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Your key to the latest industrial automation and process control information

Cover Story: The Paradox of Petrobras, Part 2

[Editor's note: the first part of this article was published in the July INSIDER]

The Petrobras scandal in Brasil continues to play itself out. The investigation is in at least its 17th phase (with more to come). Approximately 100 Petrobras managers, politicians and owners of major construction firms were arrested on suspicion of corruption, money laundering and conspiracy. Approximately 30 have been convicted --- so far.



Ex-President Lula da Silva

from construction projects.

More Surprises?

This begs the question as to whether this occurred on other construction projects. As such, investigations are now expanding into shenanigans that may have occurred during the (still ongoing) construction of a nuclear power plant for Electrobras. The potential for similar activities would not surprise the INSIDER because the Brazilian government is the majority stakeholder and overseer of both Petrobras and Electrobras.

Intimidation??

As reported last month, a handful of people involved in the scandal decided to tell all in hopes of receiving a reduced sentence. The Petrobras manager who agreed to return over USD 100 million dollars was represented by a legal expert in such negotiations.

Upon her return from a trip to the USA, the lawyer announced that that she would no longer represent this Petrobras manager or her other clients for whom she had negotiated reduced sentences because she had closed her office in Brasil but will reportedly leave Brasil and keep her Miami office open.



President Dilma Rousseff

Both ex-President Lula and the current President Dilma Rousseff have denied any involvement in these activities.

The INSIDER opines that it is difficult to believe that neither Lula nor Dilma did not notice that billions (with a "b") of dollars flowed into their political party (albeit mostly in cash), and that Dilma did not know that top Petrobras managers were reportedly receiving a few billion (with a "b") dollars in kickbacks

Her reason for these actions was intimidation and threats to her family that she alleged came from members of the investigating committee that (by the way) contains politicians from the political parties accused of receiving money from Petrobras. The Brazilian Supreme Court will likely summon the lawyer to testify as to the nature and origin of the threats.

Ex-President Lula's chief of staff was arrest-

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Cover Story: The Paradox of Petrobras (continued)



Jose Dirceu, Lula da Silva's Chief of Staff

ed on the suspicion of corruption and money laundering. This gentleman has an interesting past in that resigned as chief of staff in 2005 due to corruption

charges and was subsequently convicted in the Mensalão scandal and was considered its mastermind. He had his political rights suspended and was convicted of corruption, embezzlement, racketeering and money laundering (among other charges). He served time in prison but was under house arrest when recently taken into custody.

President Dilma's popularity hit another low this month with an approval rating of 8% and a disapproval rating of 71% (20% consider her typical). Her television appearance on 6 August was met with the banging of pots and pans in most major Brazilian cities --- <https://www.youtube.com/watch?v=L9wfKR4VgL8>. Even the children are calling for <https://www.youtube.com/watch?v=qCCXReBRcBk>.

Petrobras (and like companies) may now be somewhat hesitant to purchase from large companies that could have been involved in the scandal (even if indirectly). This suggests that smaller (second tier) companies and indigenous Brazilian companies might be presented with favorable opportunities in the near and medium terms.

Dilma to be removed ---

<https://www.youtube.com/watch?t=55&v=Xi73qmwXJtU>. In Brasilia, protestors displayed a huge balloon of Lula in stripes (prison garb). The government has been notably silent on the matter --- perhaps hoping that it will blow over. The INSIDER opines that Dilma will lay low and carefully control the events that she attends.

This discontent has created pessimism in Brasil. Not surprisingly, the 2015 and 2016 GDP projections were adjusted lower --- projected to contract approximately 2 percent in 2015 and slightly less in 2016. The INSIDER would not be surprised if these projections are again adjusted lower in the coming months.

These events and the devaluation of the Brazilian Real by approximately 50 percent in the last year clearly affect the instrumentation and process control market in Brasil. The devaluation makes imported instruments more expensive in local currency which tends to put a damper on the sale of imported goods (including instrumentation) while the political uncertainty tends to have a detrimental effect on investment.

It is reported that the large (international) instrumentation companies that traditionally provided large quantities of instruments to Petrobras are reducing their workforce due to a sharp drop in sales due to project delays and/or cancellations. The INSIDER opines that aside from reducing expenditures, Petrobras (and like companies) may now be somewhat hesitant to purchase from large companies that could have been involved in the scandal (even if indirectly). This suggests that smaller (second tier) companies and indigenous

Brazilian companies might be presented with favorable opportunities in the near and medium terms.

On 16 August 2015, about 1 million people (estimates vary significantly)



Over 1 million people demonstrate against President Dilma on 8/16/15

mobilized in a grass-root protest against President Dilma and ex-President Lula in 200+ cities throughout Brasil. This video (not subtitled) recorded

some events and shows some of the men and women (both young and old) people who took to the streets of Sao Paulo ---

Reiterating from last month... Despite its problems, Brasil is weathering the storm and is not a basket case --- even though it is called "The Crisis" on the evening news. The economy will eventually recover, more people will find employment, and the economy will grow. Given its size, population, raw material wealth, and potential for growth, developing and maintaining a presence and/or investment in the Brazilian market is still a good idea. Brasil just may take a while to rebound.



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.

Cameron Swallowed by Schlumberger

Sometimes it is nice to be able to say, “We told you so.” We at the INSIDER have been predicting that Cameron would not survive the BP Deepwater Horizon settlement, followed so quickly by the precipitous plunge in oil prices. We told you so.

Cameron and Schlumberger announced in mid-August that Cameron had agreed to be acquired by Schlumberger for the princely sum of \$12.7 billion in cash and stock.

The proposed acquisition price values Cameron at \$66.36 a share, which is a whacking 56.3% premium to where it was trading before the announcement. Cameron’s shares have fallen 42% in the past 12 months as the price of oil plunged. But stock in Cameron surged 41% to \$59.81 the day after the announcement. For some reason, shares of Schlumberger fell 4.7% to \$69.11 that day as well.

Companies like Schlumberger and Halliburton, as well as smaller service providers, have had to lay off tens of thousands of workers around the world this year and idle hundreds of drilling rigs amid sharp spending cuts by their energy company customers. Cameron was no exception, especially since it was cash poor after settling with BP.

Analysts said the deal didn’t come as a complete surprise. Schlumberger and Cameron are already partners in a joint venture, OneSubsea, which focuses on drilling and managing subsea wells in extremely deep water offshore. Clearly, though, that isn’t the focus of the deal, since Keppel Corporation Ltd., of Singapore, announced on August 31 that it had acquired Cameron’s offshore rigs business for \$100 million.

The chart shows clearly what we’d been saying since June—that Cameron wasn’t doing well, and its automation business, shown as V&M in the chart, was tanking badly. It would be a good guess that Schlumberger, who doesn’t like the valves and meters business, will be selling this business off.

Potential acquirers are thick on the ground, and include all the usual suspects. Siemens, ABB and Honeywell would get a valve division and some exceptional flow measurement systems for a reasonable price. Emerson would put a valve competitor out of business. And the list goes on.



Cameron CEO Jack B. Moore

Cameron’s sale came before CEO Jack B. Moore, was to retire and hand over control to R. Scott Rowe. Moore will retire, and Rowe will get a job running a division for Schlumberger—probably a golden parachute thing.

Paal Kibsgaard, Chairman and Chief Executive Officer of Schlumberger



Scott Rowe gets parachute

remarked, “This agreement with Cameron opens new and broader opportunities for Schlumberger. At our investor conference in June 2014, we highlighted how the E&P industry must transform

to deliver increased performance at a time of range-bound commodity prices. With oil prices now at lower levels, oilfield services companies that deliver innovative technology and greater integration while improving efficiency, which our customers increasingly demand, will outperform the market.

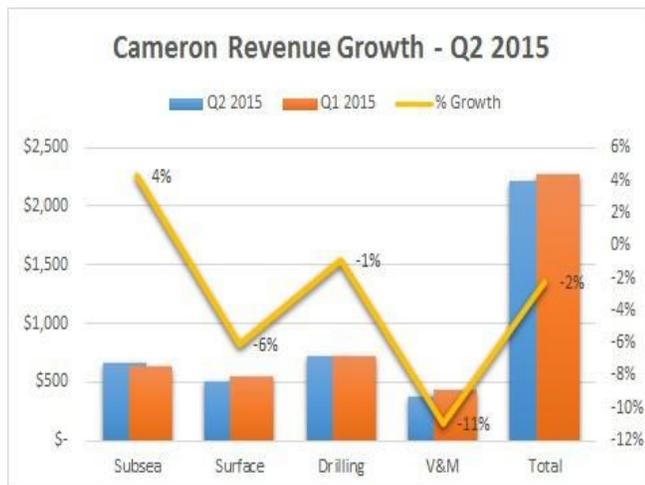
“We believe that the next industry technical breakthrough will be achieved through integration of Schlumberger’s reservoir and well technologies with Cameron’s leadership in surface, drilling, processing and flow control technologies. Deep reservoir knowledge further enabled by instrumentation, software and automation, will launch a new era of complete drilling and production system performance.

“In addition, we will achieve significant efficiency

gains through lowering operating costs, streamlining supply chains, and improving manufacturing processes while leveraging the Schlumberger transformation platform. We look forward to welcoming the talented employees of Cameron and are pleased that they will be joining the Schlumberger team as our fourth product group.”



Schlumberger’s Paal Kibsgaard



Here’s why Cameron was acquirable; Chart courtesy of Seeking Alpha

CSIA and MESA Collaborate on Smart Manufacturing

With today’s business marketplace becoming more agile and intelligent as manufacturing is transformed by the Industrial Internet of Things (IIoT), the [Control System Integrators Association \(CSIA\)](#) is committed to connecting Smart Manufacturing to the automation industry.

Smart Manufacturing involves aligning information and communication technologies with U.S. manufacturers across the country to manage their energy, productivity and costs in real-time. Smart Manufacturing is among the efforts to re-shape manufacturing for the 21st century, such as Industry 4.0 and France’s Industry of the Future.



CSIA’s Rivera

CSIA CEO Jose Rivera says the association is collaborating with the Manufacturing Enterprise Solutions Association (MESA) on an initiative around Smart Manufacturing.

MESA is a member of the Smart Manufacturing Leadership Coalition (SMLC),

which is developing smart manufacturing technologies under grants from the US Department of Energy. MESA and SMLC are also working with the Industrial Internet Consortium.

“MESA will contribute through their capabilities around best practices for the real-life deployment of information technology, providing real-time visibility into the production process and in particular on non-technical deliverables,” says Rivera. “CSIA will offer best practices for successful system integration. We are working together to provide our services towards this great opportunity.”

Rivera adds that CSIA maintains a solid value proposition centered around its Best Practices Manual that members review regularly to ensure they remain relevant in the industry. CSIA encourages an open, collaborative environment for system integrators to share best practices for the improvement of companies around the country and the world.

“We’re optimistic about CSIA’s future as system integrators increasingly broaden their scope of work,” Rivera says. “This will be driven in part by the Internet of Things (IoT), increasing regulation involving physical and cyber security, traceability requirements and more. In addition, there is an overall need

to direct information to those that can act on it, especially the factory floor for manufacturing.”

As the Smart Manufacturing movement spreads, there will be substantial need for MESA’s technologies. Manufacturing will be less about stuff and machines, and more about information and data flows. Smart plants will not have islands of automation...they will have highly connected automation networks, from sensors to ERP



MESA CEO Mike Yost

systems. MESA’s sweet spot is the interconnecting of these networks.

The opportunities for system integrators will also increase, especially for those who understand plant level networking and how to produce safe and secure networks.

Manufacturing enterprises are not able to hire the talent they need to do all the projects they need to implement Smart Manufacturing, exactly like they have been unable to keep up

full scale engineering and construction divisions. Control system integrators long ago filled that gap, and they are positioned to do so again with Smart Manufacturing. A top notch integrator can fulfill the engineering and integration needs of many different enterprises in a cost effective manner.

The opportunities that the Industrial Internet of Things, Big Data, Cloud technologies and virtualization provide will change the way manufacturing is done in ways not yet completely understood. Fewer than 30% of enterprises are even close to enabling Smart Manufacturing technologies. But it will be necessary to change that as the data revolution continues.

Organizations like CSIA, MESA, SMLC, the Industrial Internet Consortium, and Industrie 4.0 are providing knowledge bases to help companies figure out what all this means.

Disclosure: Spitzer and Boyes LLC, the publisher of the INSIDER is a member of the Smart Manufacturing Leadership Consortium, and Walt Boyes, the editor, is a member of SMLC’s board of directors.

Nick Denbow's Roundup

Offshore Europe 2015

The Society of Petroleum Engineers are holding their biennial exhibition and conference, known as Offshore Europe, in Aberdeen from 8-11 September this year. The world E+P industry will descend on the 1500 suppliers and 33 International Pavilions on show in Aberdeen: some will stay for a week, but many for just a day, to avoid the hotels, and to try to gain some flavour for the latest offerings from the whole gamut of industry suppliers.

The Conference theme this year is "How to Inspire the Next Generation": this is aimed at inspiring and recruiting into the E&P industry (and then retaining them). There is also a Deep-water Zone and an Investment Workshop in the Exhibition.

The preview press releases are fairly standard! But read these:

Extronics Zone 1 Wireless Access Point

More interesting, from Extronics in the UK, the iWAP107 Access Point Enclosure system will be on display. This enclosure enables the wireless access point to be installed inside the iWAP housing, and safely deployed in a Zone 1 hazardous area. The marine grade powder coated aluminium, or optionally stainless steel flame-proof/explosion-proof housing, is equipped with galvanically isolated intrinsically safe RF



iWAP107 Access Point

outputs, for either 2.4 or 5GHz, to be used with any antenna that can be classed as simple apparatus. Such antenna equipment is readily available with models from vendors such as Cisco, Aruba, Aeroscout and Motorola – these can be supplied by Extronics or 'free-issued' and factory fitted - or the Extronics iANT2 range of antennas can be used. Up to 8 such antennas can be used on each installation, allowing the MIMO functionality of the latest 802.11n/ac compatible wireless access points to be implemented. Optional features such as surge arrestors and single mode or multimode fibre optic inputs for extended Ethernet connection link distances are available.

Available later from Emerson

The new Emerson Process Management Solutions centre will



Emerson gets keys to the castle

be opening in Aberdeen in December. Only getting the keys to the new building at the end of July may mean it will probably not be 'officially' open during OE 2015, but sales engineering and service teams will have started moving in, as it is next to their larger regional service centre. In fact three existing facilities will be consolidated onto this one site.

Also available for delivery from late 2015 will be their new Micro Motion



Micro Motion HighPressure Coriolis meter for use offshore

flowmeters built for high pressure offshore chemical injection applications. The HPC010P is the first ultra-high pressure Coriolis meter developed by Emerson, and will have a maximum operating pressure of 1034 bar (15,000 psi) to address offshore chemical injection measurement for chemicals such as corrosion, scale and asphaltene inhibitors. The current practice is to use positive displacement meters in these applications, but the Coriolis meters are said to offer more accurate measurement and reduced maintenance compared to the traditional PD technology.

ESI Acquisition



Emerson's Craig Llewellyn

Earlier this year, Emerson acquired Energy Solutions International, a Houston-based international supplier of decision support software and services that enhance operational efficiency, commercial profitability and safety across the oil and gas pipeline, storage, marketing and distribution functions. Founded in 1976, ESI has grown to offer an integrated suite of operational management applications for pipeline modelling, leak detection and scheduling, covering also the commercial applications for transactional accounting and inventory management. These programmes have been recognized for improving both operational efficiency and financial profitability. Craig Llewellyn, president of Emerson Process Management Remote Automation Solutions, said, "ESI is a great strategic fit for the Emerson Process Management oil and gas SCADA business."

Wireless flow totalizer

A new flow totalizer introduced by Emerson, is the Rosemount 705

Nick Denbow's Roundup (continued)

Wireless Totalizing Transmitter.

This is suitable for retrofit to any flow-meter offering a pulse output, such as most obviously a turbine or positive displacement transmitter.

But being wireless the unit requires no additional field wiring, invaluable on retrofit applications, but also useful to enable the location of metering equipment exactly where the location is required.

The totalizing transmitter also delivers predictive diagnostics data to indicate instrument health and support timely maintenance to intervene on any issues before they impact operations.



Rosemount 705

The 705 delivers average flow rate and totalization on a one second update rate: it can also optionally provide a continuous readout display.

Wireless battery technology

The first question with wireless transmitters has always been quoted as “How long does the battery last?” After five years of operation of many Emerson WirelessHART sensors, the answer to this question was that they were not seeing a significant demand for replacement battery packs.

Yokogawa offer a two cell battery pack for their ISA100 sensor that is suitable for exchange in the field, even in a hazardous area. The pack, with enclosed lithium/thionyl chloride batteries (available from standard suppliers), allows cell replacement by the user. These battery packs still seem to have a 7-10 year life expectancy: the life actually depends on the sensor response time the user requires. By the time the battery pack needs replacement, it is likely that the current growth of battery technology will have provided a better replacement cell.



Perpetuum Harvester

There are also some really interesting developments in energy scavenging power sources already. In the UK Perpetuum developed an energy harvester that could power an integrated wireless vibration monitoring sensor, creating the power from a moving magnet within a coil. Subsequently, the company have split their vibration-generator unit from the harvesting electronics, so that the latter can replace, for example, the battery in a Rosemount wireless pres-

sure transmitter, and the Harvester part is mounted on an adjacent motor or similar – something that creates some vibration.

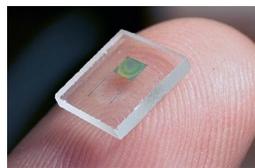
Then the Perpetuum harvesting electronics can also be used to collect energy from other inputs, for example from solar cells.



ABB MicroTEG & TSP300-W

From ABB, the TSP300-W wireless temperature sensor has a micro-thermal electric generator (micro-TEG, a form of thermopile) that can generate power from the temperature difference ($>20^{\circ}\text{C}$) between the ambient temperature, and that of the process being monitored, whether hot or cold. This is used to trickle charge a Lithium battery, which will operate for ten years at least.

Research Projects



Chip Power Module

The latest research is coming up with even more novel battery power ideas. At the smaller end of the size spectrum, researchers at the University of Illinois have produced a

lithium-ion micro-battery suitable for ‘on-chip’ integration, using 3D holographic lithography and 2D photolithography. Professor Paul Braun said, “A miniaturised high-energy and high-power on-chip battery would be highly desirable for applications including autonomous micro-scale actuators, distributed wireless sensors and transmitters, monitors, and portable and implantable medical devices.”



UI's Braun

New lighter batteries using sodium-ion technology are being developed by Faradion to replace conventional lithium-ion cells. Faradion is part-funded by InnovateUK with Williams Advanced Engineering and Oxford University. Sodium is much cheaper than Lithium, which will make the batteries lower in cost, and the sodium-ion battery has better high temperature stability. The first target market is in automotive power batteries, but other developments will follow.

Cambridge University researchers have taken vibration energy harvesting further, using parametric resonance (sic), which amplifies the vibrations produced by traffic moving over a suspension bridge. The team from CSIC, the Centre for Smart Infrastructure and Construction, under Prof Middleton, have designed vibration powered wireless strain sensors for use on a project on the Forth Road Bridge, in Scotland, where the sensors are mounted on the suspension cables, and under the bridge deck, to monitor the effects of

Nick Denbow's Roundup (continued)

traffic vibrations. Next year the new Queensferry crossing will be opened, taking much of the strain away from the Forth Bridge, which with wireless sensor monitoring and reduced traffic flows might continue operations for 50 years.



Scotland's Forth Road Bridge

Cambridge Engineering Department researcher Dr Ken Ogata is investigating the reactions between silicon and lithium in the next generation high capacity lithium batteries, using a combination of nanotechnology and NMR, nuclear magnetic resonance. Replacing the carbon anodes with silicon has the potential to increase capacity by a factor of ten, if the anode micro-structure can be designed properly.

ScrutonWell Thermowell

Wika has introduced a new design of thermowell for use in processes with high flowrates, when the thermowell might fail the strength calculations required according to ASME PTC 19.3 TW-2010, where and other opti-



Scruton Well thermowell

mizations – such as a shorter or stronger stem or a support collar - are not desirable.

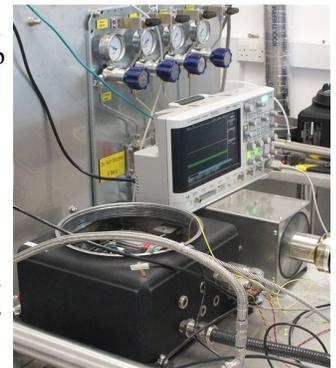
Called the ScrutonWell design, the helical form of the stem is applicable to all solid-machined, barstock thermowells from WIKA. It is available in two versions: manufactured in a single piece or with helices welded onto it. Installation and removal are just as easy as with a standard thermowell.

The helical form of stem damps out the excitation that leads to the stem vibrations that can cause failures. In fact, in comparison with the conventional stem form, the new design reduces the flow induced vibration by more than 90 %.

Natural gas analyzer

Michell Instruments, manufacturers of dew point, RH and gas analysis equipment, have won a Euro50k grant from the Horizon 2020 Research and Innovation Framework to fund the development of an energy-saving analyzer for the natural gas processing industry.

The grant will be used to fund a six-month project to develop the business case for a commercially viable analyzer, to provide real-time measurements to enable full control over natural gas processing - and one which is also able to cope with changes of composition in the gas streams.



The importance of this development is two-fold. Firstly the sources of the gas used around the world are changing to include both shale gas and bio-methane: an analyzer that is able to cope with changes in composition is necessary to cope with this. Secondly, real-time analysis of gas composition will increase energy efficiency by around 20%.

This will not only reduce carbon emissions during processing, but could also save the global natural gas processing industry an estimated Euro640Bn a year.

Michell will present some of this research at OE2015, plus also their D-MET, a moisture analyser for use in natural gas with a varying base composition, such as blended gas from multiple sources, without the need for added manual correction factors.

Cisco invests \$1Bn in UK

Cisco has a significant presence in the UK: in fact it is Cisco's second largest country market, and they employ 7000 people directly, in the UK.



Cisco's former CEO John Chambers

In 2011 Cisco made a commitment to invest \$500m into UK-based activities, research and acquisitions. Last month their future strategic commitment

Nick Denbow's Roundup (continued)

was increased: they plan now to invest a total of more than \$1Bn over the next 3-5 years.

This figure was announced after a meeting between the UK Prime Minister David Cameron, and the Cisco Chairman and CEO



Cisco's Internet of Everything

has included acquisitions in wireless software, next-generation video delivery, and cloud-based security technologies.

In recognition of the productivity challenges faced by the UK and the necessity to increase the level of students utilising science, technology, engineering and maths (STEM)



Phil Smith, CEO Cisco Ireland and UK



UK PM David Cameron

John Chambers, accompanied by incoming Cisco CEO Chuck Robbins and Cisco UK and Ireland Chief Executive Phil Smith.

The investment will support the next phase of the UK's digiti-

skills, Cisco will also further its UK-based Cisco Networking Academy education programme to promote innovation and entrepreneurship.

This builds on its UK-wide network of innovation centres, established via their existing British Innovation Gateway (BIG) initiative, which includes other ventures known as 'IDEALondon', the 'National Virtual Incubator' network, and 'CREATE'.

By the end of 2015 Cisco will have doubled the size of its offices in Central London, creating 200 new high-value jobs.

zation plans. Within the \$1Bn, a commitment of \$150m for Internet of Everything.

UK start-ups and venture capital equity investments will focus on key priorities for Cisco and the UK.

These include applications of Internet of Everything (IoE) technologies across the financial technologies, retail, and healthcare industries, and smart city development. In addition, corporate investments will also accelerate innovation in cybersecurity.



New Cisco CEO Chuck Robbins



Nick Denbow is European Editor of the Industrial Automation and Process Control INSIDER. He has had a long career in PR and Marketing in the Automation Industry, and blogs regularly at "Nick Denbow's Industrial Automation Insider Blog" <http://www.nickdenbow.com>

Capital will also be made available for further strategic acquisitions by Cisco in the UK, which over the past five years

Odds and Sods from the Industry

Emerson simplifies wide-area plant network deployment with a single access point for Wi-Fi and WirelessHART



1552 WU Gateway

The Smart Wireless Gateway 1552WU enables a full featured wireless solution based on a single platform for both *WirelessHART* sensors and Wi-Fi applications, helping to lower costs and reduce deployment time
 AUSTIN, TEXAS (July 28, 2015) – Emerson Process Management has introduced the Smart Wireless Gateway 1552WU, a Wi-Fi access point that connects *WirelessHART* sensors to the control network.

Jointly developed as an integral part of Cisco’s IoT Systems, the 1552WU Gateway is a fully- fea-

tured mesh access point that simplifies Wi-Fi and *WirelessHART* installations, lowers costs and reduces deployment time. Users no longer have to run fiber optic cables for ethernet communication to every *WirelessHART* Gateway. The 1552WU seamlessly connects to neighboring access points allowing complete wireless coverage, with only local power wired to the 1552WU.

“Customers get the combined industry and technical expertise of Emerson and Cisco in a high-performing, secure, scalable gateway that safeguards data integrity,” said Alexandre Peixoto, industrial wireless manager, Emerson Process Management.

With this product, Cisco and Emerson have provided a solution that meets both the Operations Technology department and the Information Technology standards.

“We are pleased to continue our collaboration with Emerson,” stated Tony Shakib, vice president, IoE Vertical Solutions Engineering for Cisco. “By integrating Emerson’s *WirelessHART* Gateway with Cisco’s outdoor, hazardous-location-qualified access points, the 1552WU provides customers with the efficiency, scalability, and security of a single wireless network solution that can be utilized for multiple use-cases, including plant control, worker mobility, and safety. This solution extends to meet the demands from both Operational Technology and Information Technology, in industrial environments to realize the Internet of Things vision.”

The 1552WU is another example of how simplifying the installation with wireless technology enables customers to apply Pervasive Sensing™ strategies to improve plant performance and reliability. As obtaining data from hard to access locations becomes easier and more cost effective, process manufacturers are

better able to address concerns such as corrosion, energy consumption, health and safety, and the environment.

HONEYWELL’S LATEST EXPERION LX RELEASE ENHANCES BATCH, SCADA AND ENGINEERING CAPABILITIES

Compact, Easy-To-Use Control System Leverages Proven Experion Technology

Honeywell Process Solutions (HPS) has announced its newest version of [Experion® LX](#), a distributed control system (DCS) designed specifically for small- and mid-sized companies.

Experion LX is available in North America, Latin America, Europe and South East Asia and is sold and delivered exclusively through Honeywell channel partners and system integrators.

Built on the proven Experion Process Knowledge System (PKS), Experion LX includes a number of capabilities to support midsized chemical processing, industrial power, biofuels, pharmaceutical, food and beverage, and water and wastewater facilities.

“Increasing manufacturing agility, meeting strict regulatory standards, controlling energy usage and reducing maintenance costs are pressing challenges faced by our small- and mid-sized customers,” said Shen Tao, Experion LX senior product manager, HPS. “A powerful, compact DCS like Experion LX provides those customers with a cost-effective solution to efficiently solve the challenges of smaller plants and operations.” Experion LX’s major enhancements include:

- **Enhanced Batch operations capabilities:** S88 compliant batch system runs entirely on Experion LX’s C300 Controller providing faster and more reliable batch operations compared to the competing server-based system. Class-Based Recipes enable reuse of recipes and helps reduce the cost of recipe engineering, maintenance, and testing.
- **SCADA enhancements:** Experion LX provides a comprehensive set of SCADA capabilities including new equipment based configuration which significantly reduces engineering effort.
- **Engineering tools enhancements** HMIWeb Solution Pack provides a ready-to-use library of standardized objects to build ASM compliant displays, enabling the quick projects implementation and effective plant operation. CAB Developer and Application Development Toolkit allow efficient algorithm and application development tailored for specific requirements, reducing engineering and maintenance costs.

Learn more about Honeywell’s [Experion LX](#) and download the [eBook](#).

Odds and Sods from the Industry (Continued)

aeSolutions' Latest Release of aeShield V4.0 with aeFacilitator, Safety Lifecycle Management Suite, is Making Safety Simple

aeSolutions has announced the release of aeShield V4.0 with aeFacilitator, the latest version of their Safety Lifecycle Management platform.

aeShield paired with aeFacilitator provides maximum value to customers by enabling different personnel/groups throughout organizations to seamlessly transfer data to support the entire process safety lifecycle from hazard analysis all the way through to Management of Change (MOC) and back through the process again to effectively drive continuous risk reduction in the oil & gas, chemical, petrochemical, and specialty chemical industries.

aeShield with aeFacilitator enterprise software application is making safety simple by centralizing critical process safety information, consolidating the number of tools used throughout the lifecycle, and optimizing data accessibility across an organization.

aeShield V4.0 with aeFacilitator NEW Functionality Includes:

- ◆ Editor to override SIF targets when not generating target from traditional LOPA methodology
- ◆ Configurable severity types and reporting options by severity
- ◆ Additional health meters to further analyze bypass, demand, and spurious trips
- ◆ Enhanced SRS datasheets editor including templates for faster development and reusability
- ◆ Upgraded SRS datasheet including color coding and mapping to IEC 61511 sub-clauses
- ◆ Improved aeFacilitator interface and advanced reporting

"aeShield V4.0 with aeFacilitator is the only comprehensive tool to truly make compliance with the safety lifecycle simple," states Mike Scott, Executive Vice President of Global Process Safety Technology for aeSolutions. "Companies were challenged with conforming to ISA84/IEC 61511 standards due to the immense amount of data to collect and the disparate tools they were using. aeShield with aeFacilitator is a single tool to provide a single source of the truth. Our customers are realizing significant cost savings and more importantly are improving the process safety performance at their facilities. This translates directly to reducing risk, saving lives, and protecting the environment."

Renishaw Sponsors AM and 3D Conference

In a show of support for the additive manufacturing community, global engineering technology firm Renishaw sponsored the

internationally renowned, knowledge transfer event focused on production using additive layer-based technologies, the Additive Manufacturing and 3D Printing International Conference. This is organised by the University of Nottingham, and was held from 7-9 July, 2015.

The Additive Manufacturing and 3D Printing International Conference has been running for almost a decade, and the event was one of the first dedicated to additive manufacturing. Renishaw's additive manufacturing specialists attended the exhibition, sharing their wealth of knowledge with over 300 delegates from 19 countries.

"Emerging technologies require support, which is why Renishaw has been involved with the additive manufacturing (AM) community since day one," says Robin Weston, marketing manager of Renishaw's Additive Manufacturing Products Division. "The industry is seeing new developments every day, so the Additive Manufacturing and 3D Printing International Conference is a great opportunity to share knowledge and celebrate achievements."

The first day of the event was dedicated to scientific advances in AM. Then the next two days provided a conference during which academic and industry speakers discussed industry topics, such as the future materials to be used in AM and applications of AM in the production and construction sectors. An exhibition including some of the highest profile names in additive manufacturing also ran in parallel.

Engineers test-fly 3D-printed aircraft from Royal Navy ship



Separately, Les Hunt, Editor of DPA, Design Products and Applications, carries a report that a 3D-printed aircraft has been successfully launched from the bow of the Royal Navy vessel, HMS Mersey, and achieved a safe landing on a Dorset

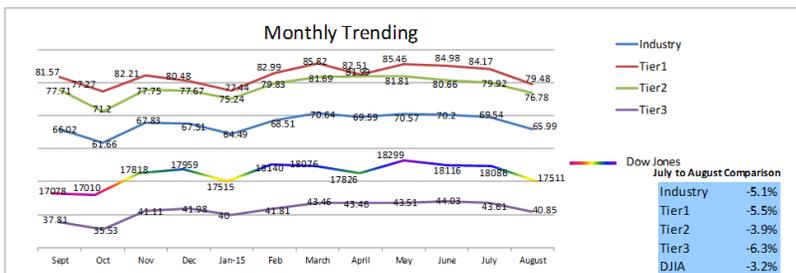
Can It Get Any Worse?

INSIDER

INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

By Mary Samuelson



After stabilizing for a while and even showing some improvement, the Automation Control Industry Index and the Dow both took a pretty hard slide in August. The Index dropped 5.1%, with Tier III companies hit hardest, showing a loss of 6.3%. The Dow outperformed the industry aggregate by 1.9%, with a loss of 3.2% since last reporting.

It appears that the rollercoaster ride is not yet at an end, after all.

While the overall performance for the ACI is once again far from stellar, a few of the companies in our industry continue to perform better than the Dow and much better than their industry competitors. The big question is, WHY?

In an attempt to answer that question, we looked at those companies who did best and those who did most poorly in this tough business environment, between July 18 and August 18, 2015. Chart 2 displays both groups.

Looking at the comments of the leaders of those companies that showed the largest declines, provides an indication of the “why” behind their current situations as

well as outlining the strategies they plan to implement to correct the current shortfalls.

Belden

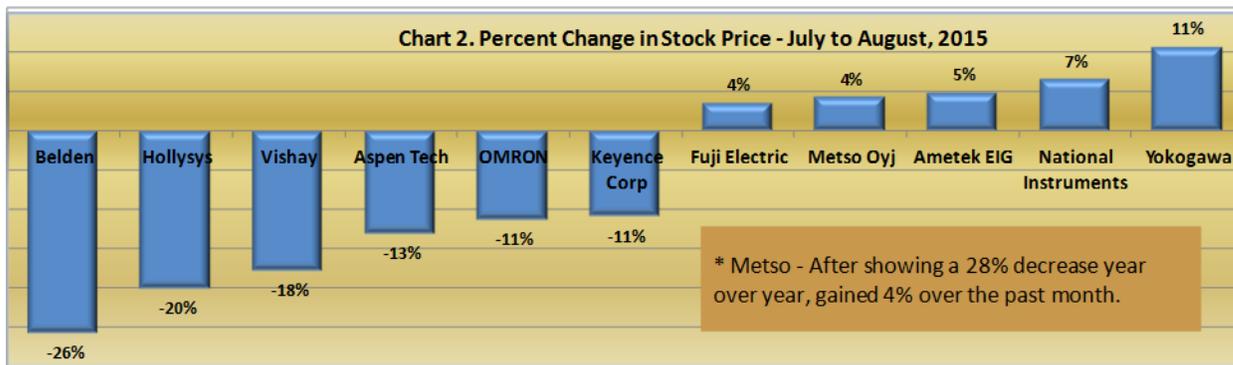
After a disappointing year, John Stroup, Belden President and CEO made the following announcement during the July 29, 2015 Earnings Conference Call.

“On our first-quarter earnings call, I shared with you some concerns regarding customer demand in a few of our served markets. A strong US dollar, the impact of lower energy prices and a lackluster Chinese economy are impacting demand for our industrial segments. Furthermore, it’s now clear that our broadcast customers will defer capital spending on traditional infrastructure equipment as they navigate

significant price decline in the past four weeks, and it has seen negative earnings estimate revisions for the current quarter and the current year.” Belden stock dropped an astounding 28% over the past month, leading Zacks to change its rating from 4 to 5 “strong sell” on August 17. On the same date, Moody’s also revised its ratings outlook from stable to negative, citing “recent softness in the company’s Broadcasting and Industrial Connectivity reporting segments and expectation of continued softness in the near term.” Belden is still financially strong, but unless/until the economic situation changes, they predict a lean year.

Hollysys

Hollysys is also struggling. Although



through a number of important industry transitions. As a result, we believe it’s prudent to adjust our revenue expectations for the remainder of the year and take swift action to align our cost structure and profit margins.

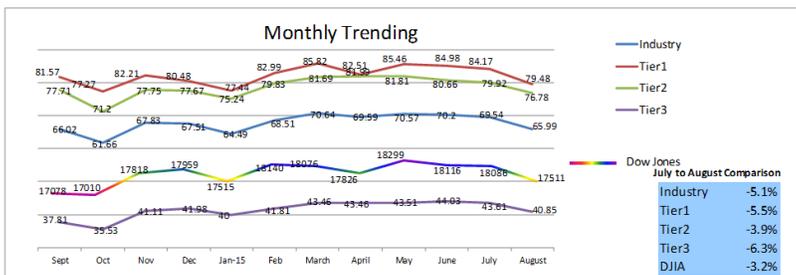
On July 31, Zacks Equity Research recommended off-loading Belden stock, commenting that **Belden** “has witnessed a sig-

overall their year over year stock decline was only 5.23% between July 2014 and July 2015, Hollysys stock dropped of 20% in the past month. Baiqing Shao, Hollysys Automation CEO, acknowledged a relatively large decline in Industrial Automation Division revenue year-over-year, which is especially significant since Industrial Automation sales currently make up 40% of Hollysys revenue. He then outlined

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Can It Get Any Worse? (continued)



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Hollysys' survival strategy, citing changes in the types of contracts they will pursue including sharper focus on robust contracts and the addition of expert staff to promote future investment opportunities in food and beverage, environment, and pharmaceutical. The change in focus will hopefully help Hollysys recover from the decline that has played havoc with its bottom line.

Vishay

Vishay stock fell 18% in the past month, but accurate financial information is not available to date, due to an error in revenue reporting from one of its subsidiaries that could affect reported earnings as far back as 2011. This error, which made it impossible to file a timely Form 10-Q, resulted in a notice of Delisting from the NYSE, and could be part of the reason for the stock decline. Preliminary financial results, however, are not promising. The error is expected to be corrected and audited information should be available in early September.

In an effort to provide stockholders with some indication of its current condition, Vishay released preliminary unaudited financial results on August 4, but noted that those results are subject to change. The preliminary results show Vishay Qtr 2 year over year revenues down across all segments with decreases of 6.7% for Foil Technology Products, 7.9% for the Force

Sensors Segment, and 12.1% for its Weighting and Control Systems Segment. Revenues are up from Qtr 1, 2015, however, in all areas.

The clear winner for the month of August is Yokogawa with a gain of 11% since July.

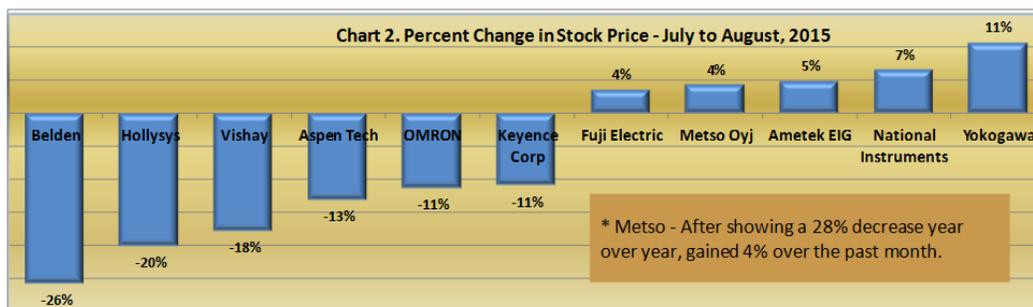
Vishay cites the reason for the year-over-year decrease in gross margin for its Weighting and Control Systems Segment as "primarily due to the effects of foreign

the bottom line a facelift.

Yokogawa

The clear winner for the month of August is Yokogawa with a gain of 11% since July. Although the company experienced the same slump between December of 2014 and April 2015 observed for the industry in general, it has since recovered and moved ahead, showing a year to date return of 17%.

With its diverse, global market penetration in areas such as pharma, food and beverage, and renewable energy, combined with its commitment to leading edge technology, Yokogawa is better positioned to weather the oil price and currency fluctuation storms that are having such a negative effect on other ACI suppliers.

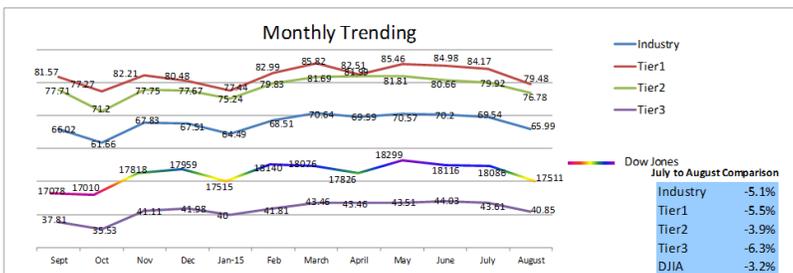


currency rates and unfavorable product mix. The sequential decrease in gross margin is primarily due to higher freight costs and unfavorable product mix." No mention was made of changes or improvements currently being implemented to give

With the award of several large projects earlier in the year and the release of ground breaking new products like the SensTation Digital sensor measurement system, a scalable and integrated solution that combines the unique capabilities of digital SMART sensors and the SMARTDAC+ data acquisition and control system, current economic conditions are not having the negative impact on Yokogawa that is seen across the industry in general.

Can It Get Any Worse?

... continued...



National Instruments

National Instruments also deserves mention for prospering over the past month when so many others did not. As an example, 69% of all companies in the index showed a loss and gains when present, were small as is evident from Chart 2, where three of the top five gained 5% or below.

National Instruments has a current 1 year return of -11.5% and a YTD return of -5.6%, but that may change shortly. At NI Week in early August, the company released information on several new products, including a wireless test system (WTS) that dramatically lowers the cost of high-volume wireless manufacturing testing. As the IoT moves closer to becoming a reality, WTS will increase in demand.

Since July reporting, and the new product press releases, stock price has increased over 7%. *The Street Quant Ratings* agrees, rating National Instruments as a buy. It quotes multiple reasons for the rating, including revenue growth, a solid financial position, reasonable debt levels, expanding profit margins and a notable return on equity. They acknowledge that the stock has not performed well, but state that in their opinion the company's strengths outweigh the weak stock showing.

In Closing

The latest reporting period is a disappointment after seeing the period of calm

that extended from April till July for the industry in general. Economic conditions continue to be a hurdle that many within our industry (as well as others) are finding

At NI Week in early August, the company released information on several new products, including a wireless test system (WTS) that dramatically lowers the cost of high-volume wireless manufacturing testing. As the IoT moves closer to becoming a reality, WTS will increase in demand.

it very difficult to clear. As of this reporting, the stock market continues to drop, and at close of business on Thursday, August 20, The Associated press reported that "The U.S. stock market endured its worst performance in 18 months, driven lower by another slump in Chinese shares and heavy selling by technical traders."

Our industry is struggling, but so are many others. Some of our more forward-thinking members are making changes while others seem to be taking more of a "wait and see" or "just ride it out" philosophy. I can't speak for anyone else but I can say with all sincerity that I am ready for this particular roller coaster ride to end!

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INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

By Mary Samuelson

The *INSIDER* Health Watch™ is written by Mary Samuelson, 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

TEOTWAWKI!

What? That stands for “The End of the World as We Know It.”

No. I haven’t gone pointy-headed on you.

Maybe I should have put an “A” in there...for the automation world. Because that’s what appears to be happening. The easy to understand categories and markets in the automation industry are just not coherent anymore.

We have companies from far outside the automation industry entering the market. We have companies that have just been formed to operate in the automation market, like Bedrock Automation.

We have companies that are changing the original value creation model of automation. We have cloud networking companies thinking about SCADA.

Heck, IBM has said they are now a SCADA company. Google owns automation companies in both factory automation (robotics) and building automation (NEST). These companies are orders of magnitude bigger than the conventional automation companies— even the big ones.

And we have small, startup companies building sensors that are designed from the start to be explicitly for the Internet of Things.

You have to ask yourself, are the big automation companies agile enough to tiptoe through all the landmines, and probably a few meadow muffins, to be able to come out of this as strong or

IBM has said they are now a SCADA company.

stronger than they were ten years ago?

Of course, the big fish eat little fish. Cameron, not a very little fish, was just swallowed up. Schneider has put together a very shaky deal with Aveva. Emerson, Siemens, et al., are on the acquisition prowl.

When John Berra and Duncan Schleiss of Emerson brought the newly designed DeltaV to show Chuck Knight in Saint Louis at Emerson Corporate, he noted that it was really quite different than anything anybody else had, and asked them if they were sure it would go. Especially since the Ethernet switch, on which the success of the

design depended, hadn’t been built yet. Berra and Schleiss assured Knight that it would be developed really soon and they wanted to launch anyway. Knight replied that he supposed they knew they were betting their jobs.

The people willing to play the game of “You Bet Your Business” are mostly not in the conventional automation companies. They are the visionaries that are seeing the possibilities as the automation systems expand and become more open collections of networks and sensors— the Internet of Things and Industry 4.0.

What I am looking for is the same sort of visionary within the factory and process automation companies, or the system integration companies— and I am having a great deal of trouble finding them.

Elsewhere in this issue, Mary Samuelson’s Health Watch reports on the trouble the industry is in, while Joy Ward begins to report on the qualitative research we have done for the last year and a half on a hiring model for automation professionals, and automation leaders.

One of our conclusions is that true automation leaders need to be passionate about changing the world. The world of automation will change. The question is, will the existing automation companies survive the changes?

Probably not.

Comments? Talk to me!
waltboyes@spitzerandboyes.com

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

How to Hire the Automation Leader

by Joy Ward

After more than a year of interviews with automation's best and brightest we have learned a great deal about what it takes to be a leader in an automation company, or a leader in automation at an end user company. Many of the traits are the same, and there is much back-and-forth between automation companies and their end-user customers. Automation companies often hire from their customers, and their customers repay the favor, hiring from the automation companies.

We did this by deep interviews with two dozen people, men and women, who are proven automation leaders. While this is not a sufficient sample for a quantitative report, it is sufficient for a qualitative study. Remember, quantitative research tells you "what" and "how many" while qualitative research tells you "why" and "why not."

So after a year and a half of interviews, we are prepared to give you a composite profile of automation thought leaders and what to look for as you are hiring for the future.

Let's get the obvious out of the way. Of course, automation leaders are extremely intelligent and focused. There are no surprises there. They also have a good grasp of the way business is done.

What may come as news is that not all have advanced degrees in engineering. Some have advanced degrees in other fields not far from engineering, such as mathematics. Some have only Bachelors' degrees. We don't think education is irrelevant, only that the field is multidisciplinary, and attracts people with many different interests and capabilities. If you restrict your hiring to only people with engineering degrees, you may be losing out on a much larger talent pool, which, experience shows, may provide as many or more successful automation leaders as the engineering fraternity.

Almost all the leaders we interviewed have side interests that feed back to, and work well with, their interests in automation. These interests could be computers in general or radio technology but they are not far removed from auto-



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mation and control processes.

Also, unlike some areas of technology, those deeply interested in automation are focused on making things, especially tools, which will be useful in controlling their environment or the world around them. They are fundamentally, "makers" as a new slang word would have it.

Compare this to commercial software designers who know that what they design will change quickly. Automation designers look for ways to make longer lasting breakthroughs. We think that this is true for both software and hardware designers in automation companies, because both kinds of products tend to last a long time in manufacturing situations, and are not controlled by either the 18-month software cycle or Moore's Law.

What is true across the spectrum of automation leaders is that they have an innate ability to see patterns, even across divergent information sources. So even if one has a degree in something far afield from engineering the driving force for his or her mental passion is finding the underlying patterns and designing ways for systems and/or people to work together towards common goals or targets.

Remember, quantitative research tells you "what" and "how many" while qualitative research tells you "why" and "why not."

This is very important, because the ability to see patterns can generalize into seeing patterns of behavior in teams, and can be used to be a better and more successful manager. It helps in becoming a leader, because this pattern recognition ability often includes the ability to think unconventionally.

That brings us to the next overriding reality about automation leaders. All of the very successful, both personally and in regards to what they help their companies produce, deeply appreciate and thrive when working as part of a strong team. These individuals are happiest when their team is making corporate contributions to the industry.

Loners can and do make individual technological breakthroughs but they do not generally tend to be the most influential automation leaders over the long run. There are a few extremely im-

How to Hire the Automation Leader (continued)

by Joy Ward



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Profile

portant leaders who might seem to break this mold but when their lives and careers are closely inspected we see that they are not really loners. Just like the other leaders, they revel in their team accomplishments and professional involvements.

What they lack, it seems to us, is an overriding passion for bettering the world. Loners are more interested in their own accomplishments, rather than leaving a lasting group legacy for the company.

An extension of this team focus extends to automation leaders who feel such joy in participating in automation that they can be compared to playing on a huge playground with all their friends, who are just as excited about creating automation and manufacturing tools as they are. The members of the team are not in competition but actually enjoy seeing each other excel.

This appears to continue even after team members move to other companies.

We have become aware of the friendships that continue in companies that otherwise are fierce competitors. It seems to us that there is a spirit of co-opetition that can sometimes be harnessed, as can often be seen in Standards work. Sometimes co-opetition, when approved of by leadership, can produce strong new realities and new opportunities for both companies to prosper.

The strongest leaders in automation recognize the team excitement in those who report to them and work to encourage it. In fact, these leaders are excellent at motivating others to create more excitement for their visions. They do not push others from behind but lead from the front.

All of the previously discussed dynamics are important but there is one more personality trait that must be evident to make an automation leader.

An automation professional can be very intelligent, be a team player, well-schooled in engineering or another field

such as mathematics and still never be a true automation leader or visionary. He or she may be a perfectly useful cog in the automation enterprise, performing their job day in and day out, but not have the one trait that fully enables an automation leader.

This one crucial personality aspect is the intense desire to improve the world. Every one of the automation leaders we interviewed is driven by a passion for leaving a better world than he or she entered. This desire is a core emotional driver to who and what they are as people and professionals.

To secure an automation leader, as opposed to a quality automation professional, then, you must hire for a team-player, a visionary, and a person with a great desire to change the world. It is possible to research for this, to test for this, and to make sure that the person you hire is in fact driven by passion, not just going through the motions.

In summation, the leaders in automation are, for all of the reasons discussed before, shining stars upon whom companies and their peers wish. These men and women happily carry others with them into the better world they dream of and build with their teams.

What is true across the spectrum of automation leaders is that they have an innate ability to see patterns, even across divergent information sources.

These leaders have an excitement for the profession and the future that is infectious.

In the coming months we will focus on other issues of concern to the automation industry that we have discovered based on our research. If you'd like to talk to us about our research, or to arrange some specific consulting services, please let us know at joyward@sbcglobal.net.



Joy Ward is Qualitative Research Practice Lead at Spitzer and Boyes LLC, and has over 30 years of experience in branding, consumer psychology research, strategic planning, and marketing. Contact her at joyward@sbcglobal.net

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The INSIDER is edited by Walt Boyes. Nick Denbow is the European Editor. Joy Ward is a columnist. Mary Samuelson is a columnist. Additional reporting is done by David W,



Spitzer PE., Rajabhadur V. Arcot and Victor Marinescu.

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Rajabhadur V. Arcot: India's development model holds promise both for the country and global technology companies

According to latest data released by the World Bank, the India's GDP crossed the \$2-trillion mark in 2014 and it has doubled the size of its economy in seven years.

The country's future growth prospects too look promising. The recent report from the International Monetary Fund (IMF) has projected India's GDP to grow at 7.5 as compared to China's 6.8 percent in 2015.

While the reports from China, a country which has been the growth engine of the global economy, are disturbing, the news from India is reassuring.

Alongside these initiatives, the country has also launched a massive program that will focus on workforce skill development.

Focuses both on asset formation

lars on which the new growth model is built. Improving the quality of life through better sanitation and health facilities, making electricity available to all, and more equitable growth are some of the other essential components of these new initiatives.

and job creation

As regards the projections for the next year, India is expected to maintain its growth at 7.5 percent whereas China's GDP growth rate will decline to 6.3 percent. The same report expects a muted global economic expansion in 2015 and it has lowered its forecast from its earlier 3.5 percent to 3.3 percent. While the reports from China, a country which has been the growth engine of the global economy, are disturbing, the above news from India is reassuring.

India's new economic growth model

India is in search of a growth model that will not only provide impetus for its GDP to grow at close to double digits in a sustainable manner over a significantly long span but also create jobs to alleviate poverty among a large section of its population and enhance the quality of life.

Having realized that meaningful poverty alleviation has to go beyond providing subsidies on food, fertilizers, diesel, electricity and such others to the needy, the country has embarked on new initiatives. Building 100 smart cities, generating 100 GW of solar power, rejuvenation transformation of around 500 existing mid-sized cities that have a population of around 100,000, digitizing India, and making India a global manufacturing hub are some of the pil-

These initiatives are aimed at asset formation on one hand and job creation on the other.

Building new cities, urban development, and construction of dwellings will give big boost to the country's construction industry which provides the largest employment opportunity outside of agriculture. Thus, the boost to the construction activity will result in creating job opportunities to the country's most needy – the migrants from the rural areas and those working in the agriculture.

The Indian economy needs to draw people from the unremunerative agriculture sector so that they can work in more productive segments. Presently, almost 50 percent of the country's population live in villages and depend for livelihood on agriculture, which contributes only to around 15 percent of the GDP. It is an unsustainable imbalance that needs to be addressed urgently and the way forward is to create alternate job openings.

Additionally, the growth of the construction industry will also spur the demand for cement, steel, construction equipment and thereby bolster these industries to expand. These programs will give boost to the growth in the country of not just the traditional manufacturing industry but also the technology industries that will rule the world in the coming decades,

Rajabahadur V. Arcot: India’s development model holds promise both for the country and global technology companies (continued...)

such as information & communication technologies and automation.

The expansion of the manufacturing industry, which presently accounts only for 12 percent of India’s GDP, is crucially important for the future economic growth of the country.

Manufacturing industry plays a crucial role

Anecdotally, the manufacturing industry had played a major role in the economic growth of advanced countries and India possibly cannot be an exception.

Li Yong, Director General, United Nations Industrial Development Organization, points this out in the Industrial Development Report 2013, “for developing countries aiming to maintain growth while sustaining job creation, manufacturing offers an opportunity not only to rebalance the economy towards higher value-added sectors but also to provide a relatively wide employment base with higher labor productivity. The transition from agriculture to services, especially for low-income countries, offers the opportunity to achieve only the first objective, not the second.”

The country’s Make-in-India initiative aims at spurring the expansion of the manufacturing industry. If India’s manufacturing industry can latch on to the emerging technologies and industry trends then the country can secure its future.

Efficient functioning of the manufacturing industries, cities & all associated services such as transportation, city administration, distribution of electric power and others demands that they leverage state-of-the technologies to achieve autonomous, collaborative, and automatic functioning with minimal intervention.

Therefore, operationalization of these programs will involve massive investments in building the technology infrastructure such as the network platform, manufacturing facilities for smart devices, and others.

The factories of the future and smart cities will demand extensive application of Internet of Things, data analytics, cloud computing and automation so as to monitor, operate, and control a variety of activities along the manufacturing value chain, infrastructure & support facilities and systems; manage the sourcing and distribution of electric power depending on the need, availability, tariff; the traffic management and transportation system, and such other facilities at optimal levels of efficiency and costs.

Massive investments attract global technology companies

While the State has approved total investments to the tune of US\$16 billion for the smart city and improvement of existing mid-sized cities, the total investments will most likely exceed US\$1 trillion. The expected investments in the case of 100 GW of solar power are around over US\$100 billion.

Add to these proposed investments in building smart cities and solar power plants, the investments in creating the technology infrastructure to make available all government related services through mobile applications and online under the Digital India program to fully grasp the business opportunities that the new initiatives offer.

Automation and other technology suppliers such as ABB, Schneider Electric, Alstom, CISCO, IBM, Google and others will significantly benefit from these investments.

Some of them have created separate business verticals that will focus on smart cities and Internet of things.

While other technology companies will also move forward to stake their claims, a flurry of agreements even by nation states are getting signed.

At the beginning of the year, coinciding with the visit of President Barack Obama to India, the United

States Trade and Development Agency (USTDA) signed agreements with three states (Uttar Pradesh, Rajasthan and Andhra Pradesh, for developing smart cities at Allahabad, Ajmer, and Visakhapatnam respectively.

The expansion of the manufacturing industry, which presently accounts only for 12 percent of India’s GDP, is crucially important for the future economic growth of the country.

Rajabahadur V. Arcot is an Independent Industry Analyst and Business Consultant 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: India’s development model holds promise both for the country and global technology companies (continued)

USTDA will contribute funds for necessary feasibility studies and pilots, study tours, workshops or trainings and other projects to be mutually determined.

Singapore has agreed to support the building of Andhra Pradesh’s new capital city which is expected to cost around US\$16.5 billion.

Maharashtra State has signed a memorandum of understanding with Cisco for making Nagpur a smart and safe city.

Above all, these initiatives will help the country to meet effectively, efficiently, and in an environmentally friendly manner its growth needs in sectors such as in energy and transportation.

For example, the goal of generating 100 GW of electric power will substantially contribute to reduction of carbon emission and making electricity available to millions of people who have no access to it presently.

Currently India generates around 275 GW of electric power, which does not adequately meet the country’s demand.

Augmenting the existing generating through construction of fossil fired power plants the transmission and distribution capacity necessary to make electric power available to far flung villages will be more expensive and time consuming compared to setting up of solar power plants at the consumption centers.

Plans to add 100 GW of solar power makes eminent sense as the country is blessed with almost 300 days of sunshine in a year. It paves the way for India to adopt microgrid supported distributed generation architecture.

Global economy will benefit from India’s Growth

A developing country, whose economy is passing through a sustainable growth phase, has the potential to support the expansion and growth of many of its trading partner countries and companies.

China has been playing that role for past few decades and it looks as though that it is now India’s turn to play that role. India’s existing domestic industry, although doing well in certain segments, such as pharmaceuticals and automotive, does not

have the depth and width to meet not only the aspirational wants of its growing middle class but also the economic growth needs such as electronic and communication products and equipment, information technology products, systems & solutions, oil, and coal.

India, therefore, depends on the import of these and others to meet the growing needs of its economy.

Thus, India’s economic development inherently supports the industrial growth in other countries as well.

The growth of Indian economy and its growth model, therefore, augurs well for technology and commodity exporting countries and companies both in the near and long term perspectives.

Add to these proposed investments ... the technology infrastructure to make available all government related services through mobile applications and online under the Digital India program to fully grasp the business opportunities that the new initiatives offer.

Rajabahadur V. Arcot is Director Asia Operations for Spitzer and Boyes LLC, the publisher of the Industrial Automation INSIDER. Contact him at rajabahadurav@gmail.com.

Spitzer and Boyes LLC is a technology consulting firm providing expertise in marketing, social media, M&A activity, technology transfer, and strategic advice to companies in technology fields such as automation and control system vendors, system integrators, distributors, and end users and asset owners.