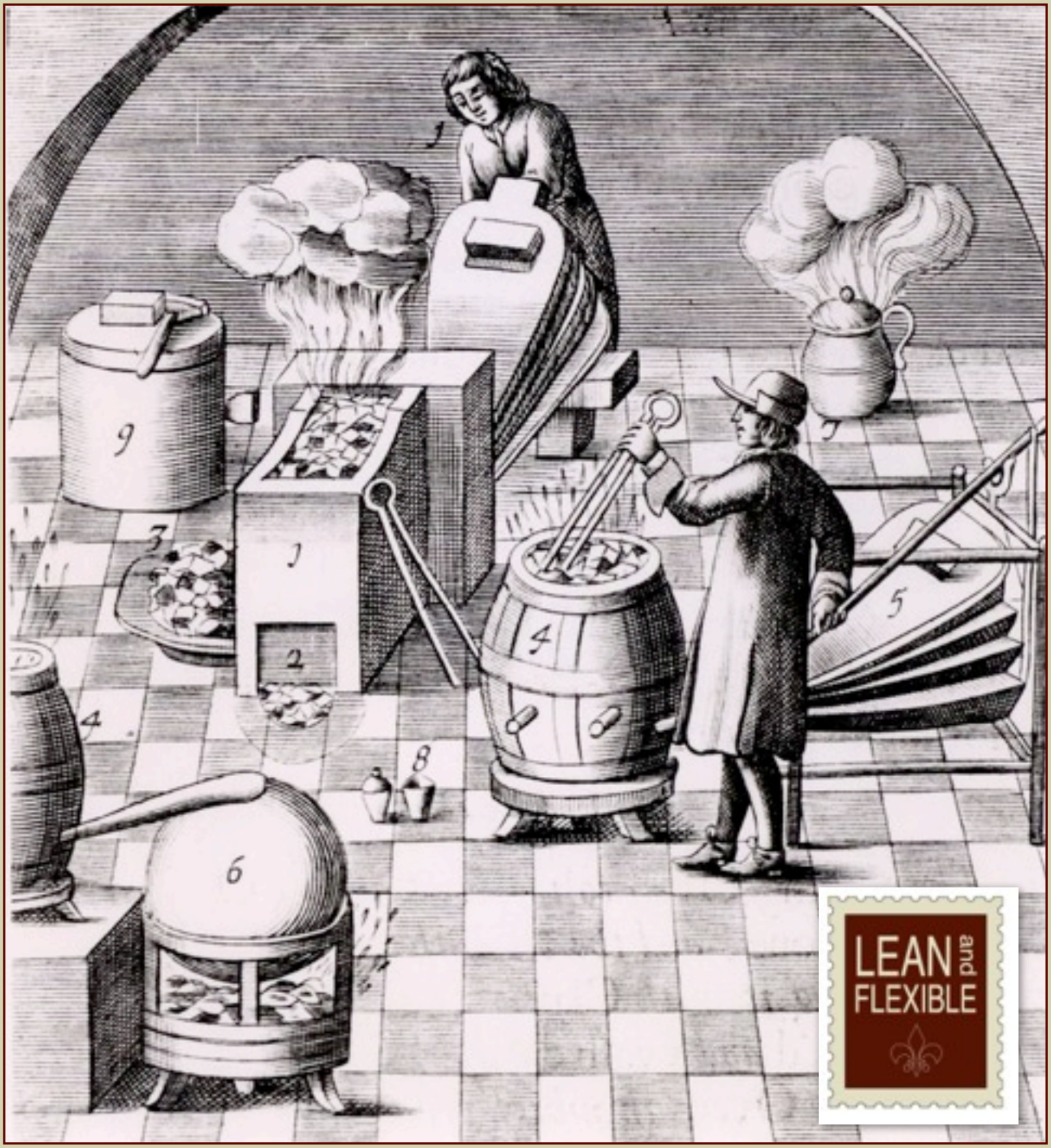

SECOND LEAN AND FLEXIBLE CONFERENCE

Create Order Out Of Chaos

September 5, 2013

Goal of the Conference

HMLV manufacturers with a Make-To-Order business strategy must produce a variety of products and deliver orders for those products to their customers by pre-determined due dates. These manufacturers need to be *both* Lean (efficient and waste-free) *and* Flexible (able to rapidly changeover their machines, work cells and support systems). How could they *simultaneously* achieve these two seemingly opposite and conflicting objectives of Lean ***and*** Flexibility?

Takeaways for Conference Attendees

- Learn how to design and operate HMLV (high-mix low-volume) manufacturing facilities
- Learn how to engage the entire organization from the C-Suite to the shop floor to implement basic and advanced improvements in HMLV manufacturing facilities
- Participate in a 90-minute Open Forum on the subject of *Lean Leadership, Culture Change and Workforce Development* with a panel of industry experts
- Network with like-minded peers working in HMLV manufacturing facilities

AGENDA

Time	Overview of Presentation
7:00 – 8:00 a.m.	REGISTRATION AND NETWORKING
8:00 – 8:45 a.m. **Lessons Learned from a Pilot Project to Design a Flexible and Lean (FLEAN) Machining Cell** **Presenters:** Dhananjay Patil Shahrukh Irani *Hoerbiger Corporation of America*	As early as 1959, Serck Audco Valves, a UK manufacturer of industrial stop valves and actuators, used Group Technology and Production Flow Analysis (PFA) to reorganize their machine shops into a network of manufacturing cells. Cells were the foundation of a complete manufacturing and business strategy to transform their enterprise. Similarly, the foundation for implementing JobshopLean in any high-mix low-volume machine shop is (i) identifying the stable part families in its product mix and (ii) implementing a FLEAN cell to produce each part family. What is a FLEAN (Flexible and Lean) cell? It is essentially a mini-jobshop which is (a) Flexible because it is designed to produce similar parts that belong in the same part family and (b) Lean because its design has incorporated all the Lean tools that are essential for jobshops too, such as 5S, SMED, TPM, Poka-Yoke, Employee Cross-Training, Design For Manufacture, etc. In the case of HCA-TX, of the five existing machining cells in our facility, the MP Cell (MPC) appeared to be the best candidate for demonstrating the viability of FLEAN cells to top management. Compared to the MPC, the other four cells are currently in flux for a variety of reasons, such as anticipated changes in their product mix, plans to upgrade their manufacturing technology, reduction or replacement of current vendors, etc. This presentation will explain the methodology of computer-aided cell design using the PFAST (Production Flow Analysis and Simplification Toolkit) software to implement PFA. Emphasis will be placed on exposing the numerous trials and tribulations of implementation! Emphasis will be placed on the changes that had to be made in the preliminary cell design based on the software outputs using the operational knowledge and experience of the cell operators, machine shop supervisors and in-house Industrial/Manufacturing Engineers.
8:45– 9:25 a.m. **Integration of MES (Manufacturing Execution System) with Material and Inventory Management** **Presenters:** Mark Ellis Paul Mittendorff *Hoerbiger Corporation of America*	Getting the right material to the right machine at the right time is the overarching objective of a daily production schedule based on finite capacity constraints. We have done this by implementing Preactor, an Advanced Planning Scheduling (APS) system that is bolted to FACTORYVIEWER, a Manufacturing Execution System (MES). The MES is intended to ensure that any schedule produced by the APS is actually executed on the shop floor. Otherwise, investing in an APS for computer-aided scheduling is meaningless. We will demonstrate how APS, MES and actual shop floor material movement work together to align job material flows with our APS-generated schedules. We will highlight our successes as well as point out our failures in becoming flexible enough to rapidly respond to demand changes where it really matters --- on the shop floor! Our presentation consists of the following parts: • (Paul) How our APS schedules and how our MES works on the shop floor • (Paul) Where the true challenge lies is in getting the “virtuality” of the APS and MES to match the reality of the shop floor • (Mark) Problems faced during production when we tried to match the “virtuality” of the APS and MES with the reality of the shop floor. He recognized the need to put in place a Pull system and that the information needed to do this successfully ***was*** available in the MES • (Mark) The solution that he implemented • (Paul) Other areas to which we are seeking to extend this implementation. While their needs are similar to the previous one, the exact solution that Mark implemented cannot be transplanted as-is. We are struggling with how to customize the existing solution to solve the same problem in these different areas. Without a doubt, the use of Lean, computer-aided scheduling, MES and a central location for holding in-process orders allows us to make computer-generated scheduling a reality.

Time	Overview of Presentation
9:30 - 10:15 a.m. **Product Mix Segmentation using t he Volume (Q), $ales ($), Routing (R) and Ordering Frequency (T) for all Products** **Presenter:** Shahrukh Irani *Hoerbiger Corporation of America)*	In order to be both Flexible and Lean, a high-mix low-volume manufacturer must ***correctly*** plan their facility layout, capital investment in flexible automation, inventory control policies, workforce skills, customer service strategies, etc. Why? Thereby, they would be prepared to simultaneously manage at least two, if not more, businesses under their roof! The best way to recognize these different businesses under one roof is to divide the large product mix (P) into several segments using four key attributes for every product – Volume (Q), $ales ($), Product Families (R) and Order Frequency (T). Examples of segmentation techniques that have been used in industry to date are: • *ABC Analysis:* This is PQ Analysis. It divides the product mix into multiple segments based on Volume (Q) only. A dedicated flowline (or a flexible flowline) would produce a single product (or family of products) with high demand. • *Demand Segmentation:* This is PQT Analysis. It divides the products based on Volume (Q) and Order Frequency (T). Decisions to outsource or terminate production of products can be made using this analysis. • *Product-Process Matrix Analysis:* This is PR Analysis. It finds families of products with similar/identical routings (R). Some of these product families could be produced by putting all the machines used to make a product family into a manufacturing cell. • *From-To Chart with Spaghetti Diagram:* This is PQR Analysis. The From-To Chart aggregates the demand (Q) and routings (R) of a large number of products into one chart. The Spaghetti Diagram is a visual display of the total traffic due to all of those products imposed on the current layout of the facility. Just this one display can offer valuable insights about factory logistics! Various combinations of the above analyses have been used to advise the purchase of flexible machining centers, to group machines into cells, to re-locate a key machine to a different location, to develop the material handling route for a water strider who must move orders between machines that cannot be co-located in a cell, to decide whether to use Pull vs. Finite Capacity Scheduling to manage a shop, etc. But, is it possible to combine all of these analyses into a single systematic approach? Yes! This presentation will offer a practical data-driven approach that has been successfully used in machine shops, fabrication shops, forge shops, and other high-mix low-volume manufacturing facilities.
10:15 - 10:30 a.m.	BREAK AND NETWORKING
10:30 - 11:10 a.m. **Revisiting Time and Motion Studies: Implementing Lean Improvements for a High-Mix Low-Volume Flexible Manufacturing Cell** **Presenters:** Shahrukh Irani *Hoerbiger Corporation of America* Prasad Velaga *Optisol Inc.*	This presentation will showcase an example of a successful university-industry partnership. A team from the IE department at the University of Houston comprised of five undergraduate students (Ana Christine Mata, Emilie Gerhart, Lance LaGarce, Robin Karikottu, Sajid Rashid) and their faculty mentor (Dr. Tom Chen) did a Senior Design Capstone project in the QRC. The QRC is one of the five high-mix low-volume machining cells in the HCA-TX facility. Each of these cells is essentially a mini-jobshop due to the constantly changing mix of jobs processed daily. The university team was supported by HCA-TX's in-house IE, Ms. Shalini Gonnabathula, who provided them invaluable support throughout the semester. In particular, she worked with the students to execute several Time and Motion Study projects. These studies provided data, charts and videotapes that were used as follows: (i) to demonstrate the viability of computer-aided cell scheduling using the Schedlyzer Lite software, (ii) to illustrate how the current cell layout would contribute significantly to inter-operation delays that would compromise any schedule generated by Schedlyzer, and, (iii) to develop a slideshow that could be used with accompanying videos to educate new members of the Tiger Team on the Seven Types of Waste occurring in our own shop! The Tiger Team is a self-organized team of HCA-TX employees committed to Continuous Improvement on an ongoing basis. The presentation will end with a demonstration of Schedlyzer Lite. **For further information on the valuable synergy between Lean and classical IE tools like Time and Motion Study, please read this article posted at http://thecommonsensei.com/2011/10/27/return-to-time-and-motion-assessments-and-improvement-analyses .**

Time	Overview of Presentation
11:15 - Noon **Sustainable Enterprise Transformation through Strategy, Simplicity & Execution** **Presenter:** Martin Nazareth *OpEx Solutions, Inc.*	In the midst of critical economic times, it is very important to survive today to be here tomorrow. To survive today, what we improve, how we improve and how quickly we improve are paramount. In addition, we want to survive by significant Improvements in productivity without capital expenditure and by cutting waste rather than people. We will present a simple approach involving *strategy, simplicity and execution* to drive effective implementation with rapid and sustainable benefits by showing applications and principles of strategic planning and execution applicable to most industries.
Noon - 1:00 p.m.	LUNCH AND NETWORKING
1:00 - 1:40 p.m. **Lean Leadership** **Presenters:** Robert Martinolli Torrence Smith	John Maxwell is quoted as saying, "Everything rises and falls on leadership". An organization's leadership is responsible for the results it achieves. What is measured is what gets done. This is also very true when it comes to building and sustaining a Lean culture. This responsibility simply cannot be delegated. We have all heard that Lean is a not a destination, it is a journey. Usually, the shift to Lean requires a dramatic culture change. This can only happen when a facility's leadership team is fully on board and committed to implementing and sustaining the changes that will surely have to occur. Deliberate turnover, a working plan to guide the implementation, prior experience with Lean, employee training and some quick wins all help to start and build momentum on the Lean journey. This presentation will tell the transition to Lean over the last year at Weatherford's Northwoods Assembly Plant.
1:45 - 2:30 p.m. **Implementation of Lean for Business Value** Duke Rohe *MD Anderson* Dutch Holland, *Holland Management Coaching*	Lean has great potential. But, that potential means nothing unless Lean solutions are implemented and achieve sustained Business Value. Lean implementation occurs at two levels: At the level of a single Lean project and at the organizational level. Our discussion will preview both kinds of implementations because both are needed in any organization. We will talk about getting started with implementing Lean to gain Business Value. In addition we will tackle the following three topics that have been requested by past participants: (i) how to engage the C-suite to get involved in and actively support/sustain Lean implementation, **(ii)** how to incentivize and reward those who are genuinely engaged vs. the fence-sitters or anchor-draggers, and, **(iii)** initiating and sustaining a culture change towards Continuous Improvement and Innovation (CII).
2:30 - 3:15 p.m. **Strategies for Effective Supervision** **Presenter:** Leonel Salinas *Hoerbiger Corporation of America*	The speaker will share his philosophies and strategies for implementing them in his current job. Being an effective supervisor has not necessitated any compromise on work-related expectations and standards for Quality, Cost and Delivery. In fact, he relies on a simple but surefire approach to get his employees to give their best at work every day --- he ensures that they work in a happy and rewarding work environment. Here are some of the strategies that have worked for him: • Make every effort to "catch" your people doing the right thing….and keep doing it • Recognize people's talent • Follow through on your word. A promise is a promise never to be broken. But how to fulfill all the promises made? Is there anything like too many promises being made to too many people? • Never fail to show any and all appreciation, even gratitude, for good work done by an employee, especially when initiative was shown! • Allow employees to take breaks (Fact! Working around furnaces in a Texas summer in a department where the utility connections and furnace operations make it impossible to have fans, let alone AC, to be installed makes for a very harsh work environment) In addition, he will share examples of the improvement ideas of his employees that he helped to flesh out and get implemented. Finally, he will share examples/cases where "tough love" was the only resort! As final evidence that his strategies work, his department's scores on KPI's (Key Performance Indicators) that the company uses to track the performance will be shared.

Time	Overview of Presentation
3:15- 3:30 p.m.	BREAK AND NETWORKING
3:30 - 5:00 p.m. **Open Forum/ Discussion** Lean Leadership, Culture Change and Workforce Development	The afternoon session of this conference featured a diverse line-up of experienced experts from different sectors of industry. How better to end the conference than to engage in a Q&A with this group of experts? Examples of some questions that could be thrown at this group of experts are: • How does one get a CEO to buy into the importance of gemba walks as a means of initiating interest in Lean among the employees? • How much should the CEO be expected to support and sustain a Lean implementation? • Is it employees or middle managers who are the bigger obstacle to implementing and sustaining Lean? Are both groups to be approached the same way to get buy-in from them? • When is an improvement part of an employee's job and not something for which he/she deserves special recognition (and reward)? • Can Continuous Improvement become second nature for every employee, as it is claimed is the case at every Toyota facility? • How much should the Lean training program for HIGH-mix LOW-volume manufacturing borrow from the well-established programs that exist for LOW-mix HIGH-volume manufacturing? Please do not let these examples bias or limit your choice of questions. Time, and not the sky, should be the limit on what gets discussed during this Q&A!
5:00 p.m.	ADJOURNMENT

SPEAKER BIOS

Mark Ellis

Mark Ellis is currently the Production Manager of Polymer Manufacturing in Plant 3 of Hoerbiger Corporation of America, Pompano Beach, FL. Hired in 2009 as Lead Process Technician, Mark immediately started moving HCA from traditional molding to science-based molding. This reduced scrap by 42% in his first two years with HCA. In early 2012, Mark was promoted to Production Supervisor of Plant 3 before being given his current position in November of that same year. Since his promotion, Mark has changed the way material moves through his plant using a state-of-the-art software for scheduling and shopfloor execution. Implementing this new technology and changing the plant layout has dramatically changed how material moves through his plant. Mark is Master Molder II Certified and a Green Belt in Lean Six Sigma.

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Shahrukh Irani

Dr. Shahrukh Irani is the Director of Industrial Engineering (IE) Research at Hoerbiger Corporation of America (www.hoerbiger.com). In his current job, he has two concurrent responsibilities: (1) To undertake Continuous Improvement projects in partnership with employees as well as provide them OJT training relevant to those projects and (2) To facilitate the implementation of JobshopLean in HCA's US plants. Previously, he was an Associate Professor in the Department of Integrated Systems Engineering at The Ohio State University (OSU). There his research focused on the development of new IE methods to adapt and scale Lean for use by high-mix low-volume SME's (small and medium enterprises). His research group created PFAST (Production Flow Analysis and Simplification Toolkit) which is a software for material flow analysis and facility layout to implement JobshopLean. At OSU, he received the Outstanding Faculty Award for excellence in teaching from the graduating classes of 2002, 2003, 2004, 2005, 2006 and 2009. In 2002, he received the Charles E. MacQuigg Student Award for Outstanding Teaching from the College Of Engineering. He is a member of IIE.

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Dutch Holland

Dr. Winford "Dutch" Holland has been obsessed with and focused on the problems and solutions of organizational change for an entire career. After serving as a pilot in the USAF, Dr. Holland began his research on organizational change and technology integration while a consultant to NASA in the 1970's and 1980's, as well as while he was a tenured full Professor of Management at the University of Houston. Dutch also founded his own boutique consulting firm (Holland and Davis, llc) and worked as a principal in more than 100 change projects with clients from the Fortune 1000 as well as with government agencies (like NASA, DOD, USAF, VA and DOE) for more than four decades. He is currently focused on "Dutch Holland's Books of Change" (fourteen at last count) that adapt his basic change models and metaphors for different industries, types of organizations and functions.
Dutch Holland, Ph.D.

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Robert Martinolli

Bob Martinolli has 22 years of leadership experience. His career began as a Combat Engineer Officer in the United States Army after he graduated from West Point in 1991 with an Engineering Management degree. While in the army, he received his MBA from City University of Seattle. Bob's first civilian job was with the Ford Motor Company where he spent nine years and gained progressive leadership experience across a broad array of manufacturing and assembly processes. Also during his tenure at Ford, he was afforded the opportunity to project manage the construction and set up of their Dearborn Truck Assembly Plant. In 2004 Bob moved to Houston to take a position with Mitsubishi Caterpillar Forklift America. During his seven years, he rose to an executive leadership level and was responsible for a wide variety of processes and operations. Changing industries in 2011, Bob did a brief tour at Energy Alloys running their largest metals distribution facility and then jumped over to Weatherford where he is currently employed as a General Manager for one of their Assembly Plants. Bob has been professionally trained and certified in Lean Manufacturing and Six Sigma. In addition to teaching Economics at the college level, Bob has also spoken at a variety of Lean conferences, including the Association for Manufacturing Excellence (AME). During the course of Bob's career, he has led both stable organizations and those requiring a radical evolutionary change. His passion lies in leading and assisting those organizations that need revolutionary transformation. Outside of work, Bob focusses on his children and is an Agricultural Mechanics Committeeman for the Houston Livestock Show and Rodeo.

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Martin Nazareth

Martin Nazareth, President, OpEx Solutions, Inc., is a global consultant in operational excellence involving the strategic application of lean manufacturing (Lean), total productive maintenance (TPM), quality, and industrial engineering (IE). He has led strategic consulting, training and execution at over 100 plants in the USA, Canada, Australia, India, Latin America and Europe. Nazareth's background spans several industries, including Automotive, Metals and Mining, Information Systems, Oil and Gas, Healthcare and Ship Building. Nazareth led Lean and TPM deployment at Alcoa, program quality, FMEA, error proofing for all North American programs at Delphi Thermal & Interior, and consulted through EDS, Tata Consulting Services, and independently. He has two masters in IE and a bachelors in mechanical engineering. He is a certified Project Management Professional (PMP) and a Six Sigma Green Belt. Nazareth served on the board of AME's Southwest Region and is a Director of IIE's Lean Division and Industry Advisory Board. With over twenty five years of professional experience, Nazareth is well recognized for his passion for excellence, strategic execution and bottom-line results.

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Paul Mittendorff

Paul Mittendorff is currently the Director of Manufacturing Systems for Hoerbiger Corporation of America (HCA). He is a 20-year veteran of manufacturing. Through his experiences as a Manufacturing Engineer and Head of IT Systems, he has managed to meld together technology and Lean to enhance production processes in high-mix low-volume (HMLV) manufacturing. After earning his Bachelor of Science degree in Mechanical Engineering from Florida State University in 1992, Paul joined the Drafting department of Hoerbiger Corporation of America. Soon after Paul was promoted and became a Technical Software Development Engineer in their Applications Engineering department. In 1997, Paul took on the position of Manager of MIS. As HCA expanded its services into North and South America, this position grew into that of Regional IT Manager, a position he held until 2006. In 2007, Paul's responsibilities changed to more directly support manufacturing at HCA when he became the Manager of Hoerbiger's newly-formed Manufacturing Control and Planning department. In 2008, when the "winds of SAP change" were upon HCA, Paul took on the role of SAP Implementation Manager and led their SAP migration teams. With the completion of HCA's SAP implementation in 2010, Paul accepted the position of HCA's Director of Manufacturing Systems. In his current position, he has worked with all members of HCA's Manufacturing Systems team to create or improve many of the critical processes that support manufacturing and on-time deliveries to their large base of customers.

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Prasad Velaga

Dr. Prasad Velaga founded his company Optisol Inc., located in College Station, TX, in 2004 to develop and implement software solutions for production control and job shop management. Since 2004, he has also been serving job shops as a productivity improvement consultant. His clients include machine shops, fabrication shops, forge shops, mold shops and custom woodworking units. During the period 1999-2004, as a Research Scientist at Knowledge Based Systems, Inc., College Station, TX, he worked on research projects that were sponsored by DoD and NASA to develop scheduling methodology. He has developed scheduling solutions for large MRO units of DoD, a shuttle maintenance unit of NASA and a mid-sized shipyard. During the period 1996-1999, he was a Visiting Associate Professor at Texas A&M University and Washington State University. Prior to that, from 1983-1996, he was a faculty member and researcher at the Indian Statistical Institute, an institute of national importance in India, where he published many research articles on scheduling and optimization. Dr. Velaga received his Ph.D. in scheduling from the Indian Statistical Institute in the early 1980s. Throughout his career, he has worked with industries as a manufacturing consultant to facilitate the adoption of scheduling solutions. He has a strong passion to bring the benefits of scientific approaches for efficient production management to complex job shops. He believes in a right balance of common sense and scientific thinking for job shop production management.

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Dhananjay Patil

Dhananjay Patil is a Masters student at the University of Texas-Arlington where he is pursuing his degree in Industrial Engineering (IE). He is currently working as an Industrial Engineering intern at Hoerbiger Corporation of America (www.hoerbiger.com). In his current job, he is supporting Continuous Improvement projects in the MP Cell and designing a new layout for the cell. Previously, he worked at SIEMENS where he focused on designing applications for the SIEMENS Programmable Logic Controller (Series S-7). Earlier, at Uttam Foods Pvt Ltd., he designed an assembly line using Time Studies and Methods Analysis. He has sound knowledge of Logistics and Quality Control and continues to develop expertise in Six Sigma.

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Torrence J. Smith

Torrence J. Smith is Operations Manager for Weatherford Northwoods. Currently he leads Assembly, Quality, Manufacturing Engineering, and Continuous Improvement. He has spent the last 21 years leading, teaching, and managing people in the military, automotive, and other varied industries. He has been centrally involved in the turnaround of three facilities and is now working on his fourth. Past responsibilities include Plant Manager, Quality Manager, Continuous Improvement Manager, Operations Manager, Industrial Engineer and Army Officer. For a period, he owned his own business. Torrence received formal training in Six Sigma Black Belt, Lean Manufacturing, and the Infantry Officer's Basic Course. He holds a Bachelor's degree in Industrial Engineering from the United States Military Academy at West Point, Class of 1992. Reading The Goal by Eli Goldratt was a life-changing experience.

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Duke Rohe

Duke Rohe, BSIE, LFHIMSS, has been working for nearly four decades to eliminate waste and improve service delivery in the healthcare field. He is known by his peers across the country for "Dare To Share", a weekly mailing of tools or insights on improvement. He is the principle contributor to tool sites for various professional societies: Three sites with improvement tools, two sites with creativity/innovation tools and one wiki site on idea generation. He currently is a Quality Improvement Education Consultant in the Office of Performance Improvement in M.D. Anderson Cancer Center. He has co-authored three books and given over 170 presentations. Duke holds a BS degree in Industrial Engieering from Lamar University, Beaumont, TX. He is also an advanced member of the School of Innovators of the Office of Strategic Thinking. Duke is on the Advisory Board for the University of Houston's Human Development Training graduate program and is the Program Chairman for the South Central Texas Healthcare Information Management Systems Society.

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Leonel Salinas

Leonel Salinas has been the Molding Area Manager at HCA-TX (Hoerbiger Corporation of America, Houston, TX) since June 2010. Currently, he is responsible for ensuring that the molding area consistently achieves its targets on KPI's (Key Performance Indicators) such as OTD (On Time Delivery) of bushings. He has led numerous CI initiatives focused on employee safety, equipment uptime and capital justification of new equipment. Past work experience has been as a Manufacturing Project Engineer at HCA-TX (July 2008 – June 2010), Shop Manager at Genemco Inc. (October 2007 – July 2008), Process Engineer at Siemens VDO (May 2005 – October 2007) and Manufacturing Engineer at ATS Precision Components (July 2003 – May 2005). He is proficient in SAP and excels as a hands-on problem-solver and team player with the employees. Leo has taken Kaiser Management Training in 2010, completed Six Sigma Black Belt training in 2004 and received EIT (Engineer In Training) Certification in 2002. Leo has a BS in Mechanical Engineering and an MS in Engineering with a Concentration in Manufacturing, both from The University of Texas – Pan American.

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A Special Takeaway for ONE Conference Attendee

The conference will conclude with a raffle. The winner of the raffle will get a free copy of a 5-DVD educational package on JobshopLean. The 5 DVD's carry most of the teaching materials on JobshopLean that were developed from 1996-2012 to educate IE students in the Department of Integrated Systems Engineering at The Ohio State University.

DISC #1) Introductory Lectures on JobshopLean: This disc contains the following introductory videotaped ectures on JobshopLean: **(1)** Overview of Lean Manufacturing, **(2)** What is JobshopLean? **(3)** Essential Foundation for JobshopLean **(4)** Quick-Start Approach for Implementing JobshopLean **(5)** Tutorial on PFAST **(6)** Patient Flow Analysis to Design a Lean Hospital using Production Flow Analysis **(7)** Value Network Mapping **(8)** Setup Reduction on a Forging Press. The disc contains a separate folder that contains articles and reports that describe successful implementation of JobshopLean in different companies since 1999.

(DISC #2) A Program to Initiate JobshopLean at Bula Forge & Machine Inc.: This disc contains a video that summarizes a 3-month graduate internship to implement the *Quick-Start Approach to JobshopLean* in a custom forge shop.

(DISC #3) How a Jobshop developed their In-House Training Video on Waste Elimination: This disc contains a step-by-step tutorial on the *Quick-Start Approach for Implementing JobshopLean*.

(DISC #4) JobshopLean Simulation/Game: This disc contains all the materials for an interactive game to teach JobshopLean to students and practitioners. It includes two videos that show a hypothetical jobshop **before** and **after** it was improved using various JobshopLean strategies.

(DISC #5) e-Books: This disc contains electronic versions of 3 books that I have written: **(1)** Hybrid Cellular Layouts: New Ideas for Design of Flexible and Lean Layouts for Jobshops **(2)** Value Network Mapping: Extending Value Stream Mapping to enable Lean Manufacturing in Jobshop-type Custom Manufacturing Facilities **(3)** An IE Student's Study Guide for Bottleneck Scheduling using Theory Of Constraints

Location for the Conference
Lone Star Corporate College
University Park Campus
20515 State Highway 249
Houston, TX77070

Room for the Conference
The conference will be held in the Universe room located in Building 11 on the 1st floor of the Executive Briefing Center in the LSCC Conference Center.

Event Parking
You can park in the parking lot of the Conference Center which is right in front of the center and Building 11. There will be directional signs leading attendees to the conference location.

Campus Map and Driving Directions
http://www.lonestar.edu/corporatecollege/directions_northwest.htm

Registration Fee $100

This fee will entitle each attendee
to breakfast, lunch, snacks and beverages.

Registration Made Easy
http://www.eventbrite.com/org/4327251197?s=15934315

Logistics
Attendees are responsible for making their own travel and hotel arrangements.

Conference Presentations
Please contact the speaker/s if they are willing to disseminate their presentation/s to the public.

Conference Sponsor
The Texas Consortium for High-Mix Low-Volume (HMLV) Manufacturing is an initiative to engage HMLV manufacturers in Texas who wish to advance beyond the current best practices of Lean and reach the next frontier of manufacturing excellence and innovation in the 21st Century. Currently, this consortium is comprised of the following organizations:
Manufacturers: Hoerbiger Corporation of America
Software Vendors: Optisol Inc., Preactor International
Consultants: Holland Management Coaching
Academia: Department of Industrial Engineering (University of Houston - College of Engineering), Department of Information and Logistics Technology (University of Houston - College of Technology)

There is no membership fee for joining this consortium. The only requirements for membership are (i) an interest in developing and implementing best practices suitable for HIGH-mix LOW-volume manufacturing and (ii) a willingness to share your organization's experiences doing that which is easily an extension beyond the revolutionary Toyota Production System!

Conference Organizer

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