

Maintenance in China



Siveco China Newsletter June 2010

Special
Lean

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Lean & TPM: beyond the hype, delivering sustainable results

The trend started several years ago, but nowadays everybody is talking about "Lean". Not denying the benefits of this approach, which from my maintenance point-of-view is nothing but a generalization of the TPM principles, I am by nature very wary of today's over-hyped concepts.... I also tend to deeply distrust anything that involves gurus.

Although "Lean" (and its cousin "Green") seems to be able to generate a never-ending stream of consulting fees to an increasing number of companies, to me it is simply common sense applied in a systematic manner, i.e. exactly what Siveco has been doing with maintenance improvement for so many years. With a catch: how do you implement both the "common sense" and "systematic" aspects in China? Let me explain.

In a recent interview on the subject, the journalist must have caught me in a bad mood, as I delivered a few mean punches on lean practitioners. This is what I said:

"The consulting business is flourishing these days: while a number of manufacturing executives who lost their job in the crisis have improvised themselves Lean Management consultants, foreign training firms have also set up offices in China."

"In spite of the all the recent marketing hype, experience has proven that training, organizational changes and other good advices provided by consultants often fail to produce sustainable results: this is especially true in China where maintenance technicians lack related experience and companies face high turnover rates."

"In sharp contrast with these fly-by-night consultants who are still discovering the Chinese market, Siveco has for many years been delivering tangible results."

Tough words, and certainly an over-generalization, but I believe this statement is an accurate description of what I have observed around me.

In 2006, I wrote an article for Shanghai Business Review entitled "A contrarian approach to maintenance" that touched on all these subjects already (the article is reprinted in this newsletter). Lean consultants are making all the same beginner's mistakes, which prevent them from delivering sustainable results. On the other hand, here lies perhaps the very secret of their business: making customers dependent on consultants, year in and year out. Yesterday: MRP and TPM, today: Lean and Green, tomorrow: some new concept, with its gurus, books, workshops and consultants.

There are signs that the frenzy is feeding on its own failure to deliver: the fact that most projects fail to bring results has

become the key topic at most Lean Manufacturing and TPM events in China! One of our customers, leading Sino-American pencils manufacturer Axus, presented a paper on their experience with Lean at the Global Lean Summit in Shanghai on June 11. The catchphrase for this event was that among companies that apply lean tools, "most of them have a tough time to sustain what they had obtained"! On June 18, yours truly and Siveco will take part in another conference, the China TPM Summit, also held in Shanghai. The organizers listed the following as the key reason for attending the event: "Every second attempted installation of TPM results in failure"! We see this summit as an opportunity to showcase our difference!

Indeed, we believe that we have at least some of the answers, backed by a long experience of "maintenance with Chinese characteristics". Our approach to maintenance improvement is based on the use of concrete maintenance management tools, namely a combination of Visual Management panels (to guide daily work), CMMS (to ensure the build up of consistent maintenance records, on the analysis of which to base improvement decisions) and mobile solutions (to let technicians access technical know-how directly from the shop floor). This technology-based method has proven particularly successful in China, providing rapid and sustainable results, measurable in hard currency (RMB).

All this prompted us to release this special "Lean" edition of our monthly newsletter, in order to actively communicate on our experience. Here you won't read the mystic quotes of any American or Japanese guru. Instead, we will cover the basics of what we do. The reprint of the 2006 article "A contrarian approach to maintenance" elaborates on the topics above. Our reliability section focuses on the pitfalls of TPM implementations in China. The customer story showcases one of our hands-on projects on a highly automated production line in the automotive industry. In Tips & Tricks, dedicated to CMMS, we talk about OEE measures whose implementation often proves elusive. Finally we detail our Value Added Partner Program and list some of our latest news.

Wishing you a safe journey on the road to sustainable, measurable improvement!



Bruno Lhopiteau
General Manager
Siveco China

Avoiding pitfalls when implementing TPM in China

Companies trying to implement TPM in China, usually as a part of a corporate roll-out, face specific challenges, which may differ from those observed in Japan or in the West, more developed economies where those initiatives, or the consultants involved, often originate from.

Maintenance jobs performed by operators, known as “autonomous maintenance”, and more generally the involvement of production staff in the improvement process are one of the key principles of TPM. One of the benefits of a successful TPM program would be to help operators acquire more responsibility, starting with simple jobs such as daily cleaning rounds, lubrication, bolts tightening and various checks. To those daily care routines, other activities are later added, such as the proactive tagging, directly on the equipment, of problems detected by operators during inspections – an excellent tool to visualize poor maintenance and its consequences. The final step consists in involving production teams in analysis and improvement sessions, from which the actual benefits of TPM will derive.

This article will look at some of the Chinese specificities that influence the TPM process, as observed in many projects conducted by Siveco, so as to help industrial managers avoid some the pitfalls.

Understanding HR limitations

The key words for autonomous maintenance may be: involvement, responsibility, and pro-activity – all which may be considered at odds with the HR situation in most companies... The challenge of trying to change old habits is obvious, although not unique to China. Specific obstacles exist, however, that make it more difficult for production workers to play their role in the TPM process, i.e. to share their experience and know-how of the machines. More often than not, in China, workers are not experienced enough: while they may have the theoretical knowledge in a specific discipline, the high turnover rate and lack of multidisciplinary skills makes it more difficult to gain mastery in their equipment.

Although there is no instant solution to this problem, we could state the obvious: plans should be put in place to reduce turnover and improve the skill level. The maintenance improvement plan itself, based on TPM or not, will greatly contribute to this (as noted in our article “A contrarian approach to maintenance”). In any case, these specific constraints should be kept in mind when rolling out a TPM program.

Reducing breakdown rate before TPM

Before launching autonomous maintenance activities, it is necessary to have the failure rate of the machines under control, and if possible relatively low. How to transfer first line maintenance responsibility to operators if the equipment is always breaking down? We often see maintenance technicians working full-time on emergency maintenance, always on the shop floor fixing machines: in such a situation, autonomous maintenance cannot be implemented.

Instead, it may be preferable to stick with the traditional organization and to focus on reducing the failure rate through preventive maintenance. This is evidently true for aging facilities, making TPM naturally more applicable to new factories.



Joint team at ZF Shanghai Steering

Implementing work feedback first

When transferring part of the maintenance job to production, the previous uniqueness of “memory” is lost: the maintenance department was once the unique depositor of all the plant knowledge, but now this knowledge is spread across the organization. Having a system in place to centralize the knowledge, based on work feedback, is critical. Without such a system, there is a significant risk that production and maintenance do not know what the other is doing. On one hand, a comprehensive maintenance record is a necessary tool for failure analysis (more on that in the next section). On the other hand, a work feedback system will allow, for example, maintenance technicians to know that a quick fix was applied by production operators, in all good faith, which may require further attention.

4 Reliability

We recommend focusing on Work Order (sometimes also called Job Request) to capture the most essential information. This process can be greatly simplified using predefined checklists: symptom, failure type, downtime (exact values may not even be needed, e.g. operators could choose between 5min, 30min, 2h, 4h, 8h+). Using Siveco's mobile solution eHand⁽¹⁾, this process becomes painless: employees are equipped with smartphones, take pictures of the problem, select the information needed and can receive troubleshooting help directly from a central database.

The most striking benefits from any maintenance management program, including TPM, will derive from the systematic analysis of historical records. Experience has proven that this can only be achieved with a CMMS: paper and Excel-based systems simply do not allow proper technical analysis over a period longer than a few weeks. Real measurable benefit will come from improvement decisions based on historical data.

Enabling maintenance improvement

Plant improvement can only be carried out if the maintenance team, freed of part of their workload (first-line maintenance now transferred to operators) is able to dedicate their efforts to it. When technicians were busy repairing the machines, this process could not take place. On the other hand, if technicians used to be lazing around in the workshop, TPM may not have been the right choice.

It is essential for maintenance workers to understand that they should now involve in, and be measured on, reliability improvement. This is not like in the old days, when they could sleep in the workshop waiting for the next breakdown.

The maintenance team has to be prepared for this change. More particularly, it should acquire some of the key methodologies and tools needed to perform their new work: root cause analysis, the design and implementation of preventive maintenance, etc. The basic reports and KPIs have to be in place (see Tips & Tricks article about OEE, the most emblematic KPI of TPM).

In conclusion – a prerequisite to TPM

In conclusion, TPM can be implemented only when:

- The failure rate is stable and preferably low
- A work order system is in place
- The maintenance team is prepared to take up a new role dedicated to improvement

While TPM has proven very successful in countries with a long industrial history, where maintenance engineers already had a strong methodological background, China brings its own specific challenges. It is our experience that a TPM initiative cannot succeed without those fundamentals – structure, methodologies and tools. Implementing a CMMS has proven to be the most efficient approach to create such a structure, in a sustainable manner, in China. This implementation will have to be done before or at the same time as TPM is introduced to the company. For more insights on the subject, interested readers may refer to the other article “A contrarian approach to maintenance”.

(1) Link: <http://tinyurl.com/eHandEN>



Maintenance in China e-newsletter

Read or subscribe to our monthly newsletter

<http://www.sivecochina.com/en/maintenance-in-china/>

亦有中文版可供参阅

A Contrarian Approach to Managing Maintenance

Ten years in the Chinese industrial maintenance market have led Bruno Lhopiteau to observe that most MNCs face the same maintenance issues – and most try to apply standard western solutions.

“China is different.” I could not resist using the secret weapon of Chinese argumentation. As far as maintenance is concerned, it is true that China offers endless astonishment to freshly-arrived overseas professionals. Due to the country’s development pace, priority is usually given to new investments, JV negotiations and the construction of new plants. Maintenance is a long-term concern, too often ignored at the investment stage.

Economic realities and MNCs themselves are to blame for this situation. We find that the basic concept of modern maintenance management – preventive maintenance, the practice to maintain equipment before it breaks down – is known in theory, but is far from being assimilated into practice. Back home, this concept is second nature to every new engineering graduate. Additionally, local engineers are often over-specialized and, hence, lack the cross-disciplinary overview needed to manage maintenance. I could also mention that fraudulent spare-parts procurement practices are commonplace, although managers, locals and foreigners alike, often chose to ignore this.

Given these circumstances, the not-so-unexpected effects appear after a few years of operation – when poorly maintained equipment starts to break down and no maintenance record exists in a reliable or exploitable form. Only then, will the plant’s general manager start to worry about the abysmally low plant utilization (just when business volume is up and full capacity is needed), indirect costs of downtime (perhaps resulting in loss of business), out-of-control maintenance costs and the impossibility of accurately auditing the situation (no recording system is often in place). At this stage, recovery measures become very costly.

On the bright side, Chinese engineers often surpass their western counterparts in key areas, such as the easy acceptance of computerization in their work environment (the motivational factor prevails over the fear of being ‘monitored’) and a willingness to acquire new skills.

Western Wisdom at Work

Time and again, expat manager apply the proven recipe of auditing (several times is better than once), training (bring on the expensive foreign consultant), organise (and reorganise, and again) and, envisioned as a last, final step, the computerization of maintenance management. “You shall organise before you computerise” is one of the greatest commandments delivered unto western engineers, and it does indeed make a lot of sense.

This approach however meets many problems in China. Nobody likes being audited, having their nose rubbed into their mistakes in front of others, especially by someone who “doesn’t know China.” Training is more than welcome but it takes time to inculcate fundamental concepts of preventive maintenance to engineers who already have several years of experience, while younger engineers also need time to gain maturity. It’s an excellent approach, but it will help five years later, not now.

In the meantime, any reasonably good maintenance manager will have been poached by your competitor next door at double his current salary. At some point of time, an expensive computerised system is introduced, which after several months of intense efforts with an IT consultant, fails miserably to be used at all. All this while, employees have lost their enthusiasm, as the improvement plans have delivered very little concrete result. And it has not even been fun.

A Contrarian Approach

I advocate nothing less than the complete opposite. In a nutshell, we have found that implementing a proper maintenance strategy, including preventive maintenance, ‘on paper’ is going to be very difficult. However, putting together, as the first step, a computerized management system will achieve most of your goals – help structure the company, provide guideline and tools to build up a historical record of maintenance and allow auditing and decision support. The ‘concrete’ aspect of such a system acts as a catalyst to the organization, allowing it to shortcut many of the more conceptual steps. Fine-tuning can be performed later, when the basics are in place.

Using this approach, small but tangible results can be achieved in a matter of weeks, helping your staff acquire good habits and to understand, in practice, the concepts of modern maintenance. Your management team has a basic audit tool in place, enabling it to make improvement decisions. The rest will all be derived from that.

This is by no means a one-size-fits-all solution, but you get the idea. Now, go and impress your board members by proposing upside-down, contrarian solutions to your everyday problems. And, remember, the “China is different” catchphrase comes in handy.

*Article first published in Shanghai Business Review
(www.sbr.net.cn) October 2006.*



Maintainability and reliability improvement in the automotive industry with BYJC-Fabricom

A state-of-the-art production line

The Assembly Line is composed of 14 standalone stations, each station capable of producing within a cycle time of 22 seconds.



Fabricom assembly line -The most advanced and sophisticated of its category

The main stations are:

- OP10/20/30: Axial rack and upper body manufacturing
- OP40: Main body and crash tube assembly
- OP50: Strap assembly
- OP60/70/80: Transmission assembly
- OP90: Radial rack fitting
- OP100: Roof bracket assembly
- OP120: Lever sub assembly
- OP130: Lever sub assembly insertion
- OP150: Test
- OP160: Packing

The project

Siveco engineers were deployed onsite in less than two weeks and worked alongside BYJC-Fabricom and ZFSS Shanghai teams from mid-July to the end of September 2008. The Siveco team was operational after a short on-the-job training period: already familiar with Siemens Simatic technology and Kuka robots, they assisted in the commissioning and troubleshooting of the machines. Siveco was more specifically in charge of reliability improvement, maintenance preparation and the training of ZFSS operators and maintenance staff.

The following results were obtained:

Background

BYJC-Fabricom (www.byjc-fabricom.com.cn) is a leading supplier of turnkey automated assembly lines, primarily targeting the automotive industry. A joint-venture between Beijing Number 1 Machine Tool Plant (BYJC) and Fabricom (a specialized subsidiary of engineering giant GDF SUEZ) the company boasts an excellent track record in China with customers such as BMW, Chery Automobile, Danfoss, Delphi, Dongfeng Peugeot Citroen, FAW, Hangzhou National Panasonic, Qingdao Haier, Siemens, Valeo, Visteon, ZF, etc.

In 2008, Fabricom was contracted by German automotive supplier ZF Group to supply a new state-of-the-art production line for the manufacturing of steering columns. The same line was to be delivered to three ZF global locations (Hungary, China and the US). Initially meant to follow the first installation in Hungary, thus benefiting from the experience, the Chinese project was in fact conducted almost simultaneously, not a small challenge considering the complexity of the line and the level of multicultural cooperation required.

Faced with tight deadlines, based on the production commitments of ZF Shanghai Steering (ZFSS), BYJC-Fabricom selected Siveco China to assist in the commissioning stage of the project in order to meet the contractual reliability requirements.

- A significant reduction in commissioning time through the provision of additional resources immediately operational on the project.

- Over 300 technical failures, ranging from critical to benign, were resolved. Root cause analysis was performed on approximately 50% of them, leading to a sustainable reduction of the failure rate.

- At the end of the project, the availability of the production line reached the customer's requirement i.e. a 90% availability rate and takt time below 23 seconds.

- The line was entirely documented in the COSWIN Maintenance System for hand-over to customer. All failures were recorded into the web-based system, ensuring complete traceability of the commissioning and early operation phase.

- Successful training of ZFSS operators and maintenance technicians.



COSWIN as a support for engineers during commissioning

According to Thierry Dormois, General Manager of BYJC-Fabricom:

"Siveco was able to quickly mobilize multi-disciplinary engineers, who successfully integrated within our multi-cultural team in a very short period of time. Under extreme pressure to start production, the involvement of Siveco ensured that we met our target in terms of line availability and maintainability."

He added that: "Siveco China's management remained involved throughout the project, sparing no effort to provide ZFSS and ourselves with value-added advice beyond their job scope."

An introduction to Siveco Value Added Partner Program (VAPP)

After a series of articles featuring various Siveco partners in the previous issues of the newsletter (ABB in March, Areva O1-db Metravib in April, Terranova Telecom in May), we have this month chosen to highlight our partner strategy to both our customers and potential partners. Partners' articles will start again from the next issue, with a continued emphasis on solutions and case studies.

The Valued Added Partner Program (VAPP)

Siveco China's Value Added Partner Program was initially launched in 2007. The program aims at providing better access to Siveco's well-recognized maintenance improvement solutions for customers across regions and industries. VAPP is tailored to offer significant profit-sharing opportunities to partners with strong expertise in their industrial or geographical areas.

Value Added Partners will work alongside Siveco's Partner Support team, located in Shanghai, both for sales and implementation. Customers benefit from the improved support capability, wider geographical coverage and better integration with local third-party solutions, based on Siveco's well-recognized software platform. The VAPP includes a comprehensive training and certification process. Partner seminars and joint marketing events are regularly organized.

While, even today, most projects are still handled directly by Siveco, the introduction of a well-structured mature partnership model was a reflection of the successful growth of the business as well as of Siveco China's future ambitions. This is what Bruno Lhopiteau, GM of Siveco China, explained when VAPP was launched:

"We have entered the third phase of our development in China, aimed at creating an ideal environment for our partners to thrive. The first phase consisted in localizing our solutions. In the second phase, we created strong reference customers within our three target markets: namely infrastructures, facilities and manufacturing. Both our sales and technical teams have been strengthened. We have now established the best possible conditions for our partners to develop business with us and to help customers' achieve their asset management objectives. We call this approach Win-Win-Win."

A modest success, more to come

Since 2007 VAPP has proven moderately successful. Siveco has established strong relationships with software suppliers, automation vendors, system integrators, as well as consulting companies and engineering firms.

Most notably, through partnerships, Siveco China has made its mark in export markets where Chinese construction companies are involved. Previous newsletters have featured projects in Malaysia and Sudan. Siveco China teams are currently involved in four Asian countries, namely China, Malaysia (4 projects), Indonesia (1 project), Singapore (3 projects) and is responding to tenders all over the world, on all continents.

In addition to extending the company's geographical reach, VAPP has fulfilled another of Siveco's original objectives in terms of increasing its solution and service scope. Among partnerships already covered in previous newsletter:

- The cooperation with Terranova Telecom has allowed Siveco China to develop its highly innovative suite of mobile solutions, while being able to use Terranova's technology and resources for large-scale mobile deployments (field service solutions scalable up to thousands of mobile users).



General Managers of Siveco and Terranova Telecom at a partner event

- The ABB partnership has proven very fruitful in terms of skills complementarities – ABB's strong automation expertise, combined with Siveco's unique maintenance and reliability consulting experience, gives the two companies a complete life-cycle approach to infrastructure and industrial projects, yet unmatched in China. Siveco's CMMS Coswin has also been integrated with ABB 800xA platform.

- The recently unveiled agreement with Areva O1-db Metravib shows similar potential. While Coswin nicely complements O1-db's condition monitoring systems, Siveco's consulting resources also extend the company's capability to deliver full-service reliability solutions to its industrial clients.

Three years since its launch, with successes in both extending geographical coverage and scope of solutions, it is in terms of business development that VAPP has still not attained its full potential. The Chinese maintenance market, still largely undeveloped, is maturing very slowly: most local partners have never been exposed to modern maintenance concepts, making it very hard for them to convey the benefits of our projects to customers. Business

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Measuring OEE in Coswin

Note that, although written for Coswin, most of this article is applicable to other CMMS.

Overall Equipment Effectiveness (OEE) is one of the key indicators of performance in the manufacturing industry. Originally part of the TPM portfolio, OEE is now commonly used to assess the results of Lean Manufacturing initiatives. The OEE reflects the contribution of all players to the performance of a production line and is easily used for benchmarking not only within an organization but also with other companies.

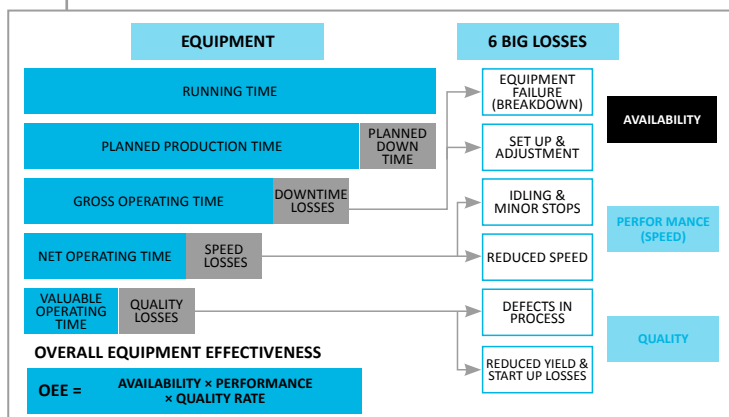
Although typically not the first indicator Siveco will recommend (simple downtime and production losses indicators are much easier to grasp), we often come across the requirement to measure OEE in the CMMS. As often with TPM-related concept, the word "OEE" itself is thought to carry magical powers... "We want TPM" and "the system should calculate the OEE" are requests we hear regularly, showing a lack of understanding of the underlying concepts. Sadly, most software suppliers will be prompt to respond: "we have OEE"!

At Siveco, magic is clearly not in our scope of business. Instead we focus on hands-on improvement projects which involve a real understanding of the industry. In this article, we won't go too deep into theories: instead, in the tradition of the "Tips and Tricks" section, we will focus on Coswin itself and use the system to explain what OEE is and what its measure implies.

A simple definition of OEE

OEE and related indicators are officially defined in various standards, to which we invite interested readers to refer—the utilization of standards is the best way to avoid endless discussions (for example EN 15341; in a previous newsletter article⁽¹⁾ we talked about the application of standards in Chinese projects).

OEE is best explained by a picture:



Now that the definition is clear, let us ask the key question.

Why would you want OEE in COSWIN?

Probably the first question to ask: doesn't the production department already provide all the reports and indicators required? This may be done using an ERP system, though more often that not it is simply in Excel. Most of the data required to complete the OEE come from production anyway. By letting production continue to handle such reports, the maintenance department can instead focus on implementing methodologies to solve technical problems. This is what we observe at most customers': if a well-functioning production reporting system is already in place, perhaps it is not worth changing it.

On the other hand, it would be nice to have both production and maintenance data in one single report, to help your team see the correlation between maintenance activities and plant performance. Having OEE data (at least the Availability part) in Coswin would allow management to better assess the impact of maintenance actions.

Another good reason to get OEE measures from Coswin could be that it would help identify discrepancies between production and maintenance reports. Surprise! Such discrepancy is very common, its degree reflecting the communication gap between operators and maintenance technicians. This will be covered in the last section of this article.

All in all the decision to measure OEE in Coswin rather than in whatever system production is using has to be taken based on the actual situation on site. It also depends on the level of maturity of the organization – a company struggling with permanent emergencies and no preventive maintenance is well advised to focus on the fundamentals first. Generally, it makes more sense in the process industry (e.g. pulp and paper, steelmaking, chemicals etc.) than in discrete manufacturing i.e. the closer the maintenance department is to operations, the more interesting it becomes to have OEE in Coswin. Process plants are also more automated, allowing Coswin to collect data directly from the control system.

How to do it in COSWIN?

To be able to calculate OEE in Coswin, it is necessary to input all the data required. From the maintenance point of view, the most important is to obtain the Running Time or Planned Production Time (= Running Time – Planned Down Time) from production.

In practice, using Coswin, specifically-designed meters are used, for example for Planned Production Time. Meters should be created at the right level in the equipment structure, i.e. where it makes sense to evaluate the OEE, typically at production line level. The meter should be set as "non-cumulative". Input will be performed manually for each meter, based on paper records. Downtime is reported as usual through work orders, together with defect code, symptom, cause and action. The OEE, from the availability point-of-view can then be computed by Coswin by applying the formula:

$$OEE(A) = \frac{(\sum \text{Planned Production Time} - \sum \text{Downtime})}{\sum \text{Planned Production Time}}$$

This can be done either in a report, as a KPI, or even through a background process that will automatically update a field in the

equipment window ("topographical details").

There are three possible methods to capture the data required for this calculation: manual input, semi-manual input and automated process. The same basic setting in Coswin, based on meters, is used for all three methods.

Manual input

Manual input is the simplest method, and the fastest to implement: operators have to record all related production values on paper, in pre-formatted sheets. Those sheets should be simple and highly visual, requiring as little writing as possible. For example micro-stoppages will be reported by sticks (adding one mark every time an event occurs: |, ||, |||, ||||, + for 5 etc.), only longer stops requiring a record of time. At the end of the shift or perhaps on a weekly basis, the data is then input manually into Coswin. Easily applicable to the availability component of OEE (which requires only reporting of Planned Production Time and downtimes), it can also be extended to performance and quality, in which case the data input process can become very fastidious. The following section will focus on availability.

Quick and cheap, this solution is on the other hand time-consuming and error-prone: it is thus difficult to ensure the accuracy of data. Based on our experience with factories in China, it, however, often proves to be the best solution.

Semi-automatic input

By this term we denote a direct input into a computer with a simplified display, located on the shop floor: for example a touch-screen device with easy input using large buttons. While this can be done in Coswin itself, using diagrams, specialized devices would more likely be used. Simple control systems can capture downtime directly from the machine, the operator then having only to select the cause of stoppage on the touch-screen panel. Until the cause has been input, the system can prevent the operators from restarting the machine. Siveco partner PCVue, with its PlantVue HMI technology, can provide such a solution integrated with Coswin (PCVue will be featured in a coming newsletter).

This approach contrasts with the purely manual method by its ease-of-use for operators and the reliability of the data obtained. Considering the hardware investment involved, it makes most sense for machines already equipped or for new automated production lines, in which case it is recommended to liaise with our teams as early as possible. Note that this method is still partly dependent on input by operators.

Automatic input

The third option, fully automatic, is based on the utilization of a control system to capture all necessary data directly from the machine. Considering the large investment required, this approach is most commonly applied to large process plants, such as paper mills, where DCS-based solutions continuously capture production, downtime and quality data. Data is then transferred to Coswin using standard interface tables (various technologies can be used depending on the third-party systems involved). The best time to implement such a solution is when the DCS is being setup.

While the first method is usually recommended for its simplicity, the semi-automatic approach may be suitable for large complex discreet

manufacturing plants, and the automatic solution is well suited for fully-automated process plants. All three are based on Coswin meters.

A few more tips and a conclusion

- OEE does not reflect the link between Performance and Quality: it treats them independently, while in reality it may not be true based on the team's experience ("We know we can't run the line over 500 units/min otherwise the scrap ratio will be too high").
- OEE penalizes variability amongst its subcomponents (Availability, Performance, Quality). For example: $20\% \times 80\% = 16\%$, and $50\% \times 50\% = 25\%$ which does not necessarily reflect an industrial reality.
- OEE doesn't take in account the fact that unscheduled stoppages are much more painful (and costly) than scheduled stoppages. It treats them equally.
- We do not recommend following the OEE for the whole plant (with the exception of process plants, where one plant is in fact one large machine). If you really have to, it is preferably to take the average OEE of all the production lines.
- OEE cannot be below zero! If the CMMS says it is, it means that the same downtime was reported in several Work Orders or that you are not calculating your OEE at the right level in the structure. Our consultant can help on this, through audit/coaching sessions (typically 1-3 days of services).
- Discrepancies between production and maintenance records are common. This remains the best reason to implement a single OEE (whether it is done in the production department's Excel sheet or in Coswin does not really matter) based on inputs of Planned Production Time and Work Orders by the respective departments. Coswin will also be able to compute other indicators based on these inputs, such as MTBF, which reminds us that OEE is just one of the many indicators available to industrial managers to improve the plant performance.

Always keep in mind that the OEE is a strategic indicator, reflecting the utilization of invested assets. From the operational point of view, what matters is the evolution of the OEE and the analysis of causes, in order to determine and implement improvement.



OEE as a KPI in COSWIN's Cockpit

(1) Link: <http://tinyurl.com/sivecostandardsEN>

Siveco unveils eHand mobile solution at the Expo 2010's International Association of Public Transport (UITP) pavilion

May 22, 2010

Siveco China, the country's largest maintenance consultancy, officially announced the release of its eHand mobile solution during a French trade delegation visit to the International Association of Public Transport (UITP) pavilion at Expo 2010.

The smartphone-based solution features a highly intuitive user interface,

designed to assist maintenance technicians working in the field by providing easy access to a central technical database, as well as diagnosis and expert support. Entirely developed in China, eHand complements existing Siveco solutions: the Coswin maintenance management system and know-how sharing platform Mtv. eHand is also compatible with other

maintenance systems available in the market.

"I am proud to unveil the eHand, the result of a two-year R&D project we initiated at the worst of the financial crisis" declared Bruno Lhopiteau, Siveco China General Manager, who demonstrated the use of eHand to inspect the facility. He added: "The solution primarily target urban infrastructures and field service companies, with a mobile workforce operating over a large area. eHand is already used by our own engineers to carry out facility assessment services and will soon be implemented by our customer Great Wall Property Group, a leading FM service supplier in Shenzhen. I am glad to say that eHand was showcased earlier this week at the Metro China 2010 show and received excellent feedback from visitors."

The announcement was followed by a Q&A session with the media present.



Saint-Gobain Pipelines implements COSWIN in its Xuzhou manufacturing base

May 7, 2010

Having worked with Siveco for the maintenance of its Maanshan (Anhui) plants for several years already, Saint-Gobain Pipelines has decided to extend the usage of the COSWIN Maintenance Management System to its second manufacturing base of Xuzhou, Jiangsu province. The project has already started and is expected to provide opportunities for maintenance benchmarking across the several locations.

About Saint Gobain Pipelines

Saint-Gobain Pipelines (www.saint-gobain.com.cn), the pipe network branch of the Saint-Gobain Group, is the world's leading manufacturer and exporter of ductile iron pipeline systems. More than 115 countries, 1000 cities around the world, approximately 100 of which are capitals, are equipped with Saint-

Gobain pipeline systems which include pipes, fittings, valves, fire hydrants etc. Established in 1997, Saint-Gobain Pipelines (China) owns plants located in Maanshan city, Anhui Province and Xuzhou City, Jiangsu Province, producing ductile iron pipes & fitting from 100mm to 1000mm, with a capacity of 300,000 tons per year.



Following its success in China, Essilor selects COSWIN for its Brazilian factory

May 21, 2010

Essilor Da Amazonia (EDAM), the Brazilian subsidiary of the world leader in corrective lenses, has chosen the COSWIN Maintenance Management System to unite the management of its plants and laboratories. COSWIN replaces an obsolete system and will support the company's maintenance improvement projects.

As Essilor China has been successfully using COSWIN since 2008 in its factory located in Shanghai's Songjiang industrial district, this new deal demonstrates Siveco's ability to deliver large multinational projects and to retain loyal, satisfied clients.

In addition to the results obtained in China, the other key differentiators motivating Essilor's decision were the software capability to provide standard KPIs and analysis reports, and the extensive possibilities it provides to customize screens and navigation diagrams.

An important part of the project is the integration with Oracle ERP Applications, based on standard Siveco tools: the interface covers stock items managed in Oracle and their utilization in COSWIN's Work Orders. The scope of interfacing is similar to what has been implemented in China.



About Essilor

The world leader in ophthalmic optical products, Essilor International researches, develops, manufactures and markets around the world a wide range of lenses to improve and protect eyesight. Its flagship brands are Varilux®, Crizal®, Essilor®, Definity® and Xperio™. Based in France, the company reported consolidated revenue of more than €3.2 billion in 2009, with 34,700 employees and operations in 100 countries. The Essilor share trades on the NYSE Euronext Paris market and is included in the CAC 40 index.

For more information, please visit www.essilor.com.

For more latest news, see <http://tinyurl.com/siveconewsEN>

► continuing from page 7

development for most companies still relies on relationship and low price, not on delivering measurable benefits.

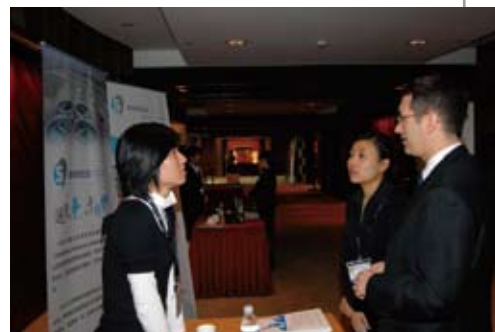
In order to better address this challenge, and recognizing that a small company like Siveco, in spite of its good reputation, cannot expect to accelerate the maturation of the market, Siveco China has started to "productify" its offering, both services and the supporting software. By better packaging the deliverables in products that partners can readily understand, the sales process becomes simpler. This will greatly enhance the capability of local sales partners to get deals with Siveco.

Ethics and trust, the foundation to all our partnerships

In true Chinese fashion, trust is the very foundation of our business: trust, not based on existing relationships, but on competence (our ability to convince customers and deliver results) and on a strong ethics. When it comes to partnerships, Siveco China's very distinct

business ethics stands out.

Siveco only appoints partners with a strong industrial value added and commits to fully support them, which also means Siveco will never develop competing partnerships. This philosophy is highly relevant to the Chinese so-called "EAM" market ("EAM" being the term most commonly used by software companies to talk about CMMS), where customers often see several local companies competing with each other, supplying the same software. More often than not, the original vendor is never to be seen by customer, leaving its local partner to handle the problems. Almost inevitably, a blame-game will start, where local partner blames the software supplier ("bugs", "lack of support", "too expensive, no margin left for us"), software supplier blames its partner ("lack of skills", "too much discount") or even its customer ("not mature enough" is what we hear most often!). Partners suffer greatly in this model, competing with each other on price and relationship (the kind of relationship that comes with a cost, still too common in China), which in several cases has even led to bankruptcies.

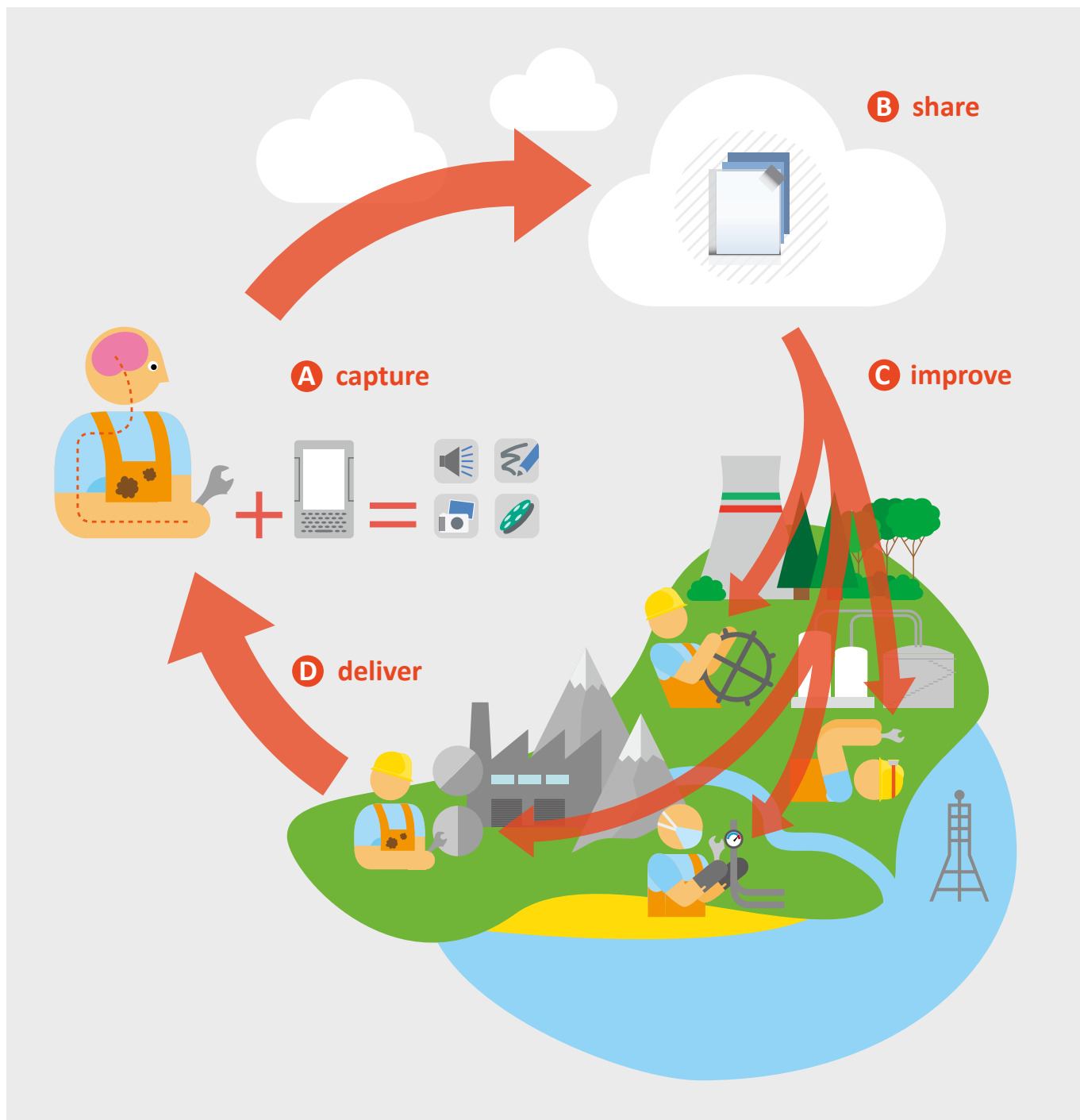


Siveco at a partner event

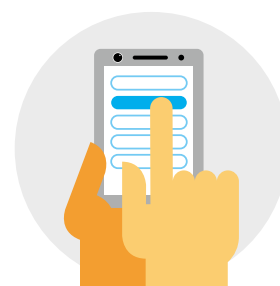
The success of Siveco China is also based on this strong ethics, on which we will never compromise, values which should be shared by our partners.

The VAPP strategy, with its latest addition to "productify" our offering for sales partners, has proven its worth. The years to come will certainly see a faster development of Siveco China's indirect business.

For more details of the different levels of partnerships available, please contact our VAPP manager at vapp@sivecochina.com.



the lean technician



Siveco provides a suite of mobile solutions offering support for the “worker of tomorrow”. Running on Tablet PC or Smartphone, the solution works with any back-office maintenance management system (Coswin, Maximo, SAP, Datastream etc.).

Contact us for more.

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