Automation technology developments in the past decade have been all about integration.

Traditional automation solutions are made up of independent and loosely connected systems with data residing separately in disparate sources. Much time is lost in searching and consolidating relevant information before any decision can be made.

Integration brings the systems together, enabling users to easily access different applications in one common environment. However, this still does not necessarily allow interoperability and real-time exchange of data.

Extended Automation System - Beyond Integration

Extended Automation in a Nutshell
Imagine the Batmobile equipped with a host of features, and a wide range of gadgets. It also has a sophisticated communications array and voice-activated computer that is also linked to the main computer. These are all easily operated from one control panel. Recall Tom Cruise in “Minority Report”, a Science Fiction film in 2002. In it, he was able to access information from extensive sources on a single screen, accurately and at an amazing speed.

Extended automation is essentially based on the same concept as these analogies. In a paper mill, an extended automation system goes beyond integration. Systems are linked across the mill, and extended through to the management and business systems. Every component is linked, and associated information across all applications and systems can be instantly retrieved from any single workstation connected to the network. Mill management and business processes can be radically improved as a result.

Extended Reach in an Intuitive Environment
Every single component in a plant has many pieces of information tagged to it. The information is distributed in separate systems that manage all the operations and business functions.

An extended automation system unifies all the separate systems and facilitates true integration and information exchange between them. A user simply logs in to a portal and is instantly linked to all these systems.

Any information on an object connected to the system can be accessed by just a mouse click. Data needs only to be created once.
The user easily navigates between different areas and functions, and in the process, information is transferred across the systems and stored.

Through this system, a maintenance engineer can create and access important information directly from the maintenance system. Within the same platform, a business manager can also access the SAP system and retrieve data on the inventory or on purchase orders by importing the purchase order status. This direct and secure access to relevant real-time data in the extended network of systems and applications enhances job functionality, hence increasing the efficiency and accuracy of operations.

**Extended Life Cycles and Efficiencies**

An integrated solution based on open technologies and a common platform allows for easy integration, including the current investments. Instead of replacing old systems, mills can now leverage on them to enjoy new levels of productivity. There is the flexibility to implement functions required today and the agility to add others as needs evolve. The life cycle of current investments is extended while new automation solutions contribute to continuous productivity improvements.

The readily available plant information also helps to reduce maintenance costs. Real-time information and historical data aids in the monitoring and detection of health and performance conditions, and providing advanced notice of degrading performance and impending failure. This information enables predictive and proactive maintenance, as well as improving and optimising of processes and assets.

Simple and efficient operations and engineering processes allow more time and efforts to be focused on productivity improvements. The same workstation used to access any component in the network can function as an engineering station and an operator station. The flexible, distributed engineering environment also allows project data to be accessed, created and modified simultaneously by different users. A familiar interface offers a truly intuitive user experience with easy navigation and display designs that can be personalised.

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The Extended Operator Workplace

To leverage on such a powerful system, operators need functional workplaces and appropriate control room designs that support improved performance.

Most control rooms today have long workbenches with workstations lined up from end to end. Such a layout does not provide a good view of the process, especially if relevant information is displayed on separate screens that are placed apart. The small screens limit visibility, and operators have to move to the respective screens for a better view.

An extended operator workplace has a large, high-resolution desktop workplace screen. This gives an unrestricted overview of the process areas, with many options for presenting process graphics and related information. This is supported by several console-mounted monitors where information can be selected as required, moved freely between monitors, or spread out over several monitors for enhanced visibility. A concave contour optimises the viewing angle wherever operators sit or stand.

The operator workplace can be used as an isolated unit or in conjunction with other workplaces to facilitate coordination and sharing of information. Several control rooms could be merged into one by consolidating the workplaces in a circular layout. The close contact between the operator and co-workers, and the unrestricted view of crucial process information improves workflow in the control room. This promotes efficient and effective analysis and response.

Extending Your Business — An Ongoing Journey

It has long been evident that businesses will not sustain with traditional automation systems. Investments in technological improvement initiatives are only short-term measures if they are in the form of individual applications aimed at improving specific issues.

An extended automation system enables businesses to achieve a sustainable competitive advantage and an increase in industrial productivity by performing smarter, safer, and better at substantial cost savings. However, it is not a one-off effort and it cannot be achieved overnight. It is an extensive, continuous, iterative long-term engagement. A comprehensive approach with detailed planning and execution is essential for success.

It is high time for businesses to start thinking about a transformation. It is a journey that has to be undertaken sooner rather than later.