

WE DELIVER CHANGE!

THE SAMI TIMES

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THE PRESIDENT'S CORNER



Introducing SAMI Knowledge Operations!

If you're reading this, you probably have a lot of responsibility. Whether you're in operations, maintenance, or some aspect of production, you work with a lot of guys—and their understanding of the goals and methods is all over the place.

Because you are taking time to read The SAMI Times, it's likely that you are someone who's looking for the "better way". If you've been at this for a while, you probably know a lot of things, and you are trying to introduce these ideas into your operation, whether you work in a plant or an office. You've got the passion to make a difference, but you've got barriers and walls all around you that prevent your ideas from getting all the traction they deserve.

How do you get everyone on the same page? First, understanding WHY change would be good. Then HOW to get the change that makes everyone's life easier and more productive.

You've tried a lot of things including reading books, articles in professional journals, and attending professional societies and seminars but somehow it's not enough. SAMI has a solution to the WHY and the HOW.

If you know about SAMI, you probably know about our Pyramid for Operational Excellence. With best practices for Production, Maintenance (Asset Healthcare), Logistics, Capacity Development and Organizational Development you may recognize that SAMI has a complete system for improving any manufacturing operation, moving Stage by Stage towards increasing competence and results. We use this system everyday on our consulting engagements in every corner of the world. Now we are offering YOU the chance to participate in what we have learned. Introducing SAMI Knowledge Operations™!

We have developed, at significant expense, professional knowledge transfer courses that cover our Pyramid best practices, how to gain leadership attention, and get the workforce to take a lead in improving operations.

Of course, we use these courses for our own education to ensure that our consultants and contractors know exactly how to deliver the best value on our client engagements. Now, though, we are offering these Knowledge Transfer opportunities to non-client industrial companies!

Some features of the SAMI Knowledge Operations™ courses:

- Courses have been developed by practitioners with over 500 years of combined industrial experience!
- Courses represent proven best practices in hundreds of plants and across many industries
- Courses offer a consistent and integrated system of work practices covering all industrial activity
- Courses have been developed with professional educators, with consistency in formats, learning and testing methods

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2009 COURSE CALENDAR

COURSE OFFERINGS: LA, UNITED STATES

STRATEGIC PLANNING FOR OPERATIONAL EXCELLENCE	Jun. 8-11
	Oct. 26-29
ASSET HEALTHCARE STAGE II: BUSINESS DRIVEN RELIABILITY	Aug. 17-19
	Nov. 16-18
IMPROVING PRODUCTION RELIABILITY	Jul. 6-8
	Sep. 14-16

COURSE OFFERINGS: MANAMA, BAHRAIN

BUSINESS DRIVEN RELIABILITY	May 18-21
	Oct. 5-8
IMPROVING PRODUCTION RELIABILITY	Jun. 8-11
	Apr. 4-6
MAINTENANCE PLANNING AND SCHEDULING	Jul. 18-20
	Nov. 7-9
	Apr. 7-9
SHUTDOWN PLANNING AND MANAGEMENT	Jun. 21-23
	Nov. 10-12

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We are a consulting group for industrial organizations working to improve profitability, efficiency and equipment reliability. Our Mission is to improve our clients' production equipment health, by tapping the desire, creativity and dedication of all plant staff, and our vision is to be the firm consistently chosen by companies serious about making change; because our values of integrity, content knowledge, advanced practices and compassion for the workforce match the values of our clients.

DISCOVER YOUR HIDDEN FACTORY

BY HERB LICHTENBERG, SENIOR VICE PRESIDENT, DIRECTOR PRODUCTION



Does your facility have excess capacity that could be easily and economically tapped? Could one process or machine be dragging down the entire facility? Are there production bottlenecks in your plant that you're not aware of?

"Wait a minute" you say, "in these times of slowed demand and cutbacks, it's not more throughput or capacity I need, I need to reduce operating expense". Well, by understanding the gap between your plant's true potential and your current performance, you'll not only discover your "hidden factory" but also develop ways of running your plant more efficiently and effectively with less waste, thereby reducing operating expense. By working to reduce the causes of your plant's production losses you'll also get two additional benefits: when demand does return, you will have increased capacity to meet it, and your plant will run more predictably and at a consistently higher rate.

During these times of reduced demand and cutbacks, you are likely to be under constant pressure to improve performance and quality and increase equipment availability while reducing operating expense regardless of your company's size or type of manufacturing. Overall Equipment Effectiveness (OEE) provides a solution.

OEE is being used increasingly in industry because it takes the most common sources of manufacturing productivity losses and distills them into consistent metrics that are used to monitor and improve manufacturing operations. OEE can be used at the equipment, department, line and facility levels. It is a method that truly reduces complex production problems into simple, intuitive information that helps you to systematically improve your operation. OEE helps to uncover inefficiencies in your production processes by showing you how well a production line is functioning overall in terms of availability, performance, and quality. The data produced by OEE helps you to direct the focus for your diagnostic and improvement efforts. The subsequent actions taken, based on the knowledge you've gained, will result in improved efficiency and reduced operating expense.

Calculating OEE: OEE is a hierarchy of metrics focusing on how effectively a manufacturing operation is utilized, and may be applied to any individual work center or production process/line or rolled up to department or plant levels.

The two top view metrics, OEE Efficiency and OEE Utilization are closely related measurements that report the overall utilization of facilities, time and material for manufacturing operations. These top view metrics directly indicate the gap between actual and ideal performance.

- OEE Efficiency (OEEe) quantifies how well a manufacturing unit performs relative to its designed capacity, during the periods when it is scheduled to run. It breaks the performance of a manufacturing unit into three separate but measurable components: availability, performance, and quality. Each component points to an aspect of the process that can be targeted for improvement.

$$OEEe = \text{Availability} \times \text{Performance} \times \text{Quality}$$

- OEE Utilization (OEEu) measures OEE effectiveness against calendar hours, i.e.: 24 hours per day, 365 days per year. It reports the "bottom line" utilization of assets and is used when considering investment in additional production facilities.

$$OEEu = \text{Loading} \times OEEe$$

So in addition to helping you to focus your plant and equipment performance efforts, these measures can save your company from making inappropriate plant and equipment purchases.



Underlying Metrics

There are four underlying metrics that provide understanding as to why and where the OEEe and OEEu performance gaps exist. The measurements are described below:

- **Loading:** This portion of the OEEu metric represents the percentage of time that an operation is scheduled to operate compared to the total calendar time that is available.
$$\text{Loading} = \frac{\text{Scheduled Time}}{\text{Calendar Time}}$$
- **Availability:** This portion of the OEEe metric represents the percentage of scheduled time that the operation is available to operate. Often referred to as Uptime.
$$\text{Availability} = \frac{\text{Available Time}}{\text{Scheduled Time}}$$
- **Performance:** This portion of the OEEe Metric represents the speed at which the work center runs as a percentage of its designed speed.
$$\text{Performance} = \frac{\text{Actual Rate}}{\text{Theoretical Rate}}$$
- **Quality:** This portion of the OEEe Metric represents the good units produced as a percentage of the total units started (commonly referred to as First Pass Yield).
$$\text{Quality} = \frac{\text{Good Units}}{\text{Units Started}}$$

Within the next issue (Part II), I will present an example for the calculation of OEEe and OEEu as well as review the types of OEE losses. Of course, feel free to contact me in the meantime with any questions at hlichtenberg@samicorp.com.

Herb Lichtenberg is the Senior Vice President of Production Practice within SAMI. He has 36+ years experience in operations management and management consulting including plant turnarounds, and the design and implementation of operations improvements. His current focus is on Production management. www.hlichtenberg@samicorp.com

MANAGING CONTRACTOR SERVICES



BY STANTON MCGROARTY, CMRP CMFGE



More and more equipment maintenance work is being outsourced. Cost issues, local shortages of trades people, shutdown work volume and other issues are driving this change. The results can be very beneficial, but the benefits are not automatic. If maintenance outsourcing is not carefully planned and executed, it can result in a loss of control that will drive operating cost and Cost of Unreliability (CoUR) skyward.

Planning and control of contract maintenance are more difficult than management of in-house resources because there is an extra link in the communication chain between the organizations involved. Here is the workflow model SAMI uses for in-house work:

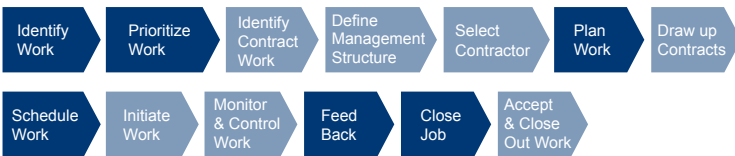


Challenge each of these steps, if you like. What happens if you skip any of them? You can reassign the work, but you can't skip it. Some of these tasks, like planning and feed back, become much more difficult when you are working with a resource you don't know well. Task lists and scope documents must be airtight. Schedules must be coordinated between in-house and contract resources, and with production.

Here is the workflow model SAMI uses for contract work management:



If we combine them to show the workflow for contracted work, it becomes clear that contracted maintenance actually requires more management tasks, involving more departments (like Purchasing) than in-house work. Again, take a moment and challenge each of the tasks. Each really is indispensable.



Clearly, contracting work is not a substitute for planning, work management, close-out or any other control function. Instead it increases the complexity of work management and coordination.

Fortunately, there are several steps that can help an organization capitalize on the advantages of contracted work without suffering the business and scheduling setbacks that contracting tends to create. Here is a list with brief explanations of the most important tools:

- Convert Some Tasks to Pre-work – Predictable jobs can often be standardized. Task lists, parts lists, tool requirements can all be pre-planned to facilitate fast completion and also to support annual bidding.
- Select Contractors and Draw Up Contracts in Advance – Jobs that have been standardized are ready to be bid in advance. This puts the organization in a position to get pricing and priority based on a year's worth of work, rather than begging for help at the last (most expensive) moment.
- Include Contractors in Planning – When a year's worth of work is under discussion, the contractor's capacity and availability are much easier to assess. It may be possible to get commitments that would be difficult at the last minute, and, if additional equipment is needed, it can be placed on order before the shortage creates delays for production operations.
- Establish Airtight Rules for Contractor Use – Establish procedures for Contract Work Identification, Job Initiation, Management Structure, Work Monitoring & Control, Feedback Capture, and Job Closeout.
- Keep Emergency Work to an Absolute Minimum – There is usually some need for emergency procedures so that a night crew can get a pump or a crane on very short notice, but these incidents should be treated as serious disruptions. Emergency response basically puts a blank check in the hand of a contractor. No matter how good your contractors are, this opens the door to extra cost. If it is a daily occurrence, cost overruns will erase any financial benefit you have obtained from contracting work.

Finally, contract maintenance is not a substitute for having a sound Work Management Process embedded as a way of life in your own organization. If your organization doesn't have firm control of all the elements within the in-house Work Management process, you will be unable to control contract work. Contracting work is not a substitute for a solid Work Management Process; instead it is the ultimate test of that process.



CUSTOMIZED TRAINING PROGRAMS

Based on your specified needs and desired level of support, SAMI will work with you to create a customized training program. All customized programs are centered around the change management methods embedded in our models of Operational Excellence and may range from basic education to full implementation.

Contact SAMI Knowledge Operations at 860.675.0439 to find out more about our customized training programs.

www.samiknowledgeoperations.com

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- Courses have been tested in practice, and updated to include new learning's
- Courses address both the WHY and the HOW
- Courses are available as open market courses, dedicated client courses, or as licensed modules to meet your specific needs

Some benefits of SAMI's Knowledge Operations:

- Contains tools to align the organization towards systematic goal achievement
- Assists to evaluate the "size of the prize", gaining credibility with senior management
- Creates ownership of improvement projects with full support
- Goes beyond 6 σ to address the entire System of Manufacturing, not isolated pieces
- Creates a disciplined culture around Strategy, Planning, Execution and Evaluation
- Results in Lower Operating Costs and Higher Production Volumes
- Results in improved safety and lowered risk to better planning and communication of work
- Engages hourly workers to build and own projects, leading to sustained change

SAMI Knowledge Operations Learning Modules:

Planning and Scheduling for Zone Maintenance®
Planning and Managing the Maintenance Shutdown
Improving Production Reliability
Production Planning and Control
Business Driven Reliability – Reliability Engineering
Business Driven Reliability – AHC Stage II
PM Development and Optimization
Certification
The Manufacturing Game®
Work Management for Executives
Strategic Planning for Operational Excellence
Business Case Development
Contractor Management
Assessments
Loss Mapping
Using SAP® as a CMMS
Managing System Overview
Measuring Sustainable Change
Optimizing Work Culture
Organizational Communication
Organizational Goal Setting
Condition-Based Maintenance
Basics of Logistics
Performance Management

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