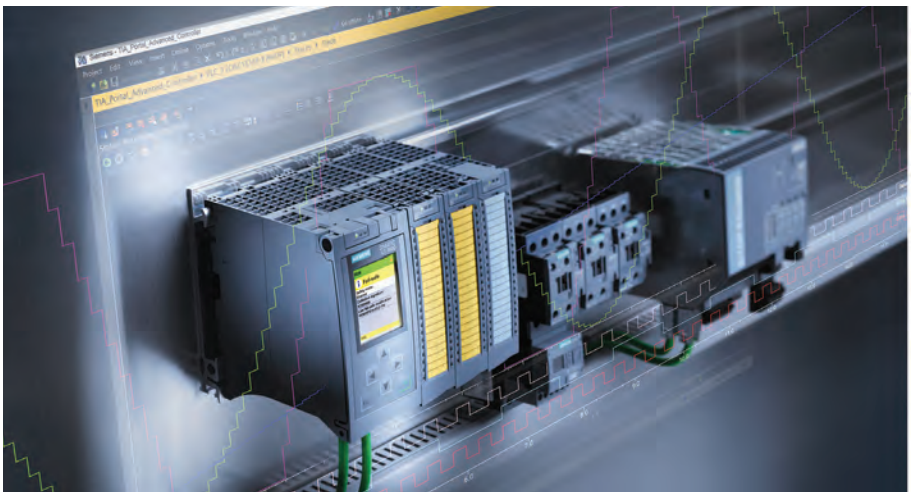
Sure, that ICS from the 1990s might be fully depreciated and still producing as needed, but are costs of maintenance, repairs, and spare parts rising? Are disruptions happening more often? Is its human know-how retiring to Florida? Are there opportunity costs from limited production agility and lacking communications with higher-level systems and even suppliers and customers?



Migration or modernization?

One hidden opportunity cost could be thinking that the easiest path to a data-driven Smart Manufacturing/ Industry 4.0 model is to stay the course with current PLC vendors. While a manufacturer may believe such migrations might be simpler, faster, and less risky, they could miss out on the chance to evaluate how next-generation alternative platforms could provide a better way to a truly Digital Enterprise.

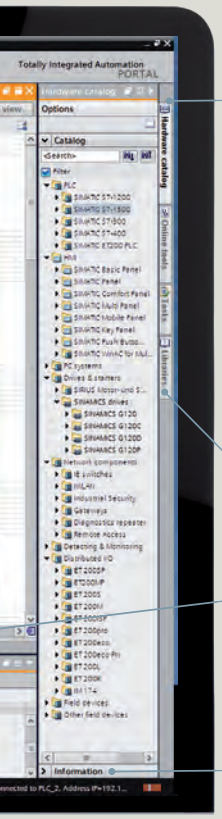
Even if a manufacturer sticks with what its supplier suggests as a "new, improved" PLC, it still may need to convert code to the upgrade's programming software, to train engineers and maintenance teams in it all, and to risk changeover downtime.



After all, as long as a manufacturer must invest money, time, and effort in migrating to the next stage in its PLC supplier's portfolio roadmap, it might as well evaluate alternatives – ones that offer the most advanced features needed to sustain a true competitive advantage well into the future. If not, the manufacturer's migration might be, in effect, paving the proverbial cow path, instead of modernizing with a new, high-speed ICS autobahn.

What a modern ICS autobahn looks like

A new ICS autobahn doesn't have to be more expensive or disruptive than sticking with a current supplier. That's especially true if it's built from the broad range of highly sophisticated yet plug-and-play PLC, I/O, HMI, communications, and other components in the Siemens Totally Integrated Automation portfolio and programmed with its complementary TIA Portal, an easy-to-use, point-and-click engineering framework.



Intuitive tab pages > follows the selected editor

Global Library concept > reusing of project parts

Property window > displays all relevant parameters of the selected object

Information window > displays detailed information of the selected object in the tab accordingly

Modernization made easy, with much less risk

The Siemens TIA approach is founded on an open-systems architecture that covers the entire production process with shared foundational characteristics:

- Consistent data management
- Global standards
- Uniform hardware and software interfaces

These shared traits help to minimize engineering time by as much as 30 percent. Even more, in thousands of deployments worldwide, TIA customers have dramatically cut production costs, operating expenses, and time-to-market, while gaining greater agility and flexibility to respond to new market opportunities. All this has sharpened their competitive edge, too.

With the TIA Portal and TIA components, users can create their own Digital Enterprises that combine all of these capabilities in a single platform spanning all of their production processes:

- Integrated Engineering
- Integrated System Diagnostics
- Industrial Data Management
- Industrial Communication
- Industrial Security
- Safety Integrated
- Drive Integrated

Modernization made easy, with much less risk

Siemens doesn't believe rip-and-replace approaches to ICS modernization are needed, although many customers can choose such strategies. The TIA portfolio's adherence to global standards helps to ensure inter-operability with other vendors' legacy components and systems. And Siemens experts know

how to bridge yesterday's systems with know-how and experience drawn from thousands of modernizations around the world and across virtually all industries. That's one risk factor the Siemens TIA platform addresses.

Another important modernization concern is code conversion. For that, Siemens invested in developing, testing, and refining its **Migration Studio**. This powerful software tool converts legacy data files and tags, logic files, program files, tasks, and routines, then exports them to the TIA Portal where they can be tweaked, if necessary, and re-purposed for use with PLC, I/O, HMI, communications, and other components from the TIA portfolio. They can also be combined with vast libraries of code developed and proven for specific production functions and processes.

A sage once said that change doesn't occur until the anticipated pain of doing so is dwarfed by the pain of keeping the status quo. Siemens TIA platform is designed, engineered, and proven to reduce the pain of change for any company seeking to create a Smart Manufacturing/Industry 4.0 model and move forward as a Digital Enterprise.

For more information and a no-obligation consultation, contact your local Siemens Solution Partner or Siemens representative today.

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