WORKING ON A SUSTAINABLE DEVELOPMENT PROJECT

Introduction
A team was assembled to work on some of the issues associated with ink in our printing operation. The team members consist of the following people:

- Joey Worthington – Press Operator
- Edwin Polk – Purchasing
- Stacy Jones – EHS Manager
- Jane Evans – Customer Service
- Henry Platt – Accounting

The team met with a facilitator familiar with the use of the Systems Approach. There was no setting of goals. No sustainable development indicators were proposed by Jason Smith’s team! The inks used at Charles River Printing create interests with all of the key stakeholders. It is time that the inks were addressed in a formal way. This will be the beginning of the work phase of the sustainable development program.

During the meeting the facilitator outlined how they will use the Systems Approach to prepare a draft sustainable development action plan that will be reviewed by the sustainable development oversight committee. Once the project is approved, the team will be held accountable for implementing the activities that they proposed in the action plan. The Baldrige model really promotes the use of formal action plans. Many management systems do not have separate action plans for each project. Perhaps this is why there is a lot of difficulty meeting the pre-set objectives and targets.

The meeting will be relatively brief today. The team first looks at the hierarchical process maps and the accounting sheets associated with these maps. Jason Smith visits the team and briefs them on the results of the stakeholder engagement process as it pertains to the interests in the ink. Finally, Joey shows them how ink is added to the press during the make-ready process and how the press operates. They will get to participate in a press cleaning operation before the next meeting. None of the team members are looking forward to this activity!

Edwin Polk explains to the team how he takes the orders and estimates the amount of ink that should be added to the fountains during the make-ready procedure. In addition, he orders the ink and makes sure the inventory is controlled. He adjusts the activity accounting sheets to make sure that they are accurate with regard to his efforts. Stacy Jones also makes some adjustments to show how she manages the EHS compliance...
requirements associated with the ink. She pointed out the activities of workers that lead to hazards associated with the ink.

Henry Platt talks about the cost of the inks and other costs associated with managing the regulatory compliance issues. Jane Evans tells the team how she tries to get customers to order soy-based inks. She hates the odors of the solvents used to clean the presses. Many customers have complained to her as well.

At the end of this discussion and brief tour of the area, they are asked to write down on a piece of paper what they thought to be the major problem with the use of solvent-based inks. They had to relate the problem to all three responsibilities (environment, social and economic) in the sustainable development project. Once they had written down their ideas, they read them to each other. The team selected the best “sound bites” from the readings and prepared a brief statement of the problem. This represents their opportunity for improving the process (i.e., prevention) so that the interests of the key stakeholders will be addressed and this process can become more sustainable. They agree on a statement and set the date for their press cleaning initiation and the next meeting when they will work on the preliminary draft of their action plan.

**Root Cause Analysis**

When the team assembled for their second meeting, the facilitator had four flip chart sheets tacked to the wall (see the figure below). The materials represent all the resources that are used and lost in the operation. This information was obtained from the resource accounting sheets and from the notes taken by group members from the tours and demonstrations. A complete list of the materials from the operation and all of the supporting operations (in proportion to their use to support the ink use in the main process) was prepared and written on the proper flip sheet with a space between each entry. Machines represent any form of technology and instrumentation used in the main process and in the supporting processes. Methods include the procedures used by all that handle ink and the wastes associated with the use of ink in the operation. It is important to remember that there is a method whether it is presently in writing or not. People represent the position descriptions of all those that have any role to play in the problem as it has been described.

After the list has been completed on each sheet, the facilitator will ask, “What is it about each item that causes the problems described in the statement of the problem?” The answer(s) to this question will be written under each item on each of the four sheets of paper.
In finding solutions to the problem that will enable the company to move down the path to sustainable development, it is best to remove the causes rather than cure the symptoms or even the problem itself. Remember that everything is connected to everything else. When you change something, you will create another problem somewhere else! By going “upstream” in the process and by removing causes, the solutions with the least amount of trade-offs or other problems can be determined.

This root cause step is missing from most sustainable development programs. It is clearly one of the most critically important elements of the problem solving activity of the team. It took just 45 minutes to complete the entire listing. The team takes a short
break and comes back to look at potential solutions for the problem and means to integrate the three responsibilities in their attempt to address the stakeholder interests.

**Brainwriting**

The project team will look at the listing of potential causes of the problem and then use the brainwriting tool to generate a listing of potential solutions to the problem. The brainwriting tool is one of the tools in the Systems Approach. They will use brainwriting sheets as shown in the template below.

Each team member will select a brainwriting sheet and write down two different ways to solve the problem with the ink and solvents (using boxes 1 and 2). They place that sheet back into the center of the table and withdraw another sheet. Two more alternative solutions are written and the sheet is once again exchanged.

When the team member cannot think of any additional alternative solutions, they read what the other team members have written. Sometimes this will help them think of something new or a modification of what they have read.

A technique known as “provocation” is used to help spur some “out of the box” thinking. Any team member with a more or less “outrageous” idea uses it for one of the alternatives. Sometimes these “blue sky” ideas spur thoughts of “something that just might work!”

You will notice that the team has not been provided with best practices or success stories. They have examined the problem themselves and are working to solve it in their own space largely with the knowledge that they have and the information that they can find and trust. In addition, the team members are making sure that they are addressing each of the three responsibilities. When they have ideas for integrating items, they are placed on the paper slips. In about 20 minutes, all the sheets are full of ideas. They cut up all of the boxes and move on to the discussion and prioritization of these potential solutions. In the front of their mind is the need to address the issues raised by the key stakeholders. This is easy since each of them are key stakeholders themselves!
**Bubble Sorting – Prioritization**

Next, the project team will work with the Systems Approach facilitator to prioritize all of the potential alternatives they identified using the brainwriting tool. For this prioritization activity, they will use a tool called “bubble sorting” or “bubble-up/bubble-down.”

The little squares were cut from the brainwriting sheets and arranged in random order in a pile. Two of the alternative solutions are placed on the table and the team performs a *forced pair comparison* in which each alternative solution is compared with the alternative at the bottom on the list. The question is asked, “Which one is best?” The team members evaluate each alternative in the pair on the basis of cost (cheap is best), ability to implement (easy to do is best) and effectiveness (this is great as long as it does not cost too much or is very difficult to accomplish). Effectiveness addresses whether the potential solution addresses the responsibilities and offers an integrated approach to helping find a sustainable solution to the stakeholder interests.

The better alternative *bubbles up* and is moved to a place over the other alternative and is compared to the next alternative above it. If the team has five members, three members get to move an alternative or keep it where it is. Once the final order has been defined, the team can debate the final ordering.

The easy and inexpensive ideas (often called the “quick wins” or the “low hanging fruit” go to the top of the list. They can be started right away and some initial progress will be made. Results from these actions will help make the case for the more complicated and expensive solutions to follow. At some point on the list, there is a potential solution that would move the team very close to a sustainable situation with this problem. This is called the “crown jewel” since it is so important. Because it may be difficult to accomplish and cost more money that is currently allocated to the project, does not mean that it should be put off completely. The team will conduct a simple feasibility study on this item and tell management what it would take to make it work at a later time. They can start to build a business case to get management interested in this potential solution.

This activity took almost an hour will all of the discussion that took place. The team will just collect its thoughts on the action plan and come back at a later time to complete it. This time will also provide them with an opportunity to explore some of the alternative solutions that they discussed in the session.

**Draft Action Plan**

- Finally, the EHS project team will prepare a draft action plan. This is the final tool used in the Systems Approach. A template for the draft action plan is provided below.

- The **top section of the action plan** describes the “EHS project” and summarizes its purpose, describes the project itself and states the benefits.
- The **first task** will be the baseline survey. It will be important for the EHS process improvement project team to determine what will be measured during the project. The team will also have to determine a financial measure of the project. In the next to the last step, they will repeat these measurements to determine the physical and financial results of the project.

- The **last step** in the draft action plan is a statement of the “lessons learned” by the team in conducting this project.

Once the draft action plan has been reviewed and approved for implementation by the Management Oversight Committee, it should be attached to the relevant EHS management program.

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<th>ACTION PLAN (PROJECT)</th>
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<td>1. <strong>Purpose:</strong></td>
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<td>2. <strong>Project:</strong></td>
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Questions to Address

Let’s try something a little different on the discussion board this week. A folder will be provided to help you get a feel for the tools in the Systems Approach. Each of the items below will have its own sub-folder.

- Discuss what you think should be the *statement of the problem* with the inks. Make sure that all three responsibilities are addressed and integrated in the problem statement. A separate folder has been set up for this discussion.
- List all of the items in each of the *cause categories* and answer the question(s) on each as described in the method.
- List all of the potential solutions to the problem in a group *brainwriting* session in a folder reserved for this.
- Select the *top five (s) solutions* that would help integrate the three responsibilities and make this a great sustainable development project
- Discuss how you would organize the *draft action plan* and have it presented to the management oversight committee.

The weekly discussion should focus on the following questions:

How should projects be used to help implement a sustainable development program? How do they need to be interrelated to work well? Can the projects that were discussed in the weeks where you discussed the three responsibilities be the subject of projects in the sustainable development program?

Discuss how you would use social marketing to raise the issues associated with Charles River Printing Company’s solvent use in the City of Cambridge. How do they cast their transition to less solvent and more benign inks in a positive light for the community and the key stakeholders to see? What is the difference if they limit their sustainable development projects to their in-house activities versus going public with the issues?