

## Management Tools used for Establishing a Competitive Marketplace

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As a result of our Internal Auditor's requirements and a need for tax dollar accountability, the Department of Transportation purchased the right, through the State of Indiana, to use a new software package developed by De Leuw Cather & Company.

This system, called simply the Work Management System (WMS), is a tool to help managers plan, control, and carry out the maintenance mission. It offers a means to:

- Develop annual work programs and budgets,
- Distribute work on an annual basis,
- Determine resource needs,
- Monitor complaints,
- Schedule work,
- Recording accomplishments (production), and
- Evaluate performance

The system is broken down into two areas, planning and evaluation. A number of reports are available in both areas such as:

### Planning

- Work Program and Budget
- Deferred Maintenance
- Workload Distribution
- Work Calendar
- Resource Requirements

- Activity Listing
- Feature Inventory Data
- Labor, Equipment and Materials Data
- Activity Summary

These reports represent the work being planned for the year. It also shows deferred maintenance.

### Evaluation

- Daily Work Report Data
- Performance
- Budget Status
- Work Calendar Status
- Resource Utilization
- Location Maintenance
- Work Request Backlog
- Work Request Completion Analysis

These reports compare the planned versus actual accomplishments.

With a new administration in 1992, came a change in focus for our Department. We were always concerned with how much we could get done in a year and were never concerned with what it cost to accomplish this. We were now placed in a position to compete with the private sector for the work we had performed regularly.

In order to become competitive we had to first discover what our true costs were and

what creates them. A new tool was provided to enhance our current system. This tool is called Activity Based Costing. It was developed to understand and control indirect costs. Instead of placing a flat overhead rate on our labor, the Activity Based Costing system helps discover what activities/products generate the overhead and then applies it accordingly. We needed to take a look at all functions necessary to produce a product for our customer.

For example, for snow fighting we had used a flat cost for the materials, equipment, and manpower directly related to removing snow and ice, as our total cost. But what about the cost for ordering salt and calcium, the storage facilities, the equipment preparation, the equipment operator used to stockpile the salt upon delivery and so on?

That is the function of ABC – to capture all costs related to a particular product; in this case lane miles salted. Work management will break down the number of lane miles salted and what manpower, equipment and materials were used to do this. ABC assigns a cost to everything and assigns that cost to a product.

The truck drivers, for example, are paid a set wage, but these costs are not identified until a product is produced. Therefore, the hours of production must cover their total cost. If a driver received \$500 in a 40 hour week the traditional cost system would say their hourly cost was \$12.50. ABC will ask how many hours production was received from this truck driver. If they were productive for 40 hours that rate would be correct, but more realistically they were productive for 30 hours at a cost of \$16.67/hour.

Once our costs were identified, we looked back at our methods of performance. In some instances we were able to make minor adjustments that greatly improved our competitive advantage. For example, our union employees on the Crack Sealing Team were

preparing to bid against the private sector on a contract. Our cost per lane mile at that time was \$2200. While the competition was running at about \$1400. Knowing this, the team members investigated the cost for each individual item in the process.

The original process was set up for ten to twelve people and six vehicles. They discovered that they could use a different type of truck and load the air compressor and materials onto the bed rather than use a larger truck to tow the compressor and a separate one to haul the material. This eliminated two trucks. A crew cab with an arrow board was also used to carry the balance of the crew. They were also able to eliminate the truck drivers. so now the crew was down to 7 men with 4 trucks. This alone decreased the unit cost.

In addition, it was discovered when flag men were necessary, we could sub-contract that out at a cheaper rate than using our own people. With these adjustments, production was increased from 2 lane miles a day to an average of 3 lane miles. In the end the team was able to lower their cost to an estimated \$1100 per lane mile. When actually under contract, their production increased and brought the contract in at \$983 per lane mile. We have successfully bid two additional contracts since this time.

These systems have helped build our competitive advantage, improve employee participation, quality, and production. In addition, Work Management has helped us identify the activities we are primarily involved in. ABC is assisting in identifying which activities the City should continue personally delivering and which ones we should contract out.

With these two systems in place the Operations Division of the Indianapolis Department of Transportation is moving forward in providing quality service to our customers in a more cost effective and efficient manner.