

INSIDER

INDUSTRIAL AUTOMATION & PROCESS CONTROL

VOLUME 18
NUMBER 11
ISSN2334-0789
November 2014

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Your key to the latest industrial automation and process control information

More User Group Fiesta!

Rockwell PSUG, Automation Perspectives, Automation Fair, HUG EMEA Emerson's EMEA Progress Report and Honeywell's new Customer Center

Rockwell Automation's Process Solutions User Group opened with rock music and a slick video touting the applications and users of PlantPAX.



Steve Pulsifer

Steve Pulsifer, global director of process market development opened the meeting, noting that PSUG had grown to over 900 people from 20 countries and 12 industries. This is a phenomenal growth rate over the past five years. PSUG, of course, is only one event during the week of Automation Fair, which is expected to draw upwards of 40,000 attendees in all. Joy Ward, INSIDER columnist, noted the overwhelming number of male attendees, and wondered where all the women were.

John Genovesi, vice president and general manager, information software and process business, talked about what he called "the modern DCS" and how it supports the Connected Enterprise. He touched on Rockwell's \$6.2 billion revenue last year, and promoted Rockwell as "the largest company focused on automation."

Genovesi talked about Rockwell's strategy to deliver the connected enterprise. "Connectivity is a hidden value amplifier. By leveraging modern technology, we bring people closer to the process

and drive productivity by unlocking the potential of real-time decisions."

The Internet of Things is expected to drop close to \$19 trillion into the global economy, and Rockwell's decisions, according to Genovesi, are driven to "help you catch the value of IoT."

Genovesi gave a rousing sales talk about PlantPAX and the upcoming roadmap for the software. There will be an integrated design environment, and reference architecture tools. There will be better tools for skid integration, and Genovesi



John Genovesi

promised that PlantPAX will continue to be a scalable control system.

One of the interesting comments Genovesi made was that Rockwell is developing a blowout preventer control system in cooperation with Shell.

Happy Happy World: Thomas Frey, Executive Director of the DaVinci Institute and a noted futurist, gave the featured keynote at PSUG. He regaled an audience of engineers with a happy, happy litany of how the future will hold a plethora of "Internet of Things" related items that will do everything from

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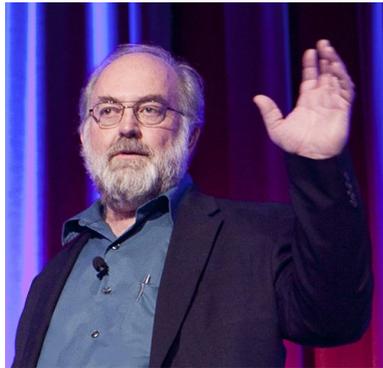
Health Watch

You can find the Insider Health Watch on page 20 in this issue, ...and we have a whole lot more inside!!

Cover Story: User Group Fiesta! (continued)

printing factories and houses to clothes and body sensors that remove the need for doctors. Sensors and Big Data instead of doctors and nurses? Are you sure about this?

The *INSIDER* was shocked and saddened at how all of these expected changes were simply accepted and even embraced, at least by Frey, without apparently the least thought for how it will affect the future of real humans.



Thomas Frey, Happy Futurist

What Frey envisioned was a future where things and computers do work, everything from construction to creation, and the humans "enjoy" their freedom from actually doing anything, like driving. Frey seemed to think this was reasonable and well within spec for humanity. Who is going to provide the capital for this, and who's going to own it? If Frey-world comes to be, we are looking at a permanent division of humanity into global poor and a very small superrich that rules them.

Not all humans are suited to being part of the team of 1 or 3 people running a massive house-printing machine. What about the 100 other people who used to build the house? What are they doing? Are they working? Are they well off? Or are they dirt poor without a future?

And Frey's proposed future is full of these situations. Not all people at every phase of their working lives are suited for highly technical work. Not a judgment, just a fact. We are all young and untrained or wandering at some point. We all need those entry type jobs. We all need access to lower level jobs.

But what happens in a world where there are way too few entry kinds of jobs to go around? What happens in a world where most people can't get jobs no matter how intelligent or trained or educated? The question is more than just compelling or important. It is bone-chillingly scary.

Mr. Frey, who seems to be a cock-eyed optimist, might say something about the best and brightest will rise to the top or humans will use the time to be more creative.

Sure, and what about the rest of the people, not best or brightest. Like everything else, human intelligence is a bell curve. Bright and educated or not, how will they survive? How will they buy food or even the nifty toys, like computers, smart sensors and smart appliances that Frey says will make everyone's lives so much safer and better?

The reality is that on a planet with already many more people than can be fed or find work, the loss of work for many millions more is at best gloomy. We are realistically looking at a global class system that can only turn extremely ugly. Those who can claw their way into the elite will do everything they can to ensure their children stay in the elite and financially safe. That means money will not just continue to flow to the top, the trend will escalate. The vast majority of people will fall into hereditary poverty. Middle class? Nonexistent. This is the downside of the Internet of Things that nobody seems to want to talk about.

Frey said we should look forward, not back, but human history has shown time after time that a small ruling class over a gigantic enslaved or impoverished class means only one thing - violence until there is a minimization of the inequality. The futurist said the next most famous person in the world has yet to be born. Looking at his predictions the *INSIDER* is afraid that is likely to be someone who looks a lot like Katness from *The Hunger Games*.



The next day, Keith Nosbusch, Rockwell Chairman and CEO valiantly kicked off Automation Perspectives 2014 in front of an audience of global media and analysts. Nosbusch, who hates public speaking, nevertheless made some important points before relinquishing the podium. "The Connected Enterprise is transformational—both for productivity and global competitiveness," he said. "Automation and manufacturing will change more in next 10 years than last 50. This is the first time in my career where the Connected Enterprise can be considered a game changer; the value at stake is enormous."



Nesi's First Panel

The Manufacturing Connection's Gary Mintchell reported, "I asked him later in a private interview, and he told me that the main reason is, it's undeniably real. Customers are implementing the Connected Enterprise and realizing significant business benefits."

John Nesi, vp Market Development, led two panel discussions. The first, "Benefits

User Group Fiesta, continued...

of Enterprise-Wide Implementations” included Samiran Das, evp and head of technical operations for Dr. Reddy Enterprises; Bret Hartman, vp and CTO security business group at Cisco; and Frank Kulaszewicz, svp architecture and software at Rockwell. The most startling thing to emerge from this panel was Hartman’s admission, later confirmed to the INSIDER at lunch, that the Internet of Things is cyber undefendable using current techniques. It will require more of a white blood cell vision, where the objective is to localize the intruder, immobilize it and dispatch it quickly, rather than provide a Maginot Line or defense in depth.

Rockwell Eats Their Own Dogfood

Marty Thomas, svp of operations, reviewed Rockwell’s own experience with the “Connected Enterprise” showing a 4-5% gain annually in productivity.

John Nesi moderated another panel, about improving business models for OEMs, and then John McDermott summed up and talked about the Fair, which drew over 5000 attendees, making it by far the largest user group meeting in the world.

—reported by Walt Boyes and Joy Ward

Honeywell HUG shows new drive

Back in the June *INSIDER*, in his report on the Honeywell User Group (HUG) meeting in San Antonio, Walt Boyes mentioned the appointment of Vimal Kapur as the new President of HPS, and the move of the Process Solutions business to the chemical manufacturing group within Honeywell, to be alongside UOP and Advanced Materials. In retrospect, there were a few other clues. But the EMEA HUG meeting this month at the World Forum Convention Centre in The Hague presented a very different atmosphere and outlook from HPS.

The EMEA User Group within the Honeywell organisation is almost as large in attendance as the USA based meeting – this year there were 1005 delegates from 446 companies in The Hague, versus 1300 from 475 companies for the US meeting. It is one of the best established in Europe in the industry - this was the 26th event. Unlike the US event, it moves around extensively: from Barcelona to Northern Italy, then Istanbul, Nice, and now the Netherlands. The latest meeting had the standard format of student awards, Channel partner awards, Enraf Channel partner and Field Products Channel partner conferences for distributors, with 150 delegates. So the format did not change, but the mood of the people has. Several of the projects discussed for several years have reached completion, or look like it: people have changed roles, and moved over to reinforce the field products activities. Too early to say yet, but spreading Experion PKS experience around the company might be a good move to unify Enraf and Field Products

within the whole. But the company had an air of confidence, a

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Jason Urso, new vp, engineered field solutions

buzz. The most noticeable people change is Jason Urso explained his 2014 Hague presentation reviewing the product developments, could be last responsibility CTO - he now the rôle of VP, gineered Field lutions, particularly involved with minimal operations gas metering (mainly the RMG ness we assume). Field Products,

Don Maness is delivering on his mission to revitalize the Honeywell field instruments, with the launch of the first in a family of SmartLine level measurement transmitters, to join



Urso with Collaboration Station

the temperature transmitters and DIN rail units launched this year. And it does not take much of a leap to understand that SmartLine

flow will not be far behind, but will this be ultrasonic, and for liquids? Maybe, but the technology priority might be elsewhere.

HPS and Collaboration

With the topical discussion being the Internet of Things, an interesting observation from CEO Vimal Kapur in his opening address was that process plant operators thought that the introduction of the original DCS brought the IOT into their plant. But the HPS Collaboration Station is leading the way in showing how the wider internet can be sensibly used for improving process plant management and business operations (I had to admit that I wondered what had made Honeywell centre the development of this technology in Australia, but having seen a report on how Rio Tinto are

User Group Fiesta, continued...

applying similar systems to remotely control and manage mining operations in Australia, including driving the massive trucks, it makes sense!)

More ‘Collaboration’, or an intimate relationship plus broad reputation with the oil and gas industry, led to many stories of involvement in unusual applications of their technologies, for example ISA100 wireless not directly related to



HPS CEO Vimal Kapur

HPS process sensors – and these tasks extended their wireless reach outside their client list, ie gained new clients.

The technology transfer between the various Honeywell businesses to produce new products, plus other products with global acceptability and approvals, has emerged strongly. For example the GT400 six path ultrasonic fiscal gas line flowmeter is introduced, with acceptability in both US and European markets – the original 1999 design from RMG was designed purely for Europe. The Honeywell-Enraf small volume piston prover, previously sold for US specifications, has been redeveloped to be suitable for use in other areas, such as Europe. The SmartLine radar level transmitter range has been developed with significant technology input from Enraf, and the Enraf servo-controlled displacer tank contents measurement system adds a wireless interface courtesy of an ISA100 tunnelling link, such that the servo signals can be transmitted complete, back to the electronic monitoring system in the control room. This can overcome site problems arising from old or damaged cabling – or alternatively free



Diederik Mols, wireless business leader EMEA

up the site cables for use as hard-wired overfill alarm circuits.

Honeywell has a business principle of ensuring forward and backward compatibility for all systems, and this was a major part of the technology review by Jason Urso. First announced was the extension of the life of TDC3000 systems by a

further 10 years, to 50 years – or at least 2035. Upgrade routes for the older HiWay systems are being developed, but are currently valid to 2020: these routes require a lifecycle contract with Honeywell. Subsequently some of the busiest sessions at the HUG were the discussions about such upgrades and Roadmaps.

So what about Honeywell new product news!

First, what news of that elusive wireless gas detector? Maybe long term readers will remember this product, reported in these pages on a “Now you see it, now you don’t” basis, since 2010. First seen in a blue housing, it was known as the ‘Impact Extreme’. At the 2013 EMEA HUG, reported in the *INSIDER* last November, the new design ‘Connex 1’ was said to be at

last available for test site use, with product launch scheduled for mid-2014. This November, the ‘ConneXt PRO’, a slightly hyped up name, was on display, in a yellow housing, from Honeywell Analytics. The product is now acknowledged to be based on the technology only recently available from RAE Systems, which Honeywell acquired in early 2013, and a Honeywell leaflet is available, but not much more data in terms of ConneXt specification can be seen via the website. However, the unit on display did work – admittedly only with an oxygen deficiency alarm sensor. Deliveries of hydrogen sulphide detector versions to Shah Gas are still reported to be ‘in progress’.

Other Wireless developments

The choice of the ISA100 standard for the Honeywell One-Wireless operations has led Diederik Mols, business leader for wireless in the EMEA region, to offer systems for requirements totally unrelated to normal Honeywell instrumentation. The use of wireless on petrochemical plants and offshore platforms was expected. On one petrochemical plant the perimeter based gas detection system protecting the adjacent office buildings was required to give a very fast response time between first gas and wireless triggered alarm sounders all around the perimeter. With the One-Wireless ISA100 system able to specify the wireless network routing and the interrogation cycle time on each node, not even heavy wireless activity on the networks could cause a variation in the response time possible. OneWireless won the order for this alarm system in preference to other wireless systems already used on site.

In another project to provide a wireless infrastructure for a new build of an offshore platform in the North Sea, the capabilities of the OneWireless system working with the Cisco wireless access points, which were required for their wifi interfaces during com-

User Group Fiesta, continued...

missioning in particular,

SmartLine progress

It has been around 18 months since the launch of the SmartLine pressure and DP transmitters. With the family growing, the common boards, housings, displays and programming switches become more obvious, and the major market advantages identified. Asheesh Arora, General Manager for field instruments, based in Abu Dhabi, explained that the high growth seen for the DP products had come from new green-field projects, specifically with Korean and Japanese EPCs working with low skill contractors, in Africa or China. These EPCs specified SmartLine even when hiring MACs like Siemens and others, where the latter would normally have sought to use their own brand of DP cells. The reasons are based on the SmartLine 400:1 turndown and reduced spares requirements. But the real savings for the EPC occur on site, from the independence of SmartLine to wiring polarity, and also a lighter weight, at around 2Kg.

Giza Systems of Egypt was named the 2014 Honeywell Field Products Channel Partner of the Year, with the award presented by Don Maness, VP of field products for Honeywell Process Solutions. Giza had achieved sales of 250 Magmeters, 250 SmartLine DP cells and 150 SmartLine temperature transmitters on one project, with performance up over 4x compared to the previous year.

The new launch for the EMEA HUG was of a Guided Wave Radar (GWR) level measurement transmitter, the first in a range of such level transmitters. This GWR unit is designed for 3mm level accuracy and able to provide two outputs if needed, one for top oil level and the second for the water level below that, for example for use in separators or storage tanks.

Orion R2 display

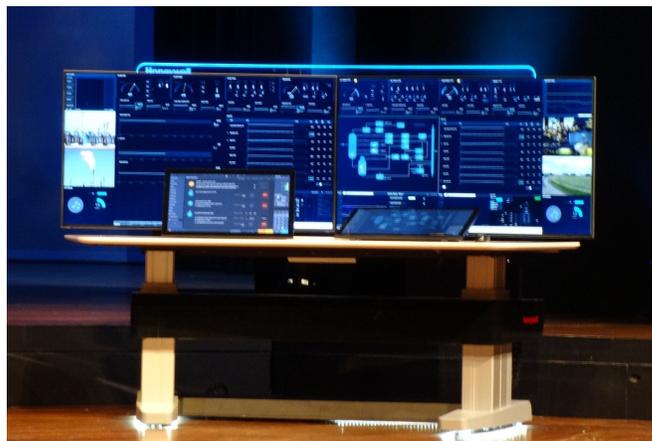
According to Jason Urso, the old style of multiple display panel in a control room was really an assembly of separately driven PC displays, each requiring its own dedicated PC and keyboard and processor. So to control the view, or take any action the indicated display requests, the operator needed to identify the relevant mouse and keyboard, often a frustrating task. The new Experion Orion Console is now introduced to provide a flexible multi-view layout of plant overview, video imaging and detail display. The separate 24 inch touch-screen gives an easier operator interface into the main operations screen, which also shows relevant operating limits and targets. This is a feature that operators had advised was much liked on the TDC3000: the whole new Orion console development was based on a survey of existing control rooms and operators, as well as input from ASM Consortium mem-

bers. The console is motorised to allow quick height adjustment, and can be fitted with a section for phones, alarms and panel switches as required.

Universal I/O in hazardous areas

Remember the Universal I/O interface units for field cabinets? It was the major discussion topic maybe two years ago, giving the automation contractor the ability to standardize the cabinets built for on-site use, and similar launches came from Honeywell, Emerson, Yokogawa and Invensys, I think. Now Honeywell claims a step in front of their normal opponents with the introduction of intrinsically safe barriers that are also capable of operation on digital or analogue I/O circuits, so that these can be factory fitted within their combined I/O and barrier cabinets, for projects requiring such cabinets for hazardous areas. Honeywell see this as one of their cost, space and time saving initiatives on automation projects. Sometimes however, barrier cabinets are specified as separate units compared to I/O cabinets.

Actually, maybe Honeywell did not do much more than push their suppliers, Pepperl+Fuchs, to develop this capability in the barrier units they use, and HPS are the first to launch. P+F suggest that Invensys and Yokogawa will follow shortly: in fact the Yokogawa Centum R6 revision just launched uses Universal I/O (called 'Network IO' or N-IO) and their recent release quotes agreements with P+F and MTL to supply Yokogawa N-IO compatible



Orion R2 Display

baseplates and IS interface modules. Meanwhile at HUG, MTL, (Measurement Technology, now part of Cooper Crouse-Hinds) suggested a different view, favouring the separate barrier box: the normal practice they suggest is to break the field responsibility at the barrier box, normally installed separate-

ly from the housing containing the interface modules, and this is where the field engineer makes his terminations. That keeps the 'field engineer' away from the 'expensive bits'. These barrier boxes are universal, and the engineer who wires up the field device, in the right terminals, inserts the right MTL barrier module (either analogue or digital for example) in the plug-in slot, which is inevitably a lower cost unit for the project.

Lean Execution of Automation Projects – LEAP

More User Group Fiesta...(continued)

Taking their Universal I/O cabinets, virtual servers for control systems and Collaboration station capability all together, HPS offer LEAP, to “enable petrochemical project teams to reduce the schedule and lower risk” compared to conventional automation project execution. The result is especially relevant for the larger projects where possibly many engineering teams are involved, and the timescale and efficiency savings within the MAC and the end customer are the main drivers there, on top of the financial and space savings that arise from the use of Universal I/O cabinets and the virtual servers.

European Update from Emerson Process

Earlier this month in an update to the UK-based press,



Roel van Doren, President for Europe of Emerson Process Management

Roel van Doren, President for Europe of Emerson Process Management, reviewed their activities over the past year, which of course included the Emerson Exchange in Stuttgart in April. The European region accounted for 20% of Emerson business in the previous FY, and interestingly the pie charts presented show (approx) 50% of sales in Rosemount type products, 22% in Fisher control products, and 30% in systems, labelled as ‘Operate and Manage’. These sales were spread around geographically as: 50% in Northern Europe, 25% in the South, and

25% in the East – an interesting broad brush picture.

Perhaps more interesting to report, is the significant further investment made by Emerson in the Process Management facilities in Europe. Van Doren said that three new service centres had been established in 2014, and three more would follow next year: these included Surgut in Central Russia. A manufacturing plant was also established in Chelyabinsk, which is on the Russian border with Asia. Also announced was a \$30m investment in Aberdeen, with a corporate facility plus both a service centre and a collaboration facility, located on a prime site at Aberdeen Airport, between the Aker Kvaerner, BP and Statoil offices. This centre is ideally placed to provide lifecycle support to the growing number of large oil and gas installations in the North Sea that require automation technology, to ensure

operations run safely, reliably and efficiently. Meanwhile in Leicester, UK, a 50% expansion in floor space will be used for Factory Acceptance Testing of control systems, and for increased office space. Subsequently, investment in the Rosemount temperature and pressure manufacturing facilities in Wessling and Karlstein, in Germany was announced. At Wessling the expansion will reduce the production lead time for a wider range of transmitters to below 7 days, and Karlstein will concentrate on temperature sensor and thermowell development and production.

Emerson Exchange on Reliability

report Walt last men- the ence

no, of the ac- MRG, that son

moved squarely into the reliability and uptime movement, and given CSI a new lease on life, since what they always needed was a dedicated reliability consultancy to work with. The message from Emerson Europe was that this was the major aspect of the Exchange presentations, and DiStefano was presented as the vp and gm of Reliability Consulting for Emerson Process.

DiStefano ran MRG for 28 years (back to a 1986 start), and before that worked in the nuclear industry on similar things: which probably takes him back to the era when condition monitoring was a major growth area in aviation and gas turbines. It was 1980-81 when I was a product manager trying to bring vibration sensors developed for the steel industry into broader use in the process industry on pumps, fans and centrifuges. It was a great idea, but there was no



Aberdeen Corporate Facility

The from Boyes month tioned pres- of Bob DiStefa- founder recently quired and said Emer- had



Emerson's Bob di Stefano

More User Group Fiesta, continued...

money in it, so I, and my employers (now incidentally a part of Emerson) packed it in. But DiStefano did not, he spent these years putting 150k man hours into assembling a library of failure modes of plant and equipment, and the measured effects, to be able to understand the meaning of the changes in vibration, heat et al.

Reliability as a Business Strategy

Now “Reliability as a Business Strategy” is becoming understood, and MRG has many clients who have proved the value. There are industry surveys and studies that show as much as 5% of production capacity is lost each year as a result of unplanned shutdowns, and nearly half of these come from equipment failure. In a US 200k BPD refinery, every 1% gain in uptime achieved is quoted by Emerson to be worth \$8.4m of additional margin: but maybe in Europe this would not currently be true! However, other industries do not have the same problems. Di Stefano points to the changes being brought about by benchmarking studies, which indicate that major CAPEX projects are looking closely at maintenance and repair (M+R) strategies in the planning, because on average 30% of the expected project value returned is lost in the start-up years as the M+R teams learn about the major problem areas for failures. Top performers in the process industries spend as little as 1.4% of the replacement value of the plant on M+R, whereas those in the bottom quartile spend on average 5% and in consequence have their plants offline for longer.

DiStefano stresses that he has no quick fix, and the benefits will come only after several years of work implementing predictive maintenance systems and plant monitoring at successive levels of machinery. So with a 3 year or more payback, privately owned companies are the most receptive to the principles. One example of a success was with Corbion, a global food and biochemical company with plants in Spain, Holland, Asia and North America. Starting in 2005, with only 50% of their capacity available, and M+R costs of around 7%, maintenance costs have been progressively reduced by 25%, and OEE increased from 88 to 97%. MRG was only actively involved on the plants during the first two years, since then they have run the procedures themselves, MRG is only called in when further advice might be needed.

—European News Reported by Nick Denbow

In the US, Honeywell has opened a new Customer Experience Center in Houston, Texas. A group of media, including the INSIDER’s Walt Boyes, were given a tour on opening day as Honeywell opened the doors on a new, interactive demonstration center in Houston to give its industrial customers a glimpse into the future of managing their manufacturing oper-

ations.



A popup guide “to the Customer Experience”

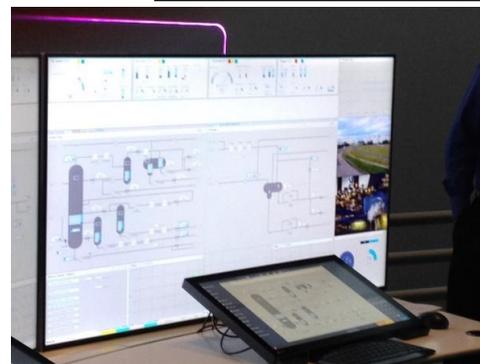
The new Customer Experience Center (CEC) – located at Honeywell Process Solutions’ global headquarters at 1250 W. Sam Houston Parkway S. – brings to life many of the newest, high-tech innovations for customers in the oil and gas, refining, petrochemicals, mining, power generation, pulp and paper, and other industries. The center includes, for example, a plant control room outfitted with Honeywell’s Experion® Process Knowledge System (PKS) Orion Console. The console is a completely new interface that uses the integration of larger screens, touchscreen displays, mobile

device capabilities and other technologies to better assist plant operators who are charged with running some of the world’s most critical and complex manufacturing facilities.



The \$5 million CEC will be a destination

Experion Orion control station with 55" HDTV displays and "alarm bar" and touchscreens



ASM display includes Level One that mimics an old style panel wall

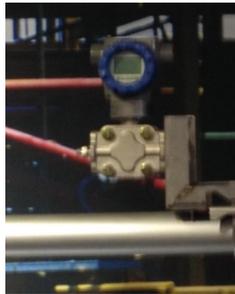
showcase site for Honeywell’s customers from process industries throughout the world. “There’s only so much someone can learn about a new technology by talking about it. The goal of the new Customer Experi-

More User Group Fiesta, continued...



Phil Ng talks about Smart Line field instruments

ence Center is to physically show our customers what these systems look like and how they can help them solve their most daunting manufacturing challenges,” said Olivier Biebuyck, global vice president of marketing and strategy, Honeywell Process Solutions.



Modular components reduces inventory—it isn't just a tag line

like this gives our customers a much

“Even seeing the setup in a smaller scale better idea for how the technology works to improve the safety, reliability and efficiency of their plants.”



HON safety systems connect to HON Safety Manager

Other CEC highlights include field instrument technologies – such as transmitters used to monitor pipelines – that have been transformed in recent years into smart devices that deliver more-relevant information to operators in the control room, as well as to mobile operators.



Ng with GWR

The center also demonstrates how Honeywell safety, physical and cyber security systems can be fully integrated together within facilities to achieve the



Old and New Level Gauges—Both Wireless

highest level of asset protection, and features advanced software that helps manufacturers design their processes, train their operators and optimize daily operations.



Wellhead in a Box

Phil Ng also showed two new field instruments, the Guided Wave Radar system that was introduced at HUG EMEA, and a wireless mechanical level gauge. The GWR instrument comes with a new collaborative product selection application and product documentation software.



Building System

Honeywell Process Solutions’s removal from ACS hasn’t lessened the collaboration between other divisions. We saw a Honeywell Building Automation System seamlessly linked to an



Solar RTU

Experion Control System, and we saw Honeywell’s new “Wellhead in a Box” RTU. The very low solar powered RTU draws 1.7 watts.



Wall Chart of How LEAP Works and How Much Is Saved

Finally, Matt Wilmont talked about LEAP project solutions, and how they work. Instead of being linear, LEAP solutions produce results faster and for much less cost— he mentioned 30% savings in project costs.

INSIDER Special Report— Steven Las Marias Reports from Singapore on NI Days

T&M Innovations in Focus

National Instruments kicked off the Southeast Asian leg of its NIDays 2014 series in Singapore early this month.



Previously named GSD Summit, NIDays upholds the NIWeek tradition of showcasing compelling technologies and market-focused applications that use the graphical system design platform.

Attended by over 350 engineers, educators and scientists, NIDays featured sessions on the graphical system design platform and showcased NI's latest solutions and innovations in software-defined systems in design, test, measurement and control.

"NI is committed to improving the hardware and software systems so that engineers and scientists can effectively manage complexities in the embedded and industrial market, thereby accelerating innovation and discovery," said Chandran Nair, managing director, NI Southeast Asia.

"NIDays is very much about creating an opportunity for our customers to get together and celebrate the successes that we've had by working together. It provides an opportunity for our customers to learn from us, but

it's also about us learning from our customers; and then maybe, just importantly, customers learning from other customers," said Mike Santori, Vice President of Product Marketing, National Instruments. "When I come to NIDays, it's about understanding the markets and the local customers. And what's always interesting is there are a lot of things that are very unique here in terms of the industry itself."

Nair presented on Big Analog Data and the industrial side of the Internet of Things (IoT). Santori, meanwhile, led the presentation of NI's latest hardware and software solutions. First was the annual software update in NI's flagship product, LabVIEW. LabVIEW 2014 features upgrades to help users acquire, analyze and visualize data sets to make informed decisions fast. It standardizes the way users interact with hardware through reuse of the same code and engineering processes across systems, which

"NIDays is very much about creating an opportunity for our customers to get together and celebrate the successes that we've had by working together."

scales applications for the future—thus saving time and money as technology advances, requirements evolve, and time-to-market pressure increases.

LabVIEW 2014 provides access to cutting-edge acquisition hardware such as the rugged and flexible 4-slot CompactDAQ system and CompactRIO system, software-designed instruments such as the PXI Express 8-channel high-resolution oscilloscope and the software-

MIV for Colombian refinery

Endress+Hauser is the Main Instrument Vendor (MIV) for the Refineria de Cartagena (Reficar) in Colombia, and will supply more than 2,800 flow and level measurement instruments to support the \$3.8Bn refinery expansion and modernization project. This expansion will add twelve new process units, increasing refining capacity and production of ultra-low sulfur gasoline and diesel from heavy crude oil slate from 80k BPD to 165k BPD.

Colsein Ltda, the local E+H partner in Colombia, provided additional support to Reficar with local training, calibration services and site supervision during installation, commissioning and start-up. The training programmes used an Endress+Hauser Process Training Unit, which provides a full-scale working mini-process plant with on-line



instrumentation and controls. This allowed Reficar personnel to gain hands-on experience with the types of operations, diagnostics and troubleshooting used in the new refinery instrumentation.

Reficar shifted much of the logistics and invoicing responsibilities to E+H by engaging the company as the MIV. This resulted in significant cost savings and reduced engineering rework, plus time savings for Reficar's procurement department.

INSIDER Special Report: ABB in Singapore

(continued)

based VirtualBench all-in-one instrument.

Moreover, LabVIEW 2014 also includes user-driven features to optimize coding productivity, and an expanded online training for LabVIEW RIO applications.

Another highlight is NI's Semiconductor Test System (STS) series. These PXI-based automated test systems reduce test costs for RF and mixed-signal devices by opening access to NI- and industry-offered PXI modules in semiconductor production test environments. Compared to conventional semiconductor automated test equipment, STS enable users to perform both characterization and production with the same hardware and software tools—thus reducing data correlation time and time to market.

NI has also showcased its InsightCM Enterprise—the first end-to-end software solution that provides insight into the health of capital equipment for machine maintenance and operations, and helps companies address Big Analog Data challenges. A deployment-ready software solution with tightly integrated and flexible hardware options, InsightCM can acquire and analyze measurements, generate alarms, allows maintenance specialists to visualize and manage data and results, and simplifies remote management for large deployments of CompactRIO-based monitoring systems. It also provides insight into the health of both critical rotating machinery and auxiliary rotating equipment to optimize machine performance, maximize uptime, reduce maintenance costs, and increase safety.

NI also released new software-designed instruments that address automated test and research applications across wireless and mobile devices, automotive and aerospace/defense industries. These include a 14-bit, 300MHz 8-channel oscilloscope; the industry's widest bandwidth 26.5GHz RF vector signal analyzer; a 12-bit, 2GHz intermediate frequency digitizer; and a 12.5Gb/s, 8 TX/8 RX lane high-speed serial instrument.

Using a platform-based approach, engineers and scientists can push the boundaries of innovation in areas including automated testing of consumer devices; designing, prototyping, deploying and monitoring industrial systems; and the development of next-generation wireless communications.

At NIDays Singapore, NI also recognized Southeast Asia's outstanding engineers and scientists with the 2014 NI Engineering Impact Award.

Revolutionizing Benchtop Instrumentation

One of the biggest challenges to the engineering community is the complexity of tools, according to Joel Shapiro, Leader, Emerging Markets Marketing at National Instruments. "Having separate set of tools for every single, specific piece of the engineering environment that [engineers] are working on is quite a big challenge," he said during a presentation at National Instruments facility in Penang, Malaysia.

Shapiro said the complexity of the actual products that are being developed is likewise in-



Typical lab environment today

creasing exponentially, and engineering teams

New Centum VP – Series 6

Yokogawa launched the new version of Centum VP, the Series 6, this month. Centum was launched in 1975 as the World's first DCS system, and Yokogawa are proud to claim progressive compatibility and upgradability across all Centum systems over these 40 years. Over 25,000 Centum systems have been installed worldwide in this time, with 88% of these concentrated in Europe and Asia.

The R6 version introduces N-IO, Network IO, which "fulfills the functions of universal I/O and a signal conditioner, enabling configurable software and flexible I/O assignment". As discussed in the Honeywell report, Yokogawa also have agreements with P+F and MTL to enable intrinsically safe interfaces for the N-IO. A FieldMate Validator software tool is also available, enabling the field instrument and wiring loop to be checked before there is any connection to the control system.

The Centum VP R6 also includes an 'Automation Design Suite' that facilitates project execution, including program templates for heat exchangers, filters, and other types of equipment commonly used in the field. The database structure facilitates the reuse of valuable engineering knowhow, centrally manages the functional design documents needed, eliminates inconsistencies between the design information and the actual system, manages change, and supports the automation lifecycle, for example in maintenance and expansion phases.

INSIDER Special Report continued...

have their demands to actually get to market faster, with all of the quality expectations that have always been assumed. “And to do so with smaller budgets, and smaller engineering teams,” he said.

When an engineer is faced with spending all of his time on the complexity of the low-level details of engineering, he gets to spend less time on the actual things that he has really started out to do—which is to improve products; help his company in saving time, effort and money; and to be very innovative in the products that they are developing for the market.

“Really, our goal and our mission at NI is to abstract that complexity, and to allow engineers to focus on what they are trying to do, and less on the tools,” Shapiro said. He added that in a traditional lab today across engineering companies big and small, a typical bench will have an oscilloscope, a function generator, a power supply, and a digital multimeter.

“Each of these has a screen, has knobs, buttons, mechanical enclosure—and inside of that you got processors, and a lot of duplicate components,” he said. “Not only do they take a big physical space, they also have a lot of redundancies within them.”

In line with this, NI has developed VirtualBench, a benchtop instrument that offers a mixed-signal oscilloscope, digital I/O, programmable DC power supply, digital multimeter, and a function generator in one. “It is

radically different than all of the other instruments that are out there: in size, functionality, and in how we interact with the data,” said Shapiro. It has the most essential tools that an engineer will need while testing and developing their products—all in one small form factor.”

According to Frost & Sullivan, engineers will increasingly associate the concept of a user

Consumer Interface



Virtual Bench

interface with the one they use on their consumer electronics devices. “So what that means for us as an engineering tools provider is that engineers are going to expect to have the same type of functionality, ease of use and intuitive nature in their electronics tools,” Shapiro said, which is why VirtualBench can integrate with Windows PCs and iPad.

One of the biggest advantages of VirtualBench is the drastic reduction in price. A typical cost of essential instruments with almost the same specification would amount to almost \$6,000—while VirtualBench costs only about \$2,000. The way that NI was able to do this, according to Shapiro, is through the reduction of a significant amount of duplicate components.

Aashish Mehta, Marketing Engineer Manager for National Instruments ASEAN, demonstrated how the VirtualBench is used and talked about its key advantages compared to individual box instruments, and its intuitive, user-friendly interfaces. Another feature of VirtualBench is a “hands-free” feature that lets a user capture a screenshot of a measurement just by a simple bump (when using an iPad).

“So what that means for us as an engineering tools provider is that engineers are going to expect to have the same type of functionality, ease of use and intuitive nature in their electronics tools.”

The ASM is Twenty!

This month marks the 20th anniversary of the start of the Abnormal Situation Management (ASM®) Consortium (www.asmconsortium.org). In the early 1990’s, a number of leading companies along with universities and research centers joined forces to advance the cause of industrial safety. Honeywell spearheaded the development of a proposal to the US National Institute of Standards and Technology (NIST), Advanced Technology Program (ATP) to form a Joint Research & Development Consortium. In November 1994, the ASM research joint venture began its research.

The best practices developed by the Consortium are completely available only to members giving them a competitive advantage in safety and performance. The Consortium also periodically publishes guidelines which are available to the public so that the non-members can benefit from ASM Research as ASM Effective Practices Guidelines for Alarm Management, Console Operator HMI Design and Procedural Practices.

The global process industry alone averages one serious event or an abnormal situation in every three days ([Incidents List](#)). An abnormal situation occurs whenever an automated control system is unable to return the plant to its normal state without human intervention.

Hollysys Reports Earnings for Q1 FY2015

According to a blogger and analyst, who goes by the handle of ChinaStockResearch, “HollySys Automation Technologies (NASDAQ:HOLI) released Q1 FY2015 results beating consensus both on the top and bottom lines (revenue 141 million USD vs. 125 est.; EPS of 0.46 USD vs. 0.38 est.). Continued strength in the Rail transportation segment (+12% YoY) helped push up revenue, as did Mechanical and Electrical Solutions (nearly +200% YoY), which offset slight weakness in Industrial automation (revenues -2% YoY). Resilient gross margins in both the integrated contract business and product sales helped push the total gross profit margin to a multi-year high of 38%, which combined with controlling fixed expenses resulted operating margin improvement to 25%.”

The blogger continued, “Management didn't provide a specific outlook for Q2, instead reaffirming its earlier 565-600 million USD revenue and 94-98 million USD non-GAAP net income targets for FY2015. When asked on the Q1 call about possible upside for the Rail business due to policy changes in China, management deferred, saying that it felt a flattish YoY estimate was still appropriate. Considering the timing of recent announcements of a re-acceleration of investment into China's rail infrastructure, it's possible that management may not quite know what the impact on the full-year may be, suggesting that next quarter may bring some clarity.”

More from the blog: “The company recorded a net cash outflow of under 1 million USD during Q1, and spent approximately 1 million USD on capital expenditures during the quarter.

“HollySys reported approximately 191 million USD of highly liquid assets (cash and cash equivalents, marketable securities) on the Q1 balance sheet, up from about 130 million USD a year ago and flat vs. last quarter.

“Outlook

HollySys' management did not provide a Q2 FY2015 outlook, which is not unusual for the company, instead reiterating its earlier-announced FY2015 expectations:

- Revenue: 565-600 million USD (+12% YoY, using the midpoint)
- Non-GAAP net income: 94-98 million USD (+10% YoY, using the midpoint)

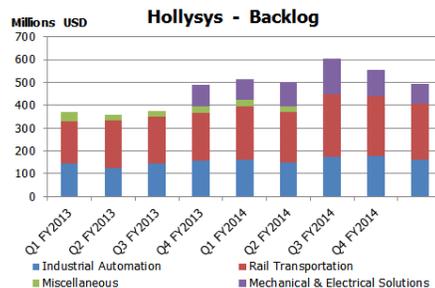
“Management's outlook hasn't changed since the start of the year, something that analysts asked about on the Q1 call (should it be higher due to announced policy changes to increase investments in China's rail infrastructure). Although it seems probably that HollySys will benefit from the incremental investment, it may be too soon for management to estimate what the impact could eventually be. An upgrade of the full-year target seems relatively likely at some point (perhaps next quarter); however, it might slip into Q3.

“When discussing the outlook for Industrial automation, it seems that although there could be more progress with power generation, earlier efforts to diversify into more industries were still ongoing. In the past, management suggested that a weaker economy and pressure for companies to “go green” could help

its business (automation to reduce labor expense, other technology to reduce pollution from production), and has been making

progress on developing these areas.”

Hollysys' statistics and the entire blog post can be found at: <http://seekingalpha.com/article/2687905-hollysys-q1-fy2015-results?dr=1>



HON: Refinery Upgrade in Turkey

Honeywell is to upgrade the controls at two refineries run by Tüpraş, Turkey's largest industrial enterprise, as part of a five-year service, maintenance and support contract aiming to improve plant performance while reducing control system maintenance costs by 15-20%.

HPS is to upgrade the systems at the Aliaga refinery and provide maintenance, support and parts management for Honeywell equipment at that facility and at the refinery at Batman. This new order follows earlier work carried out on one of the largest control systems at the Izmir refinery, which was migrated to the HPS Experion PKS.

“Our industry-leading service contracts go well beyond maintaining any required technology upgrades,” said John Rudolph, vp at Honeywell Process Solutions. “They include ongoing expertise and support from technical experts to optimize performance and keep a plant running efficiently throughout the automation lifecycle.”

“Honeywell was the only automation vendor to provide a lifecycle management contract that goes beyond simple maintenance activities,” said Osman Demir, Tüpraş Contracts and Procurement coordinator. “The contract lets us meet one of our major challenges in constructing an efficient long-term plan for migrations while also giving us certainty for our financial plan.”

They're Coming From Outside! The first in a continuing series of reports on the future of automation, "Automation's Perfect Storm" by Walt Boyes, *INSIDER* Editor

We have been talking, for more than a decade, about "lick n stick" sensors and the need for more sensing in plants. So why hasn't this happened? There are several reasons why, especially the cost of sensors and the business model of sensor vendors.

But things are moving, finally, toward the disruptive inexpensive sensor milieu. There are trends that are moving in the automation space that will make the dream (or nightmare) of inexpensive sensors come true...with major disruptive changes in business models and product design modalities.

Industrial Internet of Things

Feeding off the commercial Internet of Things, there are significant reasons to use IoT technology in the Industrial environment. The current design practice is to only put sensors where you absolutely have to have sensors, and expect that you will get optimum results. This is due to the fact that sensors and transmit-

ters are expensive and that controllers are designed primarily for single loop control. If you can use many more sensors in the process industries, on reactors, fractionation columns, distillation towers, and so forth, most experts believe that significant advances in performance could result.

Big Data Analytics: Uses in Plants

Of course, that result can only mean something if analytics exist to make sense of the data from these vastly more sensors we would be installing.

There are trends that are moving in the automation space that will make the dream (or nightmare) of inexpensive sensors come true.

Big Data is being used in many areas, including already in Industrial Automation, to determine things like prognostic asset management and drill field analysis. It is also clearly being used in Advanced Process Control algorithms by a number of forward thinking vendors and asset owners. Many more applications of Big Data are being discovered or created every day. The biggest hold-up to rapid expansion of the uses of Big Data is the cost of sensors.

More Sensors

At \$1000 each, nobody is going to put 100 temperature sensors on a distillation column. But at \$125 each, it is a different design proposition,

especially if the use of matrix arrays of those sensors is considered. Matrix arrays have very high reliability, and can be made of less accurate, more repeatable sensors. This allows for the use of less expensive circuitry and software.

Wireless Sensors

Wireless sensors have made part of the installation expense go away—the

wiring part. It is still necessary to sometimes make holes in vessels, which is still expensive, but in many applications, wireless sensors make a marginal application quite doable.

The problem is that wireless sensors, as currently produced by automation vendors, are usually at least as costly, and in most cases, more costly than the plain vanilla wired sensor they'd replace.

Once again, this appears to be a deal-breaker, but it is not.

The Tail Wags The Dog!

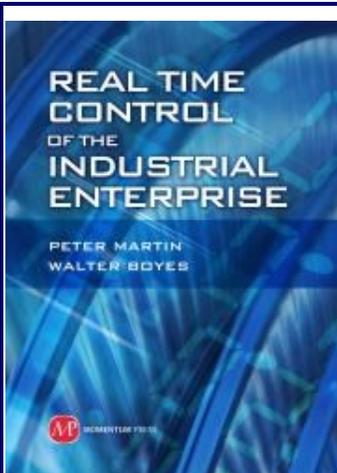
Emerson Electric's Q4 and FY2014 results were posted November 4th. The company's automation divisions together accounted for 56% of sales in FY2014, and 62% of profits. Other divisions were also profitable, but the contribution from Automation to profit is nothing short of remarkable. The numbers reveal Emerson's strength in North America as well.

Process Management

The company's **Process Management** segment accounted for 36% of sales in fiscal 2014, and 44% of operating profit. Quarterly sales for this segment rose by 8%, driven by 5% underlying sales growth. This growth came from strength in the global energy and chemical markets. North America saw a 13% sales quarterly increase because of investments in oil and gas production. However, sales in Asia rose by only 1%, as strength in Southeast Asia and India were partially offset by declines in Australia and China. Sales in Europe were flat versus a year ago. Orders for this segment by 12% during the quarter, excluding a negative 9-percent deficit from foreign exchange fluctuations.

Industrial Automation

The **Industrial Automation** segment was responsible for 20% of company sales over the last 12 months, and 18% of the operating profit. Fourth-quarter sales for this segment rose by 5% due to higher demand for capital goods. North American sales increased by 12%, while Asian sales increased 5%. Europe saw a decline of 2%.



READ THE BOOK!

Over 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 making manufacturing sustainable 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.

They're Coming from Outside!
(continued)

Lick-n-Stick Sensors

The reason it isn't a deal-breaker is because sensor manufacturers from outside the industry are being created to produce sensors for the commercial space, like agriculture, energy, building automation, and transportation.

The one thing most of them share is that they are not from the automation industry, and they aren't burdened by installed base or profit models based on limited sales of expensive sensors.

These vendors are designing sensors that can stand up to commercial use, even in homes and offices where the operators have no training and the sensors need to have good reliability, and self-diagnosis capability. These sensors are generally less accurate than those found in process applications, but used in matrix arrays, or where repeatability is more important than absolute accuracy, these new sensors and new sensor companies will move into a significant number of applications in the industrial space quickly.

Class I, Div. 2?

It isn't just the accuracy issue, it is also the cost of installation. A single transmitter can cost two or three times its own sales price to install, and more if the area is classified as hazardous. This may be changing, however, because the real existence of Class I, Division 2 areas is seriously in question. The EPA and other environmental agencies around the world have been enforcing anti-fugitive-emissions rules for more than a decade, leading to a significant drop in fugitive emissions in plants. Fugitive emissions are the basic reason to classify an area Class I Div.2 so as these emissions disappear, the basic reason to have the classification is also

becoming questionable.

The reason that most plants have not done away with Class I, Division 2 areas is because nobody wants the dubious honor of being first if something goes

wrong, and their insurance actuaries are reluctant to let them.

These new sensor companies range from Google (owner of quite a few sensor and robotics companies) to tiny one-person startups, and everything in between. The one thing most of them share is that they are not from the automation industry, and they

aren't burdened by installed base or profit models based on limited sales of expensive sensors.

Many of these new sensor companies are extremely agile, and often come from the semiconductor industry where design cycle time is significantly shorter than the 18-months to three years of the normal automation product design cycle.

Crowdfunding development

In the past, it was hard to get investment in a company that would make sensors. The growth model for that kind of company discouraged most venture investors from the space. Recently, however, beginning with Kickstarter.com and its similar brethren, it has become much more simple to attract angel investment (and not have to give up any ownership either). A cursory examination of Kickstarter shows that nearly 100 sensor projects have been listed, with more than 20 actually funded. Most of these are simple sensors, like temperature. Others are not—the winner of the X-Prize for the "Star Trek Tricorder" began on Kickstarter, and attracted more standard ven-

They're Coming from Outside!, continued...

ture funding from there. And, of course, these sensors are being designed to be sold very inexpensively. The lick-n-stick sensor has arrived.

Got Business Model?

So now we turn to the effect of this disruptive trend on the standard business model of companies that manufacture traditional sensors and transmitters. The business

model assumes little or no economy of scale since the sales numbers are exceedingly small in comparison to other types of sensors, and therefore the model requires a high Gross Margin. Typically, for the past thirty years, the Design Gross Margin for most transmitters has been somewhere between 55% and 65%. The sensors divisions of automation companies are also usually the highest profit centers in those companies, as you'd expect from the high Design Gross Margin.

What happens when the \$1000 temperature transmitter can be replaced by the \$200 wireless transmitter in at least 50% of the applications?

We should expect to see massive changes in the way sensors are designed, in the design life cycle, in the way they're sold, and in the way they're used. These changes are coming, and we estimate that sensor vendors in the automation space will be dealing with them within two design life cycles.

We are dealing with a disruptive enough trend to bring Bernard Baruch's famous "Quick and the Dead" quip to mind.

And while you're at it: Controllers

Another company from outside the main-

stream of the automation industry has reimagined the controller. We have written before about Bedrock Automation, a subsidiary of Micron Technologies. Bedrock has completely re-designed the controller, from the

backplane to the I/O module, and has brought the engineering know-how of the semiconductor world to bear on automation controllers. From the very first controller,

serial data drops connecting pin-sets to modules. Bedrock, using the concept of mesh (they call it Black Mesh) provides pin-less connectivity for modules except power and communications.

This means that any module or multiple of modules can be connected to the backplane at any location and in any orientation.

Bedrock has designed encryption into the backplane and into each module. No malware commands or data can be injected into the controller either accidentally or on purpose. Forsaking the inexpensive plastic most controllers are made of, Bedrock has committed to an all aluminum housing for backplane and modules. And Bedrock has partnered with another maverick in the automation business, Inductive Automation, to offer complete systems from controller to MES system.

It remains to be seen if any of these Outsiders can make a serious penetration into the automation space. But it is beginning to seem much more likely as more Outsiders show up and take their shots.

The question is, can existing sensor vendors change their business models sufficiently fast to take advantage of these new trends instead of pretending ostrich-like that they aren't really meaningful trends, and they won't really affect their business models. The answer is, of course they can, but that begs another question: will they?

The next installments in this series will deal with new sensor designs, and what this means for your business and the future of automation.

It remains to be seen if any of these Outsiders can make a serious penetration into the automation space. But it is beginning to seem much more likely as more Outsiders show up and take their shots.

ARC Says ABB "Finestkind"

ARC Advisory Group has released their Distributed Control Systems Worldwide Outlook report for 2013 in which ABB has retained its leading position in the worldwide DCS (distributed control system) market. According to the study, the global DCS market grew about 4 percent in 2013. According to the study, ABB was the regional market share leader for Latin America, Europe, Middle East and Africa (EMEA), and the worldwide leader in key global verticals including oil and gas, pulp and paper, mining and metals.

The report also notes that the DCS business has continued to be primarily a service business over the past few years. The Main Automation Contractor (MAC) approach continues to grow stronger and expand.

"For years ABB has cultivated its capability to serve major projects as the Main Automation Contractor," said ARC Senior Analyst Harry Forbes.

"ABB is well prepared with a broad DCS portfolio including its flagship system 800xA Extended Automation platform, Symphony Plus control system, Freelance process control system for small to medium process applications, as well as its prior generation systems," said Tobias Becker, Head of ABB's Control Technologies business.

ARC Announces Principal Speakers for 2015 Industry Forum

The Nineteenth Annual ARC Industry Forum, “Industry in Transition: The Information Driven Enterprise for the Connected World” will be held February 9-12 in Orlando, Fla.

From a recent press release: “What does it mean to be information-driven? New information technologies such as Internet of Things, predictive analytics, wireless, additive manufacturing, cloud computing, mobility, and 3D visualization have the potential to disrupt and radically change the way companies do business. An information-driven enterprise leverages these new technology solutions to achieve agility and sustain a competitive edge. Join us to learn how an information-driven strategy can better position you to succeed and determine how you can best approach critical technology decisions.”

Key topic areas will be:

- Industrial Internet of Things
- Analytics for Industry
- Asset Performance Management
- Cloud Computing Solutions
- Cyber Security Solutions
- Latest Innovations in Automation
- Energy Management Solutions
- Workforce Development and Training Solutions

ARC has announced the Keynote Speakers:



Peter Holicki, Corporate Vice President, manufacturing and engineering and environment health and safety operations, The Dow Chemical Company.

Gregory Touhill, deputy assistant secretary, cyber security operations and programs, national programs and protections directorate, Department of Homeland Security.



Stephan Biller, chief manufacturing scientist, General Electric Co.

Additional executives ARC expects to participate in the Forum include:

Bayer Technology Services, Thomas Steckenreiter, Sr. Vice President

Dow Chemical, Carrie Schaller, Manufacturing Engineering IT Director



ExxonMobil Development, Sandy Vasser, Facilities Electrical and Instrumentation Manager

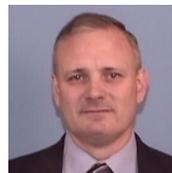
Saudi Aramco, Hussain Al-Qahtani, manager process and control systems



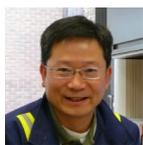
Thyssenkrupp, Reinhold Achatz, CTO

Kimberly-Clark, Pete Anderla, ITS Architect

Styron, Joop Peeters, Shared Service M&E Leader



Southern Company, Harvey Ivey, General Manager of Design



Suncor, Eric Lau, Process Specialist, Automation

...and more.

Visit www.arcweb.com/events/arc-industry-forum-orlando/ for complete information and to register for the forum. The INSIDER will be there, and so should you be.

ABB Does China Shale

ABB announced an agreement with China Petrochemical Corporation (Sinopec), in which it will provide a complete set of automation solutions and engineering services to Phase I of the Sinopec’s Shale Gas Project in Jiaoshiba Block in Fuling, Chongqing over the next three years. ABB will provide a series of smart solutions for the project, including the SCADA system, the Extended Automation System 800xA-based distributed control system, a safety instrumentation system, and Remote Terminal Units (RTUs).

With the technical support of the ABB SCADA system, the Fuling Shale Gas Project will use the advanced design concept of multi-level cut-off and vent for block and pressure rating, to ensure the efficient and safe operation of wells and stations at all levels, including the gas gathering and transportation system of the entire gas field. Offering a multi-level protection and control structure, the SCADA system will enable unmanned production for the 33 gas gathering stations and 15 wellhead gas production platforms of the Fuling Shale Gas Project. Users will also have remote centralized monitoring of each process station at the dispatch center, thus significantly reducing operations and maintenance costs. Sinopec is one of global accounts of ABB, and has had business cooperation with ABB since 2000.



THE WAY I SEE IT

Editorial

Can Distribution As We Know It Survive?

Industrial distribution comes in three basic flavors. Manufacturers' representatives act as assistants to customers, helping them design projects, and taking orders on behalf of their principals. Manufacturers' reps do not take title to equipment and are paid on a commission basis, usually between 10 and 25 percent.

Stacking and non-stacking distributors act as their names would imply, and buy stock from the automation vendor and resell it to their customers. It is this form of distribution that may be in serious trouble and may not be able to survive.

Distribution has three real metrics. The rest don't matter. The first is inventory turns. The faster you turn your inventory, the higher the cash flow velocity. The second is "time in front of the customer" which tells you how much it cost you to sell something. The third is net profit. So for many years, distributors have focused on "pick pack and ship" products that require little "time in front of the customer" and have very fast "turn."

The problem with this is that for the past ten

years automation vendors have been setting up in competition with their distributors for those simple, "pick pack and ship" products—you can buy them from the company website at the same or less than you can buy them from the local distributor. So what's left is selling engineered products—the ones you can't just

Now, to put the nail in the pick pack and ship coffin, eBay and Amazon are in the business of selling products online.

pull off the shelf and ship.

Selling engineered products is harder, and more costly. There is considerably more "time in front of the customer" and the inventory turns are usually very slow. In addition, the distributor needs specialists (there is a great book on the subject by Frank Hurtt that I recommend) and support staff.

Now, to put the nail in the pick pack and ship coffin, eBay and Amazon are in the business of selling products online. Not all of those products are rogue, counterfeit, old, or in any way damaged, either. Even some distributors are selling on eBay.

The only things keeping distribution going have

been the advantages to the vendors of having local stock wherever they have a distributor, and the ability to off-load FGI to the distributor (nobody who's ever been a distributor will tell you they love getting the email that says they have to buy more Finished Goods Inventory at quarter's end). The disadvantage to the vendor is the large (sometimes very large) discount that distributors demand and need to hold all that inventory. When eBay and Amazon can pick

pack and ship nearly as fast as a distributor can, the disadvantage starts weighing fairly heavily on the vendor.

Forward thinking distributors have been consolidating, making large multi-territory companies where economies of scale can perhaps alleviate the danger. They have also been staffing

up with specialists, engineers, and project teams, and in many cases formed system integration divisions and service provider divisions.

Some have found success in working with smaller vendors who do not feel they can afford a factory sales force. But these vendors are looking first online now, too.

The one advantage left, it seems, is that distributors have low sales and engineering personnel turnover, and continue to provide that relationship of respect and trust that is the basis of sales. But is it enough for distributors to survive?

Comments? Talk to me!
waltboyes@spitzerandboyes.com

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

Wolfgang Seel

by Joy Ward



INSIDER

INDUSTRIAL AUTOMATION & PROCESS CONTROL

Profile

Wolfgang Seel, the current CEO of VIPA is a fascinating man. He founded VIPA as a software company in 1985 after escaping from behind the Berlin Wall in East Germany, and recently sold it to Yaskawa.

Joy Ward: What made you decide to escape to West Germany?

Wolfgang Seel: There are many reasons. There is not only one reason. To combine it in one short answer is it was senseless and hopeless at that time. Everything was more or less prohibited. You couldn't do this, this, this. On the other side if you did something it was senseless because there was no possibility to develop yourself, to build up a company or to follow your ideas. Nothing was possible.

JW: So you had started your own business?

WS: No, not at that time. But at that time I started to study and I stopped because I disappeared, escaped from East Germany and I had planned in time to restart again later but there was no time for it.

JW: So how did you get across the border?

WS: To escape from East Germany had two problems. One was to find the right way. The other was to speak with no one about it. The second was clear. We were all sitting together. If anybody has a problem we speak with each other. Nobody speaks to anybody else; to keep the circle very close. The other thing was to find the right way. You heard about people who were flying with a balloon. People were diving. People were running. We just selected our option. The most common of course was across the border because most of us had a driver's license. Christian was the name of my friend, he had a life guard certification and my girlfriend at the time was good in swimming. Then we said how can we do this? Diving. It was for me the best way. So we start making different plans and on this process we also decided to develop an underwater mobile. It was a mini submarine, like an aqua-scooter.

At that time I tried to make business, private business, a long time before. I was building and selling to the music scene but I never could make a business because it is not allowed to have business so everything was more or less under the table.

We were developing and building an aqua-scooter and were preparing ourselves for the conditions for the next summer, when we would go.

JW: Did it ever occur to you that maybe this wasn't a good idea?

WS: No. For me it was very clear. At that time I tried to make business, private business, a long time before. I was building and selling to the music scene but I never could make a business because it is not allowed to have business so everything was more or less under the table. The point is you couldn't make a business because everything was limited. Also to get all the material was complicated. I could not go into a shop and buy the material. You had to find people who could help you find this and on the other side you have to help them find what they were looking for. It was not a real business. It was an improv situation.

JW: Was there any time when you were crossing you were almost caught?

WS: Yes, there was a situation because we had to go close to the border. We had to cross a restricted area. It was not forbidden to

be there but you need a license or permission from somebody. We knew there was a checkpoint but the checkpoint was not in use, We crossed and we were inside this area. When we were in the police camp we looked different than the Romanians and the Bulgarian people. The guards arrested us for a day and asked many stupid questions. They told us, "You can leave but if we catch you one more time then we put you in the prison."

We said, "We are not disappearing or escaping." They believed we were good socialists. They said, "we will let you go home but please don't come back to this area. We will send you to prison." Then we went back to the hotel and the next evening started again. The advantage was we were arrested in this area so now we knew the area better. This time we made it.

JW: How did you start your company?

Wolfgang Seel
by Jay Ward (continued)



INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Profile

WS: I got a job offer from a head hunting company. They said, “Okay, you are an electronics engineer.” I said, “I’m not really an engineer.” They said, “You understand it and you’re familiar with electronics and I have a job for you.”

JW--That job lead to several years at Siemens and the opportunity to learn how to program PLCs. After being hired as a PLC programmer he taught himself how to actually program PLCs. Seel became the “go-to” engineer when it came to large automation projects such as taking the Guinness Brewery in Dublin, Ireland, digital.

WS: It was in 1984 I had the first idea to build up a company. But the real kick off of the company was not given yet. In the beginning of '85 there was a good possibility because many departments within Siemens came to me and said we need your advice for this and this. Then two departments wanted to give me a long term contract.

I got a job offer from a head hunting company. They said, “Okay, you are an electronics engineer.” I said, “I’m not really an engineer.” They said, “You understand it and you’re familiar with electronics and I have a job for you.”

JW: What made you decide to start a company? That’s a different game.

WS: Not a different game. When you remember this was the time that the PC is coming up. It was the time when the XT and the compatible PCs were coming up. Every year a new programming system was developed., a new language developed. I think this is so fast I cannot manage to build a new project with the speed and understanding of all the things. The best way would be to form a company, a software computer company where you get more specialized. This was in April 1985. At that time it was more or less, let’s say, a straight-forward working process. We are VI-PA. The name of the company was the program: Visualization and Process Automation. We came from the process industry and visualization was also the early stage when you brought all this process what was running in the factory, to the screen. You could see where the water flow was, what temperature was inside the tank and all the stuff.

It was the first stage in automation that people could see what is really behind it. This was the beginning of the company. At that time we didn’t build any hardware or anything like that. Everything was based on software. We ramped up quite fast and I think after four years, we started 1985, in '88, '89 we had over fifty people. But we were 100% working on the software side. Then the company ramped up quite fast and the first years everything went well. During the last two years we started developing hardware because we found out when we developed software and took it to the PLC, which was 100% from Siemens, there were always features missing which were absolutely needed in the process field.

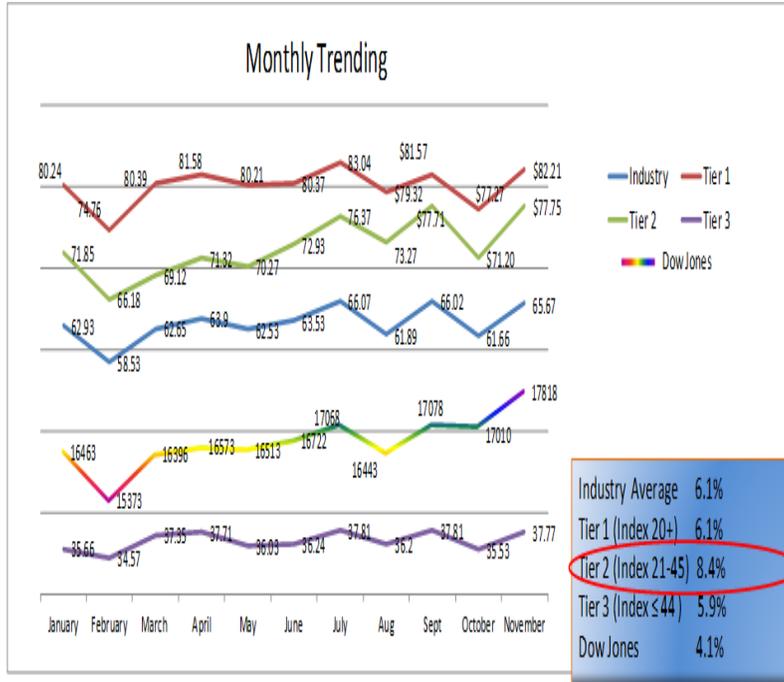
Then in '89, when I recognized we have to restructure the company there was also a decision that had to be done, shall we go with the software side or the hardware side? Develop our own products? In the end we decided let’s go with the hardware. So we made a PLC.

JW: You started out in process automation and you were making visualization systems in the early '80s. Do you ever wish you had gone the other way and had been Wonderware instead of the way you went?

WS: In principle, yeah, but at that time when I started visualization was not PC based. At that time visualization was really hardware based because we developed a visualization card. This was a manual driver card with video memory inside.

JW: Where do you go now with VIPA?

WS: Next year is very important. Next year we will have thirty years of VIPA on the fifth of April. My interest is that the company itself its going on. That in the past the company has developed itself in the right way and goes in the right direction. This is the best I can wish for VIPA.



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INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

By Mary Samuelson

The news is hopeful at this point that after several weeks of ups and downs, with more

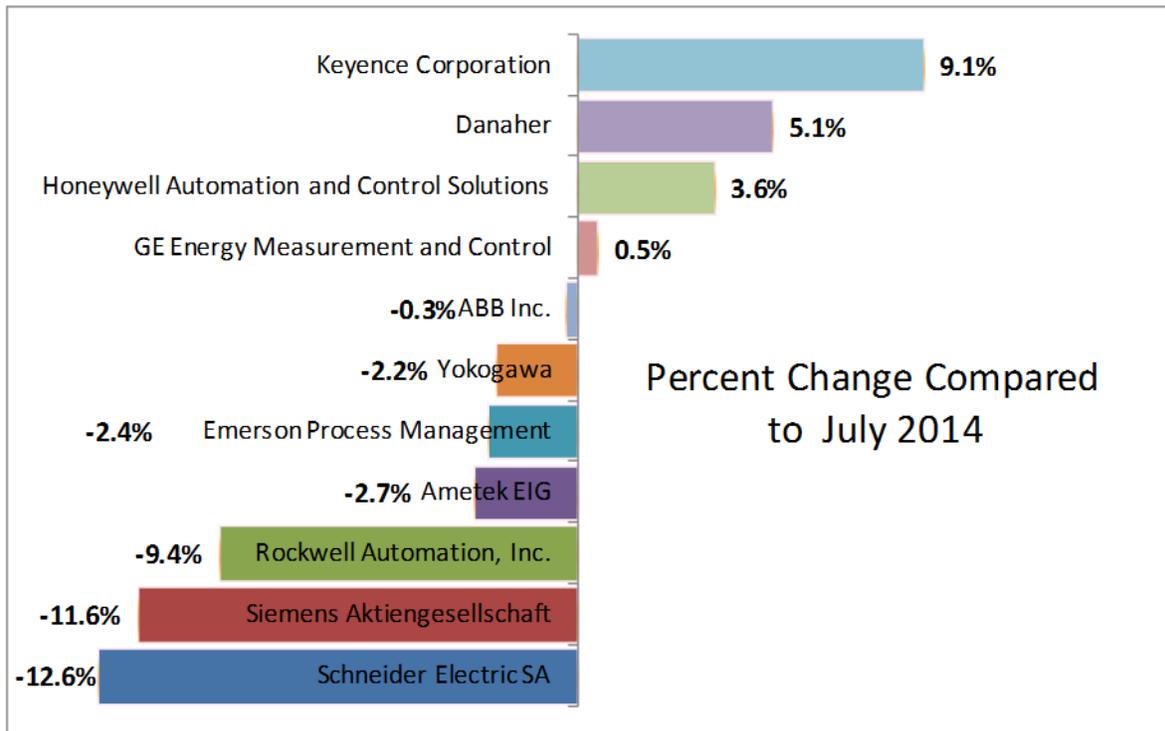
forming the Dow, with Tier 2 companies beating the Dow by over 4 points.

Tier 3 companies didn't fare as well as their larger Tier 1 and Tier 2 brothers, but in the final analysis they held their own respectably in what has been a wild and somewhat unreliable market for the past two months.

While many of the individual companies in

After a rough couple of months, the overall picture for the ACI is improving. Last month we reported that ACI Stock prices appeared to be missing the Stock Market climbs and riding the drops. The overall industry stock price dropped an average of 11.5% between September 3 and October 12, compared to a much smaller Dow loss for that same time period.

downs than ups, the health of the industry is improving. As was typically the case



the Index are still not back up to their July figures, some are getting close and some have actually topped those numbers. The following chart shows several of the Index companies, and how they currently fare compared to July.

before the roller coaster ride began, all Tiers of the ACI are once again outper-

Keyence Corporation has not only rebounded but passed their July numbers by 9.5%. This is not surprising when we recall that they were the only company in the

**SSX and SST Isolator/
Splitters Win exida Safety
Award**

The SSX and SST Safety Isolators and Splitters have received the 2014 Safety Award for Interface Modules from exida, a global leader in functional safety certification for the process industries. The SSX/SST family is one of three products to receive the



recognition, which highlights products that bring innovation to the concept of Functional Safety.

“Moore Industries is honored to receive this prestigious award from exida,” said Scott Saunders, President and CEO of Moore Industries-International, Inc.

The two-wire SSX and four-wire SST provide isolation and signal conversion for loops in Safety Instrumented Systems (SIS). Both units have the ability to pass HART® data from field transmitters to host systems, and vice-versa. The four-wire SST Splitter takes one process signal and creates two identical, isolated outputs. It can also serve as a HART splitter.

The SSX and SST are approved by exida for use in a Safety Instrumented System (SIS) up to SIL 3 in monitor mode where only the input circuit is part of the safety function, or for single use in a SIS up to SIL 2.

INSIDER Health Watch *continued*

Index to slightly outperform the Dow in October, aided by a 37% profit margin posted in September. Schneider is still down by 12.6% compared to its July high, but is moving in the right direction with a slight improvement of 3.6% since October.

Overall, the Index points toward cautious optimism. The industry is again tracking with the DJIA and as a whole is improving and performing well. Several of the key individual players however, are still struggling to regain the fairly substantial losses seen since July.

In December, we will have more results for FY2014 to consider, as well as the yearly report from ARC Advisory Group in Control magazine on the Top Fifty Automation Companies. It is to be hoped that the report will include more non-process automation companies, and more non-North American companies.



We have been compiling the INSIDER Health Watch for several months now, and the industry has gone through some significant changes. We started with 79 companies, and reduced that to 78 with the acquisition of Invensys by Schneider Electric. We will be reviewing the index in January, adding more companies, accounting for switches within companies, and looking at further segmentation.

Your comments, critiques and requests for making a better Health Watch are solicited.

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.

Rajabahadur V. Arcot: Falling oil prices: a fillip to Asian economy

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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,



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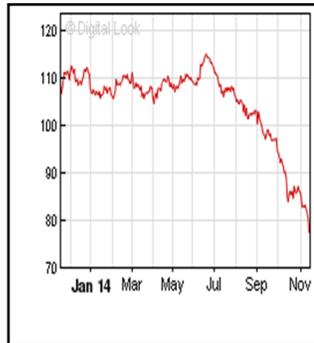
After touching a high of almost US \$112 a barrel around end of June 2014, oil prices are presently down by more than 20 percent and there are no indications that point to their quick recovery.

A few days ago, Brent crude fell below US\$80 and according to the International Energy Agency's latest monthly oil market report, the drop in oil prices will continue through the first half of 2015. If the trend persists, and many analysts predict that it will, it augurs well for the Asian economy, as this region is the largest importer of crude.

Saudi Arabia and the US are seen acting in unison to mount pressure on Russia and Iran because of geopolitical reasons.

global oil supplies, is not likely to cut production. In fact, Saudi Arabia, the group's biggest oil producer, has given indications that it is

Apart from Japan, several countries in this



Brent Crude Oil Futures \$ per barrel

region, such as China, India, South Korea, Indonesia, and Thailand have robust and expanding industrial bases. These countries, which even currently are important markets for automation vendors, will therefore demand their greater attention.

Supply and demand considerations, such as production and financial costs, the availability of the product, and the pace of demand growth, have minimal influence on the price of crude. In comparison, political considerations and market speculative forces have influenced the crude oil and gas prices much more.

When subjected to speculative forces alone, the prices tended to recover quickly after dips. In the past when oil prices dropped, the oil producers typically responded by cutting down oil production. On the contrary, this time around, there are indications that the Organization of the Petroleum Exporting Countries (OPEC), which controls about one-third of

comfortable with lower prices and according to available information, it has increased its output and offered discounts to key Asian customers and the US, sending a strong signal that it's ready to live with lower prices.

According to some analysts, this time around strong political compulsions are behind the significant drop in crude oil prices. Saudi Arabia and the US are seen acting in unison to mount pressure on Russia and Iran be-

cause of geopolitical reasons. Russia and Iran depend on oil export revenues and therefore drop in oil prices would affect their economies badly.

Thomas L Friedman, a *New York Times* columnist, has in his article "The Pump War" has alluded to a likely global "pump war" between the US and Saudi Arabia on one side and Russia and Iran on the other. He further adds "This is business, but it also has the feel of war by other means: oil." The OILPRICE.COM, in its report "US Using Oil to Fight Russian Gas Politics in Ukraine?," wrote, "the US appears to be building pressure on Russia over its actions in Ukraine by releasing crude oil from its

Spitzer and Boyes LLC has a large portfolio of offerings for the automation enterprise:

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- Walt Boyes, David Spitzer, Joy Ward, Rajbahadur V. Arcot, and Mary Samuelson are available for workshops, short courses, and speaking engagements.

Rajabahadur V. Arcot: India's initiatives to emerge as a manufacturing hub and achieve economic growth, continued...

emergency stockpile onto the market, with news of a 'test sale' causing oil prices to dip to their lowest levels in a month." This report appeared in March 2014. The warfare is not likely to end soon and therefore oil prices are likely to remain suppressed over a significantly long period.

The Associated Press report, quoting Adam Slater, senior economist at Oxford Economics, says that the fall this time should stick a little bit more and give the world economy an unexpected stimulus. The shale oil revolution and oil sands discoveries also have long-term price moderation influence.

Declining oil prices help in reducing the oil import bills of numerous countries, which depend on import of oil to meet their energy needs. It will greatly influence the Asian economy, the world's largest oil importing region, and in

particular economies of countries such as China, Japan, South Korea, and India. The article in Gulf-Times "Oil price slump is double-edged sword for Asia" declares, "Falling global crude prices are a boon to Asia, the world's largest oil-importing region,

reducing costs for businesses and consumers." Consumers in general and in particular those living in oil importing countries will save on fuel bills, which they can spend on other things resulting in consumer spending and demand creation. Apart from helping consumers, lower energy prices also help manufacturing companies' fuel bills and possibly help authorities responsible for fiscal and monetary policies take corrective measures to boost the economic growth. With the manufacturing industry contributing significantly to the GDPs of countries such as China, Japan, South Korea, and India, the declining crude price trend augurs well for them.

Recently, South Korea's central bank trimmed its benchmark interest rate by a quarter-percentage point to 2 percent,

the terms of trade and increases real income." India seems to be the biggest beneficiary in Asia. The drop in oil prices provides India an unexpected window of opportunity to set right its economy. A ten percent reduction in the crude oil price would reduce the country's import bill by about US\$ 15 billion and the current account deficit by 0.6 percent of the GDP. In addition, every US\$10-a-barrel change in oil price will bring down the government's fuel subsidy burden and the fiscal deficit by around US\$3 billion. Even the country's wholesale inflation would come down substantially as energy prices have a bearing on transportation, manufacturing, and other costs. There are signs to that effect already. The direct impact of declining oil prices would be the reduction in trade deficit, which was getting out of control. It would also help large domestic oil companies such as ONGC, GAIL, IOC, and such others improve their finances as they bear a share of the subsidy burden and their profits could flow into productive investments. China's state-owned energy companies will also benefit from lower oil costs as their subsidy burden will also come down.

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



a move made possible in part because of lower inflation resulting from declining oil prices. A Bloomberg report quotes Haruhiko Kuroda, Governor of Bank of Japan, "Japan imports massive amounts of oil, so falling oil prices itself is a plus for the economy as it improves