

**Manufacturing Insights**

**ABC/ABM**

**Understanding Manufacturing Costs**

SCENE 1.  
FBI WARNING

SCENE 2.  
ANIMATION: SME LOGO

**MUSIC**

SCENE 3.  
STANDARD MI OPENING

**NARRATOR (VO) :**

MANUFACTURING INSIGHTS... MANUFACTURING ENGINEERING  
MAGAZINE'S VIDEO SERIES FOR INDUSTRIAL MANAGEMENT.

SCENE 4.  
CG: ABC & ABM

Understanding Manufacturing Costs

2227 (04:16:00 - 04:16:08) (LS) Man in work cell  
2227 (04:20:10 - 04:20:14) (MS) Man at control panel  
2227 (04:19:45 - 04:19:54) (MCU) Man puts part in  
gage

**NARRATOR (VO) :**

THIS PROGRAM LOOKS AT ACTIVITY-BASED COSTING AND  
ACTIVITY-BASED MANAGEMENT... TWO INCREASINGLY USEFUL  
TOOLS THAT HELP YOU DETERMINE WHAT PRODUCTS REALLY  
COST, THEN USE THAT DATA TO OPTIMIZE YOUR COMPANY'S  
EFFECTIVENESS.

SCENE 5.  
ABC-22 (01:24:30 - 01:24:40) (MS) Woman at  
workstation  
CG: Ecowater Systems, Inc.

**NARRATOR (VO) :**

WE'LL SEE HOW ECOWATER SYSTEMS, DESIGNED AND  
IMPLEMENTED A SUCCESSFUL ABC PILOT PROGRAM...

SCENE 6.

ABC-7 (07:15:28 - 07:15:37) (MLS) Woman at workstation

CG: Allied Signal Automotive

**NARRATOR (VO) :**

...HOW ALLIED SIGNAL AUTOMOTIVE EMPLOYS ABC DATA TO  
CALCULATE THE PROFITABILITY OF PRODUCT LINES  
AND INDIVIDUAL CUSTOMERS...

SCENE 7.

ABC-11 (11:01:11 - 11:01:22) (LS) Woman at press

CG: TRW Vehicle Safety Systems

**NARRATOR (VO) :**

...HOW TRW VEHICLE SAFETY SYSTEMS USES ABC-ABM TO  
REACH ACCURATE MAKE-OR-BUY DECISIONS...

SCENE 8.

ABC-20 (20:20:13 - 20:20:18) (MS) Man at control panel

ABC-21 (21:13:19 - 21:13:24) (MS) Man tightens down gear

ABC-20 (20:21:00 - 20:21:05) (MS) Part moves out of machine tool

CG: Clark Hurth Components

**NARRATOR (VO) :**

...AND HOW ABM ENABLES CLARK HURTH COMPONENTS TO SAVE  
OVER ONE MILLION DOLLARS A YEAR THROUGH COST  
REDUCTIONS, PRICING ADJUSTMENTS, AND IMPROVED  
OPERATIONS.

SCENE 9.

2229 (06:27:28 - 06:27:33) backtime from end of take

670 (06:12:02 - 06:12:10) Moving of materials

2229 (06:05:27 - 06:05:37) Hi-angle Machining

**NARRATOR (VO) :**

WHAT DOES IT REALLY COST TO PRODUCE A PRODUCT IN  
TODAY'S MODERN MANUFACTURING ENVIRONMENT? WHICH COST  
CRITERIA YIELD THE MOST ACCURATE DATA TO SET FAIR AND  
REALISTIC PRICES? AND MOST IMPORTANTLY, HOW CAN THIS  
DATA HELP IMPROVE YOUR COMPANY'S COMPETITIVE  
POSITION?

SCENE 10.

ABC-24 Graphic 8-9

CG: ...misallocate product costs because they are  
based on assumed linkages or convenient  
alternatives...

**NARRATOR (VO) :**

TRADITIONAL ACCOUNTING SYSTEMS MISALLOCATE PRODUCT  
COSTS BECAUSE THEY ARE BASED ON ASSUMED LINKAGES OR  
CONVENIENT ALTERNATIVES SUCH AS RAW MATERIALS AND  
DIRECT LABOR HOURS.

SCENE 11.

ABC-24 Stills

**NARRATOR (VO) :**

THIS WORKED WELL IN THE PAST WHEN THESE TWO FACTORS  
ACCOUNTED FOR AS MUCH AS SEVENTY PERCENT OF A  
PRODUCT'S COST.

SCENE 12.  
ABC-24 Graphic 8-2

**NARRATOR (VO) :**

HOWEVER, OVER TIME, LABOR AND MATERIALS CONTRIBUTION  
HAS BEEN STEADILY DISPLACED BY OVERHEAD COSTS...

ABC-21 (21:12:49 - 21:12:48) Part rotates into place  
2217 (10:02:41 - 10:02:49) (MS-OTS) Electrician  
2228 (05:15:13 - 05:15:21) (MS) Woman moves thru cell

WHICH IN REALITY ARE TECHNOLOGY, THE TECHNICIANS WHO  
SUSTAIN PRODUCTIVITY GAINS, AND THE PEOPLE WHO MANAGE  
INCREASINGLY COMPLEX MANUFACTURING PROCESSES.

SCENE 13.  
2227 (04:28:21 - 04:28:40)

**NARRATOR (VO) :**

SUCH SIMPLE ALLOCATION SYSTEMS NO LONGER ACCURATELY  
GAGE TRUE MANUFACTURING COSTS. ABC AND ABM, HOWEVER,  
EMPLOY METRICS TO REMEDY THIS SITUATION.

SCENE 14.  
ABC-24 Graphic 8-20

**NARRATOR (VO) :**

ACTIVITY-BASED COSTING FIRST IDENTIFIES AND COMPUTES  
THE COSTS OF ACTIVITIES AND PROCESSES, THEN ASSIGNS  
ACTIVITY COSTS TO COST OBJECTS THAT CONSUME THE  
ACTIVITY. COST OBJECTS ARE PARTS, SERVICE,  
INGREDIENTS, PRODUCTS, CUSTOMERS, OR DISTRIBUTION  
CHANNELS.

SCENE 15.  
ABC-24 Graphic 8-20

**NARRATOR (VO) :**

ACTIVITY-BASED MANAGEMENT USES ABC DATA TO DIRECT  
PROCESSES AND THEIR CONSTITUENT ACTIVITIES, THEN  
EVALUATES THOSE ACTIVITIES PERFORMED TO SUPPORT

THINGS LIKE CONTINUOUS IMPROVEMENT, TOTAL QUALITY  
MANAGEMENT, AND BUSINESS PROCESS RE-ENGINEERING.

SCENE 16.

ABC-1 (01:05:09 - 01:05:29) Cokins on-cam

CG: GARY COKINS

PRINCIPAL CONSULTANT

EDS

COKINS (ON-CAM):

I guess a simple definition of an ABC system is an allocation-free system. In fact, I always like to say, Say no to allocations. Allocations often times are distributing costs without any true correlation, and it disturbs a lot of people. I've heard companies refer to the allocation "food fights" that go on.

SCENE 17.

ABC-16 (16:00:45 - 16:01:16) Man at computer terminal

2240 (03:14:35 - 03:14:53) (MS) Women gage parts

**NARRATOR (VO):**

IT'S IMPORTANT TO UNDERSTAND THAT ABC-ABM IS NOT A  
FINANCIAL ACCOUNTING SYSTEM, BUT RATHER A MANAGERIAL  
ACCOUNTING TOOL THAT POINTS OUT WAYS TO ELIMINATE  
WASTE AND OPTIMIZE VALUE-ADDED ACTIVITIES.

SCENE 18.

ABC-1 (01:11:24 - 01:12:08) Cokins on-cam

COKINS (ON-CAM):

Financial accounting tends to be the type of information the companies provide for the Internal Revenue Service or if they're publicly held for the SEC or for stockholders, or bankers. Those are if you will the official financial records. The income statement and the balance sheet.

SCENE 19.

ABC-1 Cokins on-cam inserted over graphic background

CG lower 1/3 left:

GARY COKINS

PRINCIPAL CONSULTANT

EDS

CG right 1/2:

Managerial accounting

- ...understand cost behavior
- ...to make better decisions
- ...make vs. buy
- ...capital investments
- ...profitability

COKINS (ON-CAM):

Managerial accounting information is information that decision makers inside companies--teams, vice presidents, supervisors--use to understand the cost behavior of their company and make better decisions, such as make versus buy decisions, such as capital investment decisions, such as profitability decisions--what products or customers are we making money on or losing money on.

SCENE 20.

ABC-1 (01:04:43 - 01:04:59) Cokins on-cam

note: possible jump dissolve within graphic then fly out to full frame?

COKINS (ON-CAM):

I see activity based costing as a form of translating the general ledger chart of accounts--these are balances that the accounting system accumulates--into verb-noun grammar which describes what do people do.

SCENE 21.

ABC-22 (01:10:57:15 - 01:11:04:20) (MS) Hi-lo  
328 (20:00:49 - 20:01:04) (CU) Hands on keyboard  
ABC-16 (16:14:41 - 16:14:45) Hands gage part  
2228 (05:08:48 - 05:08:52) (MS) Hands move parts thru  
wash

NARRATOR (VO) :

THAT IS, IT BREAKS DOWN COSTS INTO EASY TO  
UNDERSTAND PHRASES, SUCH AS "MOVE MATERIAL", "PROCESS  
INVOICE", OR "INSPECT PART", AND GRASPS THE HIGHLY  
CROSS-FUNCTIONAL NATURE OF TODAY'S WORKPLACE.

SCENE 22.

ABC-1 (01:08:14 - 01:08:37) Cokins on-cam

COKINS (ON-CAM) :

And what we're recognizing is process-based thinking  
is beginning to dominate American and actually  
international manufacturing. And so the departmental  
approach actually drives vertical behavior when in  
fact most of the things we work on are flowing  
cross-functionally across departments, and  
individuals in those departments tend to multi-task  
in different processes.

SCENE 23.

1107 (04:02:23 - 04:02:50) (MS) Man sets up machine  
gages  
1107 (04:02:45 - 04:05:00) (CU) Hands on gage  
note: matching action - can go out on zoom-out

NARRATOR (VO) :

TRADITIONAL ACCOUNTING ALSO OFTEN FAILS TO TRACK THE  
INDIRECT COSTS INCURRED IN MANUFACTURING. ABC  
IDENTIFIES WHICH PRODUCTS USE THIS KIND OF WORK --  
AND IN WHAT PROPORTION.

SCENE 24.

ABC-1 (01:14:47 - 01:15:00) Cokins on-cam  
note: at end of take fly into graphic background  
(jump dissolve on fly?)

COKINS (ON-CAM) :

The popularity of activity based costing has risen  
because many of those activities, such as setting up  
a machine, are disproportionally consumed by certain  
part numbers rather than others.

SCENE 25.

ABC-1 (01:15:10 - 01:15:38) Cokins on-cam inserted  
over graphic background  
CG lower 1/3 left:  
GARY COKINS  
PRINCIPAL CONSULTANT  
EDS  
CG right 1/2:  
...distorting true costs  
...overcosting part numbers  
...undercosting others  
...errors over 100%  
...1000%

COKINS (ON-CAM) :

The consequence is we wind up actually distorting the true costs of parts. We're overcosting certain part numbers and undercosting others. The error created by this distortion is actually significant when one creates these ABC systems. It's not unusual to have errors over 100% and even sometimes 1000%, which comes as a surprise to the people who install the system.

SCENE 26.  
ABC-24 Graphic 8-6

NARRATOR (VO) :

IN SIMPLEST TERMS, AN ABC SYSTEM USES TWO FUNDAMENTAL PROCESSES. FIRST, TRACING RESOURCES TO THE ACTIVITIES THAT CONSUME THOSE RESOURCES...

SCENE 27.  
ABC-24 Graphic 8-8  
CG: PARTS SERVICE INGREDIENTS PRODUCTS CUSTOMERS DISTRIBUTION

NARRATOR (VO) :

AND THEN, USING COST DRIVERS, TRACING ACTIVITIES TO THINGS LIKE PARTS, PRODUCTS, AND DISTRIBUTION CHANNELS. THE IDENTIFICATION OF COST DRIVERS IS ESSENTIAL TO ANY ABC SYSTEM.

SCENE 28.

ABC-1 (01:20:45 - 01:21:03) Cokins on-cam inserted  
over graphic background

CG lower 1/3 left:

GARY COKINS

PRINCIPAL CONSULTANT

EDS

CG right 1/2:

Activity drivers...

number of setups...

number of inspections...

number of material moves

COKINS (ON-CAM):

Examples of activity drivers would be the number of setups or the number of inspections or the number of material moves because different products--cost objects, which is sort of a general term for products or parts--will disproportionately consume setups or material moves.

SCENE 29.

ABC-1 (01:23:08 - 01:23:49) Cokins on-cam inserted  
over graphic background

CG right 1/2:

...a network of tracing costs from resources into activities and then activities into cost objects...

COKINS (ON-CAM):

The whole system is a network of tracing costs from resources into activities and then activities into cost objects such that one now knows what products truly cost with a lot more accuracy. One of the useful parts of activity based costing is not just to rely on the final product costing but to look at the activity costs as well and see what they're made up of, see if there's any low value added or non-value added or waste. So the data there also serves different kinds of end users in the company--process owners or manufacturing people--as to how to improve their processes.

SCENE 30.

ABC-1 (01:27:26 - 01:27:49) Cokins on-cam

Fly out full frame

COKINS (ON-CAM):

Often times ABC is thought of as a silver bullet or is resisted because it is another vogue word or project of the month. In reality, it is just a much better way of reflecting the true consumption of resources in the form of data, and then that data can serve these other programs and projects.

SCENE 31.

ABC 15 (15:24:11 - 15:24:20) EXT (LS) Ecowater bldg  
(pan R)

NARRATOR (VO) :

ECOWATER SYSTEMS IS A LARGE MANUFACTURER OF WATER  
SOFTENING EQUIPMENT. RECENTLY THEY'VE COMPLETED THE  
FIRST PHASE OF THEIR MOVE TO ACTIVITY-BASED  
MANAGEMENT.

SCENE 32.

ABC-14 (14:02:52 - 01:03:12) McMenimen on-cam  
CG: KEVIN MCMENIMEN  
MANAGER - COST & FINANCIAL ANALYSIS  
ECOWATER SYSTEMS, INC.

MCMENIMEN (ON-CAM) :

I view ABC as a piece of activity based management.  
So therefore we took the approach of activity based  
management because it is an organization-wide  
program, it's not a financial program. We wanted to  
de-emphasize the financial side of the program.

SCENE 33.

ABC-14 (14:03:15 - 14:03:24) McMenimen VO  
ABC-22 (01:01:37 - 01:01:51) (LS) Molding area zoom-  
in (MS) woman at machine  
note: run into next scene

MCMENIMEN (VO) :

We wanted to look at it as a business shift in terms  
of how we manage our business.

SCENE 34.

ABC-14 (14:04:10 - 14:04:29) McMenimen on-cam

MCMENIMEN (ON-CAM) :

It is the people on the manufacturing floor's  
program. When you do a project that involves those  
people, it becomes their program. They utilize the  
information. Finance doesn't necessarily utilize the  
information. It's the people involved in the  
activities that will utilize it. Therefore, it's  
their program.

SCENE 35.

ABC-22 (01:06:39:15 - 01:06:44:17) (MS) Woman removes part from mold (zoom-in)

ABC-22 (01:07:29 - 01:07:36) (MCU) Hands check part

NARRATOR (VO) :

SUCCESS IN ANY ABC/ABM PROGRAM LIES IN FINDING OUT EXACTLY WHAT ACTIVITIES ARE CURRENTLY BEING PERFORMED THROUGH EXTENSIVE INTERVIEWS THROUGHOUT THE COMPANY.

SCENE 36.

ABC-14 (14:08:13 - 14:08:36) McMenimen on-cam

MCMENIMEN (ON-CAM) :

What we've done in our ABM pilot project to set the stage was a global view. Therefore, we were going to interview key people. And when I say key people, I'm not just talking about managers. I'm talking about the worker bees who actually do the activities, the major functions of that department.

SCENE 37.

ABC-14 (14:08:41 - 14:08:51) MCMENIMEN VO

ABC-24 (01:12:12 - 01:12:22) Slo-pan of form

MCMENIMEN (VO) :

In the interviews what we're looking for are exactly what those people are doing. Where are they spending their time? What activities are being produced in that organization?

SCENE 38.

ABC-14 (14:09:46 - 14:09:57) McMenimen VO

ABC-23 (02:08:37 - 02:08:43:07) (LS) plastic injection molding area

ABC-23 (02:05:55:24 - 02:06:08:25) (MS) plastic parts out of chute

MCMENIMEN (VO) :

A machine operator will tell us one of their activities is to monitor the machine in terms of its settings.

SCENE 39.

ABC-14 (14:10:01 - 14:10:09)

MCMENIMEN VO

Insert continues from previous scene

MCMENIMEN (VO) :

We'll ask him how much time do they spend monitoring the machine. Most likely they tell us anywhere from 10 to 20 percent.

SCENE 40.

ABC-14 (14:09:01 - 14:09:12) McMenimen VO

ABC-23 (02:06:28 - 02:06:41) (MS) Woman trims part

note: run into next scene

MCMENIMEN (VO):

We also look at what is driving the activity, what are the inputs, and finally we look at what are the outputs. What is the product of your activity?

SCENE 41.

ABC-14 (14:10:15 - 14:10:32) McMenimen on-cam

MCMENIMEN (ON-CAM):

And from that we're going to ask them, Why do you monitor the machine? What is it that drives you to do that?. Well, in the process, the machine gets out of tolerance, or it moves toward an out-of-tolerance position, in which case it needs to be adjusted.

SCENE 42.

ABC-14 (14:10:48 - 14:11:13) McMenimen VO

ABC-16 (16:15:46 - 16:15:56:20) (MS) Robot places part on conveyor

ABC-16 (16:14:07:07 - 16:14:14:13) (MS) Woman trims part

MCMENIMEN (VO):

What's the output? The output is that you get a part. The output in their minds--and this is critical--as the interviewer, you don't tell them what the output is. They need to tell you what the output is.

SCENE 43.

ABC-16 (16:17:42 - 16:17:52) (MS) Manager talks to woman

**NARRATOR (VO):**

FROM THE BEGINNING, ECOWATER UNDERSTOOD THAT TO BE SUCCESSFUL THE PILOT PROJECT REQUIRED THE FULL SUPPORT AND COMMITMENT OF MANAGEMENT.

SCENE 44.

CG: ECOWATER PILOT PROJECT

- Establish Steering Committee
- Establish ABM Team
- Team & Steering Committee Training

NARRATOR (VO) :

THEIR FIRST STEP WAS TO ESTABLISH A MANAGEMENT  
STEERING COMMITTEE CONSISTING OF TOP MANAGEMENT, AND  
A CROSS-FUNCTIONAL ABM PILOT PROJECT TEAM FROM  
VARIOUS DEPARTMENTS. NEXT, THE TEAM AND STEERING  
COMMITTEE WERE TRAINED ON ABC/ABM CONCEPTS, AND HOW  
TO APPLY THEM IN THE ORGANIZATION.

SCENE 45.

ABC-14 (14:18:14 - 14:18:33) McMenimen on-cam

ABC-16 (16:08:01 - 16:08:11) (CU) CRT

note: backtime from end of bite

MCMENIMEN (ON-CAM) :

From there you should move to the mechanics side of  
activity-based management, and I view that as the  
software side of it. You should look at different  
softwares obviously, but once  
you select a software, you should train yourself as  
how it is utilized.

SCENE 46.

ABC-14 (14:19:28 - 14:19:54) McMenimen on-cam

MCMENIMEN (ON-CAM) :

Establishing the scope of the project, that's a  
critical step. The scope of your project is so  
important because you need to know the limits and the  
parameters of what you're going to be analyzing. And  
within the scope, once your project's defined, you  
need to understand the goals and objectives of your  
project. Those need to be established upfront and  
committed to by the team and accepted by the  
management steering committee.

SCENE 47.

ABC-14 (14:19:57 - 14:20:35)

ABC-24 (01:16:30 - 01:16:38) Slo-pan of schedule

MCMENIMEN (VO) :

Then you can go ahead and schedule out your pilot project, which includes the interview schedule--you'll identify the key people you want to interview to gather the data.

SCENE 48.

MCMENIMEN (ON-CAM) :

Once the interviews are completed, then you start throwing your manual schematics together

SCENE 49.

ABC-16 (16:03:15 - 16:03:24) (MCU) Chart zoom-out

(MS) McMenimen at CRT

ABC-16 (16:08:56 - 16:08:59) (CU) CRT

ABC-16 (16:06:23 - 16:06:30) (MS) McMenimen refers to chart

--you literally do them by hand--and you can start gathering data to support your model. From that manual schematic, you then enter it into the software program and when you're done with entering all the information, you verify and validate your model. Make sure it makes sense Make sure you haven't broken constraints.

SCENE 50.

ABC-22 (01:21:31 - 01:21:43) (MLS) Two women at assembly station talking

**NARRATOR (VO) :**

SINCE ABC-ABM IS A RADICAL DEPARTURE FROM TRADITIONAL COSTING METHODS, IT'S OFTEN VIEWED WITH SUSPICION, ESPECIALLY BY WORKERS WHO SEE IT AS A NEW WAY OF MEASURING THEIR JOB PERFORMANCE.

SCENE 51.

ABC-13 (13:07:13 - 13:07:45) Dudzinski on-cam

CG: JERRY DUDZINSKI

INDUSTRIAL ENGINEER

ECOWATER SYSTEMS, INC.

DUDZINSKI (ON-CAM) :

This was a major hurdle for the interviewers to overcome to obtain the information they needed for the pilot program, and once we established rapport with the different groups and explained to them what we were trying to really gather was not how each person's job was being performed but the actual activity and how it related to the product, they felt much more comfortable in supplying the information we

needed.

SCENE 52.

ABC-16 (16:16:46 - 16:16:53) (MS) Men discuss part

NARRATOR (VO) :

WITH THAT OBSTACLE OUT OF THE WAY, THE PILOT PROGRAM  
AT ECOWATER SOON PROVED TO BE A MAJOR SUCCESS.

SCENE 53.

ABC-12 (12:14:36 - 12:14:53) Dudzinski on-cam

DUDZINSKI (ON-CAM) :

Traditional costing systems don't give you the  
flexibility that ABC does. It makes you pull all you  
costs either directly through labor or through  
material, which is not enough dimensionally to give  
you a true picture of what your product costs are.

-FTB-

SCENE 54.

ABC-7 (07:14:45 - 07:15:05) (MLS) Shop floor (pan R)

NARRATOR (VO) :

THE ALLIED SIGNAL AUTOMOTIVE PLANT IN GREENVILLE,  
OHIO MANUFACTURES A VARIETY OF FILTRATION PRODUCTS.  
THROUGH ABC AND ABM, THE COMPANY CAN ISOLATE  
DESIRABLE BUSINESS AREAS BY PINPOINTING THE  
PROFITABILITY OF EACH OF ITS PRODUCT LINES... AND  
INDIVIDUAL CUSTOMERS.

SCENE 55.

ABC-3 (03:09:58 - 03:10:25) Salles on-cam

CG: BERNIE SALLES

PLANT MANAGER

ALLIED SIGNAL AUTOMOTIVE

SALLES (ON-CAM) :

Some of the things that we found out is the certain  
redistribution of costs within product lines, as to  
whether the after-market product was more profitable  
than, for example, the OE product was. It also  
showed us between customers, major customers, as to  
where the actual profit of the organization was being  
driven.

SCENE 56.

ABC-3 (03:11:26 - 19:11:49) Salles on-cam

SALLES (ON-CAM):

It highlights that and makes that determination on a real basis, not a standard basis that this is the amount of activities that you have allocated into heavy duty product. This is what it really costs you to produce heavy duty product. You run that against what your selling price is, determine what your margins are, and say, Do I want to play in this arena or don't I?

SCENE 57.

ABC-7 (07:09:35 - 07:09:45) (MCU) Canisters move down conveyor

NARRATOR (VO):

IN ADDITION TO DETERMINING PROFITABILITY, ABM HAS UNCOVERED ACTIVITIES THAT ADD VALUE TO THE PRODUCT AND THOSE THAT DON'T.

SCENE 58.

ABC-6 (06:16:29 - 06:16:45) Lico on-cam

CG: JAMES A. LICO

OPERATIONS MANAGER

ALLIED SIGNAL AUTOMOTIVE

LICO (ON-CAM):

One of the most difficult things about ABM is coming up with value added and non-value added, not because it's difficult from a technical standpoint, but it is sort of an emotional process that a lot of people don't like to think that everything they do during the day is non-value added.

SCENE 59.

ABC-6 (VO 06:16:49 - 06:17:01) Lico VO

CG: ALLIED SIGNAL AUTOMOTIVE

VALUE ADDED CRITERIA

- CUSTOMER PREFERENCE
- MADE RIGHT THE FIRST TIME
- CHANGES PRODUCT FORM OR FUNCTION

LICO (VO):

We consider value added if it's one of three things: one, if the customer has a preference for that type of thing, number two, if it's made right the first time, and number three...

SCENE 60.

ABC-6 (VO 06:17:06 - 06:17:08)

LICO (VO):

...if it changes the form or function of the product.

SCENE 61.

ABC-6 (06:18:49 - 06:19:18) Lico on-cam

LICO (ON-CAM):

When you embark into activity based management one of the things that's a given and you have to make sure everyone in the organization understands is that there are going to be things uncovered that people haven't seen before. And so one of things we talked a lot about early on in the process is using the data responsibly, because it's an improvement tool and just because the process is 85% non-value added, it doesn't mean that it's not important. We just have to focus on improving that particular process.

SCENE 62.

ABC-6 (06:19:35 - 06:19:56) Lico VO

ABC-7 (07:10:50:20 - 07:11:11) (MLS) Man moves materials

LICO (VO):

Specifically, things like the amount of money we spent moving material, the amount of money we spent setting up, how much time we spend fixing things versus looking at them preventatively. Those are probably typical things that come out of most facilities, but you never really have a good handle of costs and with ABM we've been able to do it.

SCENE 63.

ABC-7 (07:01:06 - 07:01:16) (MS) Machine

**NARRATOR (VO):**

HIGH-TECH MACHINES ARE OFTEN TOUTED AS MAJOR COST SAVERS, BUT ABC SHOWS THEY PRODUCE COSTS ALL THEIR OWN.

SCENE 64.

ABC-6 (06:21:20 - 06:21:30) Lico on-cam

LICO (ON-CAM):

You save the direct labor in many cases, but you've added new costs to it. In general it may still be a savings but it means you have to do things differently in the future to improve that type of operation.

SCENE 65.

ABC-6 (06:21:40 - 06:22:18) Lico VO

ABC-7 (07:18:53 - 07:19:00) (MS) Canisters move down conveyor

LICO (VO):

Things like process engineering. Do we have enough process engineering support now because of the fact that we now have a lot more technical equipment. And then maintenance really is the main one. I mean, if

you look at equipment, you really find out how much more important, as we get into more highly automated, electronic controlled equipment, we realize that that equipment can go down more and longer, and so the cost driver of reactive maintenance is an eye opener.

And it really focuses your effort to do things more preventively and that's what we're focusing our efforts on, to do more predictive and preventive type maintenance activities.

SCENE 66.

ABC-7 (07:29:46 - 07:29:54) (MCU) Color coding

NARRATOR (VO) :

ABM NOT ONLY SHOWS ALLIED SIGNAL WHERE IMPROVEMENT IS  
NEEDED -- BUT WHERE IT IS MOST PROFITABLE.

SCENE 67.

ABC-6 (06:24:38 - 06:25:09) Lico on-cam

ABC-7 (07:06:34 - 07:06:46) (MS) Man at machine zoom-  
out (LS) materials on floor

note: backtime from end of bite

LICO (ON-CAM) :

It takes you to a more active, participative approach to quality, so that you're auditing more processes, your poka-yoking or mistake-proofing equipment more often, you're putting in systems that will identify issues sooner. Both visually, sounds, lights, those kinds of things. The costs that are associated with the cost of poor quality, coupled with the material side of it, are probably the two big drivers that really show us that we have to redefine processes.

SCENE 68.

ABC-7 (07:20:55:07 - 07:21:00:20) (CU) Hands insert  
ring on top of filter

ABC-7 (07:12:06 - 07:12:12) (MS) Two people on line

NARRATOR (VO) :

ALL OF THIS COST INFORMATION IS JUST DATA... UNTIL IT  
IS MADE AVAILABLE TO THOSE WHO CAN PUT IT TO REAL  
USE.

SCENE 69.

ABC-6 (06:29:25 - 06:29:50) Lico on-cam

Insert: backtime from end of bite

ABC-7 (07:12:27 - 07:12:31) (MS) Woman at work station

ABC-7 (07:24:07 - 07:24:28) (MCU) Parts organized on plant floor

LICO (ON-CAM):

Organizations are much more horizontal now than vertical, and so the understanding of activity based management, of cost, has to come out of the hands of the financial folks and into the hands of the improvement teams, hourly and salaried, that are self-managed out on the factory floor and are focusing on improvements that way. Really the future is getting that information--good, solid data--that they can focus their improvement effort on to the factory floor.

SCENE 70.

ABC-6 (06:26:37 - 06:26:57) Lico on-cam

LICO (ON-CAM):

We talk so often about this being the next evolution in total quality, which is a major initiative, really the way of life that we're running our operations. When you look at the next evolution of that, without a doubt activity based costing and being an activity based management organization is certainly our wave of the future and that's where we're going.

-FTB-

SCENE 71.

ABC-11 (11:02:18 - 11:02:29) (LS) Press zoom-in (MCU) parts out chute

NARRATOR (VO):

THE SEAT BELT DIVISION OF TRW VEHICLE SAFETY SYSTEMS  
MOVED TO ABC/ABM AS THE BEST WAY TO DETERMINE WHICH  
PARTS SHOULD BE MANUFACTURED IN-HOUSE AND WHICH BY  
OUTSIDE VENDORS.

SCENE 72.

ABC-9 (09:23:01 - 19:23:51) (MS) Schleicher on-cam

CG: DAVID SCHLEICHER

MANAGER - VALUE ENGINEERING

TRW VEHICLE SAFETY SYSTEMS

SCHLEICHER (ON-CAM):

We make a wide variety of parts and even though they all go into seat belt assemblies, they range from

very small anchors to very large retractor bases. Some are very low volume service parts, some are very high volume production parts that run literally millions of parts per year. Because of the wide diversity of both types of product and volume of product the standard cost system was allocating all of the overhead across those parts like peanut butter.

Insert:

ABC-11 (11:03:05 - 11:03:12) (MS) bracket out chute

ABC-11 (11:02:43 - 11:02:50) (CU) bracket out chute

Each one of those parts was getting an average share of the overhead pie. ABC costing has allowed us to only allocate resources and therefore costs to the products that consume those resources.

SCENE 73.

ABC-9 (09:27:12 - 19:28:08) Schleicher on-cam

SCHLEICHER (ON-CAM):

We did a rather unique thing after we got done with the ABC implementation. We did a regression analysis of all the current parts that are on the outside to try to predict what our own internal ABC cost was versus what we were currently buying from the outside. We also used the regression to try to predict what the outside stampers would sell us those parts that we are currently manufacturing in-house. We then took a simple formula where we took the predicted outside stamper's selling price to us minus our own internal ABC variable cost and we divided that by the constraining factor of our operation, which in most cases is the press capacity in our plant.

SCENE 74.

ABC-9 (09:28:32 - 19:28:39) Schleicher VO

ABC-11 (11:11:47 - 11:12:02) Dies

note: backtime into previous scene

SCHLEICHER (VO):

We have moved several dies in both directions since the implementation.

SCENE 75.

ABC-9 (09:09:14 - 09:09:42) (MS) Greer on-cam

CG: TOM GREER

INDUSTRIAL ENGINEER

TRW VEHICLE SAFETY SYSTEMS

GREER (ON-CAM):

One of the things ABC costing has done for us is--we're a stamping facility and stamping dies are costed basically in our facility on strokes per minute. I know that some other facilities will cost them as to the press time that they go to. But dies are a lot more individual than that.

Insert:

ABC-11 (11:14:18 - 11:14:28) "Tool Room"

note: run into next scene

Some dies will run well. Some dies will have critical factors that will require tons of extra inspection or tool maker adjustment.

SCENE 76.

ABC-9 (09:09:53 - 09:10:24) Greer on-cam

ABC-11 (11:06:02 - 11:06:18) (MCU) "OVERSEER" unit

pan L to sensor in die

note: backtime from end of scene

GREER (ON-CAM):

ABC has captured that and given us a die performance factor. That performance factor from the ABC costing has allowed us to distribute costs to that part, but it has also come into play for capacity studies. Now we can say if a die goes into a press, it's not just the strokes per minute at some blank flat rate you would apply to how much time that die is actually going to take to get out the part. We can tell you, based on the last six months performance of that die, how much time that die is going to require in the press and we can schedule our presses that way.

SCENE 77.

ABC-9 (09:14:15 - 09:14:25) Greer on-cam

GREER (ON-CAM):

Another thing that doesn't get captured in a standard cost system a one-out die versus a two-out die. If you have a die that is stamping and turning out a single part every second...

SCENE 78.

ABC-9 (09:14:34 - 09:14:46) Greer VO

ABC-11 (11:15:50 - 11:16:02) (WS) Toolmaker moves die

zoom-in (MS)

GREER (VO):

If you automatically make that one-out die a two-out die where it turns out two parts every second, it means that all the overhead and standard labor applied to that part are now half of what they were before. Well, that's not true.

SCENE 79.

ABC-9 (09:14:56 - 09:15:16) Greer on-cam

GREER (ON-CAM):

In real life making a two-out die versus a one-out die does not cut the cost in half. There is a middle range there where it does improve but it doesn't cut all these costs in half. Your shipping costs aren't half. Your inspection costs aren't half. And these things get applied to those dies as well. So that's another strong area where ABC comes in.

SCENE 80.

ABC-11 (11:13:31 - 11:13:34) Yellow die  
ABC-11 (11:13:54 - 11:13:58) Green die  
ABC-11 (11:13:44 - 11:13:48) Red die  
ABC-11 (11:14:06 - 11:14:10) Yellow die

**NARRATOR (VO) :**

AS COMPANIES STRIVE FOR GREATER COMPETITIVENESS --  
ESPECIALLY IN THE AUTOMOTIVE INDUSTRY -- TRW SEES  
ABC/ABM BECOMING A MAJOR MANUFACTURING TOOL.

SCENE 81.

ABC-10 (10:08:45 - 10:09:20) Schleicher on-cam

**SCHLEICHER (ON-CAM) :**

Both GM and Chrysler are very heavy into implementing ABC and Ford I know just started their first implementation this year. Because of the large automotive industry in this country, I feel that they're going to drive that down to their major suppliers, then the major suppliers are going to drive it down to the tier two suppliers, so that in the next five years I predict that there will be a very large implemented base of activity based costing in manufacturing in this country.

-FTB-

SCENE 82.

ABC-21 (21:08:06 - 21:08:27) (LS) Plant floor (pan R)

**NARRATOR (VO) :**

CLARK HURTH COMPONENTS IN STATESVILLE, NORTH CAROLINA, MANUFACTURES AXLES AND TRANSMISSIONS FOR OFF-ROAD VEHICLES. THEY'VE COMPLETED GATHERING ABC DATA AND ARE VIGOROUSLY PURSUING ACTIVITY-BASED MANAGEMENT. ALTHOUGH THE PROGRAM IS RUNNING SMOOTHLY NOW, THEIR EARLY ENTHUSIASM TO LAUNCH ABC WAS TRULY A LEARNING EXPERIENCE.

SCENE 83.

ABC-19 (19:15:46 - 19:16:04) (MS) Miller on-cam

CG: SCOTT MILLER

CONTROLLER

CLARK HURTH COMPONENTS

MILLER (ON-CAM):

One of the pitfalls we had, we trained everybody upfront. We told them how to use ABC, what they could use it for. Then six to eight months later give them the data and use it, they forget all their training. So one of the big pitfalls we had was we trained too early in the process. We would train more at the end of the process.

SCENE 84.

ABC-21 (21:05:35 - 21:05:45) (MS) Dolly thru blanks

NARRATOR (VO):

ALTHOUGH THE PROGRAM WAS IMPLEMENTED IN LESS THAN EIGHT MONTHS, EVEN THAT TIME FRAME WAS TOO LONG...AND MISSED OUT ON THE IMMEDIATE BENEFITS ABC CAN BRING.

SCENE 85.

ABC-19 (19:16:13 - 19:16:52) Miller on-cam

MILLER (ON-CAM):

If you can do something very quickly--in a month, month and a half--get some quick results and then build enthusiasm and support from there. I think you're much better off. Because typically there are some tremendous savings there, in ABC, that will just come jumping at you. You don't need to do a real complex model to develop them. You'll need the more complex model later on to get some of the less obvious cost reductions. The more obvious ones are there. You just do a very quick model, get it out in a month or a month and a half, and build off that enthusiasm and support to help you make the change you need to do or to help to implement what you need to do to reduce those costs.

SCENE 86.

ABC-21 (21:04:46 - 21:04:56) (MS) Gears

note: cover next scene

NARRATOR (VO):

AS IS SO OFTEN THE CASE, ABC UNCOVERED COSTS CLARK-HURTH DIDN'T KNOW EXISTED.

SCENE 87.

ABC-19 (19:07:09 - 19:07:13) Miller VO

MILLER (VO):

We discovered some hidden quality costs when we went through the activity analysis.

SCENE 88.

ABC-19 (19:07:29 - 19:07:51) (MS) Miller on-cam

MILLER (ON-CAM):

For engineering, the obvious one was they spent some time in quality analysis. For example, a part fails out in the field. The engineer would analyze it to see if it was a design problem or what type of problem it was. Maybe on the machining side. What happened was those costs got rolled into the quality costs. It was quite surprising, because the quality cost almost doubled from what we thought it was.

SCENE 89.

ABC-20 (20:17:30 - 20:17:38) (MS) Machine tool

**NARRATOR (VO):**

DETERMINING THE TRUE COSTS OF PRODUCTION ENABLED THE COMPANY TO INCREASE EFFECTIVENESS IN TWO KEY AREAS.

SCENE 90.

ABC-19 (19:10:23 - 19:10:38) (MS) Miller on-cam

MILLER (ON-CAM):

Well, ABC has done two things for us. It's saved us money and also we were able to have some price increases. The first, the price increases, after looking at our cost and what product was costing us, we raised prices that basically gained us a million to a million and half dollars.

SCENE 91.

ABC-24 GRAPHIC

note: find rack-focus of Timken bearing as background

**NARRATOR (VO):**

FOR EXAMPLE, A VENDOR'S BEARING WAS BOUGHT AT NINETEEN DOLLARS. THROUGH ABC ANALYSIS -- WHICH FACTORED IN ACTIVITIES SUCH AS INSPECTION, SCRAP, MATERIAL MOVES, RECEIPTS, AND OTHER PAPERWORK -- THE REAL COST PROVED TO BE FORTY-SEVEN DOLLARS.

SCENE 92.

ABC-18A (18:25:47 - 18:26:04) (MS) Miller on-cam

MILLER (ON-CAM):

On the price increases we have given relating to ABC about 90% of our customers have decided to stay with us, which shows there's some pricing elasticity out there which we were unaware of and didn't pursue enough without the ABC knowledge.

SCENE 93.

ABC-19 (19:10:39 - 19:10:48) Miller VO

ABC-20 (20:16:46:24 - 20:16:53) (CU) Hand tightens  
down fixture

ABC-20 (20:16:56:15 - 20:16:59:15) (CU) Man's face

MILLER (VO):

On the cost savings side of ABC, and I think that's where the long-term fruit of ABC is at, is being able to reduce your costs. We are able to look at our set-ups, see how much our set-up costs were costing us.

SCENE 94.

ABC-20 (20:17:02:20 - 20:17:20) (MS) Part fixtured

**NARRATOR (VO):**

EQUIPPED WITH ABC DATA, THE COMPANY MOVED TO ABM AND  
  
BEGAN CHANGING THE WAY MANY OF ITS OPERATIONS WERE  
  
MANAGED.

SCENE 95.

ABC-18A (18:17:50 - 18:17:58:19) Miller on-cam

MILLER (ON-CAM):

We took a look to see what was driving costs, for example material moves, but there might have been drivers driving that driver of course. Well,

SCENE 96.

ABC-18A (18:18:00 - 18:18:17) Miller VO

ABC-21 (21:11:09 - 21:11:12) Operator at keypad

ABC-21 (21:12:55:03 - 12:13:00:15) Machine loads part

ABC-21 (21:13:30 - 21:13:39) Operator loads part

MILLER (VO):

the two machines are far apart so we had to move the material there. We were, at one time we used the transfer line concept, now we we're at a cellular concept. So we were are able to bring machines closer together in that example, reducing the material moves. That also reduces some scrap costs, etc.

SCENE 97.

ABC-19 (19:01:08 - 19:01:29) Miller VO  
ABC-21 (21:02:34 - 21:02:38:24) (MS) Man at panel  
ABC-21 (21:04:16:16 - 21:04:21:24) (CU) Hand on  
button  
ABC-21 (21:03:55:06 - 21:03:58:12) (MCU) Tool  
exchange  
ABC-21 (21:04:25:20 - 21:04:32:05) (MS) Tool inserted  
ABC-21 (21:02:52:16 - 21:02:54) (MS) Man at panel

MILLER (VO):

We evaluated some of our activities and determined there were certain steps in those activities that could be reduced or eliminated. For example, with setups, we saw we spent a lot of time in doing setups. With our small lots, the setups were quite extensive in cost. So we've made some efforts in quicker change tooling.

SCENE 98.

ABC-19 (19:01:39 - 19:02:11) Miller on-cam

MILLER (ON-CAM):

Engineering would have a part number during the prototype phase and then we would actually change that part number and put it into our manufacturing system. Now we're going to a product data manager--a PDM--that electronically allows you to have multiple views of the same part number, so we have a consistent part number. We do away with one full position, someone just doing the translation from engineering part numbers to manufacturing part numbers. And also it allows manufacturing and engineering to speak one language.

SCENE 99.

ABC-20 (20:13:15 - 20:13:20) (CU) Machine cuts part  
ABC-21 (21:09:49 - 21:09:54) (MS) Gear teeth cutting

NARRATOR (VO):

CLARK-HURTH HAS EMBRACED ABC-ABM, AND NOW SEES IT AS  
AN INSTRUMENT FOR CHANGE AS WELL AS A STRATEGIC  
DECISION MAKING SYSTEM.

SCENE 100.

ABC-19 (19:17:56 - 19:18:05) (MCU) Miller on-cam

MILLER (ON-CAM):

In the end ABC is going to give you some data. It's up to the management team, the people implementing it, how they are going use that data. Are they going to use it to change things or are they going to just provide the data?

SCENE 101.

ABC-19 (19:19:33 - 19:19:46) (MS) Miller on-cam

MILLER (ON-CAM) :

Like any change you have to decide if it's going to be evolutionary or revolutionary. And I think it should be revolutionary, because, really the cost data we have today isn't really providing us adequate details on what's driving the costs.

-FTB-

SCENE 102.

2230 (07:05:10 - 07:05:26) Two men discuss automated work cell

2230 (07:07:25 - 07:07:35) Man at design terminal

NARRATOR (VO) :

A MAJOR ADVANTAGE OF ACTIVITY BASED COSTING IS ITS ABILITY TO DRAW MANUFACTURING AND ENGINEERING CLOSER TOGETHER, PARTICULARLY IN THE DESIGN OF A PRODUCT.

SCENE 103.

ABC-17 (00:11:20 - 00:11:46) Boike on-cam Full-frame

CG: DOUGLAS BOIKE, PH.D.

VICE PRESIDENT

MERCER MANAGEMENT CONSULTING

Fly Boike on-cam into graphic background at "...various forms of complexity..."

CG lower 1/3 left:

DOUGLAS BOIKE, PH.D.

VICE PRESIDENT

MERCER MANAGEMENT CONSULTING

CG right 1/2:

...part proliferation

...variations of design

...non-standard processes

..non-standard designs

BOIKE (ON-CAM) :

A lot of the costs that are uncovered through activity based analysis are driven by complexity. Various forms of complexity include part proliferation, many different variations of design, non-standard processes, non-standard designs and whatnot. One of the ways that you take a lot of that out of both the manufacturing as well as the original design of the product is the way you actually design the product in the first place.

SCENE 104.

ABC-17 (00:12:03 - 00:12:43) Boike on-cam insert into graphic background

note: jump dissolve

CG lower 1/3 left:

DOUGLAS BOIKE, PH.D.

VICE PRESIDENT

MERCER MANAGEMENT CONSULTING

CG right 1/2:

poor technology platforms...

designing approaches...

...complexity

...common parts

...standard building blocks

...modular building blocks

...common testing

...design-for-assembly

BOIKE (ON-CAM) :

30 to 40 to 50 percent of the cost gap between effective products relative to ineffective products were driven by poor choices of technology platforms, designing approaches, the complexity that was built into the product, and whatnot. By understanding costs on more of an activity basis in manufacturing you can drive yourself back into design and say, What I really want is more common parts, I want more standard building blocks, I want modular building blocks, I want more common testing processes, I want to analyze the product more from a design-for-assembly standpoint.

SCENE 105.

ABC-17 (00:12:53 - 00:13:05) Boike on-cam

note: fly out to full frame

BOIKE (ON-CAM) :

It doesn't necessarily drive you towards more automation, however, because in many cases automation is a hidden cost element that gets built into many manufacturing enterprises without realizing it.

SCENE 106.

2229 (06:11:49 - 06:12:03) Robot arm goes down,

spins, comes back up

NARRATOR (VO) :

IN MANY INSTANCES, ACTIVITY BASED COSTING ALLOWS

COMPANIES TO WIN LUCRATIVE CONTRACTS THAT WOULD HAVE

ELUDED THEM USING TRADITIONAL COSTING METHODS.

SCENE 107.

ABC-17 (00:16:19 - 00:16:29) Boike on-cam

BOIKE (ON-CAM) :

Activity based costing should be preferred by manufacturing managers because it really enables them to get at the true cost of manufacturing a good or a service.

SCENE 108.

ABC-18 (00:01:10 - 00:01:40) Boike on-cam

BOIKE (ON-CAM):

Moreover, it really exposes a number of the classic death spirals a number of companies get themselves into, where they end up winning the low-volume contracts and losing the high-volume contracts because their cost accounting system leads them to pricing which is really inaccurate. By losing the high-volume contracts you in fact lose the volume that you need to support all the various costs that you're incurring in a manufacturing operation. So it leads to a very classic death spiral.

SCENE 109.

ABC-17 (00:07:33 - 00:08:12) Boike on-cam

BOIKE (ON-CAM):

Common costing systems quite often penalize high-volume manufacturing operations. Because most of the rate bases for allocation of cost tend to be on basis of material or labor consumption and therefore because it's a high-volume production line, you're most likely going to be picking up a lot of the allocated costs from the manufacturing operation.

In reality, a lot of the costs are probably being incurred because there are lower volume products cast about in the rest of the manufacturing site and there are other support services that are probably being driven more by the lower volume products than the higher volume products.

SCENE 110.

328 (20:03:00 -20:03:20) (WS) Woman works at terminal

**NARRATOR (VO):**

EMBARKING ON AN ABC/ABM PROGRAM DOES NOT REQUIRE

SCRAPPING CURRENT ACCOUNTING METHODS OR THEIR

SUPPORTING INFORMATION SYSTEMS.

SCENE 111.

ABC-17 (00:24:42 - 00:25:03) Boike on-cam

BOIKE (ON-CAM):

I really think that you can extract a lot of the value from an activity based costing system without doing major surgery to your day-to-day accounting practices and procedures. In the end you will, assuming that you think this is a sound analytical platform for the way you want to run your company,

but you don't have to do it on day one.

SCENE 112.  
ABC-24 GRAPHIC

**NARRATOR (VO) :**

TODAY, ACTIVITY BASED COSTS AND ACTIVITY BASED  
MEASURES ARE KEY DRIVERS BEHIND MAJOR CONTINUOUS  
IMPROVEMENT INITIATIVES. WITH THE GROWING ACCEPTANCE  
OF PROGRAMS LIKE THESE, ABC SHOULD PROVE TO BE A VERY  
USEFUL TOOL IN PLOTTING MANUFACTURING'S FUTURE.

SCENE 113.  
ABC-18 (00:11:45 - 00:11:59) (MCU) Boike on-cam

**BOIKE (ON-CAM) :**

Where I see Activity Based Costing, or that acronym  
at least, going is I believe it is going to serve as  
the fundamental economic model or basis for most  
manufacturing, and in fact I think actually, many  
service industries as well.