

W H I T E P A P E R

Wisdom of Off-Loading Work While Operating in a Corrective Action Mode

SUMMARY — Off-loading of work to countries with skilled workers and low wages to enhance profitability becomes an issue when it contributes to unemployment.

A better option is being overlooked. To off-load work while suffocating on corrective action is equivalent to driving down a highway while wearing a blindfold.

A better option is to drive out corrective action before considering off-load. Once accomplished, most previous off-load decisions will be reversed.



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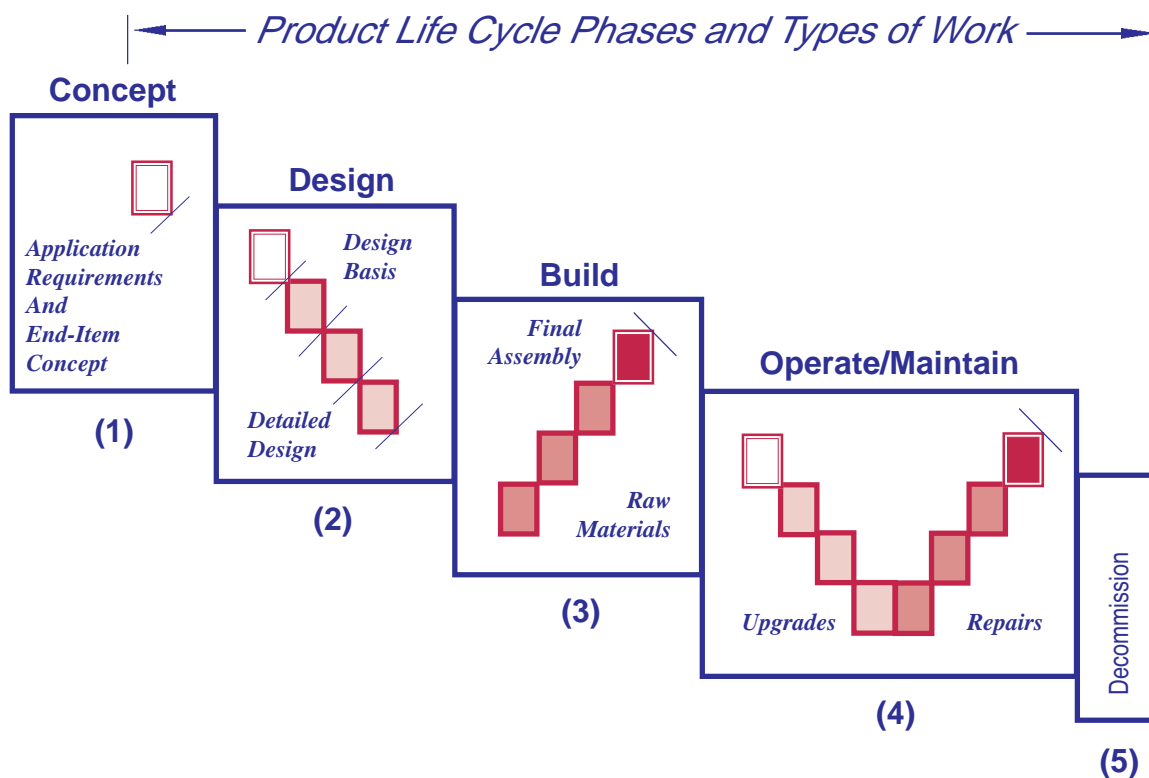
PRODUCT LIFE CYCLES AND TYPES OF WORK

The product development process represents a "V" model as shown below. The model is used to manage a product through all phases of its life cycle. A new product begins with a concept. The concept is transformed into a design basis. The design basis is then extended into detailed designs and processes which, in turn, are used to build the product.

No product is truly new. Each company strives to reuse proven designs and processes as economically feasible. Such reuse contributes to its competitive strength. The most significant decisions for reuse are made while extending the initial concept into a design basis (or basis for detailed design).

An organization's success is derived from the ingenuity of its new concepts, ability to transform those concepts into a design basis that is truly robust, and ability to optimize the reuse of its proven detailed designs and processes.

These core strengths must not be compromised as organizations seek ways to reduce costs and increase profitability.

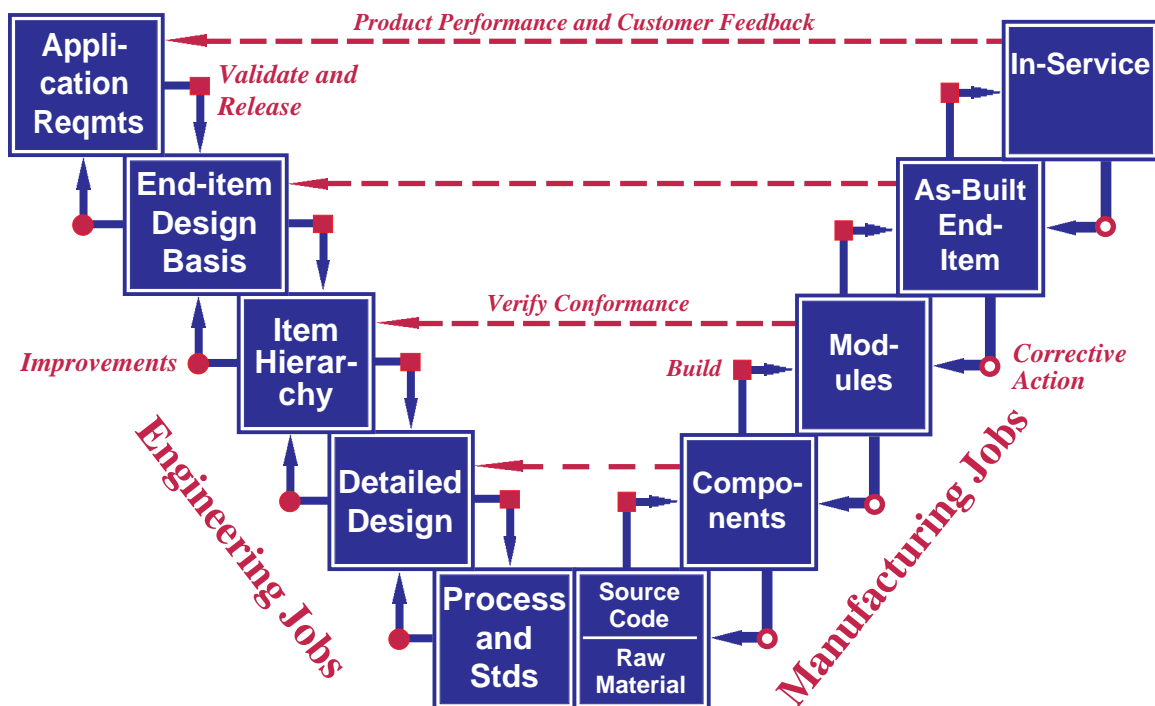


SUBCONTRACTING ISSUES AND NON-ISSUES

It is common practice for multinational corporations to perform final assembly in countries where the basic product is to be sold and used. They hire local workers to assemble, package and deliver the finished product. They contract with local suppliers to provide a significant portion of the components. The local government may even specify what that percentage must be.

A decision to buy components from a foreign supplier, rather than a local supplier, is rarely an issue if the competition is fair. Losing parties make it an issue if the winning party has an unfair advantage. Subcontracting work to compensate for inadequate capacity is also a commonly accepted practice.

Off-loading work for the sole purpose of lowering costs, however, becomes an issue if it contributes to unemployment. Manufacturing jobs which involve labor unions are most commonly off-loaded. Off-loading has recently expanded to include design jobs residing in the left leg of the "V" even though such practices may create new competitors.



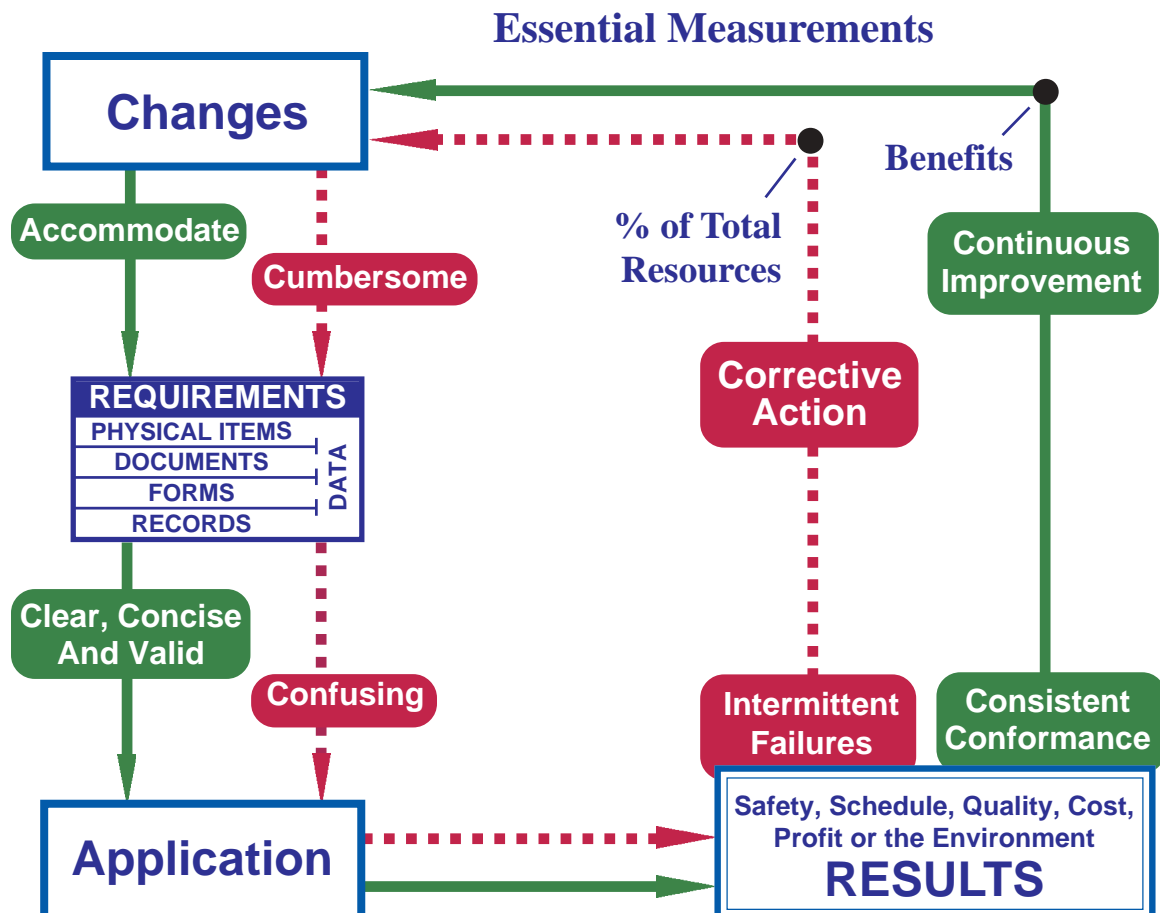
Products are designed top-down and produced bottom-up. Any defects in the leg on the right are due to deficiencies in requirements on the left.

CORRECTIVE ACTION MODE — WHAT IT MEANS

Continuous corrective action is not continuous improvement — yet most organizations operate in a corrective action mode. Intervention resources are the extra effort spent to rescue quality and schedule. Surveys by ICM reveal that most organizations spend over 40% of their resources on intervention.

It is impossible to be lean and efficient when corrective action is an integral part of each individual's job. Everything exists in a state of uncertainty. Any hesitation due to uncertainty is a form of intervention. The basis for making real improvements becomes unreliable. Profitability erodes. Survival is at risk.

To off-load work while suffocating on correction action is equivalent to driving while wearing a blindfold. ROI calculations cannot be trusted. The only viable option for optimizing profitability, ensuring survival and protecting jobs is to eliminate the need for corrective action. It deserves the highest priority.

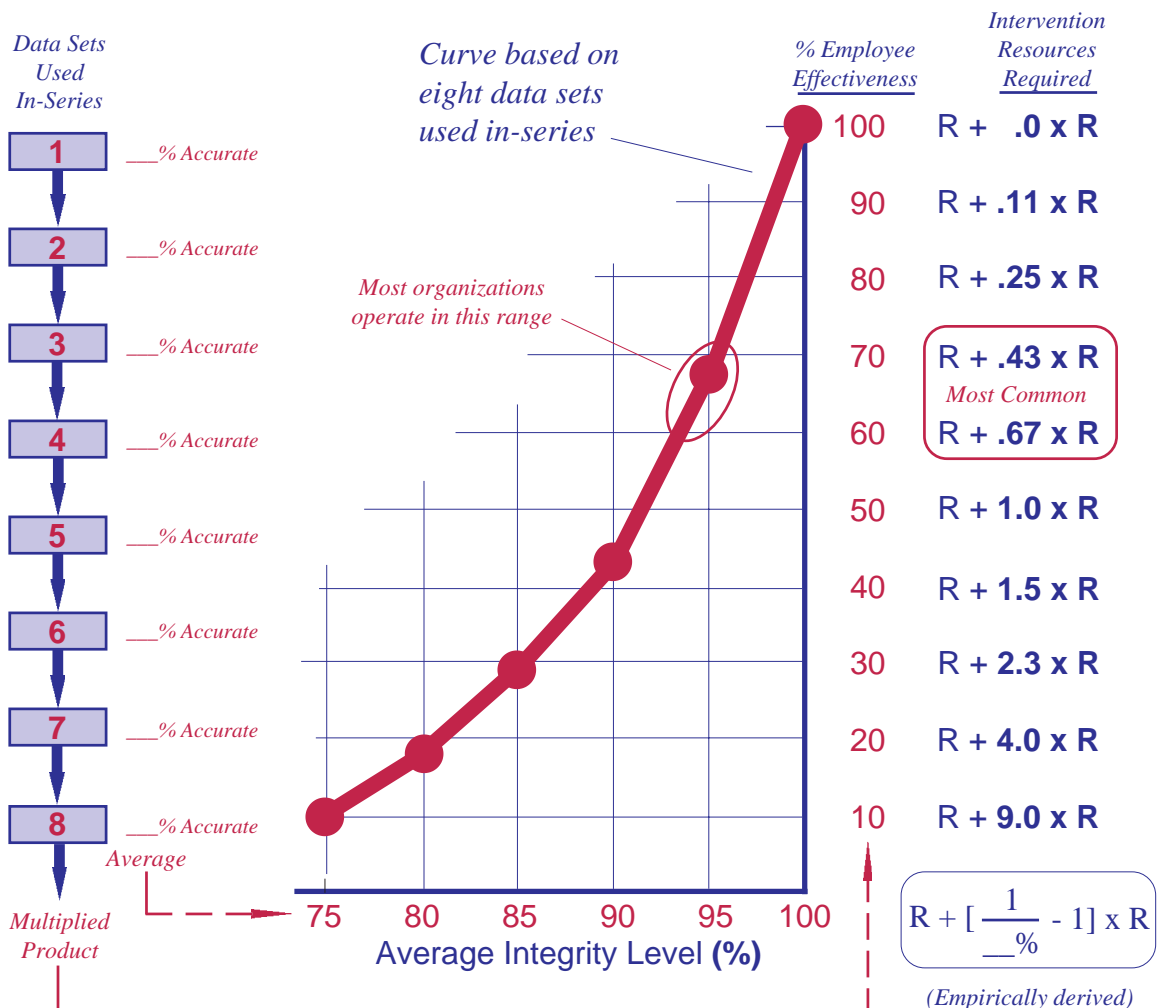


PRODUCTIVITY RELATIVE TO DATA INTEGRITY

There is a direct correlation between productivity and data integrity. Data includes any information that could impact safety, quality, schedule, cost, profit or the environment. Productivity declines as data integrity erodes. The relationship is exponential when data sets are used in-series.

Eight data sets are used in-series in the example below to demonstrate this relationship. Eight is not a large number. It increases with automation. Automated scheduling systems such as ERP use many more than eight.

In-series use of data sets cannot be avoided. A high level of data integrity is the only viable solution. Optimized efficiency and profitability cannot be achieved until the integrity of individual data sets approaches 100 percent.



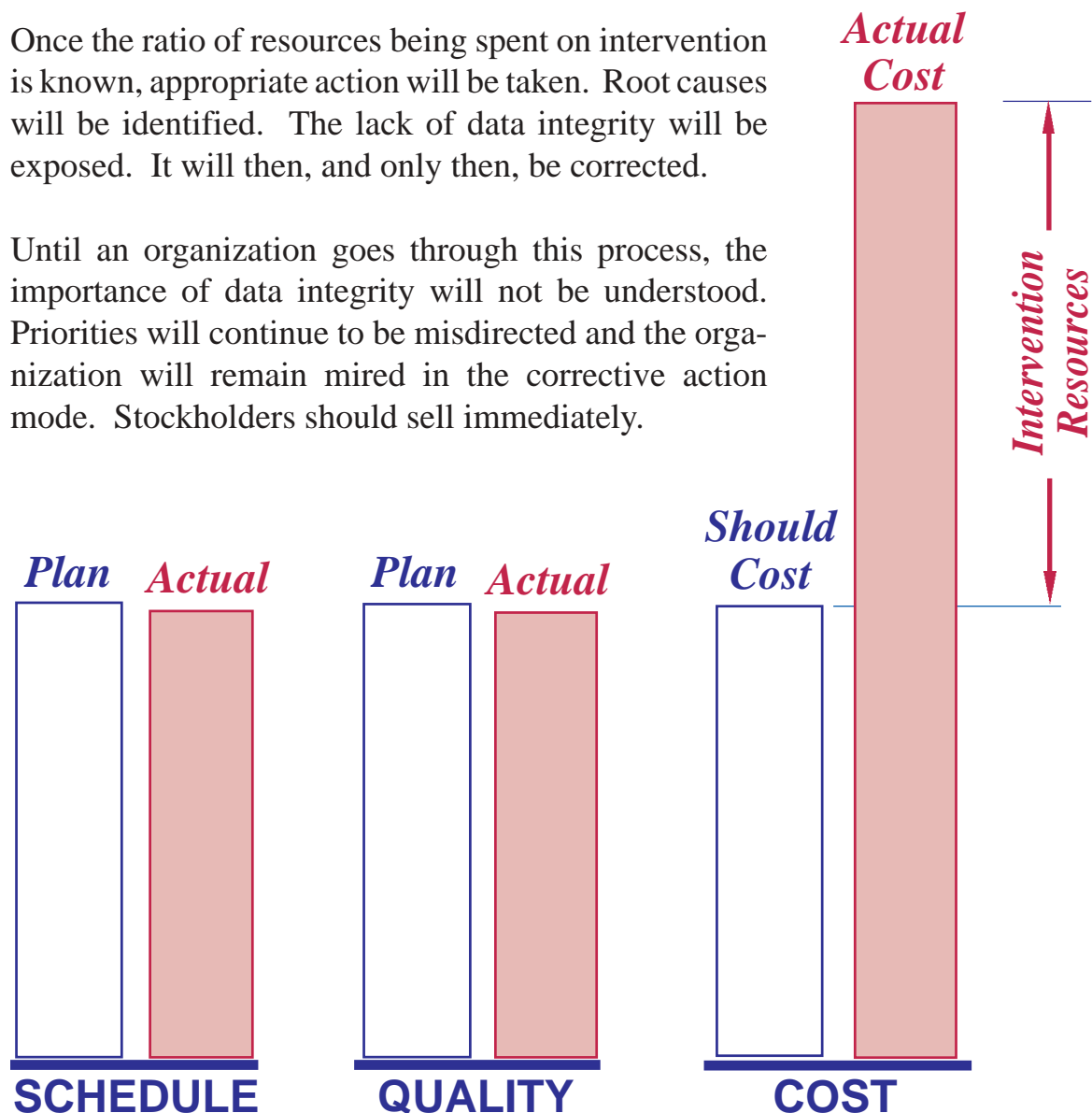
RESOURCES TO RESCUE SCHEDULE AND QUALITY

Very few organizations measure the resources being spent on intervention. Some amount of corrective action is assumed to be normal and is generally attributed to a lack of worker discipline. Most organizations would be shocked if they knew the magnitude of their resources being spent on intervention.

Resources being spent on intervention can be measured. Sample audits can be very simple and very revealing. If a single individual is spending 40% of each 8-hour shift on intervention, others are probably doing the same. Sample audits in other parts of the organization are likely to yield similar results.

Once the ratio of resources being spent on intervention is known, appropriate action will be taken. Root causes will be identified. The lack of data integrity will be exposed. It will then, and only then, be corrected.

Until an organization goes through this process, the importance of data integrity will not be understood. Priorities will continue to be misdirected and the organization will remain mired in the corrective action mode. Stockholders should sell immediately.

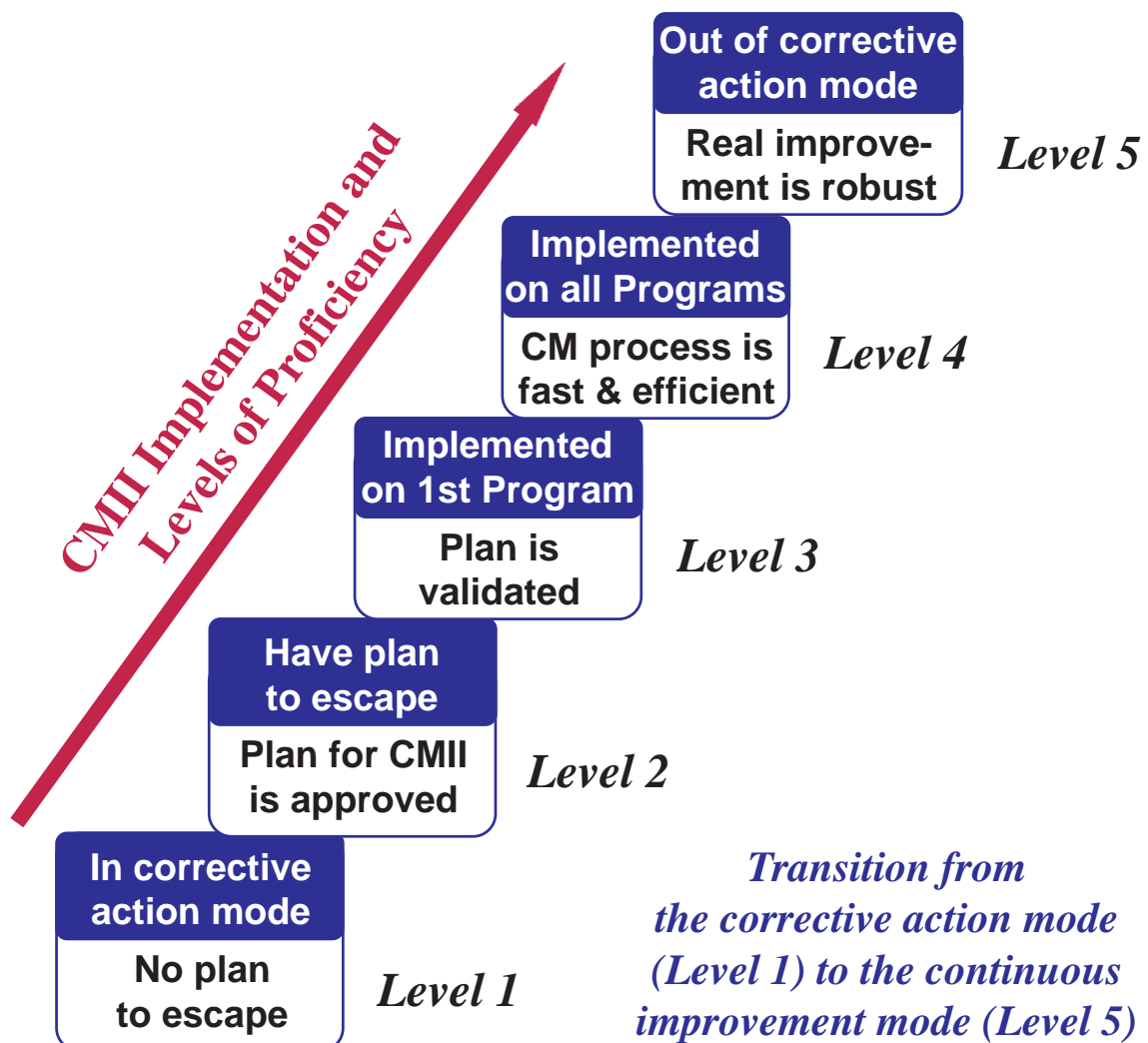


FIVE LEVELS OF CM PROCESS PROFICIENCY

The CMII model provides a methodology for transitioning out of the corrective action mode and into the continuous improvement mode. An organization operating in the corrective action mode with no plan to escape is at level 1. Levels 2 through 5 signify progress towards reducing corrective action.

Over 600 organizations around the world have CMII-certified grads and many have achieved level 3. The best of the best have achieved level 5.

Comparisons between the CMII process and other business process improvement initiatives are provided in white papers that can be obtained from the CMII Research Institute web site at www.cmiiresearch.com.



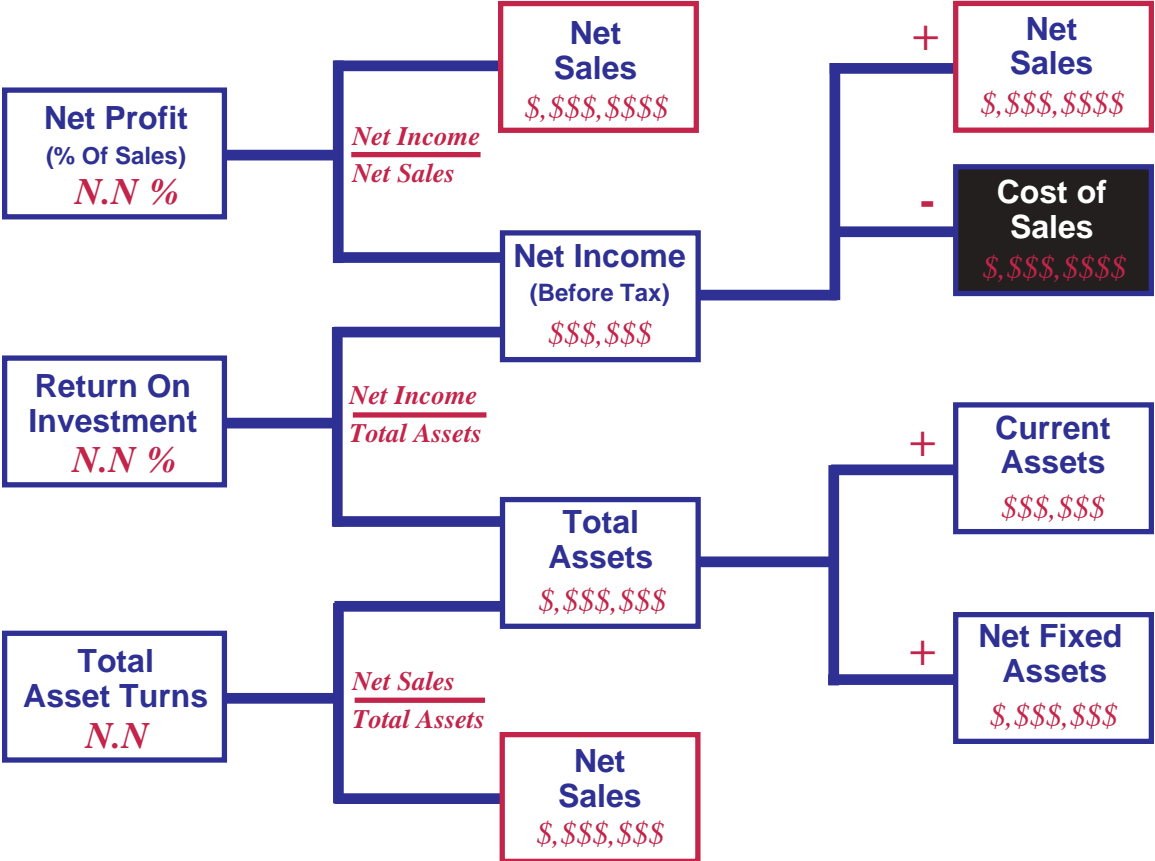
TOP PRIORITY — REDUCE COST-OF-SALES

Three parameters, *Net Sales*, *Cost-of-Sales* and *Total Assets*, are used to calculate *Net Profit*, *Return on Investment (ROI)* and *Asset Turns*. It is important to understand how changes in *Net Sales*, *Cost-of-Sales* and *Total Assets* influence each of the performance indicators.

For example, what if *Net Sales* could be increased without a proportional increase in *Cost-of-Sales* or *Total Assets*? What if *Cost-of-Sales* could be reduced while *Net Sales* and *Total Assets* remain unchanged?

Of all the options, reducing *Cost-of-Sales* relative to *Net Sales* and *Total Assets* provides the greatest benefit to bottom-line performance.

Cost-of-Sales is reduced through cost avoidance and cost reduction. Cost avoidance (elimination of corrective action intervention resources) must come first. Cost reduction can then, and only then, be achieved in a manner that is truly robust.

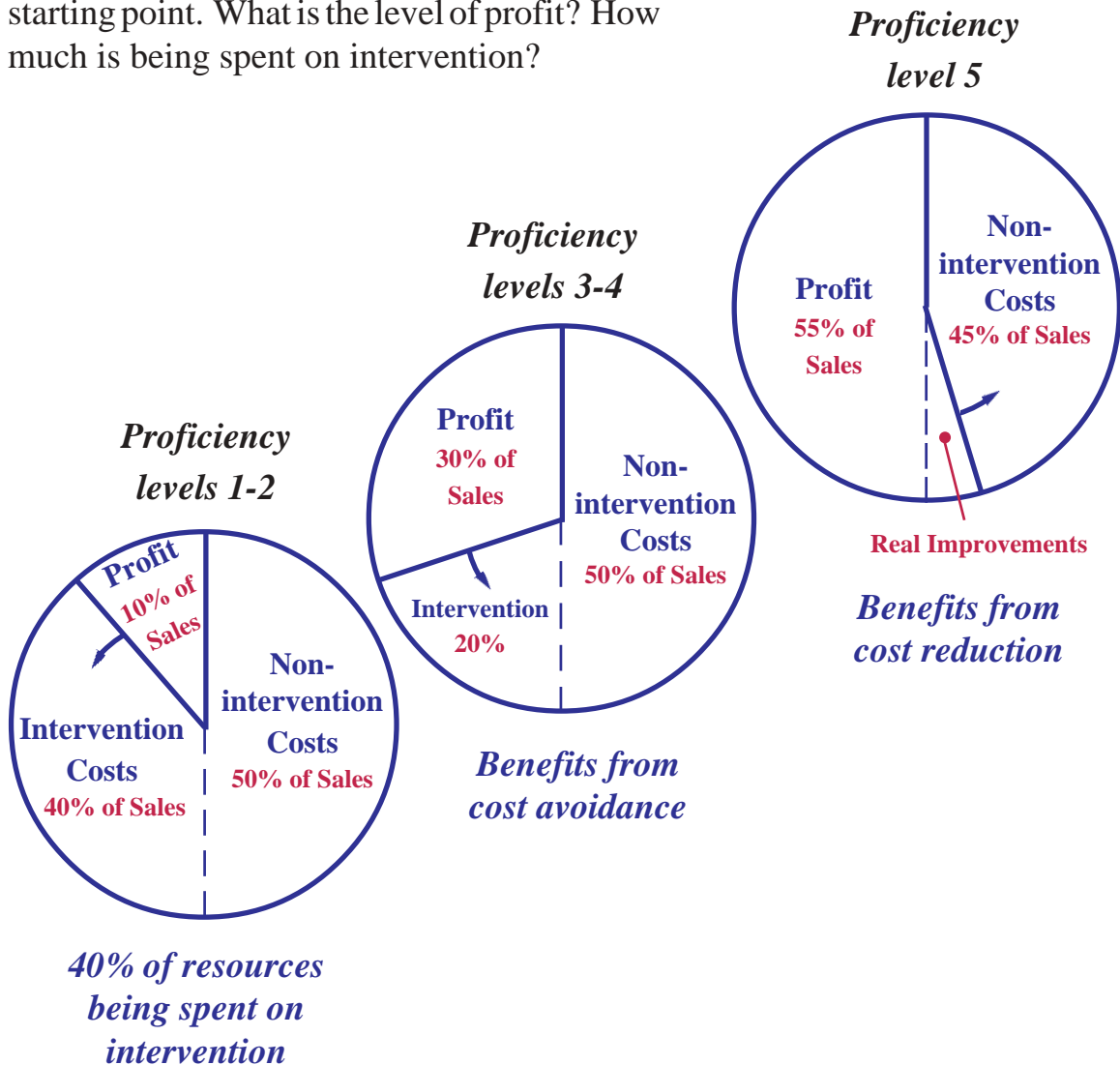


PROFITABILITY VERSUS LEVEL OF PROFICIENCY

Each dollar spent on corrective action erodes profit by the same amount. An organization that spends 40% of its resources on intervention is giving away a huge amount of profit. No organization would do that on purpose. An organization can waste 40% of its resources on intervention and continue to survive only if its competitors operate in a similar manner.

Relationships between cost avoidance, cost reduction, levels of proficiency and profitability are illustrated as a percentage of sales in the three circles below. The lower circle on the left represents the starting point.

Every organization needs to establish their starting point. What is the level of profit? How much is being spent on intervention?



CMII IMPLEMENTATION AND ROI CALCULATION

CMII implementation involves three phases; preparation, transition and application. Return-on-investment (ROI) is achieved in the application phase.

PREPARATION PHASE



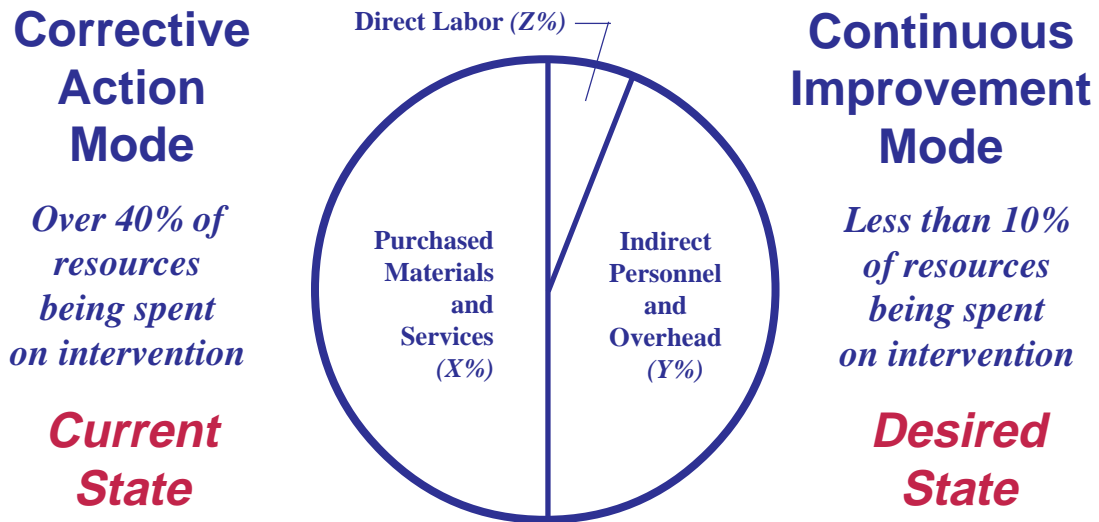
Resources spent on preparation and transition represent nonrecurring costs. Resources spent in the application phase represent recurring costs.

ROI is calculated by dividing total nonrecurring costs by the difference in monthly recurring costs plus other cost benefits.

Recurring costs before implementing CMII:	\$\$\$,\$\$\$/month
Recurring costs after implementing CMII:	- \$\$\$,\$\$\$/month
Net:	\$\$\$,\$\$\$/month
Benefits from being more agile and responsive:	+ \$\$,\$\$\$/month
Total benefits:	\$\$,\$\$\$/month
Nonrecurring costs to implement CMII:	\$,\$\$\$,\$\$\$
Divided by total benefits:	÷ \$\$\$,\$\$\$/month
Time required to recover investment:	NN months

QUALITY OF LIFE — A NEW EXPERIENCE

Most organizations have operated in a state of corrective action throughout their entire existence. It is ingrained in their behavior. To operate in any other mode is beyond their ability to comprehend.



Quality of life is significantly different within these two states of existence. Once anyone has experienced the state on the right, they never want to go back to the state on the left.

Organizations operating on the right are much more competitive than those on the left. They are able to bring new products to market much quicker. Their new products contain features which are more innovative and desirable.

Those operating on the right are able to pay higher salaries and provide better employee benefits. They are able to hire the best of the best. Word spreads fast. It is where everyone wants to work.

Organizations operating on the right strongly resist the off-loading of work. Profitability is not an issue. They are secretive about how they run their business. They have a competitive edge and they know why.

The right priorities and the how-to are clear. Reducing *Cost-of-Sales* deserves top priority. CMII provides the how-to. Off-loading work is not the answer.



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