

Lies, damn lies and statistics - market share figures give conflicting verdict on who's doing what to whom

Just how confusing or downright misleading market share figures can be is illustrated by the figures produced in a report published by Morgan Stanley early last month under the title 'Automation: Deep Dive plus Customer Survey' and reviewed by Jim Pinto in his 'Connections for Growth & Success' eNewsletter (www.jimpinto.com).

Who's up, who's down?

According to Pinto, Morgan Stanley gives the market shares of the major process automation vendors in 2002 as 12.9% for Emerson, 11.8% for Honeywell, 11.2% for ABB, 7.4% for Invensys, 5.6% for Yokogawa and 2.5% for Siemens. By contrast, we understand that ARC's figures for DCS market shares published to its subscribers earlier in the year almost, but not exactly, reverse that pecking order, putting ABB in the top spot, followed by Honeywell, Invensys, Emerson, Siemens and Yokogawa.

Clearly while we're not really comparing apples with apples here - remember the Morgan Stanley figures are for Process Automation while the ARC figures relate specifically to the DCS market, its nevertheless something of a surprise to see the order turned on its head. Equally surprising is to see Siemens accorded a share less than half the size of its nearest rival whereas we understand ARC's DCS report had Emerson, Siemens and Yokogawa all within a couple of percentage points of each other.

Siemens top in discrete

Less contentious, perhaps, is the Morgan Stanley pecking order for discrete automation, as reported by Pinto, which has Siemens on 18.3%, more than seven points clear of its nearest rivals, Rockwell and ABB, with respectively 10.7% and 10.6%, who are in turn followed by Schneider with 9.4%, Mitsubishi with 6.1%, GE-Fanuc with 4.3%, Emerson with 3.9% and Omron with 2.9%.

Arguably more important than the ac-

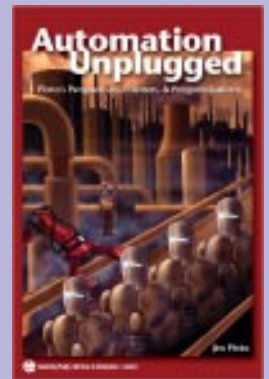
tual figures, which are in any case open to endless argument as to how specific markets are defined and then measured, is how the punters actually perceive the various contenders. Thus, Siemens is acknowledged among customers as the "undisputed heavyweight champion in the discrete domain", Emerson as having "great technology, great marketing" and to be "gaining share in key growth markets," and ABB as "maintaining share despite recent uncertainties." Users recognize Honeywell for "the power of its installed base" and Invensys for its "strong individual businesses" while Schneider is seen as "a more product-driven company," Rockwell as having "a strong market position in discrete" and GE Fanuc as being "focused on the service aftermarket."

The only numbers that matter?

What matters in the end, of course, as we have seen over recent years, is financial performance. Get that wrong and you simply won't be around to enjoy your market share, however it's calculated. Hence the significance of figures published last month by Pinto, with acknowledgement to Bloomberg, Deutsche Bank and Datastream, which compared major automation vendors on the basis of sales and market capitalization.

In terms of sales Siemens, with estimated sales of \$92.19bn is nearly three times larger than its nearest rival, Tyco, with \$35.59bn. Third is Honeywell with \$22.7bn, fourth ABB with \$18.3bn, fifth Emerson with \$13.85bn, sixth Schneider with \$9.94bn - almost a tenth of Siemens sales - seventh Invensys with \$7.88bn, eighth Eaton on \$7.21bn, ninth Danaher on \$4.58bn, tenth Rockwell on \$4.07bn and eleventh Yokogawa on \$1.56bn. What, no GE? Well, on the one hand its interests are too diverse to allow meaningful comparison with other automation vendors while, on the other, GE Fanuc, which should be in the list, doesn't publish its own figures.

THEY SAID IT



"C'mon Andrew, I need your (low key British) passionate energy and enthusiasm behind this!"

**Jim Pinto
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"Citect is reckoned to be the best package available for redundant applications in SCADA with installations in the nuclear industry and other mission critical applications."

**Jeremy Shinton,
Software Manager,
Mitsubishi Electric
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"This is not a technical issue; it's a procedural one."

**Peter Malin,
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"You need dollar values on your operators' HMIs."

**Steve Loranger,
Vice President of
Sales,
Emerson Process
Management
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Siemens Automation & Drives in the UK has appointed Mark Higham as general manager for industrial control and automation with responsibility for automation products, standard drives and low voltage control gear, as well as the training, service and technical support divisions within Automation & Drives. He was previously business manager for Siemens' Automation Centre in Manchester with responsibility for all Simatic branded products. Higham succeeds Gordon Carmichael who has become group managing director of Siemens Information and Communication Mobile (ICM) in Bracknell, UK.

UK and Ireland Wonderware distributor Pantek (www.pantek.co.uk) has awarded Certified System Integrator (CSI) status to Alton, Hants based integrator Silchester Control Systems (www.silchester.co.uk). Pantek's CSI programme is designed to foster mutually beneficial and productive solutions, by working together and harnessing complimentary technological strengths and specialist expertise. It dovetails closely with Wonderware's own programme and, where appropriate, as with Silchester, Wonderware awards its own CSI certificates in tandem with the Pantek award.

Those relative positions take on a whole different aspect when automation vendors are compared on the basis of market capitalization, arguably a more reliable measure of long term viability and immunity to predation. Although the first three, Siemens (\$56.47bn), Tyco (\$41.11bn) and Honeywell (\$22.27bn) remain unchanged, the difference between them is much less marked. However, only one other contender, Emerson with a market cap of \$23.48bn, is even in the same league.

There's then a huge gap to the next contender, fifth place Schneider which, at \$12.44bn, is only just over half the size of Emerson. In sixth place is Danaher at \$11.83bn then another big drop to seventh placed Eaton on \$7.21bn, eighth ABB on \$7.01bn, ninth Rockwell on \$5.05bn, tenth Yokogawa on \$2.47bn and eleventh Invensys on a paltry \$1.94bn. Small wonder that speculation continues to surround Rockwell and Invensys (see below).

Eaton name change

In the case of Rockwell that speculation has been given further impetus by the decision of Eaton, tipped since last year to acquire all or part of Rockwell, to rename its industrial and commercial controls business, which includes Cutler-Hammer, as Eaton Electrical. Eaton CEO Sandy Cutler is apparently happy to see his own name removed in return for an increased focus on the Eaton brand which has been interpreted in some quarters as a necessary preliminary to announcing a merger with Rockwell.

Those market cap figures probably also explain why the word is that any Eaton/Rockwell deal will be presented as a merger rather than an outright acquisition. Further rumour on Jim Pinto's Rockwell weblog suggests that the deal is now close to completion, following resolution of certain environmental issues - but then again that's been the rumour since the middle of last year! Meanwhile Rockwell employees are becoming increasingly concerned by what are interpreted as signs that further engineering and manufacturing functions are to be moved offshore from the US and relocated in the Far East.

Pinto's prognostications - a plug for the unpluggable

Automation company executives who have blocked employee access to Jim Pinto's web site, thereby ensuring even higher levels of traffic at evenings and weekends, will, Pinto hopes, further enhance his notoriety by instituting searches of employee lunchboxes for copies of his new book, "Automation unplugged," lest pungent comments on their management style find their way on site.

Due for launch at ISA Expo 2003 in Houston on October 21st to 23rd, the book, subtitled "Pinto's perspectives, prognostications, predictions & poetry", will do nothing to moderate his reputation for controversy. With a special introduction by 'father of the PLC' Dick Morley, the book brings together many of Pinto's previous thoughts and prognostications on the automation industry in general and individual companies and technologies in particular.

Friends reunited

Each of the five sections is introduced by a leading automation industry figure, thereby demonstrating that, despite his best efforts, he hasn't fallen out with everybody! Emerson Process president John Berra introduces the section on "Industrial Automation Majors, the good, the bad and the ugly", I/O Select CEO Frank Williams that on "Marketing, Sales & Distribution Perspectives", Emerson Process senior vice president Bud Keyes that on "Future of Automation Technology" and ISA SP50 chairman and former IEC fieldbus working group convenor Dick Caro that entitled "Industrial Networks - this bus is for you." Finally *InTech* editor Greg Hale introduces a selection of "Pinto's Industrial Poetry."

'Automation Unplugged' is available online from www.isa.org/pinto and from Eoin Ó Riain's *Readout.net* site with discounts for multiple orders. Alternatively you can buy it direct from the ISA stand at ISA Expo where Jim will be on hand to autograph your copy. Just don't take it into the office, though!

Mitsubishi picks Citect as UK SCADA/MES partner

Latest casualty of GE Fanuc's 2002 acquisition of Intellution from Emerson seems to have been the long-standing relationship under which Mitsubishi Electric (www.mitsubishi.co.uk/automation) in the UK has rebadged Intellution's FiX and iFIX products as MX32 and MX2000 respectively to provide a SCADA front end to its range of PLCs and drives.

That deal dates back to the days when Alan Williams, now vice president & general manager of Strategic Advisory Services at ARC, was marketing manager for Mitsubishi Europe, having himself moved there from Intellution. Those were of course also the days when one of Intellution's two main distributors in the UK was Automation Products which, subsequent to the creation of Fortétion, lost its Intellution distributorship.

Automation Products, under managing director Paul Hurst, was subsequently appointed UK distributor for Australian SCADA/MES vendor Citect and, at the beginning of this year, became a wholly owned subsidiary of the Australian parent, changing its name to Citect UK. No small satisfaction for Hurst therefore when Mitsubishi decided to replace its previous reliance on Intellution with a more comprehensive relationship with Citect under which it will rebadge Citect's HMI, SCADA and Plant to Business MES connectivity products.

More integrated offering

Both software manager Jeremy Shinton and customer marketing manager Chris Hazlewood stress that Mitsubishi was already looking at Citect before Intellution's acquisition by GE Fanuc, the main motivation being a desire to offer a more comprehensive and integrated range of products than had been possible through the relationship with Intellution. Under that arrangement, Mitsubishi would take the SCADA products direct from Intellution and supplement them where necessary with additional products such as Mountain Systems' Proficy

MES package supplied by Fortétion. Nevertheless, neither Shinton nor Hazlewood denies that, with the acquisition of Intellution by GE Fanuc, reliance for SCADA and MES offerings on a directly competing PLC vendor would have become increasingly uncomfortable.

Mitsubishi's plan is to retain the 'MX' branding for its software products which, it claims, had already given it better brand recognition in the UK for MX2000 than Intellution itself had achieved for the same product as iFIX. In order to provide continuity for existing users, it will continue to support the FIX based MX32 product for a minimum of seven years and will continue to sell the iFIX based MX2000 alongside the Citect products indefinitely, thereby providing Intellution based users with an upgrade path into the Citect-based world via Citect's Plant-to-Business package which supports integration with iFIX as one of a host of connectivity options. In the Mitsubishi world, the Citect products will be branded MX4 and, specifically known as MX4 Soft HIMI, MX4SCADA and MX4 Business. All MX4 products will be referred to as "Powered by Citect" while MX2000 will be referred to as "Powered by iFIX".

Optimized for Mits

The Mitsubishi versions of the Citect products will be essentially identical to the standard versions but will be optimized for use with Mitsubishi products. Thus Mitsubishi customers will enjoy keener pricing and will be offered a more limited range of drivers than the standard product but these will be engineered specifically to ensure easier integration with Mitsubishi PLCs and drives. At the same time however customers will be able to access the full range of drivers should they need to do so, albeit for a further consideration.

On secondment from Citect at least until the end of the year but more probably for the duration is technical product manager Tom Sabitzer, one of whose roles has been to develop a range of object oriented 'genies' designed specifically to simplify application deployment on Mitsubishi hardware. Sabitzer also keeps

Thales Information Systems (www.thales-is.com) has entered into a partnership agreement with Verano (www.verano.com) under which it will sell the latter's Industrial Defender real-time security software and services suite for industrial control environments. Thales IS operates a comprehensive vulnerability audit and assessment service for existing control systems which complements the Watch component of Industrial Defender which provides real-time security monitoring, detection and notification based on the National Security Agency (NSA) Security Enhanced version of Linux.

Triple Modular Redundant (TMR) safety system specialist ICS Triplex (www.icstriplex.com) has acquired the Turbo Machinery and Compressor Control (TMC) assets and business of Houston-based Micon Systems. ICS Triplex describes the acquisition as another step in its strategy to increase its high technology automation portfolio. Earlier this year it acquired the assets and technology of Canadian automation software company Altersys whose principle product was the IEC 61131-3 programming package ISaGRAF. Sale of the TMC business leaves Micon (www.miconsystems.com) free to concentrate on the development of its general purpose control products.

DuPont subsidiary Invista and ABB (www.abb.com) are starting work on the modernization of the control systems on the KA plant at Wilton, UK. The Invista-ABB co-managed project involves converting the plant from boric acid based technology to hydrogenation. The KA plant will be the seventh and last facility at Wilton to undergo an automation upgrade based on ABB INFI 90, the first being the Hexamethylene Diamine (HMD) plant which was upgraded in 1996/7. ABB's scope of supply at the KA plant includes front end design study, I/E engineering design and commissioning, control system design, building and commissioning, network consultancy, instrumentation design, safety system supply and integration, technical support, training and on-site construction activities. ABB says that the Infi 90 solution will be fully compatible and upgradeable within its Industrial IT system architecture. Meanwhile ABB has won a major process automation system expansion project for the Greater Nile Petroleum Operating Company (GNPOC)'s central production fields at HEGLIG in Sudan. The expansion includes ABB Foundation fieldbus technology using the LD800HSE coupler, NBC100 power conditioner and full ATEX field installation with the MB204Ex Multi-barrier together with interfacing with existing site SCADA and safety systems. Completion is scheduled for December, 2003.

Mitsubishi up to speed with ongoing Citect product developments such as the soon to be introduced palm top based hand held HMI to be known in the Mitsubishi world as MX4 Pocket.

A key element of the Mitsubishi strategy is to use the close relationship with Citect to extend its capabilities into the process market and into the rapidly growing building automation sector. "Citect is reckoned to be the best package available for redundant applications in SCADA with installations in the nuclear industry and other mission critical applications," said Shinton. "Combining that with Mitsubishi's dual redundant PLCs and redundant networks gives us a DCS capability but still at a PLC price."

Batch

Those capabilities are further enhanced by batch facilities including support for compliance with the requirements of 21CFR 11, downtime monitoring facilities and traceability facilities which are expected to be in increasing demand in the food and beverage industries. Future developments also include the early addition of scheduling facilities and the development of a new, more tightly integrated real time database.

In the building automation sector the Citect relationship will complement the recent establishment by Mitsubishi of its MELSMART Energy Centre (*INSIDER*, June 2003, page 5) and will allow complete hardware and software packages to be offered for building management, hence bringing the company's automation expertise to bear on the building automation market. It's an area where Citect has already enjoyed considerable success with recent applications in Norway and Sweden as well as nearer to home in Sydney. Mitsubishi is looking to exploit this potential as new regulations come into force in the UK and Europe requiring higher standards of energy management on both new and refurbished buildings.

"We don't do integration"

Mitsubishi goes to market in the UK through three key distributors and has a policy of never doing integration. It's an

approach which, when applied to the new relationship with Citect, will, it is hoped, further strengthen its current claimed position as number three in terms of market share in the UK PLC market.

MTL turns fieldbus threat into opportunity

The recent publicity surrounding the launch of MTL's MOST (MTL Open Systems Technologies) business unit and its extension of the group's remote I/O portfolio into control (*INSIDER*, December 2002, Page 11 and June 2003, page 3) seems to have spurred the group's other divisions into raising their own profiles. Hence last week's procession of UK technical hacks to the basement of the St James Club in London's Mayfair for a series of individual briefings by Philip Seward and Roger Highton, respectively product manager and senior product manager in the Hazardous Area Business Unit. In fairness while their particular unit may not have had a particularly high profile in the press, it has certainly been having a profound impact in the market place as it capitalizes on MTL's combination of I/O and Intrinsically Safe expertise to become arguably the dominant force in fieldbus connectivity.

Foundation participation

Appreciating that fieldbus could pose a significant threat to its conventional Intrinsic Safety business, MTL was an early participant in the development of fieldbus standards and an early developer of fieldbus interconnection products. That interest continues to this day with Highton acting as 'Director End User Councils, Europe' for the Fieldbus Foundation and Seward sitting on the Foundation's AG-163 committee on intrinsically safe fieldbus.

That level of participation has paid off handsomely with Highton now claiming that some 70% of all Foundation fieldbus installations worldwide are implemented using MTL equipment and MTL power conditioners being regarded as the de facto standard for powering Foundation

segments – so much so that the first question asked by Foundation technical advisers when asked for help with interference problems is, “Whose power conditioner are you using?” That level of acceptance has been further enhanced by the decision taken back in January of this year to enter into a cooperative agreement with Oregon-based Relcom under which MTL now distributes Relcom’s products and the two companies are collaborating in a common product development plan.

Fieldbus components

Although fieldbus has, rightly, been promoted as drastically simplifying the connection of field instruments into process automation systems, eliminating the mass of individual cabling and terminations associated with conventional 4-20mA wiring, it had until recently been less widely appreciated that it would bring with it its own set of problems and opportunities. Thus for example, it had initially been thought that individual system vendors would develop their own fieldbus interface cards which would provide power directly to the fieldbus segments. With the emergence of real applications however it soon became apparent that the power requirements would create intractable overheating problems which could only be resolved by the use of separate power conditioners which would in their turn pose a design challenge if they were not to cause interference with the signals being transmitted on the bus.

Similarly, while fieldbus diagrams show individual instruments ‘daisy chained’ along the bus, the practicalities of field installation call for wiring hubs allowing simple connection of groups of, say, four or more devices with additional provision for bus termination.

Such problems were further complicated as fieldbus technology moved into hazardous areas since, while the requirement for an IS barrier to protect each device is removed, it is replaced by the need for an IS power supply to protect all of the devices on a particular segment. That in turn led to lengthy debate in the various national and international standards bodies as to what the practical re-

strictions would be on fieldbus devices in hazardous areas and eventually to the emergence first of FISCO (Fieldbus Intrinsically Safe Concept) and more recently to the less demanding FNICO (Fieldbus Non-Incendive Concept), the latter pioneered by MTL for applications in Zone 2.

Not entirely surprisingly, with MTL’s Chris Towle acting as secretary to the IEC Committee which has recently produced the draft combined FISCO and FNICO standard which is currently being voted on by national committees, MTL has kept abreast if not one step ahead of these developments. The key elements of both FISCO and FNICO are that they permit more field devices on longer cable lengths than had hitherto been considered practicable, reduce the safety documentation to a list of devices and completely eliminate the need to calculate cable parameter. As a result, the same design rules can be applied in both hazardous and safe areas. As Roger Highton puts it, “Adding cable actually reduces the risk.”

Between them MTL and Relcom now offer pretty much the full gamut of fieldbus kit ranging from MegaBlock wiring hubs, through redundant power conditioners and FISCO and FNICO power supplies to ruggedized connectors and fieldbus test equipment. In addition, MTL is also seeing a rapidly developing business in surge protection for fieldbus installations which, by their nature, are inherently more vulnerable than conventional installations to transients and lightning strikes (www.mtl-inst.com).

- The influence of Chris Towle, who earlier this year was responsible for MTL handing out ATEX certified pens, is clear in the current draft of the IEC FISCO and FNICO standard. In the section on marking of equipment, examples are given of the marking of various types of FISCO equipment including:

FISCO terminator
Ex ia IIC T4
James Bond plc
MK45 6BY UK
Type MI5 007

Automsoft (www.automsoft.com) has announced a multi-million dollar deal under which leading biotechnology company Genzyme is deploying the Rapid-Pharma real time database solution across its primary therapeutic manufacturing sites. Rapid-Pharma will be responsible for all data capture with all process and plant information necessary for reporting and analyzing activities and trends derived through it. Deployment of the solution is a key element in bringing the facilities into compliance with the FDA 21 CFR Part 11.

Trend Web from Canary Labs is an ActiveX control that can be put into a web page to allow viewing of plant-wide data. It allows management and engineers to view plant performance data from remote locations in real-time without the need for costly travel or dedicated leased communication lines. It also allows process engineers to monitor data for process improvement purposes without the need for on-site visits. Trend Web is deployed as a small self installing 140K cab file which requests data from the Trend Web http server component. The Trend Server converts processed trend data from OPC-HDA data sources into ‘web style’ data. There’s a live demonstration on the Canary Labs web site at www.canarylabs.com

Yokogawa (www.yokogawa.com) looks like it's going to further confuse its users and potential users with the launch of the latest version of its Centum CS 3000 flagship production control system. Most significant introduction in CS 3000 R3.04 is a new FFCS compact controller, just one fifth the size of a conventional controller and designed to accommodate a wider range of applications including small-scale plants. The new release also offers an enhanced Fieldbus capability, first providing smaller systems with the same Foundation fieldbus functionality such as the integrated operation and monitoring environments and full-redundant systems that are found on large systems and, secondly, providing support for Profibus DP. What's so confusing about that? Well, as ARC research director Larry O'Brien has pointed out, CS3000 now "provides a full range of scalability around a single platform that can now target smaller applications and plants" as well as serving as "a good entry level system for Foundation Fieldbus applications." So why does Yokogawa also need both the smaller release CS 1000 and the recently introduced Stardom?

● Word at MTL is of the resolution of the differences which arose with Emerson last year over the decision to introduce the MOST concept and thus, in effect, to add MTL's own controller to the MTL I/O on which Delta V is based. "Emerson", by which one would guess is meant marketing director for Delta V development Duncan Schleiss, "now understand what we're doing and that we're not intending to compete with DeltaV," is the MTL version of the story.

That perhaps would explain how Emerson's Nick Taylor, during one of his presentations to the Readout Forum in Cork in mid September, felt able to say that, while he did not anticipate that Emerson would ever give up the concept of a proprietary controller in favour of one based on open, ie Microsoft, technology, "whether that proprietary control would be made by Emerson or by someone else such as MTL is another matter."

Vendors circle the wagons as users turn hostile

Congratulations to Eoin Ó Riain, publisher and editor of the Irish control and automation journal *Read-out* and of the *Read-out Instrumentation Signpost* web site (readout.net) for coming up with an entirely fresh and original format for his Second Read-out Forum, sponsored by ISA Ireland and held alongside the Irchem 2003 chemical engineering show in Cork in mid-September.

Eoin's formula for success? Put representatives of the major automation vendors on the same platform and have them explain their respective companies' responses to the issues raised in four keynote addresses on such disparate topics as 'Future Proofing Your Control System', 'Electronic Paper and Batch Tracking', 'Control System Accessibility and Interoperability' and 'Security'. And for added spice, round off each session by throwing the discussion open to the floor - or was that the vendors to the wolves?

Those who had anticipated blood on the floor as the competing vendors' gripped each other cordially by the throat were,

inevitably, a little disappointed by the degree of unanimity that was exhibited by Emerson's Nick Taylor, Honeywell's Alan Walsh, Siemens' Sean Cahill and, stepping into the breach at the last moment when Ulli Mueller succumbed to food poisoning, ABB's Peter Malin.

Ganging up

On the other hand there was a frisson of excitement as, more than once, the audience, or at least the part made up of users, ganged up against the vendor community in general. But then the vendors themselves seemed to be happy enough to fight their collective corner, falling in behind, for example, Nick Taylor when he reminded users that vendors are actually in this for the money and will provide their customers with just as much and no more than they ask for.

Inevitably, given the location, much of the discussion centred on the needs of the pharmaceutical industry with three of the keynote speakers, Joe Haugh of Zenith, currently on secondment to Wyeth, Paul Murray of Proscion and David McBratney of MCOS either working directly in or providing engineering and consulting services to the industry.

Cyber terrorism

Odd man out was Brian Ahern of Verano who sent a shiver up everyone's spine by pointing out just how vulnerable Internet enabled, Windows based automation systems are to 'cyber terrorism'. Few dissenters when he told this largely pharmaceutical industry oriented audience that the security issue is "the next 21CFR11." Clearly system security is already a major concern for pharmaceutical companies who find themselves between a rock and a hard place - faced with threats which change on an almost daily basis while having to conform to validation processes whose timescale is measured in months or years.

That leaves them with a choice of ignoring the possibility of systems becoming corrupted or reversing current trends for greater integration with the enterprise and effectively isolating mission critical systems. Given the degree of concern

shown by the audience it was perhaps surprising to hear the vendors respond pretty much with one voice that they have as yet to see the issue addressed in RFQs but would of course respond once they did, not a view which particularly impressed some members of the audience who took the view that vendors were under an obligation to ensure that their systems were secure. That in turn prompted ABB's Peter Malin to retort that no solution could be 100% secure and that "this is not a technical issue; it's procedural one."

Unanimity

Strongest message to emerge from the forum - held incidentally in the cork Greyhound Stadium, thereby allowing the chairman to remark, not for the first time, that "The process automation industry is going to the dogs" - is how little competitive advantage individual process automation vendors can now gain from technology. Hence the degree of unanimity with which they answered the issues raised by the keynotes on future proofing, batch tracking and interoperability by professing their total adherence to and support of standards.

It is conceivable, had Eoin been able to establish who he should have invited from Invensys, that a dissenting voice might have been heard but it seems unlikely. ArchestrA, for all its supposed advantages, isn't going to result in systems which, to the user, look much different from those based on Industrial IT, PlantWeb, Totally Integrated Automation or Experion PKS. Indeed, with process automation systems becoming increasingly commoditized, and vendors ever more unsure what constitutes their irreducible core expertise, competitive advantage must increasingly lie not in what you deliver but in how you deliver it.

Seminar truants miss best of the papers

Those who left after the first day of joint IEE/ARC/University of Cambridge seminar on "Operational Excellence in Con-

sumer Packaged Goods Manufacturing" held at Queen's College, Cambridge last week arguably missed the presentations that best matched the event's title. That at least is the view of one who only turned up on the second morning, thereby missing not only a string of papers on almost every aspect of the supply chain other than manufacturing itself but also the drinks and buffet reception which, to judge by the numbers who missed the start of the 8.30am paper which opened the second day, maintained the reputation of Cambridge colleges for the generosity of their hospitality.

Food & beverage challenge

That said, one paper from the first day which would perhaps have fitted better on the second was that from Atos Origin's Stephen Roe on "Traceability Implications for the European Food and Drink Industry". Given the lengths which industries such as aerospace and pharmaceuticals go to in order to maintain traceability - Eli Lilly's Peter Owen described his own industry as having two products, the drug itself and the documentation to support it - it's clear that the new European legislation is going to pose immense challenges for food and beverage manufacturers. Roe, however, argues that it also provides major opportunities to address related issues and hence to deliver improved performance.

The new regulations call for procedures to be in place for 'one up, one down' traceability of food and feed products and ingredients, that is to identify from whom a business has been supplied and to whom it has supplied its products, and to make such information available on demand from January 1st 2005. However, companies working to the 2005 deadline could be in for a shock because the separate Revised Product General Safety directive requires 'one down' traceability to be available from January 15th 2004 or in about three months time!

Roe's paper described the development of a traceability system for France's largest milk cooperative and argued that there are already tried and tested solutions in existence which food and beverage com-

The US Institute of Electrical and Electronics Engineers' Standards Association (IEEE-SA) has announced that it has begun work on a standard for the security of general-purpose, commercial off-the-shelf (COTS) operating systems. IEEE P2200, Base Operating System Security (BOSS), will address both external threats and intrinsic flaws, building on guidance from the US National Institute of Standards and Technology (NIST) and based on protection profiles within the ISO Common Criteria (CC) framework. Key issues to be addressed include cross-platform security, including identification and authentication, access control and cryptographic concepts. The aim is to have a completed standard by the end of 2004. IEEE has also announced that it is revising its IEEE 1540 standard covering risk management during software development, operations and maintenance, to bring it into line with existing ISO/IEC software engineering standards. The revised standard, 'Software Engineering: Software Life Cycle Processes, Risk Management' is targeted for approval by IEEE and ISO/IEC in 2004.

ClassicAutomation (www.classicautomation.com/), the collaborative market and support web service for automation users, has introduced a Part Finder Service for DCS and PLC users. Based on its network of part suppliers, the service aims to locate hard to find surplus parts in order to help control system users lower their maintenance costs and extend system life. "Many companies that use control systems have a variety of DCS and PLC systems from multiple vendors," said ClassicAutomation founder Fritz Ruebeck. "Our service lets these users work with a single vendor for all of their control system surplus part needs."

Iconics (www.iconics.com/) has introduced a series of tools designed to enable open connectivity in the security industry. Based on OPC, they eliminate the need to develop expensive custom interfaces for connecting different systems and platforms. OPC allows users to create reusable modules for communications locally over an enterprise network and remotely over the Internet. All of Iconics' visualization solutions are OPC Plug and Play friendly and Web-enabled with Windows NT C3 level security.

panies can apply without the need to reinvent the wheel. The key questions for these companies, he says, are whether they are going to be ready in time and whether they can take advantage of the inevitable changes to deliver real benefits to their businesses.

Profit, not PLCs

Day two opened with Emerson Process Management vice president of sales Steve Loranger describing the 'Development of the Business Case for Control and Automation Systems.' Loranger's argument, directed primarily at instrumentation and control engineers, is that automation projects have to be justified in terms of their ability to make a significant improvement to the overall profitability of the enterprise. The plant has to be seen as "a cash flow machine," he says and for that "You need dollar values on your operators' HMIs."

Loranger believes that we are now in a third age of automation. Whereas from the 1950s to the '70s the driver was technology, and from the '70s to the end of the 20th century it was improved quality and repeatability, today it is economics and business. As a result, he says, "The focus is on profit not technology."

What made his paper of more than passing interest however was the way in which it set out a blueprint for how automation vendors should collaborate with their users to develop the business case for a project for presentation to senior management. That implies, to this observer at least, vendors increasingly taking on the roles of consultants and service providers as hardware and even software are seen less and less as their core competencies. As the man said, "Not PLCs but profit."

Divided by a common language

Arguably the most important paper, certainly from an automation standpoint, however, was that presented by Dennis Brandl in conjunction with Eli Lilly's Peter Owen. Brandl is the editor of the ISA 95 Enterprise-Control System Integration standard and the convenor of the IEC/ISO Joint Working Group on Enter-

prise/Control Integration. In other words, if anyone understands this whole issue of shop floor to top floor integration it ought to be him.

His starting point was to examine why the 'make' part of the manufacturing supply chain has been the last to be integrated, despite the fact that such integration would yield a very high ROI for high volume or high cost products. At the root of the problem is the differing points of view embodied in business systems with their long time scales and linear route structures as compared with manufacturing's real time view and complex routing networks.

That, he says, can be summed up in the difference between enterprise systems which concern themselves with questions like "How much is my stuff worth and how much do I have?" and manufacturing systems which want to know "How do I make my stuff and where is it?" The result is a clash of cultures which either use different words to mean the same things or the same words to mean for different things.

"We've seen the future and it works"

That in essence is the challenge which ISA 95 addresses, providing a common set of models and terminology, and hence a standard means of exchanging information between the ERP and MES layers, as well as defining what MES or rather the wider 'Manufacturing Operations Management' which also includes things like LIMS and Asset Management, actually is. Brandl's message, backed up by Peter Owen's actual experience at Eli Lilly, is that this approach actually works and is being applied. Moreover, experience shows that linked execution systems do deliver results in terms of reduced direct costs, increased productivity, improved traceability and greater agility.

Specifically, S95 defines a currency for manufacturing object and information exchange which can be implemented using the XML schemas developed by the World Batch Forum and results in faster project implementation cycles and the flexibility to integrate and realign as corporate structures change. Perhaps most tellingly, ven-

dors are now using ISA 95 in development and in current products and users are specifying it in RFPs.

- The total automation business to process industries worldwide is projected to grow at 4.7% compound over the next five years to more than \$58bn in 2007, according to ARC's newly published 'Total Automation Business for the Process Industries Worldwide Outlook' (www.arc.net). "Although users will remain very conservative in their spending decisions for capital equipment, global competition will compel most manufacturers to improve their plant machinery and process to stay competitive," argues report author and ARC senior analyst Himanshu Shah.

Justifying this contention, the report identifies specific factors for growth including the need to upgrade legacy systems in an era of collaborative manufacturing and to replace plants and systems in such industries as chemicals, pharmaceuticals, pulp & paper and power which have aging plants and systems which are obsolete by today's standards.

To help manufacturers overcome their risk-aversion, suppliers are offering more services and broader solutions, augmenting deliverables, enhancing product functionality and offering fieldbus and wireless technologies. Growth prospects are focused in such areas as pharmaceuticals, food & beverage, refining and water & wastewater and geographically on Latin America and Asia. North America and Europe are expected to grow at about the same average annual rate over the forecast period while Japan again will exhibit least growth.

- Morgan Stanley expects the automation market to grow by 3% in 2004 after contracting by 1% in 2003. Greatest growth potential in process projects lies in Asia and Eastern Europe, with Asia's share of the world market increasing from 16 to 26% by 2013, principally to the benefit of Emerson and Yokogawa.

- Ultrasonic flowmeters are becoming the technology of choice for custody trans-

fer measurement of refined liquid petroleum products and natural gas, driving the worldwide ultrasonic flowmeter market to grow at an annual rate of 7.9% compound, says ARC's newly published 'Ultrasonic Flowmeter Worldwide Outlook'. "The non-contact and non-intrusive nature of ultrasonic flow technology poses a challenge to the traditional flowmeters in process industries," comments the report's author, ARC research director Wil Chin.

- As predicted by ARC president Andy Chatha in last month's *INSIDER*, the ARCwire eNewsletter is now available in Italian through a partnership between ARC and Italian publisher Fabio Casiraghi srl. ARC claims that the ARCwire service currently reaches over 60,000 executives and more than 1,300 journalists each week. To sign up for the Italian or indeed any other version go to www.arcweb.com/res/reg.

Invensys is coy about its technology assets . . .

It's not all bad news at Invensys, even if you believe the rumours broadcast on Jim Pinto's Invensys weblog or the stories in the national press (*see below*). What is surprising, on the other hand, is that Invensys in general and Foxboro (www.foxboro.com) in particular take quite such a low key approach to product announcements which other vendors would surely be shouting from the roof tops.

Take the case of fault tolerant Ethernet, presented by Honeywell as a ground breaking component of the recently released Experion PKS. Foxboro can of course claim with some justification to have pioneered the concept with the Ethernet-based 'Nodebus' introduced as part of the original I/A series more than 15 years ago, but that's no reason surely for sneaking out news of its new high-availability 'mesh' network technology in the form of an emailed press release. Lavish receptions in upmarket West End locations would probably not be appropriate for an organization which is currently best known for

Siemens (www.siemens-industry.co.uk) has developed a failsafe load feeder with an integral PROFIsafe interface. The system ensures automatic, safe shutdown of motor systems in production machinery and process applications in the event of a contactor fault being detected and enables safe shutdowns to be initiated remotely over a PROFIsafe network. Built around a fully featured motor starter coupled to a Simatic ET200S distributed I/O module with integral PROFIsafe communications interface, the all-in-one solution is said to reduce hardware costs by eliminating the need for separate contactors, auxiliary contacts and supplementary modules. In addition wiring effort and cost are cut by up to 80% compared with solutions built from discrete components. Two versions provide switching capacities up to 7.5kW, with direct and reversing operation with contactor trip, and failsafe operation in accordance with Category 4, EN 954-1 and SIL 3 of IEC 61508.

ERA's 'Major Hazards Offshore' conference and exhibition is scheduled to take place in central London on December 9th and 10th next. More information from events@era.co.uk

Eurostar began running its full passenger service on the new high speed rail route between London and the Channel Tunnel on Sunday September 28th. As a result, trains now pass some 400 yards from the *INSIDER* nerve centre at, so we are informed, 186mph (that's 300 kilometres per hour). Since this is the equivalent of having half a dozen jumbo jets taking off simultaneously at the bottom of the neighbour's garden, I'd like to be able to claim that it was an excuse, or at least an explanation, for late publication of *INSIDER*. In fact however the sound is more of a distraction than an actual disturbance although those living closer have a rather different tale to tell and describe the effect as more akin to an explosion. Whether all this, and the £6bn plus cost, is justified by cutting the journey time from London to Paris by 20 minutes we leave others to decide.

the size of its debt mountain and the depth of the hole in its pension fund but a few one-on-one briefings with the press would go a long way toward re-establishing its credentials as a serious technology player.

Automatic reconfiguration

Meanwhile, what of the new technology itself? According to the release, it uses COTS Ethernet components - switches, ports, and fiber optic cabling - to create meshed configurations which provide the multiple communications paths between network stations which ensure high availability and automatic reconfiguration in the event of network faults.

Running at up to a gigabit it can be used both at the process control and field network levels in new I/A systems, as well as being used to extend existing installations. It can thus be used to configure both plantwide process control networks and secure, high-performance links between control processors and their associated I/O modules.

Where appropriate, says Foxboro, workstations, control processors, device integrators and fieldbus modules can all be placed on a common network. That suggests that Foxboro may have stolen a march on Honeywell whose own Fault Tolerant Ethernet (FTE) solution for Experion has thus far not been extended down to the controller level, although such a capability had been promised for the end of the year.

Unprecedented

That's perhaps what Foxboro Automation Systems vice president Steve Young had in mind when he said, "Unlike conventional redundant networks, our new mesh networks can be configured to maintain nonstop communications even when faced with multiple points of failure, such as the simultaneous loss of a communications port and a wire break. To the best of our knowledge, this capability is unprecedented in the process control industry."

With the technology providing for automatic detection, diagnosis and reconfiguration of the communications path following one or more network faults,

"In effect, the network is smart enough to heal itself," said Young.

Meantime Foxboro has also announced the introduction of two new I/A Series controllers. The ZCP270 is designed for rack room mounting and supports up to 120 remote I/O modules while the FCP270 is for remote mounting and supports up to 32 adjacent I/O modules. Both can connect to the process control network via standard fiber optic 100Mbps Ethernet and use Foxboro's integrated control package. The controllers offer twice the application performance of their predecessors with enhanced support for PLCs and other devices communicating via Modbus, ControlLogix, OPC or other protocols and for Foundation fieldbus, HART and FoxCom devices.

- Little or no mention of ArcestrA in the latest Foxboro releases but perhaps that's in order not to distract attention from the new release from Wonderware of FactorySuite A² Industrial Application Server, still in effect the only actual product built on ArcestrA. Key feature of version 1.5 is support for Microsoft Windows Server 2003 running on any associated hardware, and for the Stratus ftServer family of continuous-availability servers. The new release is also claimed to offer increased performance and robustness, upward scalability, high availability, improved alarm and system management and object validation. A number of reusable component templates designed for plant intelligence and calculations, such as Event Monitor, SQL Server Access, OLE-DB Access and Generic Calculator application objects further decrease application engineering costs.

- A nice plug for Invensys at last week's IEE/ARC Operational Excellence seminar in Cambridge when Microsoft's David Nasky concluded his presentation on 'Data Visibility within the Retail Supply Chain' with a PowerPoint slide entitled "An Industrialized Implementation of .NET & Other Microsoft Technologies" and showing the increasingly familiar diagram of the structure of ArcestrA and its place in the automation hierarchy.

...but can't stop speculation about everything else

Invensys is to move its headquarters from London to Boston (Mass rather than Lincs – well, anything's possible these days) according to a report in *The Times* early last week. Although the report said that the plan had yet to go before the Invensys board, it added that "insiders" (note small 'i') said that it was just a matter of time and that it would be likely to occur within the next 12 to 18 months. That suggests that it would coincide with or follow close on completion of the current disposal programme which will reduce the size of the group by half and shift its centre of gravity across the Atlantic. Invensys already has more than half of its sales in North America and completion of the disposal programme would leave it with its railway business as the sole UK based operation since APV, as part of Production Management, presumably reports to Leo Quinn in Foxboro, Mass.

London listing retained

According to *The Times*, which also reported headquarters staff leaving at a rate of between five and 20 a week, surely a normal reaction to their current plight in any case, Invensys would continue to be quoted on the London Stock Exchange after the move. Former CEO Allen Yurko had sought a listing in New York but this was abandoned as the group's position deteriorated prior to his final fall from grace.

It's worth noting in passing that headquarters, be they in London or Boston, were not exactly a feature of the scheme of things at Siebe prior to the arrival of Yurko and the merger with BTR which created Invensys. Back in the days when Siebe was a burgeoning mini-conglomerate with a reputation for combining the tightest financial controls with the highest degree of autonomy for its constituent companies, HQ was a couple of rooms over a shop (not, we understand, a chip shop, despite the legend) in Windsor high street.

Most intriguing feature of the *Times*

story, however, is the suggestion that the current CEO, Rick Haythornthwaite, would not wish to move to the US, the implication being that he would himself be leaving within 18 months. In truth, since by then Invensys would consist of the Production Management division based in Foxboro, and the railway business which might well be sold off anyway, it's difficult to see what role Haythornthwaite would have which did not duplicate what Production Management COO Quinn is already doing. And he, though like Haythornthwaite a Brit, doesn't seem to mind living in the US.

Ex-IBMers back in the fold

The *Times* story followed close on the heels of news that Invensys is extricating itself from its IT outsourcing agreement with IBM. As part of Allen Yurko's ill fated 'Project Unity', Invensys had originally outsourced all its IT activities, both hardware and software related, to IBM back in 2001, together with all of its then current IT employees. Now, almost incredibly, the whole process is being put into reverse and some 600 or more ex-Invensys employees are about to become ex-IBMers and move back to Invensys, amid a flurry of rumours as to whether or not they'll have to take pay cuts in the process. Great for morale!

Stock market blues

None of which has done a whole lot for the Invensys share price. Following, though one must hastily add not necessarily entirely because of, our observation last month that the price had substantially exceeded the break up valuation of 34p set by Credit Suisse First Boston back in February, it went smartly into reverse and, by last week, was back below 30p, down some 25% from the price at the end of August. Principal factor, apart from our own expert analysis, seems to have been the absence of any further disposal news.

Quite why successive disposals should actually increase the value still seems something of a mystery to us at least, since all of the proceeds immediately go towards reducing debt and/or plugging the hole in the pension fund. As a result

SyTech
www.TheReportCompany.com
 has released a new version of **XLReporter Professional. Version 5.0**, modestly described by SyTech as "the most cost effective application for automatically interfacing to any data source, creating a report in Excel, turning the report into actionable information and then sending it to printers, email, file servers and web servers." Version 5.0 extends its list of supported data sources to include customized historical interfaces to iHistorian 2.0 and RSView History Logs. Both new interfaces include proprietary 'iterator' technology to simplify the generation of drill down and batch reports. Report formatting, colour coding 'out of bounds', filters and sorts are all included, along with such more complex functions as covariance, correlation, moving average and frequency distribution. Security and data integrity are addressed by the use of Workbook pass codes or the encrypted PDF output option which does not require Adobe Acrobat.

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the most likely outcome at the end of the programme is an Invensys Process Management, almost certainly by then called something else, say Foxboro, with no debt, a fully funded pension liability but an ongoing thirst for capital. What would that be worth? Presumably about 34p.

● *Inevitably, no sooner is the last full stop added to the above than we hear of Morgan Stanley making a revised assessment of Invensys' prospects and setting a target price of 38p. Result - the market smartly increases its value by more than 7% to close the week at 31½p.*

If you believe Morgan Stanley more than CSFB, or you're an Invensys shareholder needing a boost to your morale, simply substitute 34 for 38 in the last line of the previous paragraph.

● Crawley, UK based APV, or Invensys APV as we must call it, has just achieved certification to the new ISO 9001:2000 standard, a process which has involved communicating its principles to all employees and helping them understand what is required both individually and as a group in order continuously to improve the quality of service to customers. "We are delighted to have achieved ISO 9001:2000 certification," said business improvement manager Paul Morley. "However, this is certainly not the end of the process. We are committed to continually monitoring and improving our business processes . . ."

ERM vendors could move on asset management turf

The European market for Industrial Asset Management (IAM) software will grow from \$355.7m in 2002 to \$582.8m in 2009 according to a new report from Frost & Sullivan (www.frost.com). However, the report warns of a threat to existing vendors from ERP suppliers moving into the market with their own IAM solutions based on adaptations of their existing business systems to align with plant floor control. That, says the study, could result in the established IAM sector being increasingly sidelined as more business-oriented solutions encroach on its turf.

A further concern is that corporate decision-makers are put off by the cost of implementing solutions on a plant wide basis. "However, this situation is expected to change as prospective customers' senior management realise the benefits and value that can be gained by embracing

and installing an IAM solution into their business procedures," said Frost & Sullivan industry analyst Brian Flannery.

Key factors driving expansion of the market are the increasing availability of "web-architected" software and the growing trend to outsourcing of non core activities including plant production and maintenance. Investing in a modern asset management solution plays a key part in enabling a company to benefit from the supplementary value-added services that outsourcing to a service provider can offer, says the study.

The oil and gas industry is the largest user of IAM solutions in Europe, accounting for 17.6% of total revenues in 2002. However, despite the smaller size of projects, manufacturing industry will grow to account for 17.0% of the market by the end of the forecast period. "The primary driver behind growth in every single one of the eleven application sectors under analysis in Frost & Sullivan's study is the ability to reduce costs," said Flannery. "Modern asset management solutions enable the optimisation of a processing or manufacturing facility, improving asset/plant performance to maximise revenue yet minimise cost."

● By coincidence, the latest issue of ARC's *ARCwire* eNewsletter includes a briefing by David Clayton on Emerson's asset management offerings. Emerson's Asset Portal "is the first real solution that centralizes the information in a common database to allow management of Emerson and third party assets from a common view, which is exactly what manufacturers are demanding," says Clayton.

Asset management is a key feature of the solution being supplied by Emerson to automate a new \$61m plant being built in Norway for Amersham Health for batch production of diagnostic imaging reagents. Emerson will provide project management, configuration and start-up services for the PlantWeb based solution which will include 21 DeltaV digital automation system operator stations, 11 processing stations and three engineering stations. The AMS predictive maintenance software will play a key role in the plant's FDA validation process.

AMS communicates with intelligent field devices including Fisher FieldVue valve controllers and Rosemount radar level gauges, magnetic flowmeters and pressure transmitters via Foundation fieldbus. However, communication between DeltaV systems and motor controllers will be via a Profibus DP network.

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