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Creating a Successful Corporate Maintenance Council

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Most large, multi-plant companies have launched corporate "Maintenance Councils" in the past decade. While some have achieved a significant success, most are still floundering for direction and concrete results. What are the differences that make some successful and some status quo?

Types of Maintenance Councils

There are a number of models we have observed that work successfully to add value to a multi-plant company. These include:

- Networking & Competency Development
- Coaching for Change
- Agents of Change

The Networking Model

What is it?
The councils primary purpose is education; learning from each other, creating specialist teams, problem-solving, sharing practices, etc.

Models Strengths	Models Weaknesses
Low Cost	Slow to Build Value
Builds Organizational Knowledge	Strengths may not exist in company
Increases Technical Skills	May not influence operations/eng.
Leads to Functional Improvements	Knowledge may not be implemented
Can be done on a part-time basis	

Successful Examples: Mobil Oil (Walter Jones, Beaumont); Lyondell-Equistar (Joe Fluder); International Paper (Ken Collins)

The Coaching Model

What is it?
The council sets up a direct assistance organization, leading member plants in assessing their gaps, and coaching for change

Models Strengths	Models Weaknesses
Can lead to significant value creation	Where to acquire & maintain skills?
Cost billed to plants that want help	Change may be quite slow or nil
Creates examples of success	Too limited assistance to drive change
Raises visibility of maintenance in company	May not get high priority in plants
	Maintaining organizational visibility

Successful Examples: Alcoa (Bill Mathews); DuPont (Ralph Tewksbery); Weyerhaeuser (Rick Nelson, Pat DiGiuseppe)

The Consulting Model

What is it?
The councils primary purpose is developing a corporate plan and structure for change and significant value creation

Models Strengths	Models Weaknesses
Highest Value to Company	High Cost
Works best with large number of plants to support on-going organization	High Leadership and Ownership Requirements
Significant change agency for company	High Skill Requirements
Replaces need for external consulting	May lose staff to outside interests

Successful Examples: Rohm & Haas (Dick Pettigrew), DuPont (in the early 90's)

Development Lifecycle for the Corporate Maintenance Council

Whichever model applies to you, there are three phases in the lifecycle of the Corporate Maintenance Council: Initiation, Growth and Maturity. Successful completion of each is a requirement to move to the next. We explore each phase, including the objectives, success factors, what to do, and what to measure.

Figure 1

The Lifecycle of the Corporate Maintenance Council

Objective: Set-up for Success

CSF: Leadership, orientation, structure, philosophy

Activities:
- Create Excitement
- Recruit Sponsor and leaders
- Develop Charter
- Create Structure
- Assure Visibility
- Identify Business Value
- Initiate, educate members

Measures:
- Level of Sponsorship
- Value of Business Case

Objective: Early Successes

CSF: Leadership, methods, value creation, visibility

Activities:
- Identify Initial plant site
- Assess plant status
- Develop Business Case
- Plan Implementation
- Implement changes
- Measure success
- Market Success

Measures:
- Quantitative Results
- Qualitative results and support generated

Objective: Repeat Success

CSF: Leadership, flexibility, marketing, financial integration

Activities:
- Create Permanent Team
- Routinize assessment & Implementation methods
- Develop & execute internal/external mkt plan
- Increase scope of value delivery
- Integrate results with leadership rewards

Measures:
- Total value created
- Increasing responsibility

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Initiation Phase.
Our objective in initiating the Council is to structure it for long-term success. The consequences of failing here are a council that is not respected, has no cooperation from the rest of the manufacturing community, and fades away into that sunset of committees unable to create value. So all efforts here should be directed towards a successful launch.

What is critical in this early stage?

- Top **leadership must endorse** the need, the goals and the methods of the Council
- A **champion** of sufficient stature needs to make a priority of establishing the Council
- The **Council leader must be respected** as a doer, probably the person who is too busy for this job. Experience shows that other things being equal, it is better if the leader comes from production rather than maintenance
- The structure of the group needs to support ongoing scrutiny and visibility, and willingness to **be accountable for its actions**
- The Council **must represent production** in a significant manner, if necessary to the exclusion of maintenance staff. If possible get more than one representative per facility, as people change jobs often and lose continuity. Get involvement by a balanced group (including maintenance, production, engineering, staff), and don't be afraid of having hourly involvement. It may take more time at this point to achieve union or hourly ownership, but it will pay-off in implementation
- The Council must be seen as **action- and goal-oriented**, and can't spend its start-up capital (goodwill in the formation of anything new) by having meetings that don't seem to get anything done
- Certain **methods and deliverables** will yield success. These include developing a charter, developing an estimate of value to be captured, and developing a communications plan
- Identifying how group **funding** will work, both for the time and travel expense, as well as any outside services

Delivering Value
Three successful internal maintenance consulting organizations we have known or been involved with (Rohm & Haas, Dupont and Alcoa) have greatly simplified the identification of value. Each uses a single measure for maintenance cost and product throughput. While each uses a slight variation of definition, they come down to this concept:

Cost is measured as *Maintenance Expense as a Ratio of Replacement Asset Value*.

In some industries this is routinely benchmarked, especially in Refining, where the Soloman Study is a standard measure that a majority of companies use to gauge their performance. In others there may be no standard of performance and even measuring Replacement Asset Value (RAV) is difficult to determine. So the Council needs accounting involved to assure a consistent measure of maintenance expense among all plants exists, and secondly that there is a consistent means of valuing RAV. This is sometime taken from the Maximum Probable Loss calculation of the property and casualty insurer if no better measure exists.

Throughput, or capacity utilization, or uptime or OEE measures how well the plant is making use of the inherent utility of the equipment assets under management. Each of these measures can be tied to a financial amount.

A concern on this point is that sometimes only a small amount of downtime is *mechanical or unplanned*. The Council needs to decide if all sources of downtime are going to be reviewed, or only those directly affected by maintenance. For instance, sometimes a plant in not sold out, or is sold out seasonally; whatever result the team and plant come up with needs to be justifiable, and owned by the plant leadership.

Typically, for a company whose overall maintenance costs might be $100 million, we have seen that 15-25% savings is available by meeting a reasonable expectation of performance by every plant. Capacity

utilization can usually be improved by 10-20% as well, although we have been seeing steady improvements in many industries, especially those that routinely benchmark performance such as chemicals and refining.

Summary of Initiation Phase
Getting started in a way that creates enthusiasm, support and expectations of good things to come will make or break the overall effectiveness of the Corporate Maintenance Council. We would suggest that from the first meeting of the Council, no more than 12 months pass before beginning work at a plant site.

Growth Phase.
Having successfully gained the attention of leadership, recruited movers and shakers to the Council, and created the structure for success; it's now time to begin meeting expectations. That means successful change at a plant location.

It will be clear early on that there are three types of plant managers the Council will deal with. First, and most apropos to this section, are the leaders who welcome improvement, seeking out methods and sources of continuously making their plants more effective. Second is the plant manager who is in trouble and knows he needs to do something (anything?) to improve, because his money or his job is on the line. Finally, there is the plant manager who wants no part of this program. His reasons may be several: we have too much on our plate already; timing isn't good because of construction or a turnaround; we are already very good and don't want or need corporate interference; or we don't want to expose ourselves to measurement and comparison because we won't look very good.

Where do we start? The Golden Rule in corporate life: first impressions will last forever! That means there is only one chance to do this right, to make a positive difference, and for the work to be viewed positively (these are not quite synonymous!) So we begin by looking for a site champion with these characteristics:

- He is considered successful already; his patina of success will rub off to the Council's activities
- He knows how to run projects, how to take the personal interest necessary to make things successful
- There is a defined business opportunity whose scope is neither too small to matter, or too big to be an unqualified success.
- This project is personally and professionally important to the plant manager

Next the Council needs to have a method to proceed. One very important deliverable from the Initiation Phase is an assessment method and an implementation method. Rohm and Haas used an outside maintenance consulting firm to help them create an assessment methodology and an implementation approach(es). Dupont embarked on a global maintenance cost benchmarking study with a consulting firm. So this is a proven way to get started.

Getting plant ownership goes beyond the plant manager's support; before starting, the entire leadership team will need to understand the outcomes, the resources required and any out-of-pocket costs associated with the project. There needs to be a workplan, sample documentation, and delineation of responsibilities.

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Figure 2 Summarizes the Implementation Phase.

- During this process we set **goals** for changes to our leading indicators (such as changing schedule compliance from 25% to 80%), as well as changes in results (lagging indicators) such as % overtime, or the availability of a unit.
- We employ **change management** techniques to assure that people are ready to proceed. Two methods we like include employing The Manufacturing Game™ and beginning implementation with a redesign activity, to develop a complete work management process. In this activity we use plant participants from every function and every level, all working together, resulting in great ownership.
- The first result we seek is **efficiency**; getting more work done with our staff, and taking over work currently done by contractors. The method to accomplish this is better work management processes, as shown in Figure 3
- Efficiency creates work capacity, which in turn can be invested in other activities. **Optimization** will look at inventory levels, PPM frequencies, etc. Optimization reduces (usually) costs, and further increases effectiveness.
- We also invest the work capacity we create into **reducing defects**. Most frequently reducing defects in Stage 1 is simply to assure that the PPM's you have are getting scheduled and properly executed. This further reduces work, and as we catch up on our backlog of preventive work, we increase availability of equipment. We can also plan and optimize stores better because there are fewer emergencies.

Figure 2

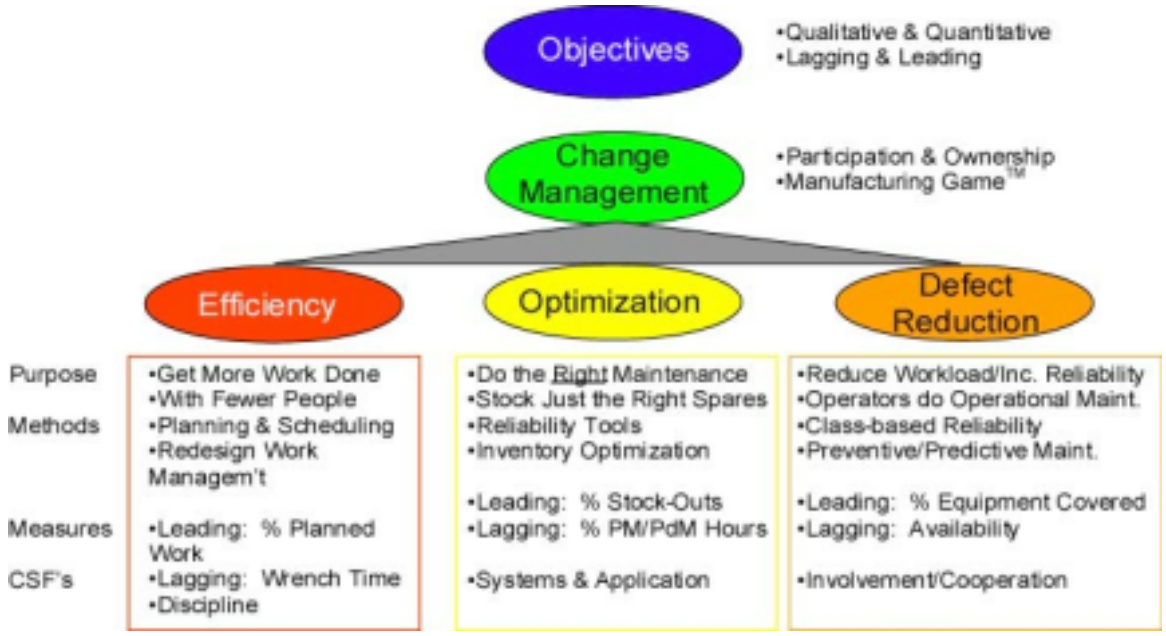

Figure 3

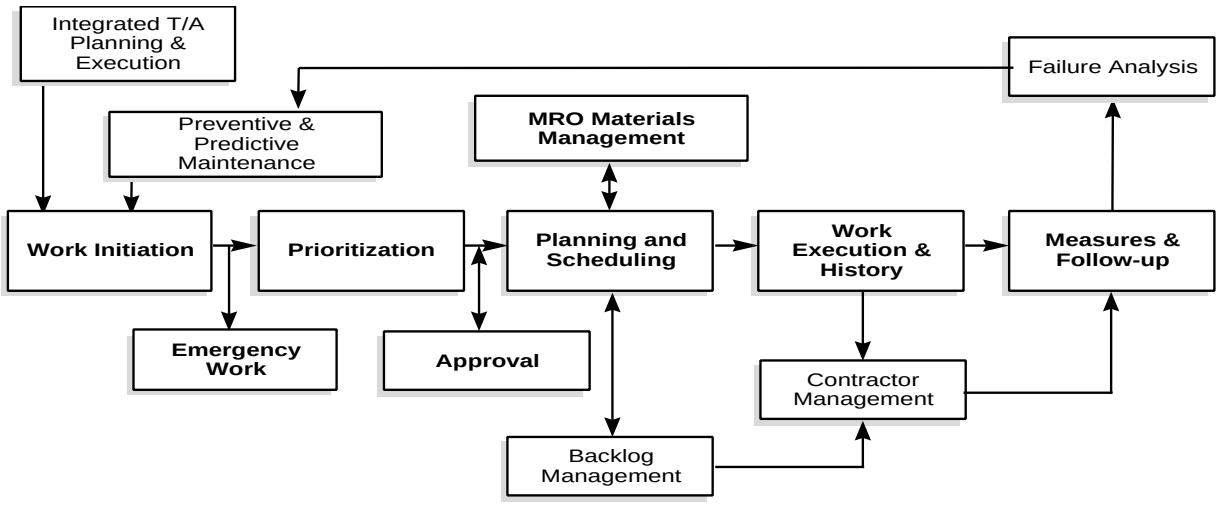

Figure 3—Elements of Planned Maintenance, Stage 1

Typical results of implementation in Stage 1 activities are cutting overtime in half or more; reducing contractors to only specialty work; and improving availability of specific equipment centers by as much as 10%. It is true that getting to these levels may require 6-12 months of continuous support, but without such results the Maintenance Council is seen as little more than a group who meets and accomplishes very little.

Most Plant Managers would give their first-born child for these results! A plant manager who has made the made the efforts and gained the results is an exceptionally strong advocate among his peers to invest in similar efforts. The role of the Committee is now to assure that the success is presented far and wide within the company, preferably by people from the successful plant itself. This sets the stage for the next Phase, **Maturity.**

Maturity Phase.

Sometimes the greatest predictor of failure is success. A great deal of time and attention went into the initial effort to make the Pilot Plant have great results. There is a tendency to forget the lessons that got us here to start with and to relax.

The Pilot Plant was chosen because of the strong leadership, and bias for measuring results and holding people accountable. Less able plants will now come forward looking for similar results but without a full understanding of what it takes to change that was demonstrated by the Pilot.

How does the Council overcome this barrier?

The answer has several parts. First is documenting the methods and lessons employed to get the results the first time. The path has been developed, and it can be improved each time the group goes to another site to work. The second success factor is to continue to work with volunteers who have demonstrated successful ability to change. In other words keep stacking the deck to the extent you are able.

We have observed a third factor that appears to be vital in *institutionalizing change*; that is the creation of an internal consulting organization, dedicated to guiding change at the plant level. Essentially the group becomes semi-professional, with:

- marketing strategies to develop and execute,
- methods to develop and refine,
- relationships to create among the field managers,
- recruiting within the company for those unique individuals who can lead change
- ability to attract a permanent funding method by reselling their services
- creative ability to work on new problems and situations throughout the plant

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Both DuPont and Rohm & Haas developed an internal consulting capacity to meet maintenance and reliability opportunities head-on. In doing so, they created a new language and awareness within the Senior Management Community of their company. As the understanding of the value to be created grew, management compensation programs were changed to reflect progress on maintenance expense and "Uptime".

Rohm & Haas—An Example of the Best We've Seen

Dick Pettigrew led the formation of Rohm & Haas' Maintenance Council. While with another consulting firm I participated in their initial formative efforts. Most of the steps we have discussed here were steps Dick led. He had a Champion, Tom Archibald, who is a manufacturing executive, and a strong supporter of the programs.

Dick learned by doing, experimenting, and tirelessly promoting their efforts both inside and outside of their company. He used consultants, engineering specialists, SMRP and other professional associations to educate his internal team. As time went on, Dick relied less on outside experts and more on his own cadre of internal experts.

As their successes grew, so did their influence in the company. Getting additional funding for more positions wasn't easy, but by demonstrating and marketing results, they have become an integral part of their leadership's toolkit for change. More recently, the internal consulting group has been asked to take on other challenges of lean manufacturing, in addition to their work on Reliability and Maintenance.

Conclusions

With careful attention to methods and communication, Maintenance Councils can be vehicles for change within your company. The results will easily be worth the extra effort, because so often today we observe few results from a lot of hard work.