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Your key to the latest industrial automation and process control information

Big Changes for Rockwell and Honeywell

April has been a month of great changes for Rockwell Automation and Honeywell International and Honeywell Process Solutions.

In November, at Rockwell's annual Automation Fair, most analysts were expecting an announcement of who would succeed Keith Nosbusch as Chairman and CEO. When the announcement didn't materialize, the inside word was that Rockwell's results weren't good for the quarter, and Nosbusch wanted to go out on a high note.

There was also some discussion that the choice had still not been made. According to those who should know, Nosbusch's choice was Frank Kulaszewicz, senior vice president of architecture and software, while the Board of Directors favored either Sugeet Chand, senior vice president and Chief Technology Officer, or Blake Moret, senior vice president of control prod-



Blake Moret (left) and Keith Nosbusch

During the April analysts' call, one of the analysts twitted Nosbusch about the bad, "high pockets" engineering suits he used to wear.

ucts and solutions. The word was that the Board wanted Moret because he is much more suave and "Wall Street savvy" than the other two. During the April analysts' call, one of the analysts twitted Nosbusch about the bad, "high pockets" engineering suits he used to wear.

On April 19, Rockwell ended the speculation by naming Moret to succeed Nosbusch as president and CEO, while Nosbusch will transition to Chairman.

The handover is supposed to take place on July 1st.

Moret is a 30 year veteran of Rockwell Automation. Moret has 30 years of experience in sales and business management roles in product, services, and solutions businesses across Rockwell Automation. He began his career in 1985 as a sales trainee, and subsequently served in senior positions across

the organization, including international assignments in Europe and Canada. In 2011, he was named senior vice president of Control Products & Solutions, one of the Company's two business segments, with FY15 sales of \$3.6 billion.

Moret is a graduate of Georgia Institute of Technology, where he earned a bachelor's

Big Changes for Rockwell and Honeywell; MCAA and Interphex meetings by David Spitzer

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Big Changes (continued)

degree in mechanical engineering. He has served as Chair of the Board of the Manufacturing Institute of the National Association of Manufacturers. Additionally, he is a member of the Board of Directors for the Milwaukee-based Urban Ecology Center, the Board of Directors of the United Way of Greater Milwaukee, and the Advisory Board of the Woodruff School of Mechanical Engineering at Georgia Tech.

Moret takes over during a dangerous time for Rockwell. Sales continue to be soft, and the industry is trying to transition to the Industrial Internet of Things and the Connected Enterprise. Each of these has potential great benefit, but could result in drastic drops in revenue as industries adjust to the new reality. Rockwell continues to try to work through partners, like Cisco and Endress+Hauser, and this is problematic for strategic terms.

Donald R. Parfet, Lead Director, said: "Blake has proven himself to be an exceptional leader, with demonstrated readiness to lead the company. We welcome him to his new role at the conclusion of a deliberate and planned succession process. We are delighted he will build on the Company's many accomplishments under Keith's direction and propel our vision of The Connected Enterprise to the next level."



Adamczyk Named Honeywell Inc. President and COO

In a clear signal that he's the new heir apparent, Darius Adamczyk, formerly president of Honeywell Process Solutions, and most recently CEO of Honeywell Performance Materials and Technologies (PMT), has been named President and Chief Operating Officer (COO) of Honeywell Inc. HPS was incorporated into Honeywell PMT under Adamczyk's reign. Darius became the President of Honeywell Scanning & Mobility in 2008 when Metrologic, where he was serving as Chief Executive Officer, was acquired by Honeywell. Darius has held various leadership positions with Ingersoll Rand, including President of Air Solutions Group, President of the Heavy Industrial Business Segment, and Vice President of Business Development. From 1995 to 1999, Darius served as a senior associate at global strategy and technology consulting firm Booz Allen Hamil-

"We welcome him [Moret] to his new role at the conclusion of a deliberate and planned succession process." —Donald R. Parfet, ROK Lead Director

ton. He began his professional career as an electrical engineer at General Electric in 1988. Adamczyk is clearly the successor-apparent to David Cote, as Honeywell Chairman. The question is, then, is Honeywell Process Solutions still quietly for sale?

New Honeywell IIoT Business

Honeywell Process Solutions (HPS) has announced it has established a new business unit to help manufacturers harness the **Industrial Internet of Things (IIoT)** and more rapidly deploy technologies that will allow them to better manage and analyze data, making their operations safer, more reliable and more efficient, according to Vimal



Kapur, HPS president..

HPS CEO Vimal Kapur

"Since HPS's introduction of the modern automation control system, we have helped plants and manufacturing sites around the world use an increasing amount of data to solve customer's productivity and safety challenges" said Kapur. "As manufacturers are looking to take the next step to manage and exploit data across multiple sites in locations across the globe, our new business unit will be a focused resource to provide that expertise."



Andrew Hird

Andrew Hird has been named vice president and general manager of Honeywell's new Digital Transformation unit and will report to Kapur. Hird most recently served as HPS's global vice president of sales, where he gained exposure to customers in industries ranging from oil and gas and mining to power generation, and pulp and paper. Hird has more than 20 years of industry experience, including 12 years with Honeywell.

"Honeywell's deep expertise in IIoT allows us to solve customer challenges by consolidating

Big Changes (continued)

data in the cloud from multiple disparate systems, applying higher-level analytics and leveraging experts who are often physically remote from the customer site," Hird said. "Honeywell is in a unique position of being the recognized leader in automation and control room solutions for a wide range of process industries, plus we have advanced knowledge in connectivity with OPC UA, cyber security and advanced software development."

OPC UA is Open Platform Communications Unified Architecture, a machine-to-machine communication protocol. OPC UA is being presented as a universal glue for IIoT applications, although there are several others being pushed by IBM and GE, such as MQTT.

Among Honeywell's leading technologies that help operators prioritize and manage a growing amount of operational data are [DynAmo®](#) alarm and operations management; [Industrial Cyber Security Risk Manager](#), which proactively monitors and manages cyber risk for industrial environments; [Assurance 360](#), a multi-year cooperative service arrangement to maintain, support and optimize the performance of Honeywell control systems; and most recently, [Honeywell Pulse™](#), a mobility app that allows plant managers to easily monitor real-time operations from a smartphone.

HPS's IIoT solutions utilize Honeywell's patented software infrastructure that gives customers a secure and simple method to capture their big industrial data in a secure portal that can be scaled to meet the varied needs of single-site or enterprise-wide operations. Honeywell's innovative solutions help manufacturing plants eliminate unplanned shutdowns, maximize output, minimize safety risk and optimize supply chain strategies.

For the refining and petrochemical industries, Honeywell Process Solutions will leverage the expertise of Honeywell UOP, the recognized world leader in inventing and licensing a wide range of technologies used globally to turn oil and natural gas into transportation fuels and petrochemicals.

MCAA meets in Nashville

"Visions of the Future" was the theme of the 2016 Measurement Control and Automation Association (MCAA) Industry Forum held in Nashville, TN on 17-19 April 2016. There was a good balance of presentations and networking time for the over 200 attendees. Similar to the 2015 Forum, all of the presentations were focused on our industry while none were on softer



Exxon's Don Bartusiak

(but related) topics.

Keynote speaker Don Bartusiak (Chief Engineer of Process Control at ExxonMobil) spoke about how his company is pursuing standards-based open secure and interoperable control systems. The process started by identifying the business problem that needed to be solved, that is, that the existing control systems are getting old (or are already old) and that simple replacement will not be good enough to be competitive in the global market. In other words, capital expenses must be reduced for both new control systems and for replacement control systems. In addition, the existing paradigm of having a third-party integrate a control system with bundled solutions that are not inherently secure is problematic.

Technical trends observed in the avionics industry indicated a shift from proprietary avionics customized for every military aircraft to an open interoperable system architecture that could be utilized in any military aircraft. This advancement was in large part a result of applying the concept of virtualization --- the creation of a virtual (rather than actual) version of something, such as an operating system. This begs the question... If an open interoperable system can be utilized in any military aircraft why can't an open interoperable system provide real-time services to operate an industrial plant? Ancillary technical developments and enablers to help implement the solution to this issue include the Internet of Things, wireless communication, cloud storage and computing, and new security models.

The vision for the future of control systems is an open automation architecture that provides an eco-system to help asset owners keep pace with innovation in both brown-field and green-field plants using commercially-available platforms that are applicable to all distributed control systems markets. With this in mind, the envisioned architecture employs distributed control nodes (DCN) that perform input/output and regulatory control into which adaptive security can be intrinsically embedded. This concept would allow for real-time advanced computing (virtualization), interoperability via a communication standard, and enable higher level controls to be upgraded while maintaining control integrity.

ExxonMobil partnered with Lockheed-Martin and (indirectly) with the US Department of Defense via the Open Group Future Airborne Capability Environment (FACE™) Consortium that was formed in 2010 as a government and industry partnership to define an open avionics environment for all military airborne platforms. In other words, FACE™ is focused on getting the exponential increase in cost to build avionics systems under control by using open interoperable hardware and software. Don noted that FACE™ addressed how all participants (designer, manufacturer, user...) win while maintaining an emphasis on using existing standards and certifying conformance at startup.

In this light, ExxonMobil issued inquiries to 82 companies. The initial 53 responses and 16 companies now interested in participating exceeded expectations. Preliminary designs and desirable

MCAA Meets in Nashville (continued)

functions to build a laboratory prototype are in progress. Standards selection, conformance certification, and an infrastructure to continue into the future are still to be determined. The end-state is envisioned as one where users, manufacturers and system integrators will be bound by standards and conformance. Not only will distributed control systems be different in the future but system integrators will operate in a different environment perhaps with more competition from distributed control system suppliers. In particular, portable application code will be re-usable across new and existing systems that will enable system integrators and suppliers to develop “fit for purpose” solutions.

...companies need to manage talent strategically because they need innovative people --- understanding that companies do not innovate (people do). Further, the strategic view of talent management must align with the business strategy because employee engagement impacts the bottom line.

What is in this for ExxonMobil? The objective is to get maximum value from existing standards, reach consensus among the interested parties, increase the total market for participants, obtain increased access to best-in-class solutions, decrease cost, increase markets, and protect intellectual property by defining functionality (not internals).

To move this forward, ExxonMobil is turning distributed control systems replacement into investments that have an ROI by evaluating the lost profits from improvements that cannot be made as long as the old system is in place. The DCN is envisioned to incorporate distributed control system and programmable logic controller functionality so it will be able to perform regulatory control and logic for stability and safety. As a side note, Don also mentioned it is difficult to justify the replacement of field devices --- most of which already have HART.

Michael Reid (General Manager of Technical Programs in Duke Energy's Fossil Hydro Group) gave an overview of the complexity of energy systems and the challenge of maintaining reliability in an environment of relatively stable sales and uncertain fuel cost.



Michael Reid—Duke Energy

While fuel consumption in the USA is shifting away from coal towards natural gas and renewables, an aging infrastructure (among many other issues) is hampering equipment reliability. Maintenance was performed either on a reactive, condition-based or preventive maintenance basis pri-

marily utilizing manual handheld devices that were time-consuming.

Approximately USD 80 million has been spent to use smart connected plant assets that connect approximately 10,000 assets with over 30,000 sensors via wireless communications to provide more data for analysis. Accumulated avoided costs of this program were approximately USD 1, 3 and 7 million as of 2013, 2014 and 2015 (respectively) much of which was due to alarms that enabled significant finds. Dealing with complexity and uncertainty involves simplifying and prioritizing, developing and implementing a strategy, innovating and

using technology, big data and analytics, and collaboration.



Paul Galeski—Maverick Technoogies

Paul Galeski (CEO and Founder of Maverick Technologies) spoke about the “Workforce of the Future” in which automation is inherently complicated and the people factor adds additional complexity. Demographics are such that the stampede of approximately 59 million people leaving the North American workforce between 2010 and 2030 will increase demand for new workers. Making the situation worse, it can take an engineering graduate 1 to 3 years to be useful so organic growth is necessary to develop and retain new workers.

Therefore, companies need to manage talent strategically because they need innovative people --- understanding that companies do not innovate (people do). Further, the strategic view of talent management must align with the business strategy because employee engagement impacts the bottom line.

In this regard, Maverick hired 32 engineers in 2015 and put them on a 6-month rotation in the company. There is a risk that some of these new hires will leave but risks must be taken to grow the company and its technical expertise. These risks can often be reduced with an aggressive campus recruiting program that often includes internships. Conversely high-potential individuals with aspiration, ability and a sense of engagement can be identified in the process.

Approximately one-third of the workforce is millennials who generally value peer-to-peer relationships and listen. They are given difficult assignments as training exercises, candid feedback, and training to maintain interest and help retain them at the company.

MCAA Meets in Nashville and Interphex in NYC(continued)

Paul interestingly pointed out that first-class people hire first-class people, second-class people hire third-class people, and third-class people hire idiots. In the end, you want your company to be the employer of choice. One way to do this is to develop and implement a strategic talent management program.

Gordon Arnold (Chairman at Sierra Monitor), Wade Mattar (Flow Product Manager at Schneider Electric) and Dick Morley (retired Founder of Modicon) were the first inductees into the MCAA Hall of Fame. Flow Control magazine Innovation Awards were presented for Endress+Hauser



Howard Drake—Polk State College

This can involve grants and innovative course modifications including breaking 3-credit courses in thirds online where the student can finish one and then immediately start another. Some of these innovations are now being replicated in other parts of North America. Ed Curry (Principal at Curry & Hurd) spoke about the “Stages, Patterns and Challenges in a Growing Company” with some examples of how to interpret company results in the context of growth.



Ed Curry—Curry & Hurd LLC

Paul Rasmussen (President at Global Automation Research) spoke about the “Global Process Industry Road to 2035” where demographic changes will drive urbanization. Energy consumption, water usage, general consumption, environmental standards and various other infra-

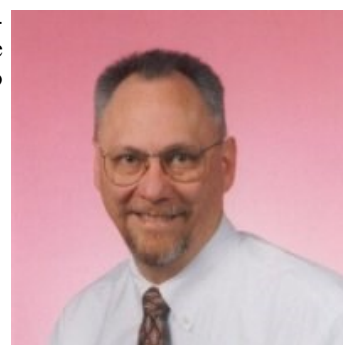
Energy consumption, water usage, general consumption, environmental standards and various other infrastructures will change as early urbanized societies mature and the global population increases to 6 to 20 billion people (probably 10 billion people) by 2050 with the highest population growth occurring in India and sub-Saharan Africa.

vortex shedding flowmeters, Magnetrol thermal flowmeters and Foxboro (Schneider Electric) pressure transmitters.

Howard Drake (Director of Applied Technology Grants at Polk State College) spoke about how education can respond to industry needs by helping obtain funds to offset employer hiring costs.

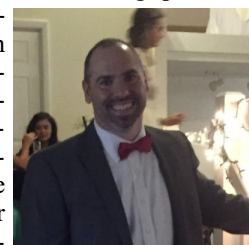
structures will change as early urbanized societies mature and the global population increases to 6 to

20 billion people



Paul Rasmussen—Global Automation Research

(probably 10 billion people) by 2050 with the highest population growth occurring in India and sub-Saharan Africa. In particular, electrical demand will increase, water consumption will increase, oil drilling, production and trans-



Dan Schaffer—Phoenix Contact

portation costs will change, petroleum standards (such as Sulphur and lead content) and emissions requirements will become more stringent, water quality will improve, household consumption will increase, and the market will become more global with a convergence of consumer preferences. Dan Shaffer (Business Development Manager at Phoenix Contact) spoke about “Cybersecurity: Increasing Risks in the Industrial World”.

Brian Gardner (Founder and Lead Evangelist at SalesProcess360) quickly reviewed 2015 Forum material he presented about moving the sales focus from the backend of the sales process to the frontend in his presentation --- Is your sales team ready for 2020? Stated differently, if you are managing the quoting process you are acting reactively. Brian suggests that scoring and managing opportunity should be the leading indicator of success for your business. Components include targeting account management, leveraging business information, team selling (sharing and leveraging) and effective use of CRM. In Brian’s opinion --- It is about a Process not just a Technology --- because you want to be more efficient and focused, more proactive than reactive, make better use of data, and share and leverage information better within your company.



Brian Gardner

Michael Workman (Professor Emeritus at the College of Engineering at Texas A&M University) presented “Visions that Generate Work and New Profit Opportunities” from Texas due to weather problems that canceled his travel plans. Michael was focused on

MCAA Meets in Nashville (continued)

distributors and cited the difficulty of escaping old ideas to manage **THIS** economy by focusing very little time to things over which you have no control and having a plan that includes cost reduction, stratifying markets and customers, redefining channel relationships, rethink systems and processes and rethinking the probable next business cycle. We are in a time of sagging oil prices, China's continued economic issues, political chaos... The trend may be slightly up but profits are pressured, investments are being made to catch up in technology, online only competition is growing and channels are merging faster. About the only thing you

can do is to prepare for the next business cycle. Michael suggests buying lower, selling higher, collecting sooner, paying later, turning inventory more often and increasing operating efficiencies --- all at the same time. Michael stated that value today is defined by convenience, crisis or unforeseen issues, time, choices, changes, consistency and doing nothing unless value is valued. Training should include teaching sales how to sell value that is based on products and knowledge (not personal relationships), enhance technical capabilities, acquire complementary businesses, shed non-core assets, divest unprofitable customer segments and charge for what you do --- understanding that nothing has value unless it is valued.

Don Clark (Vice President at Schneider Electric), Maurice Wilkins (Vice President at Yokogawa's Strategic Technology Marketing Center) and Peter Zornio (Chief Strategic Officer at Emerson Process Management) participated in a panel discussion hosted by Peter Martin (Vice President at Schneider Electric). The first major concern was the loss of knowledge in our industry due largely to the



Don Clark



Maurice Wilkins

retirements of its aging members. Lack of hiring in the 1990s and 2000s when our industry needed fewer people to do the same amount of work makes the problem worse. Replacing that talent with younger workers has been problematic because they do not see our industry as attractive and convincing them otherwise is difficult (at best). Nonetheless it is critical for end-users to hire talented people, rethink the or-

ganizational structure needed to operate plants and provide more tools for the operators who will tend to be less experienced as



MCAA produced a video of Peter Martin explaining the value of process control

--- [https://](https://www.youtube.com/watch?v=djVrgRRajQs)

www.youtube.com/watch?v=djVrgRRajQs

more people leave. To help in this regard, MCAA produced a video of Peter Martin explaining the value of process control --- <https://www.youtube.com/watch?v=djVrgRRajQs>.

Discussion shifted to the Internet of Things and what it means. A lot of hype with some truth seems to be available. It was suggested to start with a goal (such as reducing unplanned downtime) because just connecting everything (sensors, cloud and analytics) does not solve a problem.

That said, with real-time data and the Internet, data can be analyzed anywhere by in-house personnel or by people from another company. End-users need to decide whether the analytics are a core business function or not, and decide whether to perform them in-house or via out-sourcing. Interestingly, it was noted that measurement devices are here to stay



Peter Zornio

but distributed control systems and programmable logic controllers will disappear in 30-50 years. ISA 108 was developed as a best practice to rationalize intelligence in instruments to reduce operator involvement with the eventual vision of a "lights out" plant. Recognizing that operators do not do much if the controls are good the operator would have more time to run the "business" in a "lights out" plant.

Alex Chausovsky (Senior Analyst at ITR Economics) took some time to explain the ITR Economics approach to analysis before delving into the current situation where the 2008/2009 shock is affecting current decisions and risk-taking. ITR is optimistic for better times in late 2016 and especially in 2017. Leading indicators show that GDP growth will slow in 2016 (1.9%) but ITR Economics predicts that it will pick up in 2017 (3.5%). USA Industrial Production is expected to be negative quarter-over-quarter in 2016. US exports are being unfavorably affected by the USD exchange rate. The oil rig count dropped precipitously (1600 to 300) yet production is up as the shale industry is reacting to become more efficient. Ongoing concerns include contracting business-to-business activity, strong USD impacting exports, fear of instability due to low oil prices, mining and commodity prices, China: debt, devaluation and growth, and events/economies in South America and Russia. On the bright side, chemical production is increasing. Nonetheless ITR is optimistic and suggest budgeting for continued economic growth driven by the consumer.

Interpex in NYC (continued)

The International Pharmaceutical Expo (INTERPHEX) held at the Javits Center in New York City on 26-28 April 2016 had



Technical Session at Interpex

Interpex occupied 20% more space than the previous show. Over 100 technical sessions were scheduled for the expected 10,000 visitors.



Big Fancy Exhibits at Interpex

technical sessions were scheduled for the expected 10,000 visitors.

As to be expected, the overwhelming majority of exhibitors were focused on providing mechanical and other processing equipment to the pharmaceutical industry. Interestingly, there was very little instrumentation and control equipment exhibited... and what was exhibited had applications that were almost exclusively in the pharmaceutical industry.



BioPro TT Flow transducers

For example, the BioPro TT ultrasonic flowmeter (emtec) clamps around different types of flexible tubing.



Similarly, SciLog sensors (Parker —

Domnick Hunter) can measure pressure, temperature and (soon) turbidity in plastic tubing.

StoneL (Metso) exhibited valve communication network equipment that addresses pharmaceutical validation

issues but (in contrast) also offers equipment that can be extensively applied in industrial processes.



Stonel (Metso) Communications for Valve Systems

In general, walking the floor was somewhat reminiscent of the “good old days” when lots of people roamed huge halls filled with exhibitors in search of new products.



David W. Spitzer, PE is a partner in the technology consulting firm of Spitzer and Boyes, LLC, which is the publisher of the Industrial Automation INSIDER. He is an ISA Life Fellow, and is an expert on field devices, variable speed drives, and technology transfer in the automation space. He can be reached at dspitzer@spitzerandboyes.com.

The *INSIDER*™ Roundup for April 2016

Morley Gets Awards for Lifetime Achievement

Dick Morley, who may certainly be the most underrated inventor of the 20th century has finally received a couple of prestigious awards. Morley was awarded the first Lifetime Achievement Award from the Control System Integrators Association (CSIA) on April 21st at the 2016 Executive Conference.

The award was presented to Morley at his assisted-living residence in March by CSIA CEO Jose Rivera, veteran system integrators Rick Pierro and Rick Caldwell and software engineer Chuck Schelberg. However, it wasn't announced until the evening of the CSIA's annual business meeting and awards dinner at the Grand Meliá Golf Resort in Puerto Rico.

"The whole system integration profession started with the PLC, and the first one was Dick's Modicon 084, and that's why he's the first recipient of the CSIA Lifetime Achievement Award," says Caldwell. "He's truly the father of the PLC, but he's often said, 'The PLC was an idea whose time had come. I was just the guy working on it.'"



Morley, surrounded by Rick Pierro, Jose Rivera, Rick Caldwell and Chuck Shelberg.

bourne School and received a BS in Business Administration from San Jose State University. As a founding member of Sierra Monitor in 1979, he lead the design and development of the company's product line including the first digital bi-directional multi drop communication bus, the first serial Modbus communication output for plant-wide systems, the first interface to third party legacy sensors, and the first web based graphical system for monitoring hazardous gas conditions in industrial plants.

Wade Mattar joined Schneider Electric| Foxboro of Foxboro, Massachusetts in 1975 and serves as Flow Marketing Manager. He holds degrees from Boston University and Northeastern University. He holds numerous patents including the Multi-phase



Coriolis Flowmeter and the Pulsing Pressure Densitometer. In 2003, he received a Certificate of Acclamation from the American Society of Mechanical Engineers for his work on measurement of fluid flow in closed conduits. He is a contributor to numerous articles, technical papers, and handbooks.

IEEE Acquires GlobalSpec and the Engineering360 Platform from IHS

IEEE, the world's largest technical professional organization dedicated to advancing technology for humanity, has announced the acquisition of GlobalSpec, a leading source of news, data and analytics for the global engineering and technical community including the widely known brand name Engineering360.

The new for-profit subsidiary of IEEE has been renamed IEEE GlobalSpec, Inc. and will significantly complement IEEE's already broad offerings for engineers as well as its emerging position in research analytics, further fueling the organization's value to industry through its business-oriented, content rich marketing platforms.

IEEE GlobalSpec is a prominent multi-media destination for the engineering community providing proprietary editorial and tech-



Gordon Arnold

Arnold and Mattar Join Morley in MCAA HoF

In addition, Morley received one of the three inaugural inductions into the MCAA (Measurement, Control and Automation Association)'s new Hall of Fame. Gordon Arnold, chairman of Sierra Monitor, and Wade Mattar, flow guru at Schneider Electric, were the other inductees.

Gordon Arnold is Chairman of Sierra Monitor Corporation of Milpitas, California. A native of Australia, he attended the Mel-

The INSIDER's April 2016 Roundup (continued)

nical content, classified in a relevant engineering-focused system. This dynamic destination is targeted to a decision-making audience of industry-based engineers, technical professionals, manufacturers, distributors, and service providers involved in technical research, product design, and purchasing. The business also provides webinars and online forums for technical professionals to share and collaborate, and a full suite of content marketing tools and products.

IEEE GlobalSpec will be headquartered in the Albany suburb of East Greenbush, New York.

"IEEE GlobalSpec solidifies our leadership position by broadening our product offerings and expertly diversifying our appeal to the global technology community," said IEEE President Barry L. Shoop. "We are committed to our mission of advancing technology for humanity, and we believe the synergistic benefits created through this acquisition – across content, standards, and communities – will better serve the needs of our members, professions, and customers."

The site delivers a unique information experience, comprised of:

- News & Analysis – authoritative content, including industry/market news and perspectives, analysis, insights and critical information, driven by a seasoned editorial staff
- Products & Suppliers – more than 122 million parts from suppliers across numerous industrial sectors, searchable by specification
- Standards Directory – access to metadata and abstracts for 1.6 million standards documents
- Reference Library – a gateway to more than 95 million engineering documents, including technical articles, reports, publications, patents, and e-books
- Engineering Community – an established online community in the engineering/industrial space, offering forums, blogs and related resources

"IEEE GlobalSpec delivers an unparalleled depth and quality of highly relevant content critical to the worldwide technical community. Professionals can utilize IEEE GlobalSpec to research, compare and price components, download reference material, research industry standards and patent information, review product datasheets, and interact with the global engineering community," said IEEE Executive Director E. James Prendergast. "IEEE GlobalSpec is destined to drive new research efficiencies and productivity opportunities for academic and corporate users by harnessing powerful insights and expert analysis, from specifications to expert marketplace analysis."

IEEE GlobalSpec At-A-Glance

- More than 8 million registered users
- 95 million technical documents
- 200+ million datasheets

- 220 million indexed technical webpages
- 1,100+ annual newsletter editions
- 200,000+ suppliers
- 82,000 product announcements
- 63,000 digitized catalogs
- 835 specification guides

Endress+Hauser completes takeover of Analytik Jena

Endress+Hauser has completed the takeover of German analytical instrumentation provider Analytik Jena. The remaining minority shares of Analytik Jena were legally transferred to Endress+Hauser on 30 March 2016 following the entry of the transfer resolution in the commercial registry that was previously adopted at the extraordinary general meeting in February. The process will now be finalized with the agreed-upon cash payout to the minority shareholders.

In the run up to the completed takeover, as majority shareholder Endress+Hauser owned all but 3.4 percent of the Analytik Jena shares. The demand for the remaining shares was



delivered to Analytik Jena in September 2015. This set the final part of the takeover process in motion, during which an independent appraiser fixed the value of the company at 13.68 euros per share.

Endress+Hauser gained control of publicly-traded Analytik Jena AG in 2013, most recently holding 96.6 percent of the shares. The goal of the acquisition is to eventually be at the side of both companies' customers from the lab to the process, giving support from product development to production. Analytik Jena employs nearly 1,000 staff worldwide in its core businesses analytical instrumentation and life sciences.

Endress+Hauser has become market leader in electromagnetic flow measuring technology

Since 1977, Endress+Hauser has produced over two million electromagnetic flowmeters. That is more than any other manufacturer. "This magic number stands for high-quality measuring technology and, above all, satisfied customers in all kinds of industries," says Bernd-Josef Schäfer, Managing Director of Endress+Hauser Flowtec AG, the center of competence for

The INSIDER's April 2016 Roundup (continued)

flow measuring technology.

The company's success story as a manufacturer of electromagnetic flowmeters began in the middle of the 1970s. In order to enter the water and wastewater market which was emerging at that time, Endress+Hauser purchased the company Flowtec in Bern in 1977 and moved it to a new location in Reinach (Basel-Landschaft, Switzerland). This is where Endress+Hauser started to produce flowmeters with just three employees in former military barracks.

Work was done on an on-demand basis. "Whereas today," says Bernd-Josef Schäfer, "our production spans six sites around the globe – in Switzerland, France, the USA, China, India, and Brazil – and boasts state-of-the-art logistics. This infrastructure is what has enabled us to produce two million electromagnetic flowmeters to date in accordance with required quality standards."

To put this into context: These two million electromagnetic flowmeters could measure a volume corresponding to four times the flow rate of the Amazon. Each production site also features precise calibration facilities which are regularly checked by national accreditation bodies and which guarantee consistently high measuring quality for each individual device.



E+H Flow Transmitter Assembly Line

Constant innovation guarantees customer satisfaction

The company's success, which spans almost 40 years, is due to many factors. In particular, its inventive talent has enabled Endress+Hauser to keep offering its customers new, groundbreaking devices capable of measuring all kinds of fluids, such as water, milk, acids, alkalis, or ore slurry, with the greatest accuracy.

With clever innovations such as the precision measurement of difficult fluids (Autozero, 1981), microprocessor control (Variomag, 1984), two-wire technology (Eximag, 1987), or the operating matrix (Tecmag, 1990), Endress+Hauser claims they have always managed to stay one step ahead of the competition.

In 1993, all of these device variants were brought together to form a single product family under the name of "Proline". Along-

side this family, however, Endress+Hauser also produces flowmeters for very particular applications – for example, filling bottles at one-second intervals.

Looking to the future with Proline

Since 1993, the Proline device family has undergone constant development to ensure that it meets the prevailing requirements in a wide range of industries. Following the second generation launched in 2000, the third and most recent Proline generation (2012) offers a multitude of unique functions and device properties.



Large Scale Mag Meter Calibration Rig

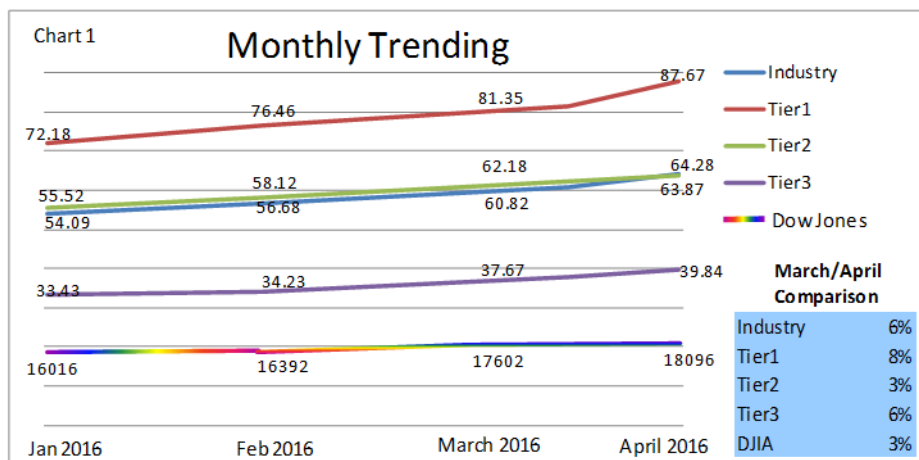
This means that system operators will not only be able to retrieve measurement and diagnostic data via display, WLAN, web server, or fieldbus, but will also be able to monitor the process comprehensively and, if necessary, check the functioning of a flowmeter during operation.

Bernd-Josef Schäfer sees the future of Endress+Hauser optimistically: "Innovations such as these enable us to align our product portfolio consistently with the needs of every industry. We are looking ahead to our three-millionth electromagnetic flowmeter with great confidence."

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INDUSTRIAL AUTOMATION & PROCESS CONTROL



The industry as a whole performed well this month, with the Index increasing 6%; outperforming the Dow by 3%. Tier 1 companies showed the largest gain (8%) over the past 30 days, and beat the Dow by 5%, welcome news after the overall performance of the past several months.

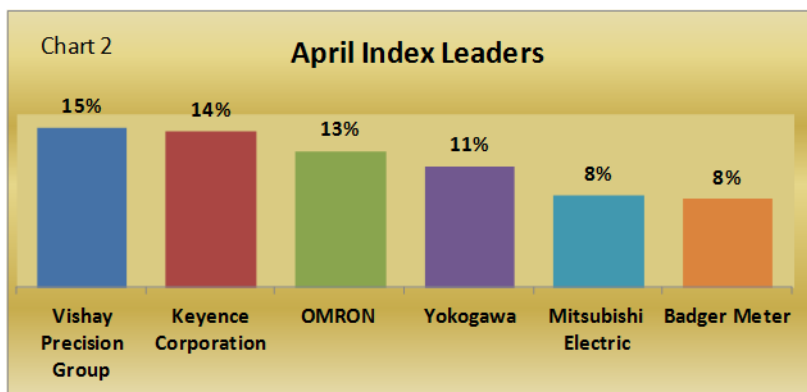
The increase is cause for celebration, and there are some specific companies who deserve accolades for stellar performance.

Chart 2 shows the companies in our Index who performed best. Each of them outperformed the Index as a whole, and stood out in their individual tiers.

Vishay Precision (VPG) is the winner with a gain of 15% since last reporting, followed closely by Keyence Corporation with a gain of 14%. On March 28, Zacks Equity Research had the following to say about Vishay:

The stock has moved higher by 17.8% in the past month,

while it is also above its 20 Day SMA too. This combination of strong price performance and favorable technical, could suggest that the stock may be on the right path. We certainly think that this might be the case, particularly if you consider VPG's recent earnings estimate revision activity. From this look, the



company's future is quite favorable; as VPG has earned itself a Zacks Rank #1 (Strong Buy), meaning that its recent run may continue for a bit longer, and that this isn't the top for the

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in-focus company.

Vishay's exceptional performance looks even more impressive when tracked against the Dow. Chart 3 shows the percentage change for both, beginning October 1, 2015. Not only has Vishay stock increased by 30%, it outperformed the Dow by 20%, coming from behind to jump from \$11.44 to \$15.01 per share, with the majority of the increase occurring since March 1.

During the past month, VPG has made several changes. Two new members have been appointed to their board of directors;

Cary Wood on March 28 and Janet Clarke on April 2. In addition, on April 5, the company signed a material definitive agreement to acquire Pacific Instruments for \$11M.

According to [Ziv Shoshani](#) CEO of Vishay Precision, "Pacific Instruments' products provide an excellent extension to our Foil Technology segment, which already offers data acquisition systems, primarily in the field of strain measurement. Pacific has extensive experience integrating large, high performance data acquisition and control systems for government and commercial customers, mainly in the U.S."

Following on the heels of the agreement,

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the company wasted no time in utilizing Pacific Instruments' experience and offerings to its benefit, releasing the following statement on April 19:

Pacific Instruments, a Vishay Precision Group, Inc. (VPG) brand, today announced that it is offering two new data acquisition systems (DAS) that broaden the instruments product line of the Micro-Measurements brand. The PI 7200 and PI 7300 DAS bring new capabilities and levels of performance to transducer data acquisition in rugged applications such as wind tunnels, engine test stands or wherever the DAS needs to be located on or near the test article. Together, Pacific Instruments and Micro-Measurements make VPG a next-level one stop supplier for stress analysis and strain measurement, with Pacific Instruments' advanced signal conditioning and

data acquisition instruments complementing Micro-Measurements' industry-leading strain gage sensors and installation accessories for stress analysis and strain measurement. The complete press release can be viewed at: www.vishaypg.com/company/press/2016/pacific-instruments-data-acquisition-systems/en/

Congratulations to Vishay Precision Group as well as the other top performers, Keyence, Omron, Yokogawa, Mitsubishi, and Badger Meter for your superior achievements over the past month.

There were very few Index members who did not contribute to the overall industry increase. Seventy-three percent of the companies included in the Index showed a gain of at least 1%, while an additional 7% remained steady.

Three of the four companies with the largest losses (losses between 8% and 9%) are foreign based companies who continue to battle both the unequal currency exchange and the global economic situation, with issues compounded by the still suffering oil industry. One however, does not completely fit that description.

National Instruments (NATI) stock dropped 8% since last reporting, from \$30.01 on March 18, to \$27.73 on April 20. In a report published April 29, Motley Fool blames NATI customers' cyclical downturn for the decrease. But is that the whole picture?

Chart 4 tracks both NATI and the Dow over a several month period. From October to March, the two performed roughly equally, with NATI never varying more than 5% above or below the Dow. On April 5 the two lines intersect, and from that point forward NATI drops while the Dow continues its slight incline.

The company showed an 11% loss in net income in Qtr 1, and

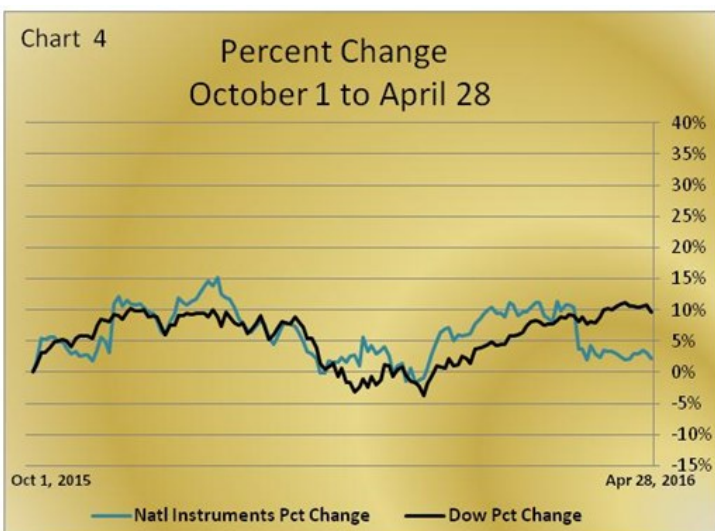
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sales fell 6% in the Americas and 3% in the Europe/Middle East/Africa segment, which could certainly have contributed to the decrease in stock price.

I believe, however, that at least part of the hesitancy toward NATI stock right now has to do with the company's inability to more closely forecast performance in the current environment.

For example, according to NATI predictions reported by Motley Fool, second quarter revenues will range from \$287M to \$323M and adjusted earnings per share will range between \$0.16 and \$0.32.

Providing such wide ranges says to me, "We don't have the foggiest idea what is going to happen this quarter so we are hedging our bets."

National Instruments CEO Dr. James Truchard remains positive stating, "While

keeping the company moving in the right direction.

My concern is that this one company is the only Index member that did not perform in keeping with the huge majority of others in its competitor set.

The drop is hopefully just a fluke in the market that will right itself, but the situation certainly bears watching. It could be that Dr. Truchard should be listening more to his board, which includes John Berra, retired Chairman and CEO of Emerson Process Management.

So while there is some less than positive news, as a whole, for the first time in many months, there is overall good news to report as it looks like our industry is beginning to once again come into its own.

it's clear that the industrial economy, especially in the U.S., experienced a slowdown in Q1, we believe the diversity of our business and the solid execution of our sales force allowed us to continue to gain market share."

He also discussed the company's cost-containment discipline as an important part of

The *INSIDER* Health Watch[™] is written by Mary Samuelson, Senior Editor, and Quantitative Research Practice Lead at Spitzer and Boyes, LLC.



Ms. Samuelson was director of research at Maritz Research, and vice president at Rockhopper Research, and a Senior Project Manager with The Right Brain People.

"The Health Watch shows what we are capable of, in quantitative research, at Spitzer and Boyes, LLC.," she said. "If you are looking for research that is different from the kind you get from the usual suspects, give us a call."

Spitzer and Boyes, LLC has a complete qualitative and quantitative research capability, focused on the automation industries. For more information, contact Walt Boyes at waltboyes@spitzerandboyes.com.

The *INSIDER* Health Watch[™] is available for license to use in other publications. If you are interested in doing that, please let Walt Boyes know.

Mary Samuelson is available for speaking engagements about the Health Watch[™] and other quantitative marketing issues. Contact Walt Boyes for details at waltboyes@spitzerandboyes.com.



THE WAY I SEE IT

Editorial

Does the Emperor Have ANY Clothes At All?

For the last several years, the Internet of Things has been the Emperor, the killer app that is going to kickstart manufacturing, marketing, advertising, design, and every other endeavor known to man or woman. The problem is that the killer app is having trouble getting traction.

A friend of mine who is a perspicacious observer recently emailed me this comment: "If hear another gram of bullshit about IoT I'm going to explode. How many freaking case studies do we actually have? How many use cases? How many standards are in place? All we have is a 'Gas Giant.' There's some substance at the core, but it's 90 percent hot air."

The unfortunate thing is that my friend is right. After at least a decade, the IoT is not the killer app people thought it would be in the consumer space. Nearly nobody wants smart houses, or smart clothes. Not very many people want the kind of smart car that cyber security researchers showed very quickly can be hacked and controlled by somebody else.

That's part of the reason that IoT is not gain-

ing the level of traction in the consumer space that it should have. And the fact is, as every cyber security expert knows, and some have said, there's no way to defend something like the Internet of Things.

Which brings us to the Industrial Internet of

All we have is a 'Gas Giant.'
There's some substance at
the core, but it's 90
percent hot air.

Things. People who saw that the IoT wasn't growing at the predicted rates that Gartner and others have been claiming decided that there was a market in industrial controls. Maybe there is and maybe there isn't. The jury is still out. They've been out for a long time. It's probably a hung jury at this point.

We haven't had many use cases because there aren't many uses. As an old friend of mine said when we were discussing wireless sensors years ago, "At [my company] if we think a measurement is worth having, it is also worth wiring a really accurate sensor into the DCS. We are seeing some use cases in asset management,

and in inventory control, but those were already being done, and have become IIoT use cases because they are there.

What we are not seeing is the radical expansion of sensors and edge devices that the IIoT predicts. Why not? Are both of my friends right?

Not only is the cyber security issue critical to the Industrial Internet of Things, but how to use the data from all those extra sensors is also important, as well as making sure that the sensors are the right ones measuring the right variables. The other important issue is that the IIoT is going to be costly to install and operate. There are very few use cases that show a business case from the start. It may be a chicken and egg problem. It may be that we need to have some use cases that people are brave enough to install, rather than making the case first.

But, as I said, the jury is still out. The question that remains is, can the IIoT really provide the business improvement necessary to support it and maintain it?

Or are the automation vendors just looking for a new market for sensors and data manipulation software?

If you think the Emperor has no clothes, maybe you're right.

Walt Boyes

Comments? Talk to me!
waltboyes@spitzerandboyes.com

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Rajabahadur V. Arcot: A Historical Perspective to India's System Engineering Capabilities

India is an important growth-oriented market for automation suppliers. Its importance has been steadily growing and its share in the global automation market is increasing.

While in most countries, the automation market remains tepid, the new investments in India in industries such as automotive, cement, electric power, pharmaceuticals, and oil and gas, especially the mid-stream and downstream segments will spur automation spending in the coming years.

Almost all the global automation companies, such as ABB, Emerson, Honeywell, Siemens, and others have emerged as leading suppliers of automation systems in India. They not only compete for their market shares, but also extensively leverage the system engineering capabilities that India offers.

Companies, such as Emerson and Yokogawa, have application engineering centers in India that serve as their global centers of engineering excellence. ABB and Honeywell have full-fledged design centers in India.

The future automation architecture will be more open and interoperable, giving end users a wider choice in the selection, deployment, and use of sensors, actuators, artificial intelligence, cloud computing, data analytics and such others.

As these and other technological developments come to the center stage, system engineering competencies with a high degree of software skills will become highly relevant for successful implementation of automation projects and for ensuring protection from cyber threats.

Companies with robust system engineering

capabilities will have greater growth opportunities.

Domestic companies focused on system engineering

The credit for building systems engineering capabilities in India goes to domestic control and instrumentation companies, such as Instrumentation Limited (IL), Keltron Controls, Bells Controls, Electronics Corpo-

ration of India (ECI), and Bharat Heavy Electricals (BHE).

Siemens and Brown Boveri were present in the market place but their India business focus then was mostly on electrical equipment.

While these domestic control and instrumentation companies manufactured instruments, transmitters, controllers and various other associated items, they focused mainly on building robust system engineering and integration capabilities and supplying total automation systems to process plants, such as electric power, steel, oil and gas and others.

For historical reasons, India missed taking the path of industrialization in an organic manner and had to wait for the country to launch its first five-year plan (1951-1956) to begin its tryst with industrial development.

During the early stages of India's industrialization, most of the plants, such as electric power, metals, and drugs & pharmaceuticals, came to be established through country-to-country bilateral agreements involving technology transfer.

Main plant licensor organizations or collaborators supplied the control and instrumentation packages along with plant and equipment and process knowledge.

Rajabahadur V. Arcot: A Historical Perspective to India's System Engineering Capabilities

(continued...)

Electric power industry spurred India's automation market

The break came when the electric power industry in India started expanding with domestically made boilers, turbines, and generators.

Alongside came engineering consulting companies that carried out thermal power plant design engineering and began the process of procuring necessary equipment including control and instrumentation systems.

This opened up the market for control and instrumentation systems in India. With India then a centrally planned economy, the country's ministry of industries took necessary initiatives to meet this demand by establishing Instrumentation Limited (IL) at Kota under a licensing agreement with Pramoshexport, one of the technology licensing arms of the erstwhile USSR and now Russia.

While Pramoshexport came forward not only to establish the production facilities along with technology transfer but to train the engineers, most other leading global suppliers declined the ministry's request.

While the initial arrangement envisaged IL to make electronic instrumentation systems, the preference of electric power companies then was for pneumatic systems.

It posed a huge challenge for IL, a company in its formative phase, and the company responded to it by offering to take full responsibility for the performance of its electronic control systems.

IL received engineering drawings, technical expertise including training, and production equipment to manufacture a range of electronic instruments, such as indicators and recorders and electrical transmitters.

IL built its systems engineering capabilities on its own by establishing a systems engineering division and by exposing its engineers to power plant automation practices, thereby empowering them to gain good understanding of power plant operational and control system needs.

Companies with robust system engineering capabilities will have greater growth opportunities.

The company spurred its engineers to develop required competencies including standards, such as those relating to symbols, panel wiring and cable numbering, instrument specification list, and project documentation drawings.

It aggressively pursued business opportunities, especially in the electric power and steel segments. IL emerged as the powerhouse of systems engineering.

With its goal set to emerge as a leading provider of complete automation systems, IL entered into new licensing agreements to make electronic single loop controllers, gas & liquid analyzers,

and control valves.

IL entered into licensing agreements with Hartmann and Braun and Yamatake Honeywell to make analyzers and control valves & actuators respectively.

IL's approach to meet the customer's requirement for comprehensive automation solutions was a unique concept then.

Even globally, very few automation companies adopted the main automation contractor approach in the nineteen sixties or nineteen seventies. Looking from the automation industry perspective, these customer winning and market positioning strategies were way ahead of the time.

Boyed by its success, IL set its ambition high and pursued global opportunities in the electric power industry.

It succeeded in getting a World Bank funded power plant control systems order in Malaysia. The contract involved the supply of control and automation systems to two units of thermal power plants of capacity 120 MW.

The then leading engineering consulting company, Preece, Cardew, and Rider, UK acted as the engineering consultant for the utility company in Malaysia.

The automation system requirement included, in addition to panel based electronic instruments and controls, the supply of Data Acquisition Systems (DAS), first up annunciator, sequence control equipment for boiler

Rajabahadur V. 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. Until recently, he was responsible for ARC Advisory Group's business operations in India. Contact him at rajabahadurav@gmail.com



Rajabahadur V. Arcot: A Historical Perspective to India's System Engineering Capabilities

(continued...)

er, turbine, generator startup and shutdown, and such others.

IL successfully developed the DCS software including the sequence of events recorder software, tested, demonstrated the functionality, installed, and commissioned the completely integrated DAS.

Growing automation market attracts global suppliers

The success stories of IL, Taylor Instruments, and Bells Controls and growing C&I market opportunities in India began to attract the attention of the global automation suppliers.

It also attracted BHE, a power plant equipment company, to become an automation supplier. Initially BHE wanted to take control of IL but when that attempt did not fructify, it entered into a licensing agreement with Brown Boveri (now ABB).

With the advent of DCS, the automation market in India became very active; a spate of collaboration and joint venture agreements came into existence. IL signed an agreement with Toshiba, Japan to make and market DCS.

Keltron established Keltron Controls in collaboration with Control.

Bailey, France and later entered into an agreement with Hitachi, Japan.

Uptron started an automation company in Lucknow in collaboration with Leeds and Northrup, USA.

Bells Controls entered into a joint venture agreement with Foxboro, now part of Schneider and established a new factory at Mysore.

Westinghouse and Bailey Controls also entered the automation market in India.

Keonics and Blue Star joined to start a joint venture company with technical collaboration from Yokogawa, Japan to make and supply DCS.

Subsequently Yokogawa bought out the share holdings of Keonics and Blue Star to emerge as an independent company.

All these companies were able to quickly ramp up their operations in India by initially attracting engineering and managerial talent from IL, Keltron Controls, and Bells Controls.

Even globally, very few automation companies adopted the main automation contractor approach in the nineteen sixties or nineteen seventies. Looking from the automation industry perspective, these customer winning and market positioning strategies were way ahead of the time.

Only Bells Controls, Keltron, and Yokogawa made significant progress and went on to secure some key contracts.

While the engineering competencies they built survive, their business fortunes did not last long as they were not able to compete with global automation suppliers who entered India subsequently.

The opening of the Indian economy in the early nineties witnessed the entry of global automation suppliers such as Honeywell, ABB, and Emerson, and

this changed the landscape of India's automation industry forever.

The engineering talent available in the country helped some of them to quickly establish their presence in the market and their ability to offer state-of-the-art control systems helped them to emerge leading players in the market place.

Despite the onslaught of global automation suppliers, some domestic automation such as BHE and ECI are still a force to reckon with. Customers trust their robust systems engineering skills and customer intimacy.

Global automation companies will thus find India not only as a growth oriented market but also as a skill resource center.

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