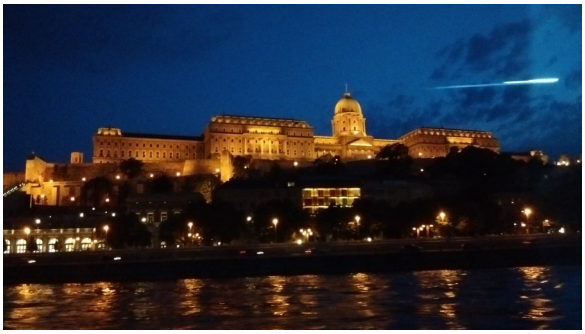
INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

VOLUME 20
NUMBER 7
ISSN2334-0789
July 2016

Inside this issue:

Your key to the latest industrial automation and process control information

Yokogawa EMEA, Fog Computing, Brexit Continues, and IIoT Issues



Yokogawa EMEA Met in Budapest in May

by Nick Denbow

The Yokogawa European User Group meeting took place this May in Budapest. It attracted around 200 engineers and interested editors from all around Europe: from Spain to Norway, from the UK to Turkey, to hear about recent new applications, and the latest product developments.

The choice of Budapest gave an interesting backdrop to the conference, as not only could the delegates enjoy pre-dinner drinks on cruises up and down the Danube, a real surprise was amongst the paintings and sculptures in the main exhibition halls. The National Gallery is the major feature on the Buda part of the town, overlooking the Danube and the Hungarian Parliament buildings.

that the conference dinner was held in the National Gallery of Hungary,

"Transformation 2017" is the current Yokogawa business plan, covering the three years from 2015-17: the year 2015 also happened to be the 100th year since the foundation of the company. So their anniversary year plan focuses on customer interfacing and "Co-Innovation", which was the main conference theme for the presentations.

INSIDER HealthWatch

Getting Back to Business as Usual
Page 10

Yokogawa EMEA, Fog Computing, Brexit Continues, and IIoT Issues (continued)

Yokogawa appears to have developed a different approach recently, and have become keen to bring in ideas, products and even make acquisitions to broaden their expertise base. They did this previously, but there is a greater emphasis now, it seems. They are also the ISA100 wireless sensor technology leader, amongst the main automation companies, and are helping other sensor manufacturers to develop an ISA100 capability.

Wireless sensors to ISA100

Yokogawa have produced wireless versions of their own temperature and pressure transmitters, as you would expect, plus have the routers and base stations necessary to complete the site system. More interesting, they have developed a wireless module, which can be integrated with other (third party supplier) sensors, to create a new wireless measurement sensor. They also have a battery pack that can be exchanged in a hazardous area, when needed, often only after ten years, but maybe after two years if that battery also powers a third party sensor and needs a fast data response time.

In a presentation about a Richter Gedeon Group pharmaceutical plant in Romania, Yokogawa described a wireless sensor installation that monitored the groundwater levels around the site, in 20 wells over an area 1500m x 600m, with some wells actually outside the factory fence. The historic weekly manual monitoring was not felt to be sufficiently frequent, and current environmental standards required an improvement, to at least 4 times a day. Standard HART submersible pressure sensors were used for the level measurement, powered by the battery pack in the Yokogawa wireless module, which communicated digitally with the sensors and then sent the data over ISA100 links. This provides hourly reporting data from each well, and allows the sensor to be put into sleep mode between readings.

The large area of the site, the topography and pipe bridges, provided a challenge for the wireless links. To achieve the transmission distances involved, Yokogawa planned the site layout with four of their independent wireless Routers, to gather data from the local sensors at the extreme distances, and then use the superior range achievable from the Router to the base station to deliver the data. This was then displayed by the pre-existing site ABB 800XA control system, to present any alarm data to the operators, and archive the records.

The IIOT and "Sushi Sensors"

Yokogawa say they have been working on the development of low-cost, small, battery operated wireless sensors, perhaps aptly named as "Sushi Sensors", for ten years, as well as learning what associated data analysis is required to come to a meaningful conclusion about what the data – "Big Data" – is saying. So it was good to see their Sushi sensors on display, in different colours (as you might expect: blue, yellow/gold, and silver) – all with a little stub aerial. But turn these little bugs over and there was an empty shell – nothing there yet! Nevertheless, the work is going on, initially to produce temperature sensor systems: watch that space.

On other stands the GasSecure GS01 hydrocarbon gas detector was on show, which is another ISA100 wireless sensor from Dräger, marketed by Yokogawa for LNG and oil and gas facilities.

Spirax Sarco presented their latest wireless sensor, used for monitoring steam traps on petrochemical plants. Available only recently, from March 2016, this sensor uses the standard ISA100 system, and is called STAPS (which stands for Spirax Total Acoustic Performance Solutions). The acoustic sensing uses a PZT sensor clamped to the outside of the steam line, alongside the trap, and can indicate when the trap is blocked, and when it has failed open, and is leaking live steam. Not only does the STAPS sensor calculate and transmit the rate of steam loss, so the operator can assess the cost and therefore the urgency needed to make a repair, it can analyse the actual type of trap failure. This is done within the sensor electronics, by measuring the emitted acoustic signatures in multiple bands between 5 and 40kHz, to suggest

Yokogawa EMEA, Fog Computing, Brexit Continues, and IIoT Issues (continued)

whether the problem is dirt, or a sticky valve, or a damaged valve seat. The STAPS sensor is available intrinsically safe, for petrochemical applications: Spirax previously offered a different wireless sensor for standard industrial plants and boiler rooms, which used a Zigbee communications link.

Customer software and Co-Innovation

There have been two Yokogawa acquisitions in the field of 'management' software, which are focused on making the computer based control systems supplied by Yokogawa for plant and process control provide the overview data required by management, improving the connectivity between plant and office, and optimising business operations. First they acquired Industrial Evolution Inc, in January 2016, who provide cloud-based plant data sharing services, or DaaS (Data-as-a-Service). Yokogawa renamed this business Industrial Knowledge: this service has been used in a broad variety of applications such as the sharing of data on oil and gas field operations among authorized users at multiple companies, and the real-time sharing of data with investors on facilities that are operated by third parties. For example when an oilfield is jointly owned by three oil companies, but only one of them acts as the main operator.

Then in April Yokogawa acquired KBC Technologies, a successful provider of software and consultancy focused on achieving operational excellence and improving profitability for both the upstream (oil production) and downstream (oil refineries and petrochemicals production) segments – advanced software for process optimisation and simulation. Originating with three process engineers who started life at the Exxon Fawley refinery in the UK, KBC also now incorporates the original Honeywell HPS reactor technology expertise, acquired in 1998, and the chemicals processing technology developed at Infochem, a business acquired in 2012.

Combining KBC and Industrial Evolution into their Industrial Knowledge business, Yokogawa is expanding its advanced solutions service business by engaging with its customers in a co-innovation process, to add value, using company-wide optimisation of the business operations.

Co-innovation with the specialists

Oil fiscal metering using specialist skids at oil tanker batch shipping terminals is a major application area for Coriolis meters. Yokogawa have just upgraded their Coriolis product line to improve their performance, using modern electronics and sensor technology. The pressure drop for a given flow rate has been greatly reduced, and on-site accuracy enhanced to meet the laboratory tested specifications. Also tube condition monitoring enables on-site checks to confirm that the process conditions have not affected the measurement tubes.

Unlike other Coriolis suppliers, Yokogawa do not offer an in-house fiscal metering skid production facility, but rely on the knowledge of their specialist customers to achieve the total package offer. So via their chosen skid supplier customer, M+F Technologies of Hamburg, they have supplied meters for terminal management systems, tank truck loading systems, aircraft and ship supply across the world. The M+F MFX4 batch flow computer has been supplied for blending, leak detection and terminal operations in Latin America, Russia, EU, and Cuba. The latest Yokogawa Coriolis meters, the TI product range, has enabled M+F to reduce the size of the gas separators involved, reducing the skid footprint, and also M+F have reduced the

Yokogawa EMEA, Fog Computing, Brexit Continues, and IIoT Issues (continued)

maintenance costs associated. Using TCP/IP communications the system has 24/7 remote maintenance available, essential for 24 hour terminal operations.

Conclusion

The three conference days crammed in a lot more than was described above: the delegate just chooses the topics of major interest on his plant. Further announcements showed that Yokogawa is to now construct complete Analyser house systems in Spain, in addition to their existing facilities in Singapore and USA, to serve the European market primarily. Here they act as the site systems supplier, perhaps in contrast to their approach to fiscal metering described above. Yokogawa are also collaborating with Cisco Systems over the Shell SecurePlant initiative, which is to be rolled out over 50 Shell plants, and have developed an interesting collaboration with StatOil, to use wireless sensors to monitor the on-site sound noise level on off-shore oil platforms, to ensure personnel safety and monitoring.

Yokogawa Dips into Fog Computing

Fog computing is an architectural concept for the realization of edge intelligence and the suppression of communications with the cloud by establishing a 'fog' distributed computing layer between the cloud and devices in the field. Fog computing eliminates communications delays and fluctuations by locating the processing of certain data near the field devices that generate the data and sending only essential information to the cloud. As such, there are high expectations that this technology will lead to a number of new IoT applications.

Yokogawa Electric Corporation has taken a minority stake in FogHorn Systems Inc, a Silicon Valley start-up that is a leading developer of fog computing technology. Yokogawa aims to foster development of fog computing technology through its investment in this company. In so doing, Yokogawa hopes to expand the range of solutions that it provides. This is a further step away from Yokogawa's traditional practice of doing all its own R&D, and seldom if ever doing acquisitions.

Tsuyoshi Abe, Yokogawa vice president and head of the company's Marketing Headquarters, said of this investment: "Highly reliable and stable communications are an essential requirement in manufacturing and many other fields. Fog computing is a breakthrough that helps to enhance the use of cloud resources. It is also expected to provide Yokogawa many more opportunities to utilize IIoT in its control business. In line with our corporate brand slogan of 'Co-innovating tomorrow,' Yokogawa will use FogHorn's technology to develop new solutions and create new value in collaboration with its customers and partners."

Because of the huge expected numbers of sensors and devices in IIoT networks, there is a growing concern over issues such as network congestion and data processing delays. Fog computing is gaining traction as a technology solution to this problem.

Fog computing is a breakthrough that helps to enhance the use of cloud resources. It is also expected to provide Yokogawa many more opportunities to utilize IIoT in its control business.

Investors include GE, Robert Bosch, and various VCs

FogHorn Systems has attracted the interest of various companies that are promoting IoT. Led by March Capital and GE Ventures, the company has succeeded in raising $12 million in funding from multiple investors, including Yokogawa, Robert Bosch Venture Capital GmbH, and Darling Ventures. There is also a group of investors who invested in the company prior to this round of fundraising. Yokogawa's stake in the company is worth $900,000.

Yokogawa expects to gain access to the latest fog computing technologies and will also make available its knowledge and expertise in process control and plant operations that will help this company further refine its fog computing technology. Yokogawa aims to make use of fog computing to strengthen the solutions that it provides.

Yokogawa has drawn up a long-term business framework and formulated a vision statement that reads, "Through 'Process Co-Innovation,' Yokogawa creates new value with our clients for a brighter future."

'Process Co-Innovation' is a concept for an automation business that will utilize all of Yokogawa's measurement, control and information technologies. Accordingly, Yokogawa will seek not only to optimize production processes but also

Yokogawa EMEA, Fog Computing, Brexit Continues, and IIoT Issues (continued)

the flow of material and information within and between companies, including their value and supply chains.

Yokogawa is committed to working with customers to create value through the effective use of IIoT, a key to 'Process Co-Innovation.'— *reported by Walt Boyes and Nick Denbow from a press release from Yokogawa*.

Brexit Woes Continue

The first thing that Great Britain's new government, under Prime Minister Theresa May and Foreign Secretary Boris Johnson, did was to quash talk of a new referendum that might end Brexit before it actually gets started. The government says it plans to go ahead with the exit of Great Britain from the European Union, despite angry words from Scotland and Northern Ireland, both of which client states voted emphatically to stay in the EU.

This impacts manufacturing and automation system companies in quite a few different ways. The membership of Great Britain and Ireland in the EU made it possible to conduct business across country barriers with so much ease that the borders were essentially invisible. Personnel could be sent wherever needed, not where they were citizens. Inventory could be stored anywhere in the EU for shipment anywhere in the EU and things like FAT tests and FEED projects could be done anywhere without regard for borders.

"The connection of just about anything via the Internet is expected to grow rapidly through 2016 and well into the future, significantly boosting opportunities for tech specialists, particularly cybersecurity professionals. Complicating this is the recent investment by the EU of US $500 million to fund research into cybersecurity, and its call for industry to invest at least three times that amount to protect the EU economy from cyberattacks. Under the plan, the European Commission (EC), the EU's executive body, has launched a public-private partnership under the European Cyber Security Organization, which calls for EU member states and cybersecurity bodies, including market players, research centers, and academia, to strengthen their cooperation and pool their knowledge to increase Europe's cyber resilience. It's not clear at this point where, or if, the UK would fit into this program." – Ron Schnieiderman on careers.ieee.org.

This will no longer be true, as Brexit takes hold, and companies are now having to do significant amounts of strategic planning based on this very large Great-Britain-sized hole in the EU. Further, other countries are making noises like they might want to break up the EU entirely, which is a different bucket of fish entirely. European automation companies have prospered because of the borderless and customs-less conditions under which they have worked in the EU.

It will be interesting to see how this unfolds, especially with Scotland making independence noises again, less than two years after a failed independence plebiscite.

The IIoT has Issues

Reports keep coming from the usual suspects detailing adoption of the IIoT by manufacturing companies. The highest number that the INSIDER has seen so far is that approximately 27% are actively working on IIoT technologies.

There are even some very limited use cases that show IIoT pilot projects. Some are even beginning to show ROI. The issue remains that when you compare the IIoT adoption rate to that of, say, virtualization, it comes up short...or much longer, depending on how you want to look at it. One of the big problems, in our opinion, is that the definitions are sorely lacking about what IIoT actually is, and how to figure out if what you are looking at is IIoT "ready."

Brice Butzer, of Honeywell's PR agency, Weber Shandwick, sent me an internal chart (which I do not have permission to reproduce) that gives some excellent guidelines for what is, and is not, IIoT ready. The chart concentrates on whether or not the thing or device connects to the Internet, either directly, or via OPC UA, and sends data to the Cloud for analysis. Software is IIoT ready if it is a cloud app.

Thanks to Bryce and Honeywell for clearing that up. The INSIDER suggests that the confusion (and the INSIDER was NOT alone) could have been eliminated if Honeywell would have just passed out the chart they sent me. This is a pretty good start for a set of definitions, and is similar to the definitions Siemens provided at their user group meeting. The INSIDER has been encouraging standards organizations to initiate a formal process to define what the IIoT is, and what it means.The real issue about adoption rates is not technology, it is strictly a business case issue. When executives see strong business values, they adopt immediately—look at virtualization as the classic example. Yet this isn't happening with IIoT...at least not yet.

The *INSIDER's* July 2016 Roundup

Over 130 Experion Orion Consoles Sold

Since the introduction of Honeywell's TDC 2000 controller in the early 1970s, industrial control rooms have relied on a growing number of monitors and systems to manage an equally ever-expanding set of technologies. Operating units have grown in size and number in response to growing consumer demand for products. Less than two years ago, Honeywell introduced the Experion Orion Console.

Honeywell announced in July that more than 130 award-winning Experion Orion Consoles – the most advanced operator interface in the world – have been sold globally, helping industrial plants operate more safely and efficiently by transforming the control room experience and enhancing operator effectiveness.

One of the earliest implementations of Experion Orion Console was at ICL Brasil's Cajati chemical plant, near Sao Paulo, Brazil. HPS has similar projects ongoing at critical manufacturing and production sites in countries such as Angola, Australia, Brazil, Chile, Kuwait, Korea, Mexico, Netherlands, Oman, Russia, Saudi Arabia and the United States.

The console builds on Honeywell's flagship Experion Process Knowledge System (PKS) control platform and features IIoT connectivity and an improved ergonomic design to improve the effectiveness of operators. Its flexible, ultra-high definition displays simplify control system management, helping reduce operator fatigue and improve situational awareness. The console provides a single interaction point where all plant data can be displayed and acted on in a meaningful manner.

The Experion Orion Console's design was based on operator inputs generated from numerous visits to plant control rooms around the world and across industries, in both newer and older plants. The software, hardware design and capabilities are the result of behavior observations, as well as insights collected in multiple phases at plants, including process startups and during periods of abnormal operations.

ABB Claims Solid progress on profitability

Second-quarter financial highlights from ABB include EBITA up, earnings per share up, but total orders and revenues are down.

Operational EBITA margin[1] up +100 basis points to 12.7%

- All divisions in target margin corridor
- White collar productivity program delivering results
- Operational earnings per share[1] up +18%[2]
- Net Income $406 million impacted by $367 million[3] of restructuring and restructuring-related expenses

- Base orders steady, continued market headwinds reflected in total orders -5%
- Revenues -2% on lower short-cycle volumes and timing of order backlog execution

Cash flow from operating activities up +80% at $1,082 million

"We improved our operational margin for the seventh consecutive quarter and significantly increased cash flow through relentless execution amid continued strong market headwinds and economic uncertainties," said CEO Ulrich Spiesshofer. "We delivered double digit operational earnings per share growth for the quarter and year-to-date, as cost savings contributed to the bottom line," he said.

ABB CEO Ulrich Spiesshofer

"Our continued focus on high growth segments dampened the impact of challenging markets like the process industries," Spiesshofer said. "We are improving our cost and capital structure, as well as our productivity, and shaping a leaner, more agile ABB in a disciplined way. We have strengthened our leadership team and are executing our Next Level strategy, focused on accelerating sustainable value creation."

ABB wins first commercial order for breakthrough 15-second flash charging technology

ABB has been awarded orders totaling more than $16 million by Transports Publics Genevois (TPG), Geneva's public transport operator, and Swiss bus manufacturer HESS, to provide flash charging and on-board electric vehicle technology for 12 TOSA (Trolleybus Optimisation Système Alimentation) fully electric buses (e-buses) which will run on Line 23, connecting Geneva's airport with suburban Geneva. The e-buses can help save as much as 1,000 tons of carbon dioxide per year, when compared with existing diesel buses.

ABB will deliver and deploy 13 flash-charging stations along an urban transit bus route, as well as three terminal and four depot feeding stations. This will be the world's fastest flash-charging connection technology taking less than 1 second to connect the bus to the charging point. The onboard batteries can then be charged in 15 seconds with a 600-kilowatt boost of power at the bus stop. A further 4 to 5 minute charge at the terminus at the end of the line enables a full recharge of the batteries. The innovative technology was developed by ABB engineers in Switzerland.

The *INSIDER's* July 2016 Roundup (continued)

Opto 22 Enables Rapid Industrial Internet of Things Application Development With Release of RESTful API to Industrial Programmable Automation Controllers (PACs)

Industrial automation manufacturer and Internet of Things platform developer Opto 22 announced in July immediate availability of a RESTful API to its industrial programmable automation controllers (PACs). The INSIDER notes that this is significantly closing the IT/OT gap and enabling rapid Industrial Internet of Things application development, reduced time to market in machine and system design, and faster automation and control project deployment.

Opto22's Benson Hougland

The addition of a secure RESTful server and open, documented API to a programmable automation controller (PAC) is a significant and ground-breaking industry innovation. REST architecture and technology are intrinsic to the Internet of Things and paramount to web and mobile-based application development. Opto 22's implementation of REST directly into a commercially available, off-the-shelf (COTS) industrial programmable automation controller is at least for now, unique in the market, and places the company as the first and only industrial automation and controls manufacturer to offer this industry-changing technology. The INSIDER wonders how long it will take for others to take off the blinders and see what Opto22 has done.

Through this new RESTful API, developers gain secure programmatic access to new or legacy physical assets through control variables and input/output (I/O) data using any programming language that supports JavaScript Object Notation (JSON). Available through a free updated firmware release for Opto 22 SNAP PAC programmable automation controllers (PACs), the RESTful API includes an HTTP/S server accessible from any HTTP/S-compatible client.

Comau introduces its own 4-axis SCARA robot with the tagline, "My name is REBEL. REBEL-S."

Comau's Rebel-S, a 4-axis SCARA robot, comes in 5 different models with a payload of 6kg and 3 different reaches. All models are controlled by the R1C 19" rack-mounted controller, which can be integrated into a single cabinet to control an entire line. The robots are also available in the openROBOTICS version, where the robot is directly integrated into the existing machine/line automation controlled by B&R technologies.

The name of these new robots reflects the differences embodied by the SCARA compared with the other robots in Comau's portfolio. They can be considered "rebels" in the sense that they are not being articulated, they offer a variety of mounting positions, and they utilize spacers - a simple, yet very innovative solution able to extend the robot's reach.

Comau Rebel Robots

Rebel-S is available with reaches of 450, 600 and 750mm. All three versions can be floor or wall mounted, while the versions with 600 and 750mm reach can also be configured for ceiling mounting. This flexibility in mounting position is facilitated by the use of dual cabling options (either vertical or horizontal).
The difference in reach is provided by spacers, modules which enable the robot to extend its radius of action. With an extension kit composed of spacers and cables, the 5 models are effectively interchangeable, and Comau will offer a range of add-ons, including conveyor tracking and a plug & play vision system, as well as a series of service packages as part of its after sales strategy.
This modularity opens the opportunity to a last second robot configuration and this, according to Comau, means considerable savings when the customer purchases the members of SCARA's family.

Emerson introduces new app to provide mobile access to critical asset health information

Emerson's new ATG View application allows quicker and easier access to critical asset health information by putting data from Emerson's CSI 6500 ATG machinery protection and prediction monitoring system in the palm of users' hands. Asset data monitored with a CSI 6500 ATG system now delivered to smart devices, making it easier for users to track equipment and process health.

With a mobile device, users can scan a quick response code

The *INSIDER's* July 2016 Roundup (continued)

(QRC) located on the CSI 6500 ATG cabinet and immediately view the status and health of all cards and measurements from the associated rack on their mobile device. This enables quicker maintenance rounds and reduces unnecessary trips to the control room, helping maintenance teams be more productive and responsive to changes in equipment health.

Emerson ATG View

"Having protection and prediction data from the same cards and measurements available on a mobile device is a real time saver," said Bjoern Mueller, product manager sensors & systems, of Emerson's Reliability Solutions business. "The new app was designed to make it easier for users to track equipment and process health to ensure they operate reliably and profitably."

The app is built to be intuitive and easy for users to get started quickly. ATG View is available in both the Apple Store and Google Play. For more information on Emerson's ATG View app or other CSI products, visit www.emersonprocess.com/csi.

Maverick named one of 2016's 50 Best Companies to Watch

Maverick Technologies has been recognized by The Silicon Review magazine as one of the 2016 50 Best Companies to Watch. The publication selected Maverick based on its revenue growth, creativity in innovation, customer reviews and domain influence.

Maverick CEO Paul Galeski

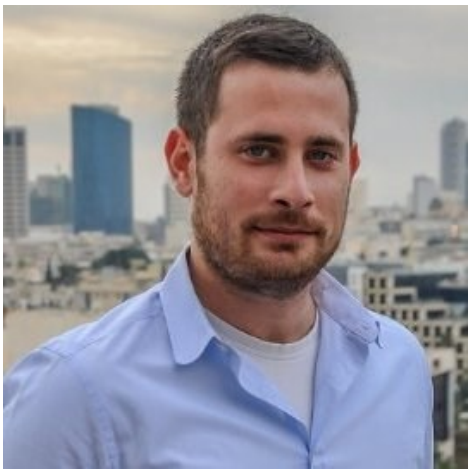
The Silicon Review is an online and print platform where new and established enterprises can interact, research new trends and share solutions to today's technology challenges. It encompasses nine communities: Software, IT Services, Cloud, Mobile, Big Data, Security, Telecommunications, Hot Start-ups and Best Companies to Work For. Each year, The Silicon Review selects 50 companies that stand out as leaders in these areas.

Maverick supports its customers across all phases of the manufacturing lifecycle with a comprehensive solution portfolio that covers everything from field instrumentation to business systems. The company's goal is to improve profitability for its customers through individual industrial automation, enterprise integration, strategic manufacturing solutions and the holistic integration of knowledge across the enterprise.

Extensive technical and manufacturing expertise, a platform-agnostic approach and a customer-centric culture are what set Maverick apart from its peers. The company says it will continue to identify and develop innovative solutions for its customers' evolving needs.

Indegy Lands $12M in Series A Financing to Protect Critical Infrastructures from Cyber Threats

Indegy, a new startup industrial cyber security company, today announced that it has closed a $12M Series A round of financing led by Vertex Ventures Israel with participation from Silicon Valley-based Aspect Ventures, SBI Holdings of Japan as well as previous investors Shlomo Kramer and Magma Venture Partners. The company has raised $18M to date to market its cyber security technology that protects industrial control systems (ICS) used in the energy, water utility, petrochemical, pharmaceutical and manufacturing sectors, from cyber threats.



Indegy CEO Barak Perelman

The funds will be used to scale Indegy's sales and marketing operations in North America, Europe and Asia, as well as

The *INSIDER's* July 2016 Roundup (continued)

R&D in Israel. As part of the financing, Aviad Ariel of Vertex Ventures will be joining Indegy's Board of Directors. Theresia Gouw, co-founder and managing partner of Aspect Ventures backed her firm's investment in the company.

According to a recent report by accounting and consulting firm BDO USA, 9 of 10 (92 percent) manufacturers surveyed cited cyber security concerns in their U.S. Securities and Exchange Commission (SEC) disclosures in 2016. Indegy's platform can discover changes to devices used to operate industrial processes and equipment that may indicate an attack, before damage can be done. Unlike IT security products designed for use in enterprise networks, Indegy's platform is purpose built for protecting ICS environments.

"Raising our Series A round with investors in both Israel and Silicon Valley provides strong validation for our technology and business, especially in a climate where many security start-ups are struggling to get funded," said Barak Perelman, CEO of Indegy. "This new round of financing will provide the working capital we need to scale our resources to meet accelerating customer demand in a rapidly growing market."

Statseeker Version 5.0 Scales to 1 Million Interfaces, Ready for IoT, IIoT

IT networks today are both large and complex. It is not easy to analyze the millions of inter-related data points that constantly race around your ever-expanding network. Add to this complexity the fact that the industry is in an early, but deliberate move to the virtualization of everything as applications and data move fluidly between hosts, and get distributed across vast locations.

Early on, Statseeker recognized that networks of the future will expand as new applications and value to the business become evident. Statseeker's network infrastructure monitoring solution was designed with technology and features that address this continual network migration. Statseeker has consistently delivered innovative networking solutions to the IT Enterprise space for over 15 years. They know networks, both IT and OT and hybrids of the two.

Statseeker CEO Frank Williams

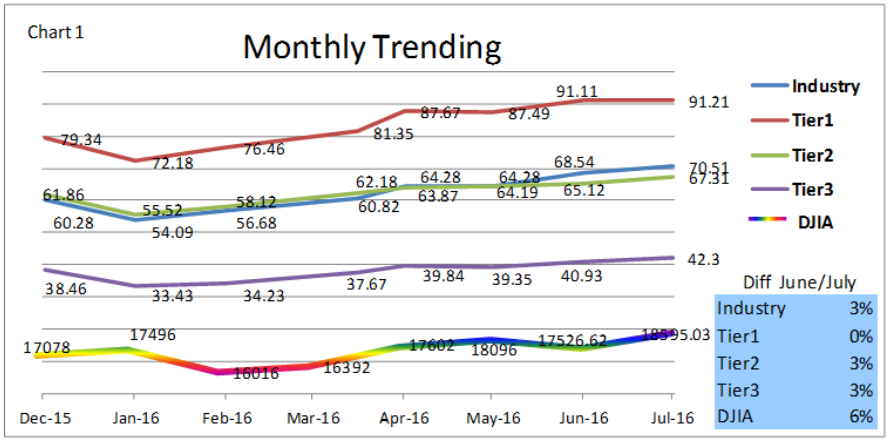
Statseeker Version 5.0 combines the full features of previous versions with a range of **additional features** such as **Unparalleled Scalability** - increased virtual machine and physical interface support **reduce CAPEX/ OPEX costs**. Version 5.0 monitors up to **1 million interfaces** on a single physical server and up to **500,000 interfaces** on a single virtual machine. Monitoring every interface, every 60 seconds, Statseeker provides unmatched scalability and minimizes your infrastructure requirements. **Higher Virtualization Support** - **reduce CAPEX/OPEX costs** and add flexibility as Statseeker now monitors up to 500,000 interfaces from a single virtual machine. **High Availability Design** - ensures that your network monitoring solution is always online and available**. New Tiered Licensing Options** - select a product feature set designed to suit your specific business needs. Tiered licensing options include Statseeker, Statseeker Enterprise and Statseeker Professional. **API Extensibility** - allows data export to your existing management reporting tools. Customize reports with data to make real-time decisions. **Custom Metrics** - reports and data views provide tailored visibility of your important network information.

"Interdependencies between applications, servers, and your network facilitate your businesses operational efficiency, or will contribute to its failure," remarked Frank Williams, Statseeker CEO. "This is quite a challenge and one that is becoming tougher to manage," he continued. "Using the right network monitoring solution makes the above challenges much easier to manage."

The new features of Version 5.0 strengthen the already successful Statseeker platform by providing improved functionality and helping to streamline workflow. The Statseeker solutions deliver real-time visibility right to the edge of the network no matter how big the infrastructure. It installs in minutes and delivers value immediately as it discovers a network of up to 1 million interfaces in less than an hour, keeps data indefinitely in its original granularity and provides total visibility across the entire network infrastructure.

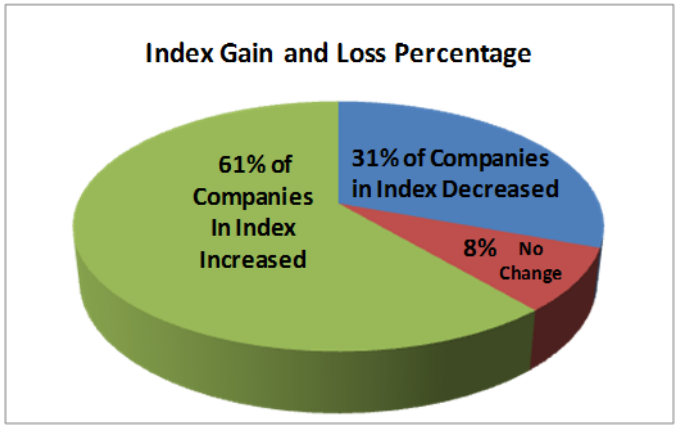
Getting Back to Business as Usual

INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL



Health Watch

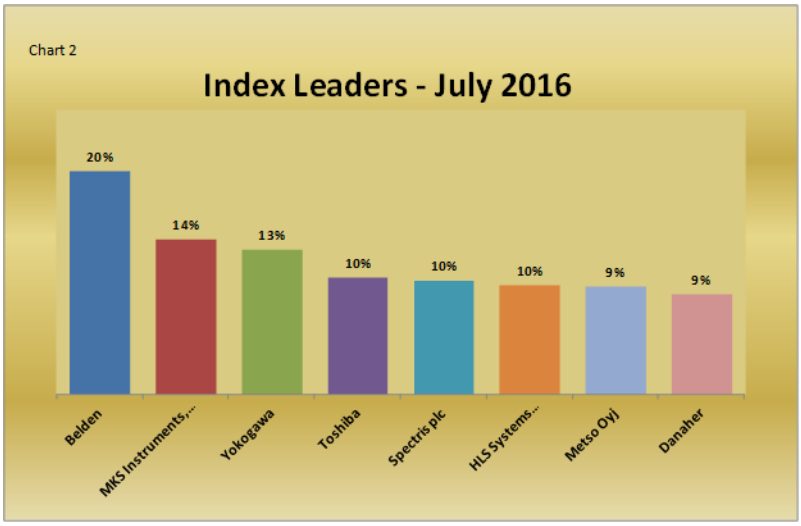
Compiled by the INSIDER staff



The Industry as a whole did well over the past month, showing a gain of 3%. While the increase is lower than the Dow, which gained 6%, considering Brexit and the economic uncertainty that currently exists, the showing is still respectable. Tiers 2 and 3 both showed gains of 3%, while Tier 1, which includes the largest of the control automation companies, showed no gain but held its own.

Looking at the Industry from the point of gains and losses since last month, almost twice as many companies showed gains as reported losses; 61% versus 31%. Eight percent remained stable.

For the individual companies in the Gains set, increases ranged from 1% to a startling 20%. The top gainer, Belden, gained 20% over the past month. MKS and Yokogawa also performed extremely well, gaining between 14% and 13%, respectively.



The Leaders

Belden

So what is driving Belden's increasing price point, and how long can performance such as Belden exhibited over the past month be sustained? Zacks Equity Research asks the same. Calling Belden stock an "intriguing choice for investors right now," Zacks noted on July 21 that Belden stock jumped 18.9% in four weeks, and also closed above its 20 Day Simple Moving Average.

With the disclaimer that "we can never know for sure" Zacks predicts that due to several factors including solid earnings estimate revision activity

Getting Back to Business as Usual

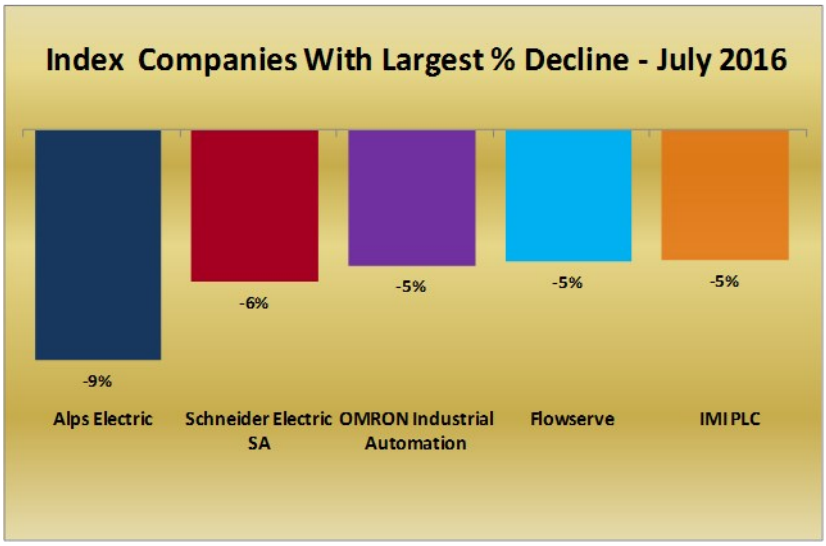
INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

over the past month, Zacks Rank #1 (Strong Buy) and its performance over the past month, "…the recent move higher for this spotlighted company may definitely continue over the next few weeks."

MKS

Another leader in the July Index is MKS. This company's stock dropped 8%immediately following Brexit, but rebounded with a vengeance. Not only did the company come back from its Brexit related drop, it gained an additional 6% for a total increase of 14% since last month's Index reporting. On July 11, Zacks Equity Research noted that MKS is now trading "above the volatile price range of $39.57 to $43.06," and bears watching. Notwithstanding the positive comments of July 11, however, Zacks downgraded MKS from Rank 1 (Strong Buy) to Rank #3 (Hold) on June 13. The reasons given include the company's exposure to multinational market-related headwinds that often influence the company's financials in the geographic areas where it operates. The Zacks article also notes that the intense competition that prevails in this industry exposes MKS to the risk of market share loss. "In order to avoid such issues, the company invests heavily in innovation to enhance its competency. However, in the rapidly evolving technology market, expensive inventions often become outdated within a very short span of time."



The amount of investment involved in performing in such a competitive area raises operating expenses, which in turn negatively impacts profit.

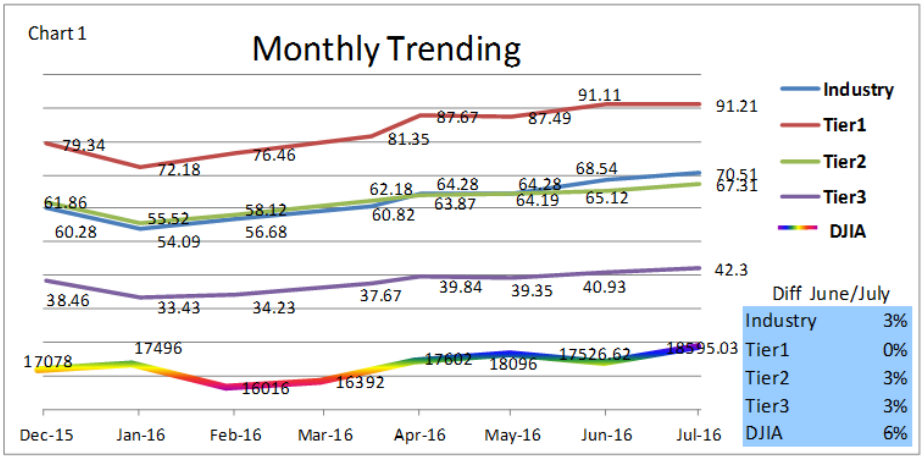
In spite of the downgrade, Zacks points out that positive industrial industry changes such as improving semiconductor market demand and increased 3D NAND business should increase revenues and that increase, combined with strategic acquisitions, lucrative innovations and tactical capital deployment programs, should support MKS Instruments' business in the coming quarters.

Yokogawa

Yokogawa holds the 3rd position for July Industry Leaders with an increase of 13% since last reporting. No one event stands out that can be pointed to as the reason why Yokogawa stock increased, but the award of a large contract from India based GTCL (Gas Transmission Company Limited) to supply a monitoring and control system for the pipeline in Bangladesh could be a contributing factor. In a Yokogawa press release dated June 15, 2016, Tsutomu Murata, managing director of Yokogawa India, made the following comment. "I am honored to receive this order, which is Yokogawa India's largest project to date in Bangladesh. By carrying out this large project, we aim to help ensure a stable energy supply for the people of Bangladesh."

Getting Back to Business as Usual

INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL



Health Watch

The press release also notes that in accordance with its Transformation 2017 mid-term business plan, Yokogawa is strengthening its efforts to drive up sales by providing solutions for pipelines and other oil & gas midstream applications.

Encouraged by its success in winning this order, Yokogawa plans to expand control business in the midstream applications segment.

Elsewhere in the INSIDER this month is an article about Yokogawa taking a position in a company devoted to "fog computing." Considering how acquisition and outside investment averse Yokogawa has been, historically, this signals a significant move forward for Transformation 2017.

Companies That Declined

As discussed briefly earlier, only 31% of the Index saw a drop in stock price since last reporting. Of that group, the largest drop is Alps Electric with a decline of 9%, followed by Schneider Electric with a loss of 6%.

Alps Electric

To help explain the drop Alps Electric experienced since June reporting, we turned to Capital Cube's assessment of the company's performance published July 26, 2016.

The summary has some good things to say about Alps, i.e., the company has a successful operating model with relatively high profit margins and asset turns, changes in annual revenue and earnings are close to the median among Alps' peers, Alps' high pretax margin indicates tight control of operating costs. There are also some negatives mentioned, like the fact that Alps' lower than peer median P/E ratio suggests that the market sees the long-term growth prospects of the company to be fading.

For those of us who are not stock market experts, here is a brief description of how the P/E ratio (price/earnings) is calculated and what it represents.

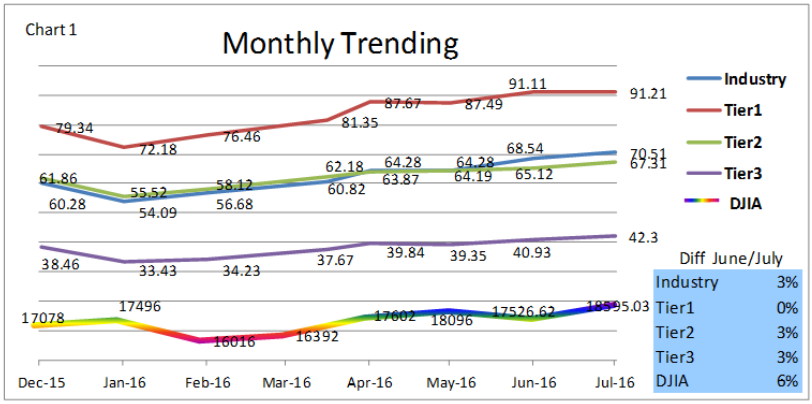
The price to earnings ratio is simply the stock price divided by the stock earnings. As an example, if a stock sells for $10 and its EPS (earnings per share) are $2.00, the P/E ratio is 10/2 for a ratio of 5. This indicates that investors are willing to pay five times the EPS for the stock.

According to Capital Cube, Alps' P/E

Getting Back to Business as Usual

INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch



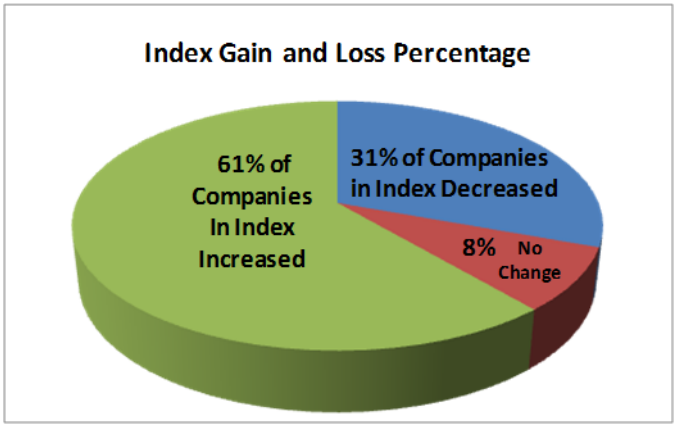
ratio is 10.52, compared to the peer median of 18.57. Looking at how this translates to stock price, this means that investors are only willing to pay 10.52 times the EPS for Alps stock, but are willing to pay 18.57 times the EPS for peer stocks.

This disparity is what leads to the conclusion Capital Cube posits concerning the market's view of the long-term growth prospects of the company, and that view is reinforced by the company's dividend payout to date for 2016, which is considerably less than the peer median, $10.28 versus $27.32.

Schneider Electric
Schneider lost 6% over the past month. Capital Cube's July 26th review provides insight into the company's financial position, which could have some bearing on the stock price decline.

For example, according to Capital Cube's analysis, Schneider's earnings lag when compared with its chosen peers, which suggests that the company is less cost conscious than its peers and may be spending for growth.

In addition, over the past five years Schneider's return on assets has remained consistently lower than the median, an indication that the company might be operationally challenged relative to its peers.



In Closing
While the news this month could be better, it could also be considerably worse.

Brexit temporarily knocked the stock market, including our Industry Index for a proverbial loop, and companies are still uncertain of what the outcome and associated affects of the U.K.'s defection from the European Union will be.

As an example, Siemens AG plans to halt new wind power investment plans in the U.K. until it has a greater understanding of what the U.K.'s future trade relationship with the European Union will be.

Other companies in our industry have expressed concern over the potential financial ramifications of maintaining headquarters in the U.K. as it exits the Union.

The good news is that even with these and other Brexit associated concerns, both the Dow and our industry have recovered nicely from this latest tidal wave, and at the moment, despite the continuing oil and economic associated issues, it is business as usual for the control automation industry.

THE WAY I SEE IT
Editorial

The U. S. Election Matters More Than Ever to Manufacturing

It isn't safe for those of you who aren't American citizens and eligible to vote on November 8th to ignore this election. Now that the major parties have conluded their nominating processes, it is clear that we have two completely different visions of what America is and where each party wants to take the U. S.

Where you sit, if you are an American citizen, depends, I believe, on what you believe the future of manufacturing should be. Rather than telling you how I think you should vote, I am going to tell you how I intend to vote.

I am going to vote to extend government support of manufacturing, including the Smart Manufacturing Center of Excellence that the Obama administration just awarded to The Smart Manufacturing Leadership Coalition (of which I am a member).

I am going to vote to support research and development, including basic scientific research. We know that NASA and the space program produced from basic research significant numbers of devices and technologies we cannot get by without today. I want more of that, not less, and so I am voting to support it.

Comments? Talk to me!
waltboyes@spitzerandboyes.com

Read my Original Soundoff!! Blog:
http://waltboyes.livejournal.com

I am voting to increase support of manufacturing companies who bring jobs, old and new, back to the United States.

Nothing grows an economy like good paying jobs. That discovery was made a century ago by Henry Ford, who noticed that if he paid his workers a living wage, they could afford to buy his cars. I am voting to decrease support for manufacturing companies that move jobs from the United States to other regions around the world. "Think globally, act locally" is really, in the final analysis, a manufacturing slogan.

> I am going to vote for manufacturing. I am going to vote for the future.

I am voting to support equal pay for equal work. We are the last of the world's great economies to recognize that great minds come in different packages, and the way to opportunity must be paved with paying a living and an equal wage.

I am voting to vastly improve our education system, allowing every person, child or adult, access to the training and education that they need to earn that living wage and become and remain a productive member of society.

I am voting to take the burden of supporting health care off of manufacturing companies and putting it where it belongs and can be administered economically and fairly.

Manufacturing companies began offering health insurance as a perk after WWII because of wage freezes. It's time to end the burden this has placed on manufacturing, and let manufacturing concentrate on what we do best— make new and better things to help us live better.

I am voting to rebuild the infrastructure of North America, before it completely collapses. We need to do this, regardless of who pays for it, and we need to do it before bridges fall into rivers, and highway surfaces buckle from age and deterioration.

I am voting for other issues, as well. But the issues I identified as essential for the growth and development of manufacturing need to be supported up and down the ballot, and around the world.

I am going to vote for manufacturing. I am going to vote for the future. If you want to see Manufacturing 4.0 and the Industrial Internet of Things, I hope you will vote to support manufacturing too.

The Industrial Automation and Process Control INSIDER™ is published by Spitzer and Boyes LLC., Copyright 2014, all rights reserved.

The INSIDER is edited by Walt Boyes. Joy Ward is a columnist. Additional reporting is done by David W, Spitzer PE., Rajabahadur V. Arcot, Nick Denbow, and Steven Meyer.

The INSIDER is a subscription based publication and does not take advertising. This means that the INSIDER can be completely independent and unbiased in its reporting and in its analysis.

To subscribe to the INSIDER, please visit http://www.iainsider.co.uk and click the "Become an Insider" button.

Send comments to insider@spitzerandboyes.com. We want to hear from you!

Rajabahadur V. Arcot: Developing IIoT Ecosystem Is More Than a Technical Challenge

We hear a lot about the impending changes that await manufacturing and the big role that IIoT ecosystem will play in bringing about the transformation.

The technology to make manufacturing lean, more responsive, agile, and efficient in the use of all resources is already there. What is the future roadmap for its deployment is the question that naturally arises.

> OT and IT systems and solutions evolved over decades and they were essentially developed for standalone and specific applications.

Those of us who are associated with the automation and manufacturing industry and witnessed the changes that have taken place over the past many years do realize that technology keeps evolving with some of them profoundly influencing manufacturing. For some of us, what is now described as OT (Operational Technology) was, to begin with, instrumentation and controls or industrial control systems (ICS) that later became automation systems.

They were designed and engineered to gather plant or operational data, generate information and automatically control specified parameters relating to manufacturing processes, the prerequisites to ensure that plants operated according to the engineered specifications and produced what they are intended to without compromising on plant and human safety, productivity, and efficiency.

Automation systems, whether they are pneumatic, electronic or microprocessor based, have always acted as well-connected and collaborative entities and as storehouses of all shop-floor information. They were built using sensors, transmitters, controllers, processing systems, and actuators that communicated and collaborated with other using standard signals or standard protocols.

Similarly what was once Electronic Data Processing (EDP) later became Material Resource Planning (MRP). It was only around 1990 that the Gartner Group came up with the acronym ERP to describe an integrated Enterprise Resource Planning solution for managing a company's inventory, financial, and people resources.

What is now referred to as IT encompasses a broad portfolio of enterprise solutions that extend beyond ERP to include Supply Chain Management, Customer Relationship Management, Supplier Resource Management and others. These are designed to address specific functional requirements, such as resource planning, supply chain management, customer relationship, and such others; most often they are selected and deployed on the best-of-breed considerations. OT and IT systems and solutions evolved over decades and they were essentially developed for standalone and specific applications.

The buzz about IIoT ecosystem

Recent reports about the emerging era of Industry 4.0 and such others extensively talk about the positive impact that Industrial Internet of Things (IIoT) and the convergence or integration of Operational Technology (OT) and Information technology (IT) will have on making manufacturing lean, flexible, and efficient.

In this context, more often, the discussions are centered around IIoT, Cyber Physical Systems (CPS), cloud computing, data analytics, artificial intelligence, and such others and how acting as building blocks of self-managing production process they will empower the manufacturing companies to become more agile and responsive to the customer needs while ensuring profitability to their shareholders.

In order for IIoT architecture to gain industry acceptance, it is necessary to achieve signifi-

Rajabahadur V. Arcot: Developing IIoT Ecosystem Is More Than a Technical Challenge (continued…)

cant progress in the development of open software and communication standards, which are still at conceptual stages.

Push from stakeholders

With automation suppliers, enterprise solution providers, and technology companies staking their claims to emerge as leading suppliers of future OT/IT integrated solutions, there are bound to be differences in their approaches; one should anticipate tremendous challenges in quickly arriving at agreements on standards. Global automation suppliers, such as ABB, Rockwell, Honeywell, Siemens, and others dominate the ICS market and they have extensive experience in connecting various devices to gather & process information and communicate the same using appropriate standards. Thus, ICS in manufacturing plants have achieved a fair degree of connectedness at the shop floor level, although interoperability has not been fully realized. Companies such as SAP, Oracle and others have similar experiences with regard to enterprise solutions. There are other technology companies such as IBM, CISCO, Google, and others that are vigorously positioning themselves to become dominant players in IIoT, data analytics, artificial intelligence, cloud computing, and such others.

> Above all, deep domain knowledge and industry practices are critical.

While prospective supplier companies and industry analysts are gung-ho about the future role of IIoT and associated developments, they are rather vague about the true value proposition that IIoT platform would bring to the table except to assert that they have big and fast data analytical capabilities and cost & other advantages of cloud computing. They also point out the advantages of achieving seamless connectivity through the use of IIoT to flatten existing hierarchies.

Need to establish value proposition and business case justification

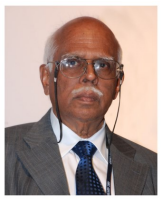
While I tend to agree that IIoT platform has the potential to allow sensors, transmitters, controllers, machines and equipment, actuators, and application packages to get connected with each other, there are other prerequisites for ensuring seamless communication and for IIoT technology adoption by the manufacturing industry. Some of them are agreements on open software and communication standards relating to device interfaces, architecture, programing tools to create the business / process logics, and pervasive security and data protection issues. The road ahead is not as smooth as the impression that the proponents of IIoT are creating. Yet other major challenges facing the adoption of IIoT technology are the establishment of the value proposition from the users' perspectives and business case justification for funding.

In order to establish the benefits and formulate the business case it is necessary to begin with developing the scope document, defining the final deliverable and its acceptance and evaluation. There are challenges in accomplishing this.

The roadmap

While those supplier companies that see a great future OT/IT integration and convergence go about resolving these issues, in my opinion, manufacturing companies that are convinced about the value proposition of IIoT, cloud and data analytics will have to create an in-house team or engage with large system integrators that will develop connectivity through gateways so that IIoT data from their existing OT systems and IT solutions are delivered to cloud architecture and analytics packages. They must start by setting out the business objectives. This approach will help establish the benefits and develop business case justification. The team must have deep knowledge about control systems including sensors and actuators, enterprise solutions, process knowledge, communication and information technologies, cyber security, project engineering & management, and such others to help them implement integrated OT and IT solutions. The other skills required include software, good understanding of the existing control system and enterprise solution architectures, software and hardware engineering, interface protocols standards, and problem solving skills. Above all, deep domain knowledge and industry practices are critical. System integration approach seems to be best way even for the proponents of IIoT platform to convince manufacturing companies that the future lies in IIoT ecosystem.

In my opinion, developing IIoT platform and architecture are not technical challenges, but rather establishing the value proposition, justifying the funding, and assuring that the OT/IT architecture, while ensuring modularity, interoperability, expandability, reusability, portability, adaptability, and scalability, is also intrinsically cyber secure.



Rajabahadur Arcot is an Independent Industry Analyst and Business Consultant, and Director Asia Operations for Spitzer and Boyes LLC**with 40 years of senior management experience. He was responsible for ARC Advisory Group in India. Contact him at rajabahadurav@gmail.com**