

THINK AFRESH WHEN PLANNING YOUR SYSTEM MIGRATION.



Honeywell

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ARE YOU WILLING TO PAY THE PRICE OF INACTION?

Insanity is doing the same thing and expecting different results. With thousands of process control systems worldwide now decades old, many operators are struggling with the symptoms of obsolescence. Even if parts are still available and support from the vendor continues, issues with ageing systems add to costs, reduce efficiency and, if unaddressed, even impact safety and security – particularly as connectivity to business systems increases. Crucially, obsolescence adds to the risk of downtime, which can quickly dwarf the costs of a new system.



59% of Fortune 500 companies in the industrial/manufacturing sector experience a minimum of

**1.6 HOURS DOWNTIME
PER WEEK**

This means that if you take the average of those Fortune 500 companies (with at least 10,000 employees) paid an average of (say)

\$56 PER HOUR

including benefits (\$40 per hour salary + \$16 per hour in benefits). The labor part of downtime costs for an organization this size would be \$896,000 weekly, translating into more than

\$46 MILLION PER YEAR

THE PRICE OF OBsolescence

- Falling reliability and availability
- Rising maintenance costs
- Limited or expensive spare parts
- Falling effectiveness as operators struggle with alarm floods
- Skills gaps as workers with systems expertise retire

MIGRATION DRIVERS.

There's an opportunity cost of obsolescence, too: ageing control technology can limit the plant's ability to adapt to changes, reducing operational flexibility; restrict possibilities to expand cost-effectively to meet capacity demands; and prevent plants taking advantage of developments in technology, such as the industrial Internet of things and advanced process control strategies to improve throughputs, yields and reduce energy costs.



In fact, obsolescence serves as primary motivation for a control systems upgrade. Key events in the plant lifecycle may also prompt operators to review the automation and control:

- Ownership changes or mergers, with groups looking to standardize on one technology
- Safety or security incidents or concerns that cannot be cost effectively addressed with existing technology
- New business opportunities, resource constraints or raw materials cost changes requiring changes to the operation

- Changes in regulations that need new solutions to comply.

While few businesses, operations and processes are unchanged from two or three decades ago, all too often, the control system has not changed substantially with them either.

Major events in the business and plant lifecycle should cause operators to review the risks, capabilities and adequacy of the existing control system. Equally, there should also be a prompt to consider the opportunities and competitive advantage that migration has to offer.

UPGRADE YOUR OPTIONS.

Getting the most from a modernization program means considering the type of upgrade that will best meet your requirements. There are three main options:



HMI MIGRATION

Providing a short-term extension to the control system's life and new operator and cyber security capabilities, Honeywell can retain existing controllers and integrate applications to protect your investments in control technology.

A PHASED MIGRATION

Probably the most common approach – with new controllers bringing the benefits of better support, increased reliability and improved control. Integrating with field networks, a phased migration can also use existing wiring.

RIP AND REPLACE

To gain all the benefits of modern controllers and a powerful HMI solution across the plant, and fully address the costs and problems of legacy systems.

Operators need to consider not just the type of upgrade that best suits their requirements, however, but also the technology that will bring them the most benefit.

RISK AND REWARD.

One reason plants opt to patch and repair rather than upgrade is the cost of migration: Not just the price of the control system (which will be small in comparison to its impact on plant productivity, efficiency and profitability), but, more significantly, the potential of disruption to the operation and lost productivity.



That's also why plants often stay with their existing control system provider, seeing this as the safer choice. Remaining with the same vendor, while it may limit the hardware changes required, may also do little to improve the environment for achieving operational excellence.

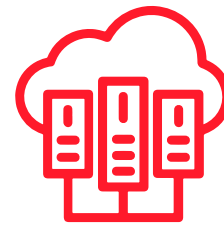
But there's a cost to this, too. Restricting your options to existing vendors limits the possibility of finding the best solution for your plant and benefiting from a wide technology portfolio offering the latest advances, functionality and cyber security protection to a position where it is future ready. It's these factors that will maximize the return on investment in control technology and determine how successful it will be in adapting to the changes yet to come in the years ahead.

Moreover, with careful, strategic planning, existing investments in applications, wiring and networking infrastructure can be protected, even when migrating to a different platform.

MITIGATE THE DOWNSIDE RISK.

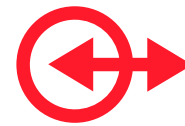
Honeywell brings decades of experience in both control technology and delivering successful migrations. Our engineers draw on deep knowledge of competitive systems, and have access to tools for audits and smooth, safe migration to Honeywell systems. Those include inventory and parser tools and tools for migrating controller, SCADA and PLC databases, as well as graphics.

Crucially, we also employ our LEAP™ (Lean Execution of Automation Projects) for Brownfield methodology, leveraging three innovative technologies for the migration:



UNIVERSAL CONNECTED ASSETS

To connect any field signal to any universal I/O channel in standard cabinets, enabling immediate configuration without the need for additional hardware, and eliminating delays because of late changes to the design.



VIRTUALIZATION

Deployment allowing for virtual factory acceptance testing (FAT) and to validate configurations remotely.



HONEYWELL'S VIRTUAL ENGINEERING PLATFORM

Using Cloud engineering for virtualization of all system network devices, to enable testing and project execution from anywhere in the world.

These technologies radically reduce the risks of migration, accelerate schedules and minimize disruption to the process. For HMI migration, Honeywell can even deliver hot cutover capabilities, where the process being offline for cutover is not an option.

TOOLS AND METHODOLOGY.

Tools help to mitigate the risk of migration by reducing the potential for human error and protecting customer's intellectual property

LEAP for Brownfield provides a dramatically different approach to project execution, allowing for a more effective transition from the existing legacy system.

LEAP FOR BROWNFIELD METHODOLOGY

LEAP enabling technologies permit a LEAN approach to project execution characterised by the ability for late binding of the system hardware and functional application keeping the automation system off the critical path.

Customer Value: Decoupling of system hardware and application design leads to flexibility in project schedule, early validation of control logic, reduction in project risk and mitigates project delays

AUDIT TOOLS

Systematic approach using checklists to capture system foot print and sub-system details.

Customer Value: Consistent approach to documenting installed legacy system with vendor specific details

CONTROL MATCH TOOL

Translate legacy configuration from controller file extract to Experion function blocks.

Customer Value: Migration of the bulk of regulatory control loops allows for a standardized workflow, minimize data re-entry and reduce need for re-work

GRAPHICS MATCH TOOL

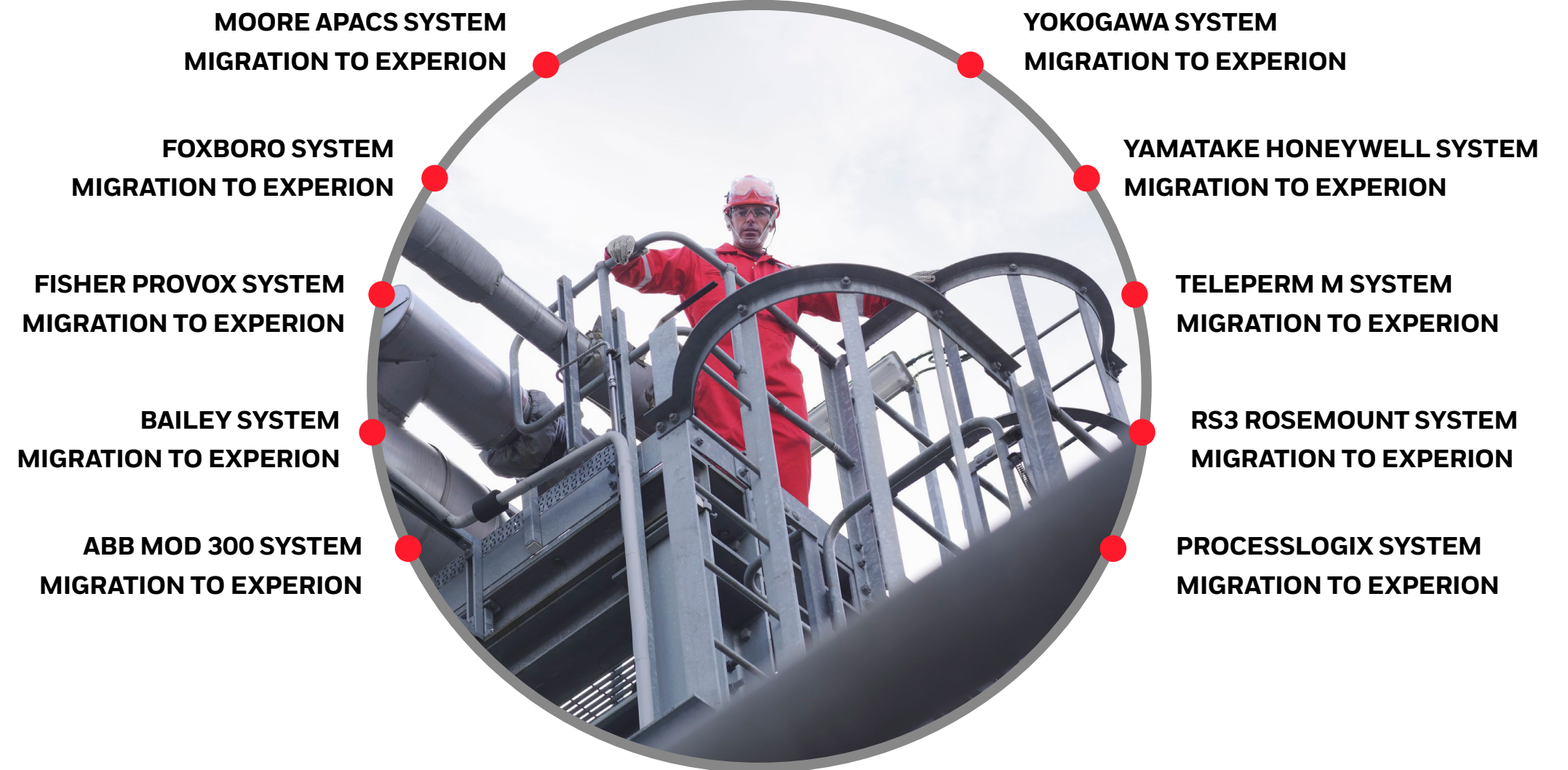
Translate legacy graphics to Experion station graphics.

Customer Value: Automated conversion of graphics allowing for a standardized workflow, minimize data re-entry and need for re-work

FROM “ANY SYSTEM” TO “YOUR SYSTEM OF CHOICE”

Honeywell protects existing investments and offers a seamless migration from all major control systems to enjoy the benefits of Experion PKS and Honeywell’s market-leading support:

We can also help you migrate safety systems to Safety Manager, Experion’s safety platform. Migrating to Safety Manager, users of legacy safety systems – whether first generation ‘safety PLCs’ or SIL rated platforms - can benefit from improved compliance with safety regulations and industrial cyber security standards as well as seamless integration with Honeywell’s Experion® Process Knowledge System (PKS) environment.



CUSTOMER SUCCESS.

OPERATOR EFFECTIVENESS

A Canadian oil refinery saw 45% decrease in daily alarm rate and reduced unexpected losses of production by improving operator response

BETTER PROCESS CONTROL

A largest private sugar producer in Turkey upgraded to Experion from Siemens Teleperm M and witnessed an increase of more than 17 percent in the sugar quality point process.

ACCESS TO REMOTE OPERATIONS

Germany's largest producer of crude oil and natural gas migrated from Bailey System to Experion PKS and saw a boost in productivity and operational efficiency due to seamless access to points, alarms, operators, messages, history, etc. across platforms from one location onshore.

VIRTUALIZED ENGINEERING ENVIRONMENT

Over \$4 Million in estimated TCO savings was achieved for a 375k BPD refinery

MAKING THE MOST OF YOUR SYSTEM— A POSITIVE CASE FOR MIGRATION

Upgrading shouldn't just be about dealing with the problems of obsolescence and mitigating the risks. Its true value lies in the benefits cutting-edge and proven control technology can bring. With improved control capabilities, businesses can build a more flexible, agile operation, making people more productive and processes more profitable. A modern control system is an opportunity to bring people, the plant and data together to drive a better business.



Migrating to the Experion® PKS, plants benefit from a powerful solution to dramatically enhance the operation:

- A sophisticated HMI promoting tighter, more efficient control as well as ergonomic control rooms to boost productivity and operator performance
- Industry leading cyber security to keep the operation safe, while providing the connectivity you need. We provide one of most comprehensive security packages in the industry to safely connect and share data across the enterprise
- Honeywell's expertise to deliver the efficiency and productivity tools available with the rise of emerging trends
- The opportunity to tightly integrate systems, with Distributed Server Architecture (DSA), bringing separate control systems around the plant or planet onto a single platform to reduce running costs, simplify training, and more efficient staffing deployment.

And it's not just plant-wide controls: building on the Experion platform users can also access other advanced solutions and technologies such as operator training simulation solution to enhance competency and rapidly address skills gaps; improved instrumentation to enhance coverage and diagnostics capabilities; and advanced analytics for predictive maintenance.

Users also gain the assurance of on-going support, and Honeywell's longstanding record of delivering a phased approach to platform modernization. With Assurance 360, we can even offer performance-based and remote monitoring contracts for complete piece of mind. Operators can be confident of excellent, continuous support and a lower cost of ownership for years – and decades – to come.

**THE
FUTURE
IS
WHAT
WE
MAKE
IT.**

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