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Data analysis takes centre stage at HUG EMEA 2015

Honeywell has seen a 20% drop in the total operational spend of their customers since mid-2014 and, according to Vimal Kapur, president of Honeywell



Process Solutions (HPS) there looks to

be no sign of an upturn, in the short term at least. The new generation of engineers has also seen a shift in focus away from hardware. These new engineers do not have the same wealth of experience about the often ageing control technologies that continue to be used in many process plants, explained Kapur, which has led many of Honeywell's latest developments to focus around more intuitive control solutions.

At the 27th annual Honeywell User Group (HUG) EMEA event, which took place in Madrid, Spain, late in November, Kapur explained that the pace of

technology change is much faster today. "Systems traditionally would have become obsolete every five to ten years. However, the underlying operating system technology used today is changing so rapidly that, whether we want it or not, there is a need to update systems more regularly. This is becoming more of a challenge for users too – the more they delay updating, the more obsolete their systems become. I do not see this trend changing and it is becoming increasingly difficult to sustain older technology," he said.

Kapur says that the much hyped IIoT is currently throwing up more questions than answers. "We don't believe that customers will be throwing away their existing systems to

Honeywell has seen a 20% drop in the total operational spend of their customers since mid-2014, and there looks to be no sign of an upturn in the short term...

implement IIoT, so we need to be thinking more about unleashing the power that they already have. I believe that control systems will become the heart of the IIoT, which is basically a network that connects people, processes and assets. This requires process data, which comes from the control system."

According to Kapur the IIoT will give engineers the ability to host applications in a much more centralised environment. With different source applications becoming centralised in the Cloud it will not be necessary

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Honeywell Scores: HUG EMEA and that Elster Deal

to maintain the same application multiple times, and upgrades will be much easier to achieve. It will also require less skilled people to manage applications. “The IIoT will change the paradigm of how different applications are run in the plant,” he said. “Plants have these same capabilities today, but the IIoT will allow for greater efficiencies and increased uptime. It offers nothing new, just a way of doing things differently.”

New software in 2016

Kapur promised some new offerings from Honeywell early in 2016, which he said will give the ability to safely and securely host certain predictive models in the Cloud environment, allowing experts from any-



Honeywell CTO Bruce Calder

where in the world to connect to a plant and undertake predictive analysis, and optimisation tasks. We can also expect a new software cyber-security tool to be introduced early next year. Risk Manager software will provide real-time continuous information about the cyber security risks within a plant, offering at-a-glance cyber security information with the necessary detail and work practices needed to correct plant deficiencies.

Bruce Calder took over the role of chief technology officer for HPS from Jason Urso last year. Calder has worked in the manufacturing and process control industries for over 30 years, and has been with Honeywell since 1993, mainly involved with software development: for the last eight years he has been Engineering Director.

He used his opening presentation at HUG to highlight that, despite the obvious event focus on the IIoT and data analysis solutions, Honeywell continues to invest in its instrumentation business and that, from field devices to gas measurement and control, it continues to develop products that are able to openly and securely communicate.

As ever more connected devices and systems generate vast amounts of data, there is a growing need for analytic solutions.

A recent Honeywell survey of around 250 process and manufacturing industry executives confirms this. It found that one-third of respondents said that they are already using data analytics to improve business performance.

Two-thirds said that they are using data analytics capabilities to monitor assets to drive a proactive maintenance program, while two-thirds also said that they were investing heavily in IT infrastructure in order to collect more data from their facilities or remote assets.

Data Analytics

“Clearly there is a huge interest in data,” said Calder. “However, alone it has no value. It needs to be translated into actionable information.” At HUG this year there was certainly an abundance of data analysis solutions, with demonstrations showing how they can help to aggregate data and use it to monitor applications and identify potential safety and performance issues, without swamping users with the base data detail. Calder summed this all up using the term ‘digital transformation.’

Key developments unveiled at HUG EMEA included pre-engineered solutions with embedded Honeywell UOP knowledge, such as engineering and operating best practices. Benefits of Experience Solution Suites for UOP Technologies are said to include early validation of UOP process project designs and reduced project risk, allowing for speedier start-ups.

Honeywell Pulse was also heavily promoted at the event. This IOS native app is designed to enable remote connection to real-time plant performance notifications from HPS’ industrial automation software, allowing users to stay connected to their enterprise 24/7. “This development shows how Honeywell is bringing all of its products together to give a more cohesive view,” said Calder.



Diederik Mols HPS wireless business leader

The Uniformance Suite software has also been expanded to provide real-time digital intelligence through process and event data collection, asset-centric analytics and visualisation technology, which aims to turn plant data into actionable information.

Sensor Developments

On the subject of wireless technology, Diederik Mols, business leader, Industrial Wireless Solutions, spoke to the *INSIDER* about the latest developments to the ConneXt LoneWorker cloud-based gas monitoring solutions, which now boast a multi-gas detection version as well as the single-gas solution. Traditionally personal gas alarm devices would only alarm the person wearing them, but the OneWireless technology enables remote monitoring of operators while in the field, offering man-down and tracking capabilities. It also offers the benefit of simplified calibration compliance reporting. Ensuring correct calibration compliance of gas detection equipment can be a full time task on many sites. The ConneXt offering, paired with the IntelliDox docking and data management system is said to ensure that every detector automatically undertakes a bump test when it is demounted from its storage dock before use. It was good to see the product developments initiated to meet the Shah Gas project requirement finally becoming mainstream offerings!

Honeywell Scores: HUG EMEA and that Elster Deal

Phil Ng talked about developments to the SmartLine portfolio of level, pressure and temperature transmitters, such as the SmartLine multi-variable transmitter (SMV800) which combines the ability to measure static pressure, differential pressure and process temperature in a single device. “We want to set a new standard for simplicity with SmartLine, helping users eliminate time-consuming work tasks,” said



Honeywell's Phil Ng

Ng. The modular design of the range is said to help simplify repair and replacement of transmitters in the field. “Modules can be replaced while the transmitter remains on-line and connected,” said Ng. “The transmitter can also be directly configured on the plant floor without the need for a handheld configurator tool.” Further, a ‘universal transmitter wiring’

concept auto-



HPS' Martin Bragg

Martin Bragg, CTO field solutions at HPS, highlighted the fact that data and measurements will only ever be as good as the instruments doing the measurements and also emphasized that Honeywell is still busy designing and producing instruments.

“We’re not just all about the software,” he said. The GT400 ultrasonic gas custody transfer meter, for example, has ‘addressed many traditional installation challenges in pipeline applications. “The same device could also be used in gas fired power plants, petrochemical refineries and in many industrial applications,” he said. “If its gas and its flowing, the GT 400 can measure it!”

Looking to the future

Vimal Kapur reiterated Bragg’s comments about instrumenta-

tion, making a point of emphasizing that, despite the focus of this HUG event revolving around data analysis, the company has not forgotten about its hardware offerings. He pointed out that Honeywell is set to become the fourth largest instrumentation company in the World, once the Elster purchase is completed.

He told an assembled group of press and industry analysts that HPS will have much more to say about its instrumentation offering next year when it is set to introduce a major, disruptive innovation revolving around how instruments are commissioned, maintained and calibrated, so keep watching Honeywell!

Honeywell Completes Elster Acquisition

The acquisition of the Elster Group from Melrose Industries closed on December 29, 2015. The acquisition, which Honeywell announced on July 28, 2015, closed earlier than anticipated fol-

lowing approval by Melrose shareholders and required regulatory approvals, including those in the U.S., European Union, and China.

“The acquisition of Elster adds outstanding technologies, strong well-recognized brands, energy efficiency know-how, and a global presence to the Honeywell portfolio,” said Honeywell Chairman and CEO Dave Cote. “We see Elster as a great opportunity to deploy HOS Gold to drive new growth and greater profitability in each of Elster’s businesses. This

acquisition is expected to generate strong future returns for our shareowners, consistent with what you have come to expect from Honeywell.”

Elster’s gas heating and gas, water, and electricity metering businesses will be integrated with



Honeywell Chairman and CEO Dave Cote

Honeywell’s Environmental & Energy Solutions business (E&ES), part of Honeywell Automation and Control Solutions. Elster’s upstream and midstream gas applications businesses will be integrated with Honeywell Process Solutions, within Honeywell Performance Materials and Technologies.

In reading the Executive profiles of the people HPS featured in the

Honeywell is set to become the fourth largest instrumentation company in the World...now that the Elster Deal is concluded.

Honeywell Scores: HUG EMEA and that Elster Deal

pre-publicity for HUG, it was obvious that Martin Bragg, quoted as Chief Technical Officer Field Solutions, would be an interesting guy to meet, as someone steeped in ultrasonic flowmeter technology – but based at Bracknell, UK, not at RMG.



Honeywell's Martin Bragg

Martin was recruited into HPS in 2012, some three years ago, which was around the time that the RMG ultrasonic gas flowmeter technology was being brought out in front of the wider audience of HUG, emerging from being just a Germany/Holland/North Europe gas industry supplier. He came from Elster, where he was VP Technology from 2009-12, having been Head of R&D and Ultrasonic Flow Division director from 2006-09. Maybe he didn't see how he might quite fit with the corporate plan, when Melrose Industries acquired Elster in 2012.

As with many other, people, such things happen, and had happened before, since Bragg had previously worked for Panametrics, a historic long-term ultrasonic technology leader, from 1999-2004. Regrettably this business went into GE, and Bragg was elevated to be the GE Oil & Gas Strategic Director from 2004-06, before changing horses to join Elster.

Melrose Industries

Melrose invests in good engineering companies, generally turns them round with strict management and financial control, and sells them when re-established. The Elster acquisition cost Melrose GBP1.8Bn (\$2.7Bn) in August 2012: in October 2014 they added a US acquisition, Eclipse Inc, a manufacturer of gas combustion components and systems for industrial heating and drying applications headquartered in Rockford, Illinois, which cost US \$158m (GBP100m).

The Elster business is divided into three Divisions, basically manufacturing and selling electricity meters, gas meters and water meters. The total business revenue for 6 months to June 2015 was GBP541m (\$810m), split 44% Europe, 36% North America, 10% Asia and 10% the rest. Operating profit for 6 months was GBP109m (\$165m): the bulk of the profit and 70% of the sales

arose from the gas division.

The deal with Honeywell is valued at GBP3.3Bn (\$5Bn), which gives Melrose and its shareholders a significant return on the acquisition costs, a gain of around GBP1.4Bn (\$2Bn). It also gives Honeywell much of what it lost when it essentially exited the field instrumentation business in the 1990s.

A Little Analysis

Honeywell, which left the field instrumentation business in the late 1980s during a time of great corporate turmoil, has now announced with the quick close of the Elster acquisition that it is seriously back.

They've quietly expanded their field instrumentation portfolio, both through in-house design and some targeted acquisitions, like RMG and Enraf. RMG even manufactures specialty control valves. Enraf possesses a well respected industrial design flair that is carrying over into the Honeywell product lines.

"We see Elster as a great opportunity to deploy HDS Gold to drive new growth and greater profitability in each of Elster's businesses."

— HON Chairman and CEO Dave Cote

With its share of the Elster business, Honeywell Process Solutions bids fair to becoming a Field Instrumentation powerhouse. As the main proponent, along with Yokogawa, of ISA100 wireless, they have a complete wireless product program, along with a differentiable story. They won't be taking on Endress+Hauser and Rosemount for a while, but the clear indication is that Honeywell is thinking about it.

For Honeywell's competitors, this must be a scary thing. Field instrumentation is one of the highest gross margin businesses in automation, and there is already downward pressure on pricing due to the economic situation, but also due to the need for IIoT sensors to be simpler, cheaper, and more rugged than typical industrial field instruments have had to be. For Endress+Hauser, Emerson's Rosemount, and Yokogawa, the three largest manufacturers of field instrumentation, a powerful new competitor who is heavily fueled with acquisition dollars, not only cuts the pie a different way, with smaller piece sizes, it also becomes a threat that one of them might be an acquisition target too. It bears consideration.

Story reported by Nick Denbow, with analysis and commentary by Walt Boyes.

More Trouble in Brazil: The Soap Opera Continues



Former President Lula da Silva

You might ask --- Why is the economic and political climate in Brazil important? The details in and of themselves are not important. However, some detail provides context for understanding what is happening and perhaps how to approach navigating the current economic and political crisis in one of the

edly holds citizenship).

It was proposed that the Petrobras executive be paid more than USD 1 million plus arrange to pay his family approximately USD 13,000 per month (presumably while in exile). Interestingly, also discussed was the type of aircraft that would be used to fly non-stop from Paraguay to Spain so as to avoid having to refuel in Brazil.

In return, it was reported that the Petrobras executive would not disclose the activities of the Senator or of a banker who is the president of the largest such privately-held bank in Latin America.

The banker was not present at the meeting.

Given the strength of the (taped) evidence and references to discussing potentially illegal activities (obstructing an investigation) with Supreme Court Justices, it did not take long for the Supreme Court to unanimously order the Senator, the Senator's aide, the Petrobras director's lawyer, and the banker jailed pending further investigation. All four were subsequently arrested. Shortly thereafter, the Senate voted not to interfere with the jailing of the sitting Senator as he posed a flight risk

and could influence the investigation if released from prison. It should be noted that thirteen (13) Senators (including ex-President Fernando Collor de Mello who is currently under investigation) voted to have the sitting Senator released from jail.

A subsequent statement released by the Senator indicated that he felt sorry for the Petrobras director and had acted on humanitarian grounds. Really??? The INSIDER would like to know how often politicians so act for humanitarian reasons --- especially for one individual when many people are similarly in jail and/or under investigation.

Another statement pointed out that the investigation was not actually obstructed because the plan was not implemented. Really??? The INSIDER would like to know when it is acceptable for government officials to plot against the government as long as they are caught before implementing their plans.

The banker (who was not at the meeting) later denied having any involvement or allowing anyone to speak on his behalf. However, notations on a document found in the Senator's Chief of Staff's office indicated that the bank would pay the president of the lower legislative body (remember him?) over USD 10 million in return for passage of a bill favorable to the bank. The president of the lower legislative body vehemently denied this accusation and suggested that the document was planted.

By the way, you might recall from our article in last month's issue that the legislative committee investigating the Petrobras scandal

largest economies in the world. Ex-President Lula da Silva recently suggested getting through the current economic crisis and impeachment process quickly, raising the question --- Who would invest in a country with this state of affairs? Perhaps this is a question that you might be considering.

Ex-President Lula da Silva recently suggested getting through the current economic crisis and impeachment process quickly, raising the question --- Who would invest in a country with this state of affairs? Perhaps this is a question that you might be considering.

The Petrobras scandal appears to be the "gift that keeps on giving." The investigation is now in (at least) its 21st phase and focused on a distinguished Senator and a banker for allegedly obstructing the investigation. Let's take this slowly because it gets confusing.

In November, a Petrobras director who was then in jail for allegedly purchasing an apartment with funds obtained from the Petrobras scandal reached an agreement with the authorities (over his lawyer's objections and ostensibly for a reduced sentence) to provide information and testimony that might compromise individuals who were not yet formally charged in the Petrobras scandal. Reports suggested that the director could provide information implicating President Dilma in Petrobras' purchase of the refinery in Pasadena, TX (for which Petrobras overpaid) and the involvement of prominent politicians. Details have not been made public.

In late November, a meeting was held between the son of the jailed Petrobras director, the director's lawyer, a prominent sitting Senator (Leader of Government), and the Senator's Chief of Staff. Unbeknownst to the other participants, the director's son was able to record the conversation and soon thereafter presented the recording to authorities.

Transcripts of the conversation indicated discussion of plans to get the director out of jail and leave the country. Discussion indicated that the Senator had already and/or volunteered to talk to various high-ranking politicians and several Supreme Court justices to try to expedite the matter. Once the Petrobras director was out of jail and under house arrest, the plan was for him to flee to Paraguay and then fly to Spain (where he report-

Even More Trouble in Brazil (continued)

recently concluded their investigation by exonerating the legislators (effectively taking care of their own) and blaming the corrupt suppliers and contractors. To the contrary, the INSIDER is not surprised that some legislators are involved in corruption ---although the details surrounding the actual participants and circumstances could not be predicted. If you did not do so last month, consider taking a quick glance to see the number and positions of legislators (and others) who have been accused, indicted, convicted, jailed and cleared in the Petrobras scandal at <http://infograficos.oglobo.globo.com/brasil/lava-jato-personagens.html>.

At this time, neither ex-President Lula or President Dilma have been directly implicated in any of the scandals. However, the investigations seem to be edging closer to Lula by focusing on the activities of one of his sons and a confidant. It would not surprise the INSIDER if there were irregularities involved. The INSIDER opines that there may not be enough solid evidence to directly implicate ex-President Lula and/or President Dilma.



Brazilian Vice President Michel Temer

In early December, a significant rift occurred between President Dilma and her Vice-President (who must be selected from a different party). President Dilma professed complete confidence in her Vice-President, yet a letter from the Vice-President to President Dilma (leaked to the press) indicates that he considers himself a puppet --- except when times are tough for President Dilma.

...and by the way, Eduardo Cunha, the President of the lower legislative body decided to start the impeachment process (it is complicated --- don't ask) which created additional problems between President Dilma and the Vice-President.



Brazilian President Dilma Rouseff

It is generally believed that President Dilma has sufficient support in the legislature such that the impeachment process will not be successful. Her party is trying to speed the impeachment process along and simply put it in the rearview mirror. The legislature being out of session due to the holidays (Christmas, New Year's Day and Carnival) and summer vacation will not help.

In other news, Brasil is reported suing Samarco for over USD 5 billion for the dam burst at the Samarco mine that is jointly owned by Vale (Brasil) and BHP Billiton (Australia). For 2015, the Brazilian economy is predicted to contract approximately 3 percent and inflation is expected to be approximately 10 percent. The outlook for 2016 is more of the same. Recent protests against President Dilma were approximately one-fifth the size of the largest previous protest as Dilma's disapproval rating (bad and terrible) reached 65 percent. Her approval rating (good and very good) is under 10 percent. In contrast, Palmeiras' victory in a soccer championship was celebrated by what appeared to be hundreds of thousands of people in the streets of Sao Paulo.



The Doce River flooded with toxic waste after the dam collapse flows into the Atlantic Ocean.



Brazil's New Finance Minister, Nelson Barbosa

The overall outlook is bad and perhaps getting worse. Brazilian debt was downgraded mid-month and a new finance minister, Nelson Barbosa, is in place.

The market did not react well to the change in finance ministers and Barbosa's statements to the press, and the real has become weaker.

For now, the democratic process appears to be playing itself out with no sign of the military intervening, although there is much talk about the impeachment being a "coup" against Dilma.

The silver lining is that corruption is being exposed and prosecuted --- hopefully forming a more solid foundation for future development. Positive results will take a while.



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.

David W. Spitzer, PE lives for part of each year in Rio de Janeiro, Brazil.

Nick Denbow's Roundup for December 2015

Climate and UK power changes

It seems that a standard feature in the monthly *INSIDER* Newsletter now necessary is to review the U-turns and changes of subsidies and policies of the UK Government in relation to future power sources. Solar schemes have used up all the Government allocated finance, and wind has fallen from favour, presumably to allow the big nuclear plants from China and France to take the front position - showered with promises of Government money. Then the rather puzzling announcement came that the Government was to cancel any further spend on CCS – Carbon Capture and Storage – for which two prototype experimental plants are being built in the UK. This ignores the major market requirement for such plants in the developing world once the technology is sorted, but at least Shell has other similar CCS projects in other countries.

So the cancellation of Government support for these green climate saving technologies was a really good precursor to the Climate Change talks in Paris in December. However, one week later, and another U-turn, and solar power subsidies, smaller versions, are re-instated!

The UK policy subsequently seems to be that coal fired plants will be phased out completely, with a target end-date of 2025, to be replaced by solar and gas powered plants. Note the gas plants could also benefit from CCS technology, using up the caverns left empty under the North Sea, but there has been no U-turn there yet! Further offshore wind farm developments will also be allowed, provided they can deliver energy at a lower cost than currently. Plus small modular nuclear plants are now back on the list of possible options, too.

The next part of the Government's spending review involved cutting out all the funding for the Manufacturing Advisory Service, which is, or was, a well-respected advice service for small manufacturers to get help in choosing the right form of automation systems, to enable them to trade competitively. That seems to have been the major area where it had a positive impact. So they cut that too.

Nuclear plant lifetime economics



Cambridge Grad Student Alisha Kasam

At Churchill College, Cambridge, Alisha Kasam, a student from Atlanta Georgia, has just completed an MPhil which was entitled *Thermodynamic and Economic Evaluation of the Nuclear Air Brayton Combined Cycle*. She is now studying for a PhD in Engineering – specifically the dynamic efficiency of energy and the economic viability of resource sustainability and waste minimisation in the next generation of nuclear plant

technology. Just the sort of investigative report that an Editor would like to undertake, but obviously it's a bit more work than might be obvious. Alisha is fully sponsored at Cambridge University by a Cambridge Trust scholarship and a Churchill Pochobradsky Scholarship combined into one.

Yokogawa finds a niche

Yokogawa, or maybe the Irish firm Schwungrad Energie (I have real worries about the Irish!) have developed a system to store and smooth the intermittent or variable power coming out of wind turbines in particular, or solar farms, using a medium-sized flywheel and a lump of their clever electronics. This enables a stable supply to be delivered to consumers, avoiding brown-outs etc. Their system has been installed in Europe's first hybrid energy storage plant in Rhode, County Offaly, Ireland. Developed in collaboration with the University of Limerick, the Rhode hybrid demo project comprises two Beacon Power 160 kW flywheels and Hitachi Chemical valve regulated lead acid batteries of up to 160 kW. The plant will have a maximum import capacity of 400 kVA and maximum export capacity of 422 kVA. The flywheel system, with very high cycling ability, can rapidly absorb short-term excess grid energy and generate energy as needed by grid operators.

Yokogawa delivered the FA-M3V high speed controller and the Fast-Tools SCADA software to monitor and control the amount of energy that is stored in the flywheels and the charging/discharging of the lead acid battery. Yokogawa are hoping to strengthen its position in the power industry through the provision of such grid-connectable power storage systems as these, and other solutions that can help to build a sustainable society.

Stop the Press!

Not yet confirmed, but the rumour is the latest Government U-turn will be that, because of "global warming, which has led to unseasonably warm weather in the UK throughout December", the GBP100 Winter fuel supplement paid to pensioners early in December is to be recalled, by a levy on their January pensions. Happy New Year!

A quiet Christmas!

Things must be bad in process automation and control: most of the major suppliers involved with the oil industry cancelled or reduced their plans for any entertainment of UK magazine editors this year. But a notable exception was Rockwell Automation! Their get-together and lunch for Editors was therefore much appreciated, and a memorable opportunity to hear what they have been doing.

David Nicholl, the new Country Director for RA in the UK,



ROK gets Editors Party ON!

Nick

joined commented uct spread age, but also shoring’, providing also high on and Pharma-ture. Still where safety



ROK UK head David Nicholl

Denbow’s Roundup (continued)

Rockwell from Schneider Electric back in May. He that RA have benefited from their automation prod-across all industries, particularly Food and Bever-they have found a niche for other industries ‘On-bringing manufacturing back into the UK, and customised, safe and secure production. Industries Rockwell’s customer list this year have been Water, ceuticals, where traceability has been a major fea-important to Rockwell are the oil and gas industries, system changes and upgrades are always a priority.

Will VSD ever take off?

We all know that VSDs can help cut energy consumption in applications including pumps, fans, hoists, conveyors, mixers, propulsion - in industry sectors including water, oil, gas, cement, mining, food and beverages. But maybe some customers have not got round to it yet?

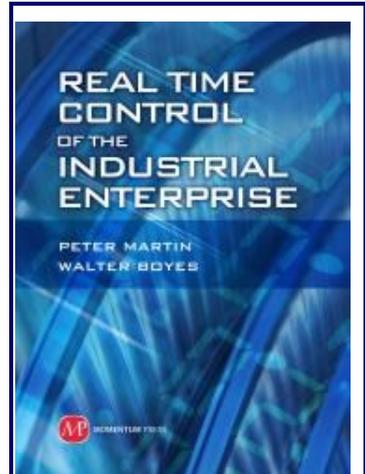
The ten millionth ABB low voltage drive rolled off the production line at ABB’s Beijing factory last November. Drive number 10 million is an ACS880 industrial drive, part of ABB’s all-compatible drives portfolio. It is destined to go to Wuhan Guide Electric Co in China, a system integrator manufacturing electric control systems for port cranes. Compatible with virtually all types of processes, motors, automation systems and users, they are designed to tackle any motor-driven application in any industry, whatever the power range. The innovation behind all-compatibility is the new drive architecture, which simplifies operation, optimizes energy efficiency and helps maximize process output.

ABB developed and today they of variable speed drives cover a range, including and power up to



ABB’s ACS880 drives family

its first AC drive in the 1970s, offer the most advanced range drives in the world. ABB wide power and voltage voltages up to 13.8 kilovolts 100 megawatts.



SMART MANUFACTURING? INTERNET 4.0? READ THE BOOK!

In the last fifty years, almost all of the productivity gains in manufacturing have come from better automation and control of the processes: continuous, batch, hybrid, and discrete. The secret to sustainable manufacturing is better control. So, why aren’t the theories that have led to enormous gains in productivity being used above the plant level? This book explains how better controls can be applied to the supply chain, and to enterprise financial management. It provides managers the insight and tools for achieving a fully integrated automated manufacturing enterprise, from the technical side to the business management side. It is helpful to anyone seeking to bring the non-technical parts of a manufacturing operation in line with the already automated production, inventory management, and plant management. The book is available from www.momentumpress.net, Amazon and other retailers.

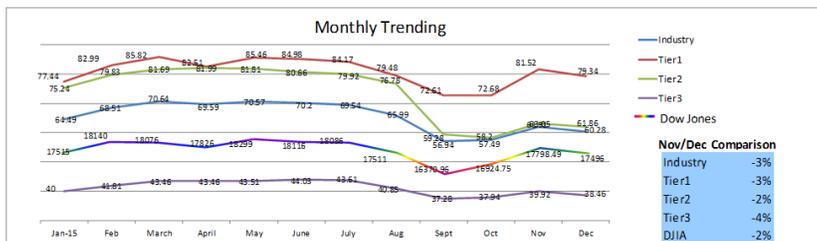


Nick Denbow is European Editor of the Industrial Automation and Process Control INSIDER. He has had a long career in PR and Marketing in the Automation Industry, and blogs regularly at “Nick Denbow’s Industrial Automation Insider Blog” <http://www.nickdenbow.com>.

Year End Brings No Relief: Happy New Year is a Non Sequitur

INSIDER

INDUSTRIAL AUTOMATION & PROCESS CONTROL



Health Watch

By Mary Samuelson

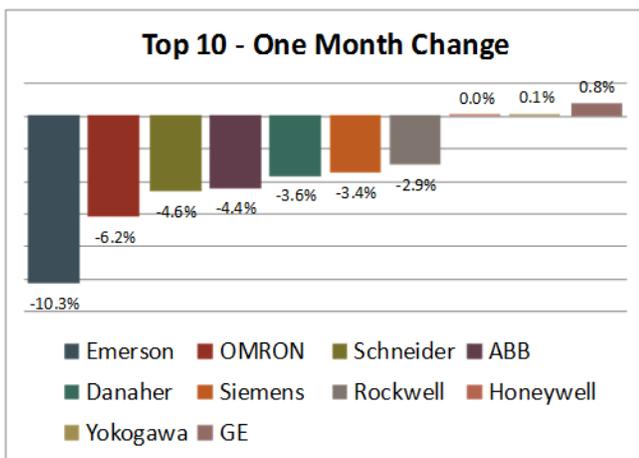
As 2015 comes to a close, the news for our industry is still as dreary as a cold rainy day. The Dow is down 2% and our industry on average is down 3%, since last month's reporting. The Monthly Trending Chart provides a clear picture of the lack of performance seen in the industry overall for the past year.

is on the rise, yet Saudi Arabia continues to pump oil even with a stockpile build of almost 3 million barrels. In addition, crude storage availability is fast approaching capacity. Lower oil prices mean less revenue for many of the companies who support the ACI.

Some of the largest ACI companies were the hardest hit during the previous month.

Another separate yet related reason for the gloomy prediction has to do with backlog shrinkage combined with de-

Emerson, OMRON, Schneider, and ABB were the largest losers, with Emerson declining an additional 10.3% since the middle of last month to hit \$45 per share, its lowest price since July of 2011. We certainly do not intend to single out Emerson. It is simply an example of the downward trend seen across companies and across the industry.



The forecast for 2016 is dismal as well. The primary culprit behind all the predicted doom and gloom is the oil industry and the current state of affairs points toward a situation that is only going to get worse for the ACI in 2016.

creased sales that are seen across the industry. As has been reported repeatedly by us and others over the past year, lower oil prices equate to lower revenues for many of the companies who are ACI's primary users.

One of the reasons for this prediction includes the fact that U.S. oil production

And the scariest part? It would not surprise us to see oil prices plummet even further to \$20 or less per barrel in 2016, with additional global destabilization a likely result.



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.

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Dow Chemical, Carrie Schaller, I/T Director Manufacturing Operations



Watson Solutions, IBM Software Group, Rob High, VP & CTO



CERN-European Organization for Nuclear Research, David Widegren, Head Engineering Processes Support



National Consortium for Mission Critical Operations, Mitchell Sepaugh, Project Manager Industrial Systems

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Temputech, Adrian Merrill, CTO & VP of Operations

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American Assoc. of Community Colleges, Jen Worth, Sr. VP, Workforce & Economic Development



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THE WAY I SEE IT

Editorial

The View From Here is Kind of Bleak— Or Is It?

When you look at the challenges facing the automation industry, you can be excused if you think things aren't going so well. You might be right. The major source of big revenue for the automation vendors has been the oil and gas industry, and they are plop in the toilet because the Saudis stopped propping up the price of oil. Oil prices have not yet reached their level and it looks like they'll get lower yet. We have already seen oil companies cut back 20-40% on both capital projects and operating expenditures— the two things that were the very life blood of the major automation vendors.

The future of manufacturing automation is also confused, with the Industrial Internet of Things bringing in new competitors, some like IBM and GE. Cisco and Google, have deeper pockets than the large automation vendors. They are looking for a big money play, and they will either compete with the traditional vendors or they will acquire the traditional vendors.

The large automation vendors whose product lines include full fleets of sensor products are under great pressure to reduce complexity, price, and installation difficulty. They are also under pressure from vendors who have entered the automation space from the Internet

of Things arena, and who are perhaps more agile, and perhaps not so encumbered by existing product lines. The traditional automation companies whose lines of sensors and transmitters have formed the most highly profitable portion of their offerings are stuck. They know they have to come up with sensor suites that are designed for the Internet of Things, but they can't dump their

Who expected Google to be a major automation vendor? But they are. Who expected IBM to declare, as they did last year, that they were a SCADA supplier?

most highly profitable products. This is a market ripe for intrusive invaders from outside with new and more sophisticated technologies. What's to keep these little guys from teaming up with IBM, or GE, or one of the automation companies, such as Schneider, who doesn't have as complete a sensor and transmitter offering as, say, Endress+Hauser does? The answer is, nothing. And that is really making vendors sweat. So much so that vendors are trying to nail down agreements with their biggest customers that they'll only buy from them. Emerson is doing it, Honeywell is doing it, ABB is doing it...they are all doing it. Get your best customers to only buy from you— it's gotta work.

Yet it never has worked, because the end users and the vendors have significantly different agendas. The end users want their plants to work, and they'll buy anything that will help with that, push come to shove, regardless of which vendor made it. That's why the automation industry keeps consolidating and deconstructing on an approximately thirty year cycle. There's always room for new technology introduced by new companies.

The problem is that the strategy of the major vendors may not work anymore. The strategy has been to wait until the new companies reach acquisition target zones, and then, snap, they buy them. It could be that it might work in reverse this time.

Who expected Google to be a major automation vendor? But they are. Who expected IBM to declare, as they did last year, that they were a SCADA supplier.

This is a time of great turmoil in the automation industry, and in the end users the industry serves. Should I still be writing this page in December of 2025, I guarantee you that the industry, and all of manufacturing and process manufacturing will be radically different than it is now. We can just barely see the outlines of the things that will come to be.

So, yes, it looks kind of bleak. But at the same time, there will be room for people and companies with ideas and the certainty with which to chase them.

So, let's move forward with a little optimism. We have seen interesting times before, and come through better and stronger. We will do that now, too.

Comments? Talk to me!
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Read my Original Soundoff!! Blog:
<http://waltboyes.livejournal.com>

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Rajabhadur V. Arcot: Time for automation suppliers to evaluate and adopt alternate business models

Last month, I wrote about the automation industry's growth opportunities and challenges and also highlighted the need for industrial control system suppliers to respond to the evolving market dynamics and adopt business models that are in tune with the market trends and needs.

In the past, when the primary driver for the manufacturing industry to invest in automation systems was to protect the health and safety of the workers, equipment, and the environment, the investment decisions were taken at the operating level, based mostly on technical considerations. The investment justification existed, especially for grassroots projects, and hence the automation suppliers focused on positioning their automation systems based on the superior technical features of their offerings. They built strong relationship with technical executives at the operating level of the end user companies and in some cases even entered into preferred supplier partnership agreements. That was a win-win situation both for suppliers as well as end users.

However, the manufacturing industry and its needs have been changing in various ways that require appropriate responses from automation suppliers. It is time for automation suppliers to evaluate and adopt alternate business models so as to acquire new customers and meet their needs.

Place Value Proposition at Corporate level

Despite these changes, control system suppliers still continue to rely heavily on selling control systems as technology solutions applied to automate production operations, even though automation plays ever increasing roles in enhancing productivity and improving efficiencies & asset performance.

On the contrary, enterprise suppliers, who

automate business processes, have positioned their offerings, such as enterprise resource planning (ERP), supply chain management (SCM), customer relationship management (CRM), and others including manufacturing execution systems (MES) as business enablers

and nurtured their relationships with the corporate level decision makers.

It is time for automation suppliers to learn a few lessons from them and place the value proposition not only at the operational level but

also at the board level.

SAP, Oracle, IBM, and such other enterprise solution suppliers sell their value proposition at the corporate level by positioning their offerings as solutions that help end users pursue business goals, such as achieving order fulfillment, supply chain efficiencies, asset performance management, and others. Thus the investment decisions are mostly top down.

In addition, enterprise solution supplier companies license the use of their offerings and some even offer their software as a service to end users. They have gone even further by offering cloud hosted subscription services.

On one hand these approaches have reduced the cost of ownership and implementation for the end users. The recurring revenue model also benefits the suppliers by making it easier to secure new customers and by ensuring predictable recurring revenues on a long term basis. It is time for automation suppliers also to evaluate such business models.

Benefits of Recurring Revenue Models

The licensing or the subscription models under which the ownership remains with the technology provider helps suppliers to introduce new versions at more frequent intervals. The automation industry, which is struggling to convince their customers to invest in new systems, may benefit from adopting similar models.

It is time for automation suppliers also to evaluate such business models.

Rajabahadur V. Arcot: Time for automation suppliers to evaluate and adopt alternate business models (continued...)

The subscription business model, which requires minimal upfront financial and in-house human resource investments, has become attractive even for small enterprises to deploy enterprise solutions. These alternate business models are gaining widespread acceptance and automation suppliers must seriously evaluate similar options for adoption.

In addition, automation suppliers continue to extensively rely on their traditional model of earning their revenues by selling hardware, software, and services as a package. This model requires end users to make significant upfront capital investment and engineering efforts which many companies, especially in the developing countries, which are emerging as important growth oriented markets to automation suppliers, find hard to mobilize.

Typically, automation systems are procured under capital budget, and therefore end users expect automation suppliers to continue to provide support to control systems over a much longer period and often are reluctant to migrate to newer models. The reasons for this include the ownership model and the upfront price the end users pay in addition to the technical and practical reasons.

According to ARC Advisory Group, as of now the value of the worldwide installed base of automation systems that requires to be upgraded is more than US\$ 65 billion. This represents a massive business opportunity for the automation industry. For the opportunity to materialize as tangible business, suppliers have to provide convincing value proposition justifying the investment to end users who have been otherwise averse to capital spending. The resistance on the part of end users to migrate to newer systems forces automation suppliers to extend support for their systems over a comparatively longer period. It hurts both suppliers and end users.

Focus on Service Revenues

The share from services in the overall revenue of automation firms has been rising. It will be good for automation suppliers to recognize that their true strengths are in control system related software and the services they are best placed to render. With end users requiring more and more services from automation suppliers, automation suppliers can increase their revenues by focusing of services. At the present juncture, the extensive use of commercial off the shelf hardware in control systems has almost made hardware such as IO cards, controller cards, display stations, and such others commodity items.

Traditional automation supplier companies should also get

ready for their time proven buyer-seller model to be challenged by other technology suppliers that are betting on the Industrial Internet of Things and robotics to emerge as the foundation on which the emerging manufacturing era will rest.

IIoT and robotics have all the potential to usher a new era of affordable and adaptable automation. The contours are already visible.

According to reports, *Inductive Automation* offers *Ignition* a web



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based industrial software platform built for HMI, SCADA and MES applications. While traditionally SCADA is licensed based on number of tags and clients, users can buy server module applications from Inductive Automation at a flat rate to service unlimited number of tags, connections to PLCs & devices, and clients. Users can deploy the solution at one site or at multiple sites or even host it in the Cloud. Even redundant server version mod-

els are available. Inductive Automation highlights that its web based *Ignition* can be applied for a SaaS (Software-as-a-Service) application.

Such trends indicate that some players in the automation industry do see the writing on the wall and are ready to take fresh stock of their strengths and respond appropriately to opportunities, threats and challenges.

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