



Facing the Challenge !

Yokogawa to be a lifetime solution partner

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The world has seen a tremendous growth over the past 3 decades in economic development, led by new powerhouses in developing countries like China and India. With this growth came the increasing awareness of the burden the industry has put on limited supply of cheap energy supply via the traditional hydrocarbon resources, and the associated CO₂ emissions threatening a fragile environmental balance. No company or country can claim to have a sustainable future or be able to fulfill its corporate responsibility to the society without seriously taking these factors into the business activities.

Against this global environmental backdrop, the manufacturing industry is also faced with a number of external and internal pressures, the key ones being the increasing challenge from the public to further improve its safety performance and the gradual dilution of operational and engineering expertise, a result of intense competition for human resource by other business sectors.

In parallel with such economic growth, we have seen rapid changes in the electronic and Information Technology arena. The direct impact of such changes can be seen in increased processing power of computers used in manufacturing plant control systems, not just in terms of very rapid accessing of operational data, but the ability to extract, manage such data to suit the needs of the operators and engineers. In other words, data has been transformed into valuable information required to manage, improve or optimize plant operations. Managing complex control systems and multiple plants are no longer a dream. With the modern IA system, it's a reality waiting to be exploited by the successfully manufacturers as a business tool, rather than a control tool, in achieving their business goals. Examples of such possibilities are many, which could include:

- Enhancing safety management through intelligent alarm management systems;

- Improve reliability and cost of control system through predictive maintenance for smart instrumentation and control valves;
- Condition based performance monitoring of critical process equipment such as heat exchangers, rotating equipment for timely and economic maintenance actions;
- Use of simulation/optimization software to maximize profitability, such as feed switch optimization, optimization of cracking heaters decoking; overall complex energy model for real time energy management; extracting maximum yield out of every drop of precious feedstock through Advance Process Control;
- Use of training simulators to enhance human reliability, which is increasingly important with increasing plant reliability, and lengthened interval between shutdowns;
- Use of Artificial Intelligence software to capture best practices and avoid operational mishaps, particularly during start up and shutdowns.

To the Industrial Automation supplier, the critical success factor is no longer just being able to provide a reliable hardware platform, but also being able to exploit “software capability”

to provide the tools customers needed to achieve their goals. Beyond the expertise to deliver the hardware, it has to develop “new” areas of expertise to deliver the “TOTAL” solutions, not just for one-off project implementation, but working hand in hand with the plant owners in sustainable and continuous technological development.

Beyond the above, appropriate relationship between supplier and consumer is becoming an important issue. Long term commitment, and alignment of objectives will increasingly replace the traditional “buy and forget” approach; Standardization of approach across a whole complex makes a lot more sense than multiple platforms approach.

Recognizing these changes, Yokogawa has been transforming very quickly over the past few years in meeting the challenges. The following technical papers are testimonies of its commitment to grow and develop alongside its customers. I sincerely hope that you will spend some of your precious time to go through the papers and give us your feedback on how they can be improved in the future to serve your needs.