

INSIDER

INDUSTRIAL AUTOMATION & PROCESS CONTROL

VOLUME 20
NUMBER 6
ISSN2334-0789
June 2016

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Your key to the latest industrial automation and process control information

User Group Month: HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change

Honeywell Process Solutions held their HUG Americas user group meeting in the Texas Hill



Country at the J. W. Marriott Resort once again. This year, the theme was Digital Transformation, and the user group meeting was re-

organized so that there were technical sessions, followed by customer sessions, followed by roundtables, rather than the traditional roadmap sessions and customer papers.

The leadoff, as usual, was Honeywell's CEO Vimal Kapur, who welcomed users to the 41st HUG. That's far longer than any other automation user group, with the exception of ISA.

The Speed of Business is accelerating. Everything is in real time. The business environment has become dynamic, with a shorter career length, and faster training.

IoT, IIoT, he remarked, there's lots of conversation around it. Everything is changing all around us. Everything is fundamentally changed in how we interact, entertain, travel, and shop. The case for change is being driven by our personal lives.

Change is not new. Technology has repeatedly transformed the process industry and is doing it again:

- Connected sensors
- Virtualization
- Cloud computing
- Wireless

dynamic, with a shorter career length, and faster training.

Honeywell has been a major contributor to industry disruptions ever since the chart recorder, right through the pneumatic and then electronic transmitter, the DCS, and the software suites and intellectual property of UOP. Now the digital transformation of Honeywell is going to disrupt the

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Want to know the **Mind of the Customer™**? Do you know why your customers buy and why they buy specific products or services, and don't buy others? If you don't know, call us to find out how we can help you! Call **Walt Boyes** +1-630-639-7090 or **Joy Ward** at +1-314-283-5259.

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

industry again.

LEAP makes projects faster and more affordable.

Universal IO, Cloud Engineering, and Virtualization provide standardization, simplification, miniaturization, parallel project implementation, and globalization, with 30% capital reduction for automation portion of project and 25% more flexibility in schedule.

Assurance 360 service contracts are outcome based. Implementing best practices, coverage throughout the product lifecycle, risk and change management, and optimized performance and uptime.

Kapur noted that Honeywell supports customers by keeping their oldest process equipment and control systems alive a lot longer than anybody else. "We have not been given enough credit for the way we support our clients," Kapur declared. "IoT will not be rip-and-replace, that's just not going to happen!"

Honeywell is leveraging the data from the Abnormal Situation Management consortium (ASM) in plants: predictive analytics, leading to an IIoT Intelligent Offering Suite-- reduction in overall and nuisance alarms by up to 80%, 40% improvement in time to solve problem, and faster recovery from abnormal situations.

He claimed that Honeywell provides the industry leading operator Interface with the Experion Orion Consoles-- over 150 now in the field, in less than 2 years== 35% faster response, and 26% quicker response to resolve abnormal situations.

Honeywell is moving toward true digital integration of Field devices....SmartLine Transmitters with EPKS (Experion Process Knowledge System) integration; auto device commissioning; Integrated de-

sign tools; transmitter messaging, and integrated dashboards.

Kapur talked about the proposition behind the Industrial Internet of Things (IIoT): Unlocking Value that couldn't be unleashed before. "Our plants aren't connected to the Internet," he said.. IIoT is simply enabling what we have in our plants and opening up to the outside world. IIoT is an evolution, not a replacement. Think about our current architecture and how it will change the architecture of the future.

According to Kapur, Honeywell is leveraging IIoT to drive excellence focused around efficiency, safety, utilization, and reliability.

"We have not been given enough credit for the way we support our clients," Kapur declared.

IIoT demands LEAP. We have to reduce capital expenditures, do the project faster, and with less cost.

Kapur threw down a whole list of new things: New ControlEdge PLC...EPKS as ECMS...3rd party skid integration...a new and improved Experion Profit Controller, Automated Device Commissioning.

Kapur talked about what he called Universal Connected Assets:

- Right integration for right application
- Ethernet interface module
- Universal channel technology
- Universal wireless I/O

Honeywell wants to Build-Run-Optimize using virtualization and hardware independence through Cloud engineering. "What this does is take automation off the critical path!" Kapur averred.

We are going to produce a comprehensive suite to provide secure connectivity to multi-vendor equipment with a cloud link, 4G connectivity, low power compact form factor, for hazardous locations, and at least five years of life with a single D battery.

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

This year, we are introducing a new RTU2020.

OPC UA, from Matrikon OPC, provides platform neutrality to run on any operating system, future ready and legacy friendly, with easy configuration. Easy configuration

We have already improved our Mobility platform: Pulse and made it more secure.

Distributed assets in the cloud=virtual infrastructure

UOP offered connected performance services because they are a Honeywell sister company.

"More work has to be done--how do we set up a unified architecture that will connect disparate systems." Kapur pointed out, "All of this requires a significant and comprehensive cyber security. How we deal with cyber security is the limiting factor in IIoT"

Honeywell is producing the best in class Customer Channel online.

"There is a lot that is changing, but it is an evolution, not a revolution."

"We are confident that you will walk away with the understanding that Honeywell is on the right trajectory," Kapur closed.

Then Bruce Calder, CTO, gave a Ted-like talk about digital transformation.

Digital Transformation is the biggest change since the DCS. For Honeywell, the Experion PKS Orion is the key building block

The latest revision of Experion is R400. What's new in R400 includes automated device commissioning



of any device connected to HON Universal I/O. It is a part of LEAP. Multivariable predictive control in the C300 and edge is another feature. Included also is the ethernet interface module: a single secure module that delivers software support for device protocols going forward, with a built in firewall allowing connection to the Internet.



One Wireless now supports ISA100 and Wireless HART (This editor recalls that he nearly got fired in the early 2000s by suggesting this to the people in charge of One Wireless—so I can say, *nunc dimittis Domine.*)

Calder continued Vimal Kapur's introduction of the new Honeywell Control Edge PLC. We are making an augmented reality app for the PLC

Calder's talk devolved into a mock-Big Bang with a fake Sheldon Cooper, who does a commercial for the ControlEdge PLC...Illustrating the security issue that overshadows cloud and internet based IIoT.

"IIoT by Honeywell enables digital transformation," Calder said.

Kapur talked candidly to the press later in the event.

He noted that distributed assets will be the first use case to move to IIoT. Look at what happened at Ft McMurray and the recovery after the fires.

Look at APC...lots has changed between 1995 and 2016...modernize by SaaS in a centralized virtual environment. The "suite" concept...for example.

In the short term you will see more edge devices, he said. And OPC UA will be the standard for interconnectivity. And with Honeywell ownership of Matrikon OPC, Honeywell is well placed for this. Of course, this cynical editor notes that MQTT is the horse a lot of

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

people are riding because it has less overhead than OPC, and the standard is partly owned by IBM.

UOP is a great sister company...it positions us uniquely, as do the chemical plants Honeywell owns. They have a fantastic test bed. "We have the ability to deploy some of it in Honeywell plants...our installed base is also an advantage for us."

He ran down Google's ability to interrupt the market (and others as well). The problem is that they don't have domain expertise. This editor completely agrees, at this point, at least.

Kapur claimed that the Honeywell's cyber security offering is best of all the rest.

IIoT will require innovation. The value is going to come from the Internet coming into the plant, so the plant will have a unified environment to deal with it. Some architectural discipline is a necessity. Of course, this cynical editor wants to know why a plant HAS to be on the Internet at all.

Lockheed-Martin ExxonMobil has several concepts we absolutely agree to. We have to redo our architecture for devices that were not designed for intrinsic security. Where we believe the program is "ambitious" is the high level of interoperability of devices they want. It will take a long road, and we will see what happens. We are involved with the program and we will do our best to see it successful.

The whole security architecture is getting stronger. We are learning and making our game better.

What makes a product IIoT Ready?

Are customers ready to pay for increased security? Yes. Customers are buying it. People are spending money especially where there is a high level of awareness.

Honeywell is looking at IIoT across all Honeywell International businesses...what the thermostat or aerospace businesses will do is different from what HPS will do, but, Kapur said, we have the advantage

of learning from what they will do. Every business is being looked at to drive a software centric strategy across Honeywell.

Why introduce a new PLC? Because we need one too. We don't want to compete with Rockwell, but we want to have one in a common engineering environment and LEAP for customers like Valero, etc.

Having a PLC will get Honeywell into other markets like pharma where PLCs are endemic. (Editor's note: What did the 3rd party distribution force say about the PLC?).

IIoT is the means, digital transformation is the end.

Kapur said something very interesting. "We want to limit the consulting piece-- standardize on tools and areas."

Remote monitoring is far more accepted than remote control.

Where the ROI is clear, people will do it much faster. When the ROI is questionable, people will take the path of least resistance and keep on doing what they have been doing all along.

IT sales channels vs OT Channels: We have learned to deal with the different parts of our customers organizations over the years.

We see many of our customers deploying applications in their own virtual environments. Different people will have different preferences for cloud infrastructure.

Honeywell is building its own capability on data science. We are absolutely open to working with the likes of Seeq so we don't have to re-invent the wheel, and we are also perfectly willing to work with third parties...we figure to ride all three horses.

(The INSIDER asks: Who owns the intellectual property about sensors???)

But to me, and to many of the other media and analysts who attended, exactly what Honeywell IIoT is, and how it works seemed to have been elided past a few too

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

many times. It sounds like it may still be a lot of vaporware. Knowing Honeywell, it won't stay vaporware for long, but the message wasn't helped by the vaguery.

Emerson shows off their latest instruments

The Emerson European Exchange User Meeting in Brussels in April 2016 presented their approach to large automation projects, 'Project Certainty', as the main thrust of the conference and press event associated with the meeting. This approach will be reported separately: this view of the instrumentation developments on show was the topic of my column about this event, published in the SA I&C Journal in June 2016. The story is shown below.

The Emerson European Exchange



Maybe half the audience for the first Emerson presentations

The Emerson 'Global User's Exchange', for their customers and potential customers in Europe, Middle East and Africa, was held in Brussels in April. As with all the leading Automation, Control and Instrumentation suppliers in the world, Emerson Process Management has developed this style of single company Expo, because it is difficult to present their whole product range and capability in any commercial, third party exhibition: there would not be enough space. Indeed even in their own dedicated

display hall, not all their product capability was on show.

The same is true of the presentations and keynote speeches. The Emerson business is so big, based on large automation projects, that these have to be the main focus of the management comments. The fascinating detailed product and technology developments in temperature, analytical or corrosion instrumentation also on show, did not get top billing, but they were there, in the background.



I have to declare that I need to understand a product or technology to become enthusiastic about it, and in general I have found instrumentation easier to understand than automation software. Emerson has always put an emphasis on instrumentation, and invested in this by developing or acquiring innovative new techniques and companies in the area – more so than most of the other majors. Then by adding their own knowledge power, they add interfaces and capability, such as HART and Wireless communications, manufacturing technology, housings and mods for industry-wide approvals. So I am an Emerson fan. But because technology grows, it does become harder to understand the way these instruments actually work! For me, a visit to the Emerson Expo is like opening a treasure chest, filled with ideas and enthusiastic people available to explain their latest kit.

Wireless interfaces link everything

The Emerson dedication to WirelessHART communi-

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

cations with all instrumentation, as a standard option, opens up the possibility of adding modern technology sensors into existing plant and processes



without the major hassles of adding new cables.

Rosemount temperature sensors have had a wireless capability from 'Day 1' of the wireless era: and various companies made such wireless sensors capable of being clamped or strapped to the outside surface of a pipe, to make them totally non-intrusive, and easily re-

positioned. The Rosemount engineers have gone one step further, recognizing the measurement errors possible with an external sensor affected by the environment. They have developed X-well technology, available with a clamp for pipe ODs between 0.5" and 48", which incorporates a layer of thermal insulation 13mm thick and covering a 12" length of the pipe (this is not shown in the picture). All this helps to bring the temperature sensor measurement closer to the actual pipe contents temperature, but in addition the electronics senses the ambient temperature, and uses a thermal conductivity algorithm to make a further correction, before transmitting the data over the wireless link.

Similarly, Rosemount lateral thinking has applied wireless technology and piezo-resistive pressure measurement to the pressure gauge. This modern design of an ancient instrument replaces the original Bourdon tube measurement element with a modern sensor capsule, which uses the battery power to drive a needle around a 270 degree scale on a 4.5" indicator. Then the WirelessHART connection transmits the



actual process pressure to a central monitoring system. This new indicator gauge is much safer than the old design – with two layers of process isolation from the gauge body it can withstand a 150x overpressure, and is much less affected by plant vibration.

Emissions Monitoring

One of the most advanced product ranges demonstrated in Brussels came from Cascade Technologies, of Stirling in Scotland, which was acquired for Rosemount Analytical at the end of 2014. Cascade have developed some clever laser based systems for gas analysis, for example for Continuous Emissions Monitoring (CEM) systems, which allows them to measure for multiple gas types simultaneously. In the words of one of the experts they effectively have up to 9 lasers operating at different frequencies in one analyser, enabling monitoring for a similar number of gas concentrations. Similar systems have been used to monitor up to a total of 20 gases simultaneously. Their enthusiastic engineers were saying that following the Emerson involvement in the company they would be launching four new products this year.

Another essential, but older, safety and emissions monitoring product range has been updated by the addition of an Emerson WirelessHART data link. In 2013, Emerson acquired Enardo, a Tulsa-based manufacturer of mechanically operated pressure and vacuum relief valves, which are used to protect storage tanks for oil/gas, petrochemical and pharma plants – Enardo is now part of the Fisher Regulators business. These valves relieve the tank vapour pressure when the tank is filled, or the temperature rises, or allow air to enter as the tank is emptied, preventing any pressure damage to the tank walls. But safety concerns and modern emission regulations require the valve actions to be monitored: and with no existing wiring installed to transmit such signals, the WirelessHART systems provide a simple solution.

Corrosion monitoring

It was way back in 2009 when Emerson acquired Roxar of Norway, who then specialised in systems for moni-

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

toring offshore wells and oil pipelines. The technology involved in the Roxar sensors has developed a long way: they don't just use ultrasonic detectors to measure the sound of sand and grit hitting the pipe walls! The ER corrosion sensors use a probe with a thin, exposed electrical conductor embedded in an insulator, inserted in the pipe wall. Corrosion of this element changes the resistance of the conducting path, which is monitored. Various designs are available, to adjust the sensitivity of the sensor. LPR probes are Linear Polarisation Resistance probes, which are electrochemical, so require the presence of a conductive liquid, like water, to function. The current response achieved when a small (10-20mV) known polarisation is applied between the electrodes exposed to the liquid, gives the corrosion rate, using electrochemical theory. These Roxar sensors with their CorrLog electronics are now available with WirelessHART communications, making them much easier to apply to any pipework area that is considered at risk from corrosion – and for modern plants using different sources and compositions of feedstock, the corrosion rates can vary significantly from one batch to the next.

Emerson EMEA Exchange was reported by Nick Denbow. Visit his blog www.processingtalk.info.

Siemens Summit Does Vegas for Second Year

Siemens kicked off their Automation Summit for 2016 with a keynote speech from Klaus Helmrich, a member of the Managing Board of the company. "Software is changing, we must survive," he said. The event was attended by approximately 500 employees, users, and media.

"Business models are changing and some are not surviving. Digitalization is knocking on the door of manufacturing. Digitalization will enhance competitiveness-- time to market, flexibility, quality, and efficiency. Efficiency also means design time and features of the product. We have to have full con-

sistency between virtual and real world's- from a digital model to physical production. In the virtual world, we design, plan, engineer and plan production. In the real world those plans are made real."

Like all the other big automation companies, Siemens has seized on the Big Data concept to move past the factory automation or process control area to the digital factory or Industry 4.0. The hope is that they can be less tied to the vagaries of the economy and have the leverage to provide more services than products.

Helmrich extolled consistency. "You need a data platform that you can use to achieve this consistency. We call it Teamcenter. It is the application backbone for the entire value chain. Teamcenter works for factory automation. CO-MOS works for process control. MindSphere, which is a joint Siemens and SAP product, is Siemens' cloud for automation."



Digital Enterprise is our portfolio of solutions for the digital transformation in both discrete and process industries. In discrete industries, we start with product design, production planning and production engineering, then production itself, and then service. In the process industries we can integrate process and plant design, engineering and commissioning, and then operation and service.

We always plan for three steps in our roadmap, he said: design, production, and service.

Helmrich said that Siemens is investing in the future of manufacturing today with Digital Enterprise-- --Industrial software and automation portfolio

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

--Industrial communication
--Industrial security
--Industrial services

These are concepts for both discrete and process industries, he said.

Siemens is moving from B2B to C2B—that's mass customization, an ecosystem for individualized customer wishes.

It works like this, he said: Individual customer wish→Involvement of suppliers→Individualized design→networked production→Integrated logistics→Individual customer wish.

Helmrich showed an example of mass customization of a perfume vial. The individual customer orders over the Internet. A digital twin is created of the machine and digital integration of the entire engineering chain with links to MindSphere- Siemens' cloud for industry for the analysis of customer data, and a complete synchronization of production and design.

The big innovation in machine building is software, Helmrich said. He then showed an example of golf club performance for Callaway --50% market share growth since 2012, reduced cycle times from 2-3 years to 10-16 months, 40% gross margin expansion since 2012. "We gave Callaway clubs to President Obama at Hannover Fair."

We apply our innovative solutions also in our own value chain around the world. In 10 years we have increased productivity at Amburg 10 times, while maintaining the same level of head count. Some Key performance indicators: "we are changing the factories 350 times daily, based on customer demand--this is true flexibility. One product per second, at 99.998% quality. Nonperformance costs are gone. Traceability is high. We see immediately what is going on. This is a closed loop concept of factory automation."

In the process industry, Siemens moves from integrated engineering to integrated operation. Note again: time to market→reliability and safety→

flexibility→quality→efficiency

Helmrich gave a process customer example. DuPont uses SIMIT and SIMATIC PCS7, Profibus, and Siemens is a single point of contact for automation electrical, and fire detection systems.

Helmrich noted that COMOS Walkinside: 3D visualization for availability makes it possible to do virtual checks on asset performance and determine the real world availability of an asset.

The digital transformation requires new approaches and clear strategic management decisions. The digitalization of industry happens on two levels

1. Tailoring the portfolio of solutions to the requirement of the future of manufacturing
2. Adapting and further developing processes

The United States plays a pivotal role in industrial digitalization for Siemens. Siemens has over 50,000 employees in the USA, greater than 9000 sales and services employees, 90 manufacturing sites, 5600 R&D employees, 1800 software engineers, and a greater than \$1 billion investment in R&D expenditures.

X-Change 2016 with an IIoT Message

By Steven Meyer

Two things always stand out for me at Wonderware Southern Africa's annual X-Change.

Firstly, the infectious energy that radiates from delegates and organisers alike; and secondly, the world class professionalism of it all. It ranks right up there with the best events I have attended anywhere in the world – thumbs up to the organisers and exhibitors for another great show.

Hosted this time at Sun City, keynote speaker Ravi Gopinath (executive vice president, Software Business at Schneider Electric) mapped out the strategy and opportunities for the company's rapidly evolving solution portfolio. This year featured the introduction of new solution and integration possibilities in the areas of

HUG Americas, Emerson EMEA Exchange, Siemens Summit, Wonderware SA x-change (continued)

HMI, Manufacturing Operations Management and Platform Information Management.

Bathed in the conference centre's purple spotlights, Gopinath identified Cloud based plat-



forms and the Industrial Internet of Things (IIoT) as key inflection points in the future of industrial software. The IIoT, he said, has the potential to flatten the automation layer through advances in sensor technology (MEMS), the possibility of ubiquitous industrial wireless, and increasingly sophisticated algorithms that transform raw data into decision support knowledge.

Predictive maintenance is an area where Schneider believes the IIoT can make a meaningful difference. After all, improving reliability and safety are top priorities at most industrial plants in that endless quest to “do more with what we already have”. To see how this works in practice, I chose from a multitude of breakout sessions to learn more about PRiSM – the company's latest predictive analytics software solution. Designed to provide early warning notification and diagnosis of equipment issues, PRiSM can identify problems weeks, sometimes even months, before a failure occurs. A further benefit that impressed delegates during the packed forty-minute presentation is the capability for knowledge capture and transfer. This ensures that maintenance decisions and processes are repeatable over time and across the geographic breadth of an organisation; a big plus for any company faced with the twin problems of diversely located facilities and the aging workforce conundrum.

What really struck home though was the revelation that PRiSM is equipment agnostic and can monitor assets regardless of equipment type or vendor, and without the need for manufacturer specific information. One of the fundamental problems that must be resolved before the IIoT can truly become the next industrial revolution is the thorny issue of interoperability. Without this, it could very well do nothing more than fizzle along, as the implementation costs simply cannot be justified on a large scale. Platforms like PRiSM are an important step in this evolution. (Interested readers will find the full conference report, including the award winners, on page 6.)

The IIoT

I have attended a number of vendor conferences recently and, as was the case at X-Change, the IIoT is never far away. What is also obvious is that while more and more success stories are emerging, these tend to be application specific, rather than an integrated shop floor to top floor solution across all the organisations processes. Of course, the latter is somewhat idealistic and it may turn out that the IIoT never delivers against this vision.

While much of what one reads about the IIoT is pure marketing hyperbole, underneath that there are some real benefits on offer. The findings of a recent survey by PricewaterhouseCoopers (<http://tinyurl.com/jqdfcg>) revealed that South African companies plan to spend around R6 billion per year, until 2020, to implement the ideas of the fourth industrial revolution. They will do this because they are aware of the impact of technology on their businesses, and that there is very little chance of survival without it.

Another interesting observation in the PwC report is that companies will need to find the right collaboration partners in order to improve their business efficiency through the technologies of the fourth industrial era.

Author's Note: Steven Meyer is editor of Technews, a South African industry publication. You can find him at <http://www.technews.co.za>

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Obama Announces Winner of New Smart Manufacturing Innovation Institute

The Smart Manufacturing Innovation Institute, headquartered in Los Angeles, CA, brings over \$140 million in public-private investment from leading universities and manufacturers to develop smart sensors for use in advanced manufacturing.



President Obama announced that the Smart Manufacturing Leadership Coalition (SMLC) will lead the new Smart Manufacturing Innovation Institute, in partnership with the Department of Energy. The winning coalition, headquartered in Los Angeles, California brings together a consortium of nearly 200 partners from across academia, industry, and non-profits—hailing from more than thirty states—to spur advances in smart sensors and digital process controls that can radically improve the efficiency of U.S. advanced manufacturing.

The Smart Manufacturing Innovation Institute is the ninth manufacturing hub awarded by the Obama Administration. The Administration is on track to meet the President's goal of a National Network for Manufacturing Innovation (NNMI) of 15 institutes underway across the country before the end of his Administration.

The Smart Manufacturing Innovation Institute, the ninth institute government-wide awarded to-date, will focus on innovations like smart sensors that can dramatically reduce energy expenses in advanced manufacturing, making our manufacturing sector strong today and positioning the United States to lead the man-

ufacturing of tomorrow, helping sustain the resurgence of U.S. manufacturing currently underway. The Smart Manufacturing Leadership Coalition will bring together nearly 200 partners to launch the Smart Manufacturing Innovation Institute, focused on accelerating the development and adoption of advanced sensors, data analytics, and controls in manufacturing, while reducing the cost of these technologies by half and radically improving the efficiency of U.S. advanced manufacturing.

Headquartered in Los Angeles, CA, the Smart Manufacturing Innovation Institute will also launch five regional manufacturing centers across the United States each focused on local technology transfer and workforce development. UCLA will lead the California regional center, in partnership with the city of Los Angeles harnessing the ability to tap the largest manufacturing base in the United States. Texas A&M University will lead the Gulf Coast center—a region anchored in the chemical, oil and gas sectors—and Rensselaer Polytechnic Institute (RPI) will lead the Northeast center, where glass, ceramic and microelectronic manufacturing has a strong presence. Pacific Northwest National Laboratory will lead a hub in the Northwest and NC State will spearhead a regional hub for the Southeast.

To ensure that all American businesses, regardless of their size or potential resource limitations, have the opportunity to benefit from the institute's progress, the Smart Manufacturing Innovation Institute will use an open-source digital platform and technology marketplace to integrate advanced sensors, controls, platforms, and modeling technologies into commercial smart manufacturing systems. The institute will also provide the manufacturing communities with easy and affordable access to real-time analytic tools, infrastructure, and industrial applications.

Through the National Network for Manufacturing Innovation, the new Smart Manufacturing Innovation Institute will partner with three existing manu-

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facturing innovation institutes to pioneer technologies at the intersection of their unique capabilities. For example, the Smart Manufacturing Innovation Institute will partner with IACMI to demonstrate the value of using advanced sensors in the production of carbon fiber and with PowerAmerica to showcase the energy savings of using advanced sensors in the production of new wide bandgap semiconductor circuit boards.



INSIDER's Walt Boyes

Spitzer and Boyes LLC, the publisher of the INSIDER, is a corporate member of SMLC. — Reported by Walt Boyes.

What Have the British Done Now? Brexit Passes!

As we noted in the Health Watch, Brexit has, at least temporarily, caused more than significant flutters in the markets, automation not least of all. INSIDER asked two European automation experts for commentary.

From Nick Denbow in the UK:

Fresh air with Brexit

Walt asked for a UK view of the Brexit decision, in the context of the automation industry.

Having been a silent voter during the run up to the referendum, and appalled by the rubbish pedalled by the Politicians on both sides, I was delighted to discover that despite my reservations about leaving the EU, a small majority of the voting population also agreed that the positive aspects of a Brexit outweighed some inevitable early problems.

Why is there so much worry over the UK from my overseas friends and relations? The UK is one of the original trading nations, dating back to the C15th. The world is now a much smaller place, and all nations seek to trade worldwide. No countries or group of countries put up trading barriers (or walls) to stop

trade, so business between the EU and the UK across the board will continue. They would lose more business than we would, by ceasing to carry existing business forwards. Plus all the recent growth in UK exports has come from trade with non-EU countries.

Forty years ago, the Politicians suggested joining the Common market would be great, citing cheap wine etc. Just another bad promise I'm afraid. Plus we joined the Common Market, not the EU, a Federation of States whose unelected bosses dictate that cucumbers and bananas shall be straight, and set the minimum size of strawberries to exclude the better English (and Scottish) ones. My niece asked where I would get my supplies of wine – so I mentioned that we drink only Australian and NZ wine, the wine sold expensively in the UK from France is actually the cheap stuff they would not drink themselves, and presumably normally turn into vinegar. The French describe the British as a nation of shopkeepers. It is true, but I say we are a nation of independent-minded traders, sometimes also called entrepreneurs.

What about Automation

In the UK, there will be a slowdown of investment, and this will hit what little domestic spend there was on process automation. It is in the food industry where automation is needed most, and the suppliers there are surely used to an unwillingness to invest. Other sensors go into machinery that is exported, and some of that will suffer with a turndown in EU trade. The oil industry is not really investing at the moment, but the lower GBP/USD rate might make our oil industry, with its experience, and our costs more competitive in overseas contracts.

Siemens, who were publicly very much against a Brexit, has announced it will put on hold any further investment in its wind turbine manufacturing plant in Hull, where it has just set up a new factory employing 1000 people, at a cost of GBP310m. Hull voted by one of the largest majorities FOR Brexit. Dong Energy, the biggest investor in UK wind power, said “we don't believe that UK energy policy is dependent on EU membership”. Maybe the UK can impose a trade barrier that stops Areva sending their reactor to Hinkley Point: already a UK

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Government advisor has suggested the GBP18Bn investment by EDF would be cancelled by the French. Maybe then we could go for a sensible UK/US solution?

From an editor's point of view, press releases about major onshore automation investment projects in the EU, by British suppliers, have been very thin on the ground for several years. So what is at risk with a Brexit anyway? For the big multinationals, they deal with these contracts through their local subsidiaries, wherever the work or engineering is carried out. Most project descriptions these days mention interlinked CAD systems using resources from 5 or 6 design centres all around the world, and the work flows electronically through country borders. From India to Aberdeen, Houston, Madrid, Romania, Italy, UK and Egypt. So what will change? The Brexit might subtly boost the likelihood of investment projects in Eire, rather than the UK, which would be good news for Ireland.

Changes to expect

Probably the people feeling the pinch most will be the City Traders and the Banks. The pound will settle to a lower level, enabling us to recover faster, and then it will climb back when compared to the Euro, if not the Dollar. Whether there will be any further effects on the EU, I cannot predict. There is very little likelihood of Scotland or Northern Ireland breaking away from the UK and joining the EU separately (but the last time I said something similar to this, it was to say that "clamp-on ultrasonic flowmeters would never be able to measure steam or gas flow" – judge for yourself). What I would like to see is an end to the extreme contrast between the lowest and the highest salaries in the UK, possibly starting by eliminating those highly paid banking jobs. Already HSBC is relocating their Euro currency trading operation to Paris. Maybe this will put a lid on the property prices in London, and overseas billionaires will sell their empty apartments. At least we will now stop paying high salaries and higher travel expenses to the ineffectively employed UK MEPs (Members of the European Parliament)!

From Eoin O'Riain, of the Irish automation magazine Readout:

You sure know how to ask 'em Walt!

At this stage it is difficult to say how automation will be effected. Ireland has always tended to be regarded (despite our best efforts) to be lumped in with Britain by many suppliers. In many cases Irish business is handled directly from Britain rather than within the country itself - not everybody in Britain understands that Ireland is different and is not a smaller version of the British Market.

That is now all changed. And nobody really expected it to so despite people saying that they have "contingency plans" in reality the answer to all questions is "nobody knows!" In the words of the President of the European Commission (Civil Service) Junkers - "Don't understand those advocating to leave but not ready to tell us what they want. Thought they had a plan"

So what is happening on the ground.

Ireland is unique in that there is a land border with the British state. As members of the Union that really had little bearing on real life. Road signs are monolingual, they use miles we use kilometers and they use sterling but that was it. No body was stopped at the border for ID checks or car insurance checks. Since last Thursday that has not changed but whose to say it won't. There are several companies in the border area, manufacturers and services who have however already changed or postponed plans for expansion for marketing in Britain. This type of thing will effect automation, not immediately but inexorably.

Inward investment into Britain will be effected as their access to the single market of 27 countries plus one or two others like Norway who participate in it, will be curtailed to a lesser extent. Companies will look to other territories Ireland, Parts of Germany and France to expand or set up subsidiaries and manufacturing facilities. (There have already been enquiries by Banking/Exchange entities to set up in the Dublin Financial Services Centre - will professions others follow?)

There has been unrestricted travel between Britain & Ireland without passports since 1928 even before we both joined the EU in 1973. Will this change now that we have chosen different paths?

In Britain Siemens has stopped a major project it was planning in the energy field and we are hearing

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

of more and more postponements in projects there.

In the area of Standards, there has been a gradual evening of standards between all 28 countries to a common European Standard in all sorts of areas. Standards, and all sorts of activities are handled by European Offices which are based in various countries. (We have just learned that the EU Office of Bank Regulation, which is based in London, will be moved to another European city in the event of Brexit - there may be more such offices there.)

Engineering qualifications is another area where things may change. Will the EU recognise British qualifications and vice versa. We don't know. As a straw in the wind we do know that the legal profession may be effected and the Law Society of Ireland has had an extraordinary increase in applications from British Lawyers for affiliation as outside of the EU they would not be able to practice in European Courts. Will that apply to other professions?

Another phenomenon is the number of applications for Irish Passports has soared in the past week. All people born in Northern Ireland and the children & grandchildren of Irish parents are entitled. There have been unconfirmed reports that over a million queries have been received this year alone.

In passing there may be an effect on British Citizens who live in other EU countries - Ireland, Spain, France and to a lesser extent other countries - who benefit from European Health & Social systems by right in those countries. There is no guarantee that these rights will continue to be in effect. The rise in applications for Irish Passports reflects this anxiety too.

The legal situation at present is that Britain is a fully paid-up member and will remain so until they make an application to leave (so-called Paragraph 50 application). The actual situation is that the Britain is being excluded from important meetings - yesterday there was a plenary meeting on the Council of Heads of Government where Cameron was left out in the cold. It is rendered more complex because the British Government is rudderless without an effective Head of Government. In addition, there is the question of those areas who did not vote to leave. The entire of Scotland voted to stay as did a majority in Northern Ireland and in the Welsh Speaking areas of Wales. Will Britain survive as a unitary political entity?

In mainland Europe there is some worry that the rot might spread to other countries and this will mean that when (if?) Britain activates Paragraph 50 the terms will not be easy as they will want to discourage others, Denmark for instance.

In short nobody was ready for this result. The greatest effect will probably be on Britain itself - will it stay together, and what deal will it be able to prise out of the remaining 27.

Ireland, for whom Britain is its greatest single market, will be most directly entered both politically and economically. Will Northern Ireland want to become part of a new Ireland?

The other 27 members who are to a greater or lesser effected - will they keep their nerve?

The immediate effect is pause and wait and in the words of Angela Merkel - "Keep a cool head!"

Honeywell has made the expected announcement that Darius Adamczyk, President and Chief Operating Officer, will succeed Dave Cote as Chief Executive Officer on March 31, 2017. Cote, who has been Chairman and CEO of Honeywell since 2002, will continue as Executive Chairman until the Company's Annual Shareowners Meeting in April 2018. After that, Cote will start a five-year consulting and non-compete agreement with Honeywell. These moves ensure a seamless leadership transition and position Honeywell for continued outperformance versus peers.

"Darius is absolutely the right person to lead our Company into a new era where we will need to keep evolving to become even more global, more of a software company, and more nimble. He has the growth mindset, global acumen, and software expertise to be a highly successful CEO for Honeywell," Cote said. "Darius has succeeded in every business leadership role he has ever held, whether it was doubling the size of our Scanning & Mobility business over four years, driving a dramatic turnaround of our Honeywell Process Solutions business over two years, or expanding margins in Honeywell Performance Materials and Technologies despite a severe downturn in the oil and gas industry. Scan-

The INSIDER's April 2016 Roundup (continued)



edge physical products and unparalleled domain expertise in a wide variety of industries.

"It is a privilege to have the opportunity to take on a bigger role at Honeywell and ultimately to become the CEO, fully supported by Dave, our very strong Board, and a talented and experienced leadership team," Adamczyk said. We have a long runway to accelerate organic growth and drive margin expansion with new offerings that blend our leading domain expertise with our advanced software capabilities to improve the quality of lives, enhance safety and comfort, and drive energy efficiency and productivity. Software will represent a big portion of our growth over the next several years, which is why about half of our 23,000 engineers globally are software engineers. We are the first large Western company to reach CMMI® Level 5 capability among all our software engineers. This is a very high standard that uniquely qualifies us to compete effectively in the Internet of Things arena, where software capability has to be combined with product and domain knowledge. Our HOS Gold-supported culture and processes are fostering speed and entrepreneurialism among our global business enterprises while allowing us to leverage the scale and process

ning & Mobility and Honeywell Process Solutions are software-based businesses with advanced offerings that blend physical and digital capabilities, and they serve as benchmarks for where the rest of Honeywell is heading. Darius' deep expertise in software will open new growth paths for all of our businesses, which are blending Honeywell's advanced software programming capabilities with leading-

strength of a large company."

Gartner has named Inductive Automation a Cool Vendor for 2016.

Only five companies received this honor. <https://inductiveautomation.com/news/gartner-names-inductive-automation-cool-vendor-2016>

Ignition, the industrial applications platform, is very popular and is driving strong revenue growth. Over the past six years, Inductive Automation's revenue has grown at an average annual rate of 61 percent. Inductive Automation has a unique business model, an app store, and fervent devotees.

Inductive Automation has a real IIoT solution that works, leveraging MQTT. MQTT is a lighter weight protocol than OPC UA, and is easier to work with. "We are working closely with Arlen Nipper, co-inventor of MQTT," said Jim Meyers, Success Manager for Inductive Automation. Arlen's company, Cirrus Link Solutions, has created several MQTT modules for Ignition. Arlen co-invented MQTT with IBM 18 years ago, but MQTT couldn't reach its full potential until now. As Arlen often says, "I'd been waiting 18 years for a solution like Ignition. I needed this piece to make all this come together."

<https://inductiveautomation.com/mqtt-modules>

Bedrock Passes EMP Test

Bedrock Automation (www.bedrockautomation.com) has announced that its Bedrock™ Open Secure Automation (OSA™) platform is in full compliance to Military Standard 461 (MIL-STD-461F) and International Electrical Commission 61000 (IEC 61000) for electromagnetic pulse (EMP) resistance. The test system deployed a loaded backplane and Bedrock™ Secure I/O, Power, and Controller Modules, with copper and fiber optic Gigabit Ethernet communications. Where MIL-STD 461 compliance requires withstanding only 5 blasts, the Bedrock system survived more than 30 blasts without faltering.

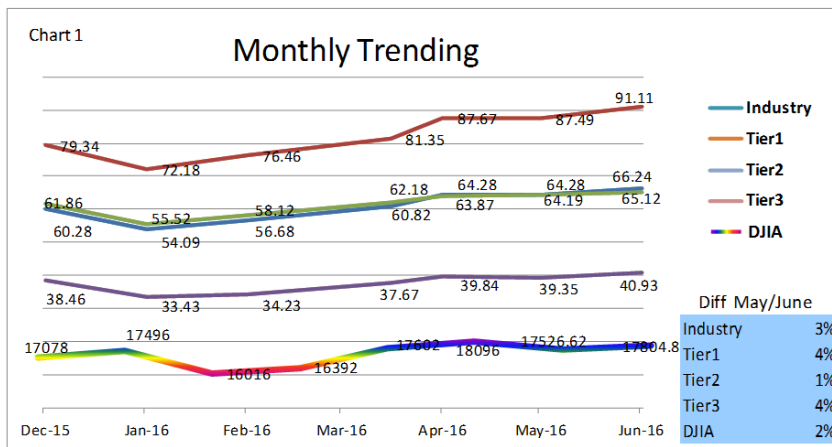
To the best of the INSIDER's knowledge this is a unique capability among PLC vendors.

Can We PLEASE Catch a Break?

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Health Watch

Compiled by the INSIDER staff



1 and 3 beating it by 2%. Tier 2 ran a bit behind, but its performance is up 1% from last month.

were happy to report at that time that we believed the industry was finally making concrete progress on its way back to health, based in large part to the quick action of industry leaders who have actively pursued new revenue streams to replace those lost due to the oil and gas slump.

In our May issue, we

We pulled information on June 20 for this month's Health Watch with increased optimism, as we saw positive increases across all

As we began pulling the data for the June edition of the Health

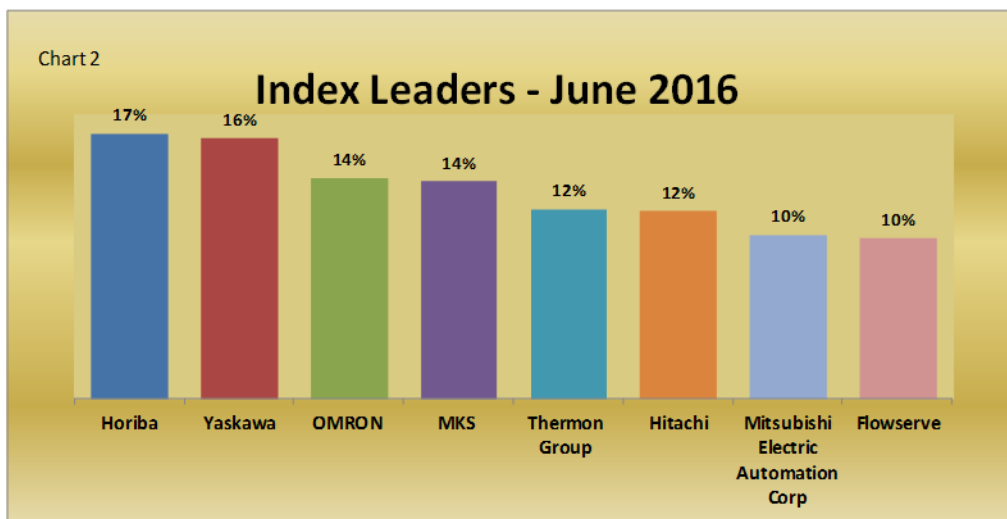
Watch, we experienced a warm, fuzzy, but somewhat foreign, feeling. Was that 'hope' we were feeling? Darn, we had forgotten what it felt like. The feeling

stemmed from the joy of discovering that the Industry Index outperformed the Dow by 1%, with Tiers

reported overall flat performance, but pointed out that flat perfor-

mance certainly beats the consistent drops the industry has experienced for the past year plus. We

stock prices showed the largest increases MOM. Horiba is the leader with an increase of 17%,



Tiers, as well as greater increases than those posted by the Dow. Several individual companies did very well, showing gains ranging from a startling 17% to a very impressive 10%.

Chart 2 shows the Index members whose

Can We PLEASE Catch a Break?

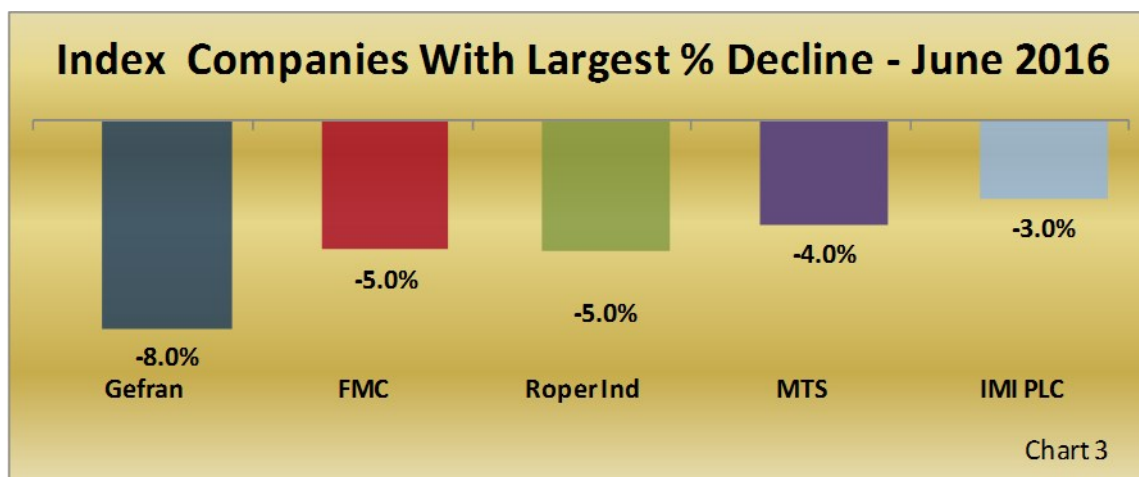
INSIDER
INDUSTRIAL AUTOMATION & PROCESS CONTROL

Health Watch

followed closely by Yaskawa at 16%. Omron, MKS, and the others shown all had increases of at least 10%.

On June 24th, UK's decision to leave the European Union took down stock markets on a global basis, and our industry's stock prices right along with them. At that point, completely disgusted, we asked

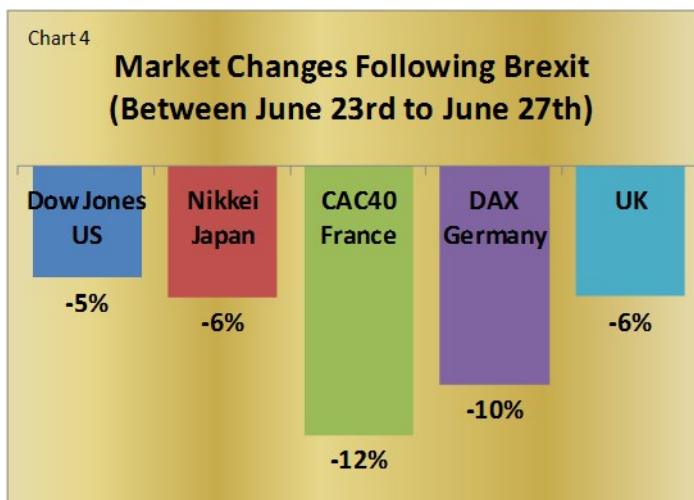
Index members whose stock prices fell most since last month are shown in Chart 3. Gefran had the greatest loss, 8%. The percentages associated with losses were much smaller than percentages seen for gains, and even more



important, the percentage of companies that posted a loss (15%) was significantly lower than the percentage posting a gain (79%).

ourselves, “Can we *please* catch a break?”

So on June 20th, life was good. Then, before we could even raise a toast to our good fortune and success or breathe a sigh of relief that after a really hard year the worst was most probably over, along came Brexit.

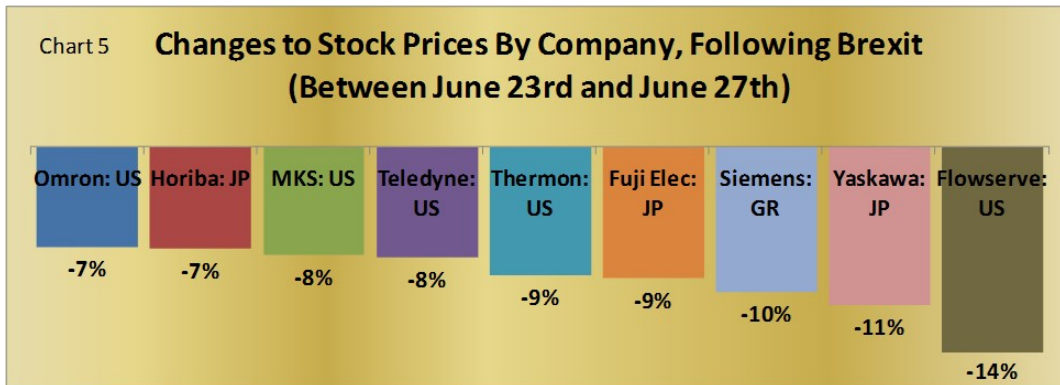


Immediately following a short tirade, we threw up our hands, sighed heavily, and started over on the Health Watch report. Chart 4 shows the drops that occurred across several major stock markets after Brexit was announced, while Chart 5 shows Brexit's effect on the stock prices of some of the companies in our Index. Neither is a pretty picture for the overall

Can We PLEASE Catch a Break?

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Health Watch



come of Brexit will be on our industry.

Too many questions remain unanswered and there is still too much to be decided. Will the UK have a change of heart or will they continue on their current path? If they continue,

will they remove themselves quickly from the European Union, or will this drag on for several years? What types of trade agreements will be put into place to replace those the UK had as part of their EU membership? What will happen to the EU without the UK's financial backing? How will financial institutions be effected?

economy or for the control automation industry.

Oil and gas issues continue to plague our industry but we believe that there is a distinct possibility that what's coming could make the oil and gas issues our industry has dealt with, look tame.

It is much too soon to project how long the uncertainty surrounding Brexit and its concomitant global effects will suppress the markets,

or to at-

There are far too many unknowns at this point to attempt any kind of prediction of how long this latest market catastrophe may last and the degree to which it will continue to wreak havoc on the global economy and the various stock markets.

Our suggestion is to hang tight once more, knowing that in time, this too shall pass.

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tempt to predict what the final out-



THE WAY I SEE IT

Editorial

Idiocracy (not to be confused with the movie of the same name)

As *The Scotsman* columnist Jeff Salway recently put it, "the UK cemented its status as a world leader in stupidity by voting to leave the EU." Not that that's saying much, with the UK taking over the title from the USA, who are about to nominate Donald Trump and Hillary Clinton for President— the two most disliked candidates in US political history.

We ask ourselves why the stupid?

Partly, it is because it is NOT stupid, although it masquerades as stupid very well. What is happening is that the basic fabric of civilization as we know it is under extreme stress from a set of factors we can all feel, and we can all fear, even if we cannot all understand what they are, and why we fear them.

We know what they are. Increased automation, artificial intelligence, technological change in overdrive, lack of jobs, few trained workers for the jobs that we'll have, cultural and religious mores changing at what seems like the speed of light...need I go on? And the older demographic, the Baby Boomers, are terrified— to us, the 1960s and 1970s still feel like home.

Comments? Talk to me!
waltboyes@spitzerandboyes.com

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

Millennials and GenXers are despondent, feeling like they have no control over the future. GenY and GenZ, just now coming of age, are fatalistic. They know there won't be the jobs, the ability to earn a living, that there is, even today.

So what do we do? We elect people who will

The Stoopid! It burns!

pander to our fears, and tell us that we will be okay, if we just go along with (insert list of political agenda items here).

People are voting for Trump, and voted for Brexit, simply to shake things up, and see if when we upend the basket, a more reasonable, or at least more palatable society, culture, and economy will emerge from the jumble.

We are going to have to decide, real soon now, how we are going to rank ourselves in the future. Now, we are ranked by what we do, and how much money we make. Bankers are more important than teachers or garbage toters. Law-

yers are more important than farmers.

One of the few things that is coming from the future with any clarity is the fact that at least 40% of the working age population of the world will not have jobs within the next twenty years.

As I have said before, we aren't talking about line workers, mechanics, food service workers, "Would you like fries with that?" Of course, they are going

to be replaced by massive automation. But so will truck drivers, paralegals, many lawyers, nurses, doctors, engineers, scientists, because of the rapid increases in capability of artificial intelligence. It's already happening. Telemedicine is reducing the need for primary care physicians and PAs. By 2025,

about 5 million truck drivers, globally, will be out of work thanks to autonomous driving trucks. Plant operators and engineers will be many fewer, because they can oversee multiple units and plants.

As the perceived pie gets smaller and smaller, we are fighting harder for a larger piece. But we aren't talking about the right things, are we? We are talking about how to hang on to our sack of moldy peanuts, while that great big steak might be right over there. Is our culture going to figure out a new way of ranking ourselves that isn't based on what we do, and how much we make? I sure hope so, because a lot of us are going to find ourselves irrelevant if we do not.

Walt Boyes

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



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Rajabahadur V. Arcot: India, a promising market for automation companies

In the May 2016 issue of the INSIDER, my colleague Mary Samuelson captioned her report as "On the bright side, flat performance is better than negative performance" and this very aptly captures the automation industry's prevailing sentiment.

The captains of the automation industry are in search of new revenue streams and markets that provide growth opportunities.

In this context, it may be stated that the country's economy is at an inflection point and if it manages it well, India may well emerge as one of the global economic growth engines.

This trend will continue as the country becomes more and more digitally connected. In order to overcome supply side constraints relating to industrial goods, India is making concerted attempts to expand its manufacturing industry.

Therefore, India, which promises to post both economic and industrial growth, will emerge as an important market for industrial automation companies.

Their search is most likely to lead them to India; it is the destination of choice for automation supplier companies as it has the immense potential to grow both economically and industrially.

India is a demand-centric and robust consumer-spending driven market that, according to the recent UNIDO report, ranks sixth among the world's largest manufacturing countries. Despite this, the country remains supply side constrained and depends on imports to meet its needs for critical industrial goods.

For example, the country's yearly demand for electronic devices and products is expected to touch US\$ 400 billion by 2020 and exceed the projected oil import bill.

If additional production capacities are not created, almost 75 percent of this demand for electronic devices and equipment may have to be met through imports that will result in massive trade deficit.

India is among the fastest growing smartphone markets and according to the International Data Corporation's recent report nearly 103.6 million smartphones were shipped in India in 2015 - an increase of 28.8 percent as compared to 2014.

Economically growing India needs robust manufacturing

While the global economy continues to remain in turmoil and commodity prices are yet to recover to the levels that will boost hopes of revival, India has emerged as the world's fastest growing large-sized economy.

Its GDP is expanding in excess of 7 percent and according to reports from World Bank, International Monetary Fund, and such others, the country is expected to retain that status. In this context, it may be stated that the country's economy is at an inflection point and if it manages it well, India may well emerge as one of the global economic growth engines.

Until now, private consumption and services sector have been India's growth drivers and this is all set to change. Slowly the economy is becoming investment driven and the share of manufacturing in the country's GDP is expected to increase from 15 percent to 25 percent in the next decade.

Robust demand for a wide range of industrial goods provides the impetus for the growth of the manufacturing industry. An interesting point to note is that while industrialization ushered economic prosperity in many coun-

Rajabhadur V. Arcot: India, a promising market for automation companies (continued...)

tries, in India it is the economic growth that spurs industrialization.

Energy industries are all set to expand

Let us look at the growth prospects of some of the industrial segments that have the potential to trigger a virtuous cycle of growth in India.

A developing country, for its growth, needs access to energy and a robust manufacturing industry that can meet the basic needs and aspirational wants of people with rising disposable incomes; this certainly holds good for India. Strategic plans and policies that are necessary to enhance India's energy availability and to press ahead with the economic growth and expansion of the country's manufacturing industry are in place.

Regarding India and its energy needs, the International Energy Agency's report "India Energy Outlook 2015," says that "India will contribute more than any other country to the rise in global energy demand over the next 25 years." The report goes on to highlight that as a consequence India will emerge "by far the largest source of worldwide coal demand growth," most of which is likely to be met through expanded domestic production.

The demand for oil is also expected to increase more than in any other country, approaching 10 million barrels per day by 2040, but in this case it will have to be met by increased imports. The report also highlights India's plans to tap renewable energy sources to meet its needs.

Therefore, the expansion of India's economy implies the immediate and sustained growth of industry verticals, such as electric power, oil and gas, refining, coal mining, and renewable energy.

Even as of now, India, with low per capita energy consumption, is the fourth largest consumer of energy in the world.

Presently the country's primary sources of energy are coal and oil & gas with the latter accounting for almost 37 percent of India's total energy consumption. While the country has large reserves of coal that will continue to be an important source of energy, it is not well-endowed with oil and gas energy resources.

Despite this constraint, India has been continuously ramping

up of the refining capacity, and as a result it has become a global refining hub and a leading exporter of petroleum products. The investment trends indicate that the country will continue to build

and operate some of the world's largest and complex refineries in the foreseeable future.

Reliance Industries, which operates the world's largest refinery complex is understood to add a new 400,000 barrels per day refinery.

State owned refineries such as Indian Oil, Hindustan Petroleum, and Bharat Petroleum have plans to increase their processing capacities from around 135 million tons per annum (MTPA) to 200

MTPA by 2017. The Oil and Natural Gas Corporation (ONGC) which is India's largest oil producing company plans to invest over US\$ 8.8 billion in bringing into production by 2018-19 its KG-basin oil and gas discoveries.

Renewable energy sector gets a boost

Despite being the world's third largest producer of electricity, India does not have adequate generating capacity to meet the demand for electric power. Coal remains the predominant source of energy, but this scenario is set to change in future.

At the United Nations Climate Change Conference, 21st Conference of the Parties (COP21), India negotiated hard, so that on one hand its commitment to protect the global environment does not imperil the country's future energy roadmap and on the other made a highly ambitious voluntary pledge of bringing 40 per cent of its installed power capacity under renewables in the next 15 years, compared to 13 per cent currently.

The country aims to generate 175 GW of electric power from renewable sources by 2022; 100 GW from solar power, 60 GW from wind energy, 10 GW from small hydro power, and 5 GW from biomass-based power projects, in consonance with the commitments made at United Nations Climate Change Conference.

Out of 100 GW of solar power, contribution of solar rooftops connected to the grid will be 40 GW. Recently the country's Ministry of New and Renewable Energy (MNRE) made announcements about Central Financial Assistance schemes to incentivize investments.

The State has already formulated associated policy decisions that attract investments and help achieve the targets. They include financial assistance schemes to grid connected solar roof tops and solar power plants on canal banks and canal tops.

In addition, MNRE has launched the scheme "Development of

Rajabhadur V. Arcot: India, a promising market for automation companies

(continued...)

Solar Cities,” which envisages around 60 cities/towns to be development as solar/ green Cities. As the deployment of renewables gathers pace, India will emerge as the world’s second -largest market for solar PV and spur manufacturing activities along the value chain.

Funds are not a problem, it looks like. Just a few days ago, the World Bank announced plans to provide more than US\$ 1 billion to support India’s solar initiatives. At a global investors’ meet held in India, almost 200 global and domestic companies expressed commitments, including financial, to set up 266 GW of renewable power over the next five years.

Most other major industries are also on growth path

Due to a spurt in overall economic activities and the resulting rise in incomes & propensity of consumers to spend, other industry verticals will also experience growth in India.

While some of them, such as steel, cement, oil & gas, refining, automotive, and pharmaceuticals are already global-sized and well established, rising demand and policy initiatives will propel the growth of industries such as semiconductors and electronics, defense equipment, glass, machinery & construction equipment, and others.

The country is already the second and the third largest producers of cement and steel respectively. The expected increased spending on projects relating to building of 100 smart cities, creation of infrastructure facilities, and construction of roads, railways, airports and such others will propel India into the league of top global cement and steel consuming nations in the next 10 years.

If all goes well according to projections, the automotive industry will become an important player in the global automotive market and its revenues will increase from the current US\$ 74 billion to US\$ 260 billion by the year 2026.

The India’s pharmaceutical industry, ranking third largest in the world in volume terms and 13th largest in value terms, has emerged as an important producer and supplier of quality drugs and medicines.

As the world’s largest producer of generic drugs, the industry makes significant contribution towards making available affordable medicine to people in many parts of the world.

Expected to grow at 15 percent CAGR between 2015 and 2020, it will outperform the global pharma industry, which is set to grow at an annual rate of 5 per cent during the same period.

The decision to shift the reliance from fossil- fired power generation to solar energy will spur the growth of associated industries, such as production of solar cells, modules, and panels.

The expected growth of numerous industry verticals augurs well both for process and factory automation suppliers.

These industries extensively deploy distributed control systems, supervisory control and data acquisition systems, safety systems, programmable logic controllers, advance process control and optimization systems, various types of sensors and transmitters including analytical instruments, actuators, and such others. The market holds long-term growth prospects.

MNRE has launched the scheme “Development of Solar Cities,” which envisages around 60 cities/ towns to be development as solar/ green Cities.

Rajabhadur V. Arcot is an Independent Industry Analyst and Business Consultant, and Director Asia Operations for Spitzer and Boyes LLC with 40 years of senior management experience. Until recently, he was responsible for ARC Advisory Group’s business operations in India. Contact him at rajabhadurav@gmail.com

