THE CASE FOR RCA: INITIAL INHERENT NATURE OF COST AND ACCOUNTING FOR EXCESS/IDLE CAPACITY

BY DAVID E KEYS AND ANTON VAN DER MERWE

EDITOR'S NOTE

Business managers have been looking for solutions to complex problems since before George Danzig developed the simplex algorithm for linear programs over a century ago. Dr. Eli Goldratt, the genius behind the Theory of Constraints, set his ambitions on maximizing throughput while simultaneously containing or even reducing operating expenses and inventory levels. Drs.Robert S. Kaplan and Robin Cooper set the foundations for measuring and managing activities that consume an organization's resources (ABC/M) in a number of articles between 1990-1995 and in 1998, thoroughly articulated their resource consumption model, capacity and performance systems in their book Cost and Effect (Harvard Business School Press). Numerous other thinkers contributed to the exploration of the interrelationships of resources, capacity, and profitability. Now, Anton van der Merwe and David Keys throw their hats into the resource/capacity ring. In the first of series of articles, the authors build on their predecessors' work, and propose a mapping method to analyze and manage the "resource" side of ABC. The authors present their work as complimentary to activity-based costing and management as they attempt to more directly express the interrelationships between resource elements.

This article addresses the misapplications of ABC systems. Many practitioners jumped on the ABC bandwagon in its early stages, and have neglected to keep up with the evolutionary think-

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

ing that has occurred since. This article series will be especially helpful for managers using ABC systems first implemented 5-to-10 years ago, and that have undergone minimal design changes since. Resource consumption accounting concepts can assist in updating such models to deliver more valuable decision-making information.

In the mid 1980's, ABC came into prominence, a paradigm shift occurred in the way cost and its behavior were viewed. Processes became the primary drivers of costs. There was talk of the functional organization being replaced by an entirely process-oriented organization, and attempts were made to incorporate capacity management into ABC. Resources, viewed as general-ledger expense elements, were recast into the new light - the process view.

Fifteen years later the functional organization is alive and well and the general opinion is that ABC had mixed, if not mediocre success in the market.[1] The reasons are not fully understood and efforts are underway to gain more insight.[2] The problems may lie in the philosophy itself or the ways in which it was applied, other shortfalls can be ascribed to the view that was adopted for ABC in regard to resources. Some companies plunged head long into a fixed-cost death spiral using ABC information.

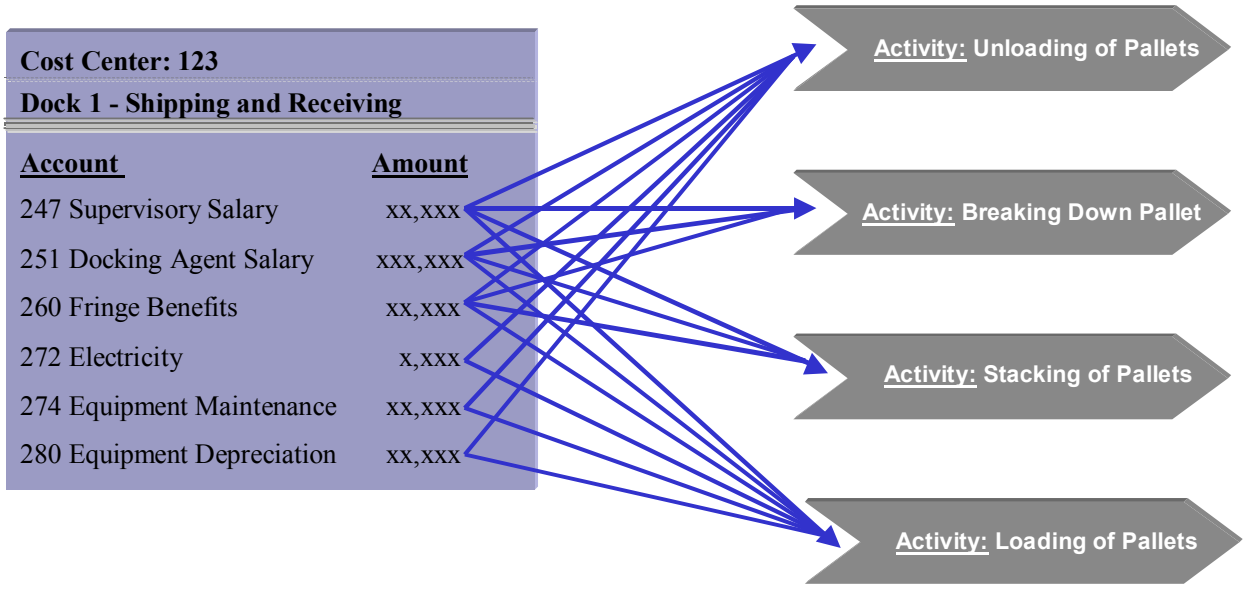
THE VIEW THAT WAS ADOPTED FOR ABC IN REGARD TO RESOURCES

Exhibit 1 illustrates the mapping of resources (expense accounts) to activities using the ABC model. Dock 1, a docking station at a distribution center, receives palletized shipments from

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

plants, and breaks them down for storage. Based on demand in the region, smaller pallets are stacked and loaded for shipment to retail outlets. Breaking down and stacking are accomplished with manual labor. Because electric forklifts are used to unload and load pallets, accounts 272, 274 and 280 are mapped only to the unloading and loading activities.

EXHIBIT 1: THE ABC VIEW OF RESOURCES AND THEIR COST FLOW



This mapping/tracing method, though intrinsically sound for allocating costs, falls short of being the definitive method in eight significant ways regarding resource costing:

1. A homogeneous measure of capacity is not incorporated.
2. Interrelationships among resource elements (i.e., input and outputs) are only indirectly expressed.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

3. The initial inherent nature of cost (i.e., the fixed and proportional characteristics of the costs given the capacity, skill, technology, etc. of the resources) is not reflected.
4. Excess and idle capacity is not properly accounted for.
5. Interrelationships between resource pools (resource pools are groupings of related resource elements) are only indirectly expressed.
6. The changing nature of cost (i.e., how the nature of cost changes through consumption relationships) is not reflected.
7. Fully burdened resource costs are not provided.
8. Inferior information is supplied for effective resource management and certain strategic decisions.

This article addresses the first four of the eight shortfalls and proposes Resource Consumption Accounting (RCA) not as a replacement for ABC but rather as a complement to it. The solution to the first three shortfalls is provided in the explanation of the RCA view of resources. Resources, in the RCA view, goes beyond just the expense elements in the general ledger; it includes machines or groupings of these and people and groupings of people. In addressing the fourth shortfall, criteria for the evaluation of excess and idle capacity solutions are proposed. Two typical ABC excess and idle capacity solutions are reviewed and evaluated before the resource consumption accounting solution is presented and evaluated. Shortfalls five through eight will be addressed in two subsequent articles.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

THE RESOURCE CONSUMPTION ACCOUNTING SOLUTION

The proposed solution is best illustrated by means of the strategic/organizational planning process, in particular when considering a green-fields organization or a new business plan. Vision, mission, and purpose objectives are converted into an investment in resources of the desired quantity, quality, technology, skill, etc. This process similarly applies to an existing enterprise, where a strategy requires a commitment of resources to achieve its goals. From a cost management perspective, such a commitment results in the following:

- Available capacity has been determined.
- Skill, technology, level of training and operating characteristics of the resource base have been determined, which in turn are the primary determinants of:
  + Interrelationships between resource elements, e.g. electricity expense and forklift hours in Dock 1,
  + The initial inherent nature of cost for the resource base.
  + Resource pool interdependencies and how the nature of cost will change at the time of consumption.

One overall assumption is made with regards to the plan: No one plans for failure, the plan is as sound as can be, given knowledge and insight at the time. Adjustments to the plan are inevitable; these will be incremental, unless the plan/strategy - or the business - is abandoned.

Until abandonment, the strengths, weaknesses, advantages, limitations and characteristics of the invested resource base must be harnessed to achieve the strategic goals.

HOW RCA ADDRESSES ABC SHORTFALLS

Some activity-based and traditional cost systems include the creation of "resource pools". Likewise, resource consumption accounting provides a particular framework for viewing resources. Resources and related resource elements are first grouped into generic resource pools, using the following criteria: [3]

- Resources must be of a similar technology, i.e. labor in Dock 1 is grouped together and the forklifts are considered a separate resource pool.
- Resource pool output and/or its relationships to consumers can be quantified and planned.
- Actual data, costs and quantities, for each pool can be collected or imputed.

RCA resource pools address the first three shortfalls as noted in the following paragraphs:

SHORTFALL 1: THE LACK OF A HOMOGENEOUS CAPACITY MEASURE [4] To address this shortfall, an output measure must be assigned to each resource pool, serving as a consistent measure of output to manage capacity. It provides insight into resource utilization, regardless of the mix of activities resources perform. Although resource output measures are used in ABC and other models, RCA's insistence on closer attention to the nature and relationship of resources provides insights for more accurate choice of output measures that better mirrors the differences and similarities between types of capacity.

SHORTFALL 2: THE INTERRELATIONSHIP OF RESOURCE ELEMENTS ARE NOT DIRECTLY REFLECTED [5]

– in resource consumption accounting resource elements are grouped in each resource pool (compare Exhibit 2 to Exhibit 1). As shown in Exhibit 2, Dock 1 has two resource pools, one for labor and one for the forklifts. The resource pool is the first discrete cost object in the cost model for the initial reclassification and collection of quantitative and monetary (expense) resource elements. Thus in a resource pool a resource's output quantity is associated with a dollar amount. In addition, RCA's construction of more direct pathways between relationship-based resource pools and activities makes cost relationships more visible for decision-making. It could be argued that such careful construction could be done within an ABC model. This is true; however, organizations can easily make the mistake of matching general ledger accounts to activities on a one-to-one basis. The RCA-based construction thus can strengthen an ABC model's linkage methodology.

SHORTFALL 3: THE INITIAL INHERENT NATURE OF COST IS NOT REFLECTED [6] **-** Associating expense elements, under the umbrella of the resource output measure, serves as the foundation for the reflection of the initial inherent nature of cost of the resources. In this step, expenses are categorized into fixed and proportional components. (Refer also Sidebar A in this regard). In Dock 1, shown in Exhibit 2, depreciation and a portion of equipment maintenance are fixed costs. Maintenance is considered partially fixed because the forklifts must be maintained to ensure serviceability even if utilization dropped significantly. Electricity and the remaining portion of equipment maintenance are considered proportional costs. All of these cost elements

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

are called primary cost elements, since costs are initially incurred here for the resources.[7] Primary cost elements reflect the initial inherent nature of the resource costs as dictated by the technology, skill, training and the operating characteristics in which the enterprise has invested.

EXHIBIT 2: THE RCA VIEW OF RESOURCE COSTS

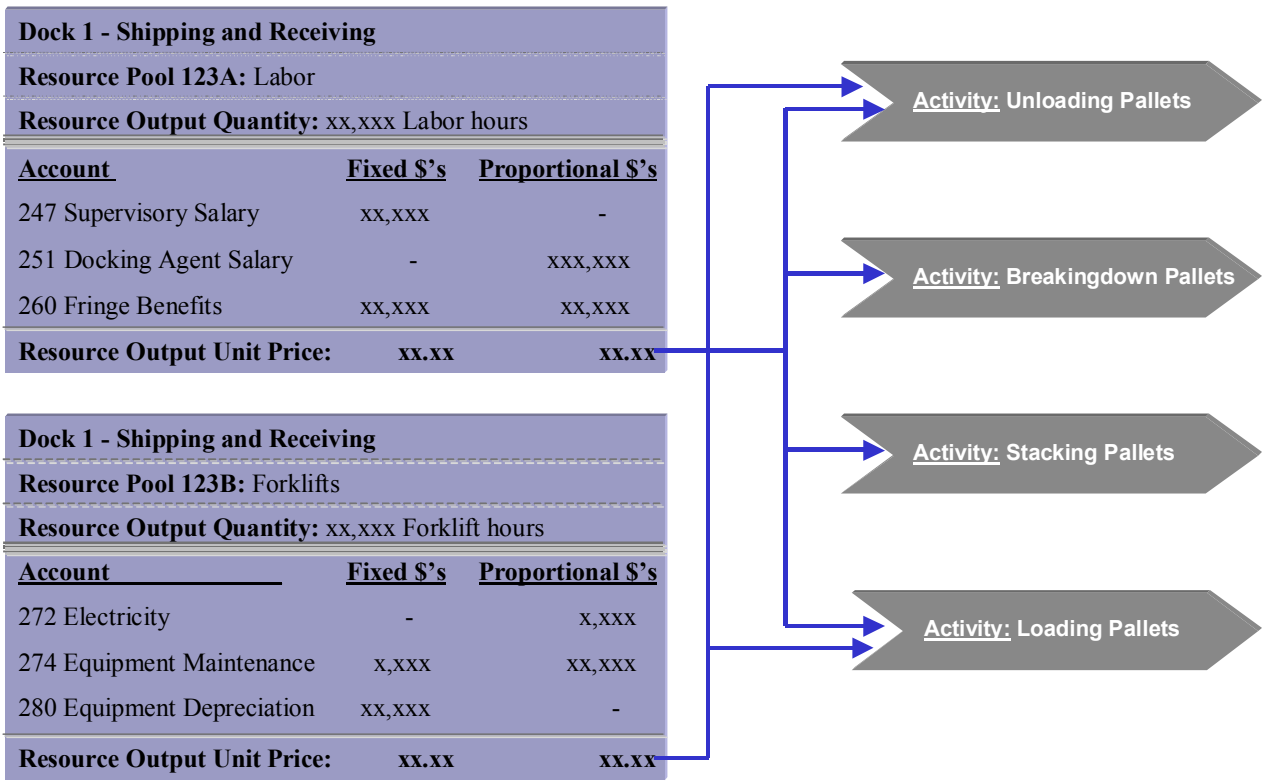


Exhibit 2 serves as a completed example of resource pools under resource consumption accounting. Dock 1 has two resource pools; each with its own output measure and associated primary expense elements, categorized into fixed and proportional components. These components are divided by the output quantity to obtain a fixed cost rate and a proportional cost rate for an output unit; to be used for charging consumers of resource output. [8]

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

HOW IS THE RCA VIEW OF RESOURCES DIFFERENT?

The first obvious difference between RCA and ABC is RCA's association of resource elements into a resource pool, which serves as the cost object for these elements for planning, collection of actual data (values and quantities) and variance calculation. Second, the output measure also serves as the resource cost driver, not to be confused with a 'resource driver' in ABC, which has the sole purpose of allocating expense elements to activities/processes. Though quantities are often used in ABC (e.g. full time equivalents), these 'quantities' seldom result in more than allocation ratios or percentages. In resource consumption accounting the output measure/resource cost driver has the following distinguishing characteristics:

- The output quantity and associated expenses (fixed and proportional) are primary planning/budgeting outputs. [9]
- Consumers are charged for the actual resource output quantities consumed multiplied by fixed and proportional cost rates (actual or planned/standard rates can be used), [10]
- The actual output quantity is used to impute authorized resource pool expenses, i.e., answering the question: 'Given an actual resource output level of 'X', what should expenses in the resource pool be?'[11]
- Authorized expenses and the actual resource output level, when compared to actual costs and quantities, serve as the basis for variance calculation in the resource pool. [12]

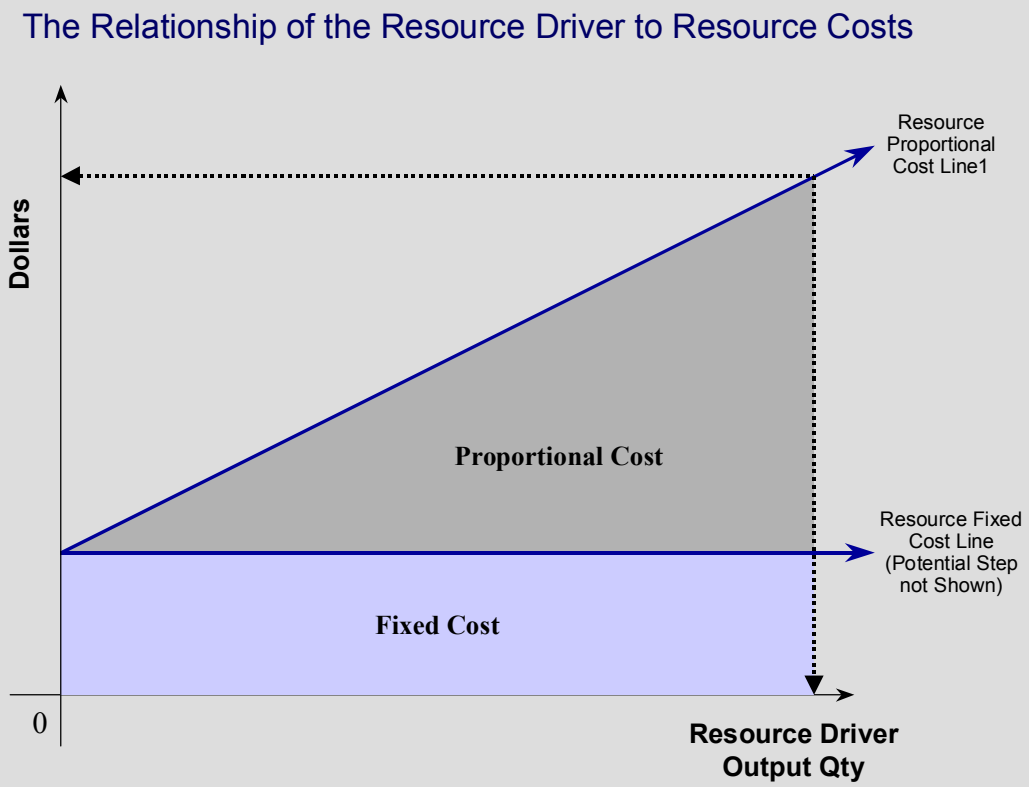
A third notable difference is the pooling of interrelated resource elements that results in more homogeneous cost pools with enhanced levels of information. Finally, the recognition of a

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

specific relationship (e.g., linear) between resource output and resource costs is another important distinction from the ABC view.

SIDEBAR A: FIXED AND PROPORTIONAL COST IN RCA

The term proportional is used (as opposed to just variable) to stress the linear relationship between certain of the associated expense items and the resource output quantity. This linear relationship is graphically depicted in Figure A.[25]



The proportional relationship of expense elements is as opposed to other extraneous factors such as production volume and sales volume - absolutely no relationships to these are implied. This linear relationship is further generally accepted. Some stepped linear or threshold linear relationships can also exist. For example, overtime expense that only kicks in when normal capacity is exceeded.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

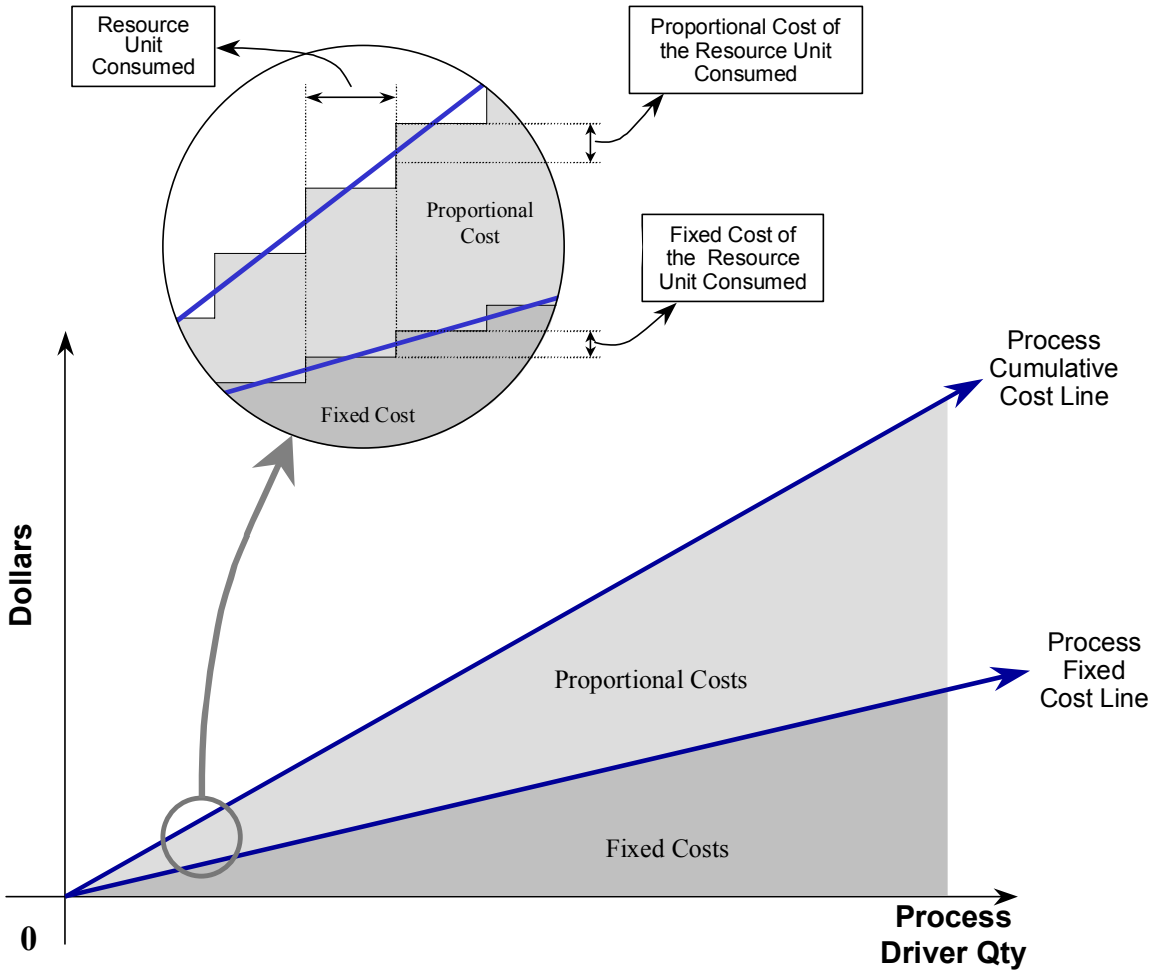
IMPLICATIONS OF THE RCA APPROACH FOR ABC INFORMATION

Processes (or other consumers) consume resource output units, each with a fixed cost component and a proportional cost component. Increased process output will require more resource output and thus more resource proportional costs (stepped fixed cost is ignored since it was assumed the original plan was not flawed). A cost curve for a process will therefore look like Exhibit 3, reflecting the cost characteristics of the resource/s output consumed.

Proponents of ABC would argue that this view is flawed: costs associated with the process disappear when the process is eliminated - i.e. all costs for a process are variable. The graph also illustrates that reducing the process quantity to zero; a zero process cost will result. However, if the process is not performed, costs will still exist in terms of available resources. For example, in Dock 1, employees arrive at work, but no deliveries or shipping requests are received, i.e. no activities are being performed. Yet costs are still incurred – resource costs. If an hour later, the first truck arrives, activities resume and resource output units are consumed. This is an example of a short-term or operations perspective; the longer-term view will be addressed in the final article in this series. (For a thorough, complementary view of process and capacity under the ABC paradigm, see Kaplan and Cooper, *Cost and Effect,* chapter 7, Harvard Business School Press, 1997).

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

EXHIBIT 3: RESOURCE OUTPUT AND COSTS ON A PROCESS



THE 4TH SHORTFALL: ACCOUNTING FOR EXCESS/IDLE CAPACITY

Once fixed cost is recognized as a fait accompli, properly accounting for excess or idle capacity becomes paramount. The following three criteria for the evaluation of methods to account for excess and idle capacity are therefore proposed:

1. The method should supply information that highlights the real problem, i.e. idle resources.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

2. The method should supply information that gives unambiguous insight into the causes and effects of the excess and idle capacity - the downstream effects of the problem should be transparent. Excess and idle capacity costs should be allocated where they are visible and actionable.
3. The method should supply information that is readily accessible and of sufficient quality and granularity to support the decision-making process. Where is the excess and idle capacity? What is the magnitude in dollars and as a percentage of total capacity? Is it temporary? Can resources be retrained/realigned? Is there an option to divest? If yes, what is the fixed cost that will remain? Can excess and idle capacity be marketed? If yes, then for pricing purposes; what is the proportional cost of producing one additional unit of resource output?

Information that satisfies these preceding criteria will enable management to understand the reasons for excess and idle capacity and to take appropriate corrective action.

TWO ABC APPROACHES TO ACCOUNT FOR EXCESS/IDLE CAPACITY

Improperly accounting for excess and idle capacity results in product cross-subsidization and fluctuating product margins between periods. A product could be profitable one month and unprofitable the next. This phenomenon is also prevalent with ABC methods to account for excess and idle capacity, where the lack of a resource output measure leads to the handling of such capacity in one of two ways:

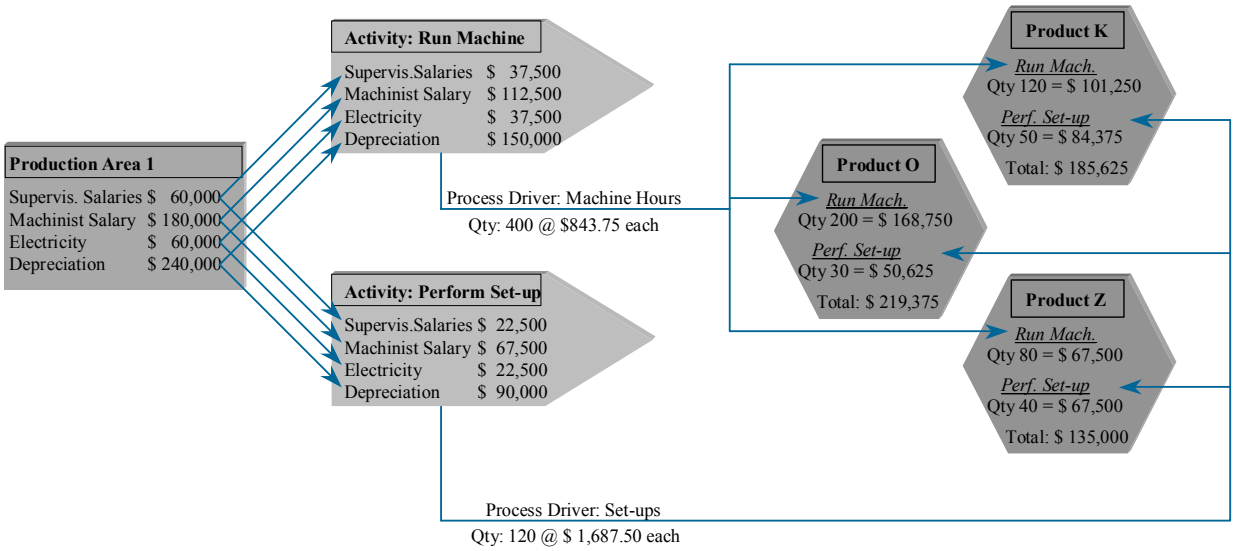
- Accommodating excess and idle capacity on a single or dedicated activity.
- Incorporating excess and idle capacity on every activity.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

ABC Approach 1: Accommodate Excess/Idle Capacity on a Single Activity

Exhibit 4 presents an ABC model; the production cost center has two activities - Run Machine and Perform Set-up - with drivers Machine Hours and Number of Set-ups respectively. The rates for each driver is as indicated. Three products - K, O and Z - are produced and consume activity driver quantities as shown. Of particular interest in Exhibit 4, and in each of the subsequent illustrations, are the profitability numbers for each product. It is assume there is no excess and idle capacity for the cost model initially.

Exhibit 4: The RCA View of Resource Costs



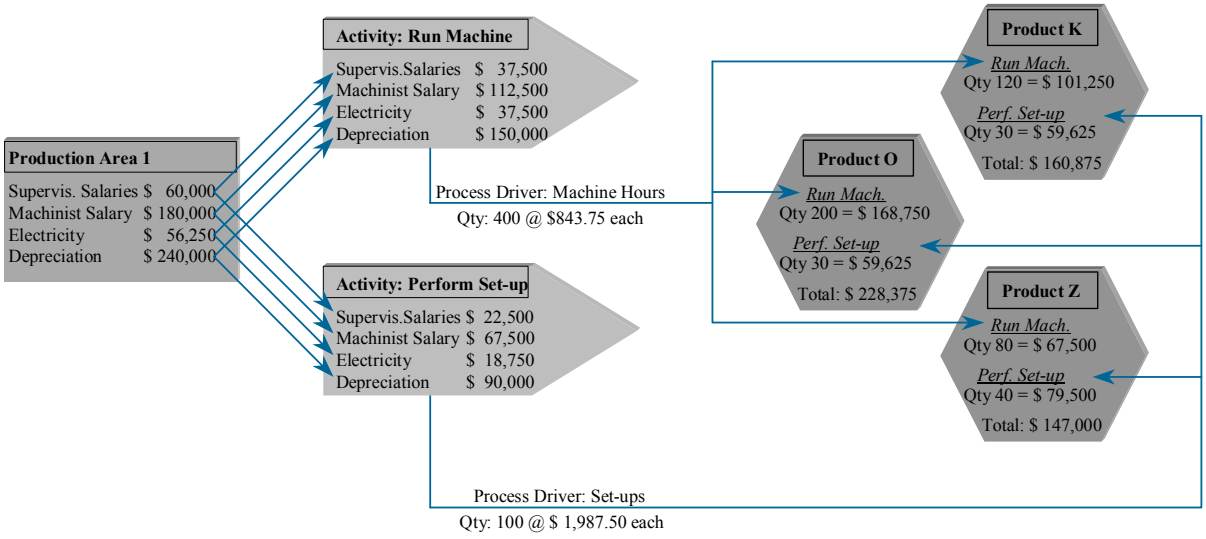
Product Profitability Report

	Product K	Product O	Product Z	Total
Revenues	$ 205,625	$ 231,375	$ 142,000	$ 579,000
Product Costs	185,625	219,375	135,000	540,000
Profit	$ 20,000	$ 12,000	$ 7,000	$ 39,000

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

In Exhibit 5, the cost model is updated to reflect product improvements in Product K (a reduction in set-ups from 50 to 30). Electricity expense is considered variable and is reduced (i.e., by $3,750). This product improvement results in excess and idle capacity and revised profitability figures for the ABC model as shown. The results indicate that in a typical ABC model, improvements in one product cause the profitability of other products to change. Improving product K resulted in profitability changes in all three products and in product Z becoming unprofitable. It is important to note that in Exhibit 5, all of the excess and idle capacity cost is allocated through the set-up activity as is evident by the set-up activity driver rate change.

EXHIBIT 5: ACCOUNTING FOR EXCESS/IDLE CAPACITY – ABC APPROACH 1



Product Profitability Report

	Product K	Product O	Product Z	Total
Revenues	$ 205,625	$ 231,375	$ 142,000	$ 579,000
Product Costs	160,875	228,375	147,000	536,250
Profit	$ 44,750	$ 3,000	$ (5,000)	$ 42,750*

* Note: Overall profitability increases by the amount of the electricity reduction, i.e. $ 3,750

Evaluation of ABC Approach 1

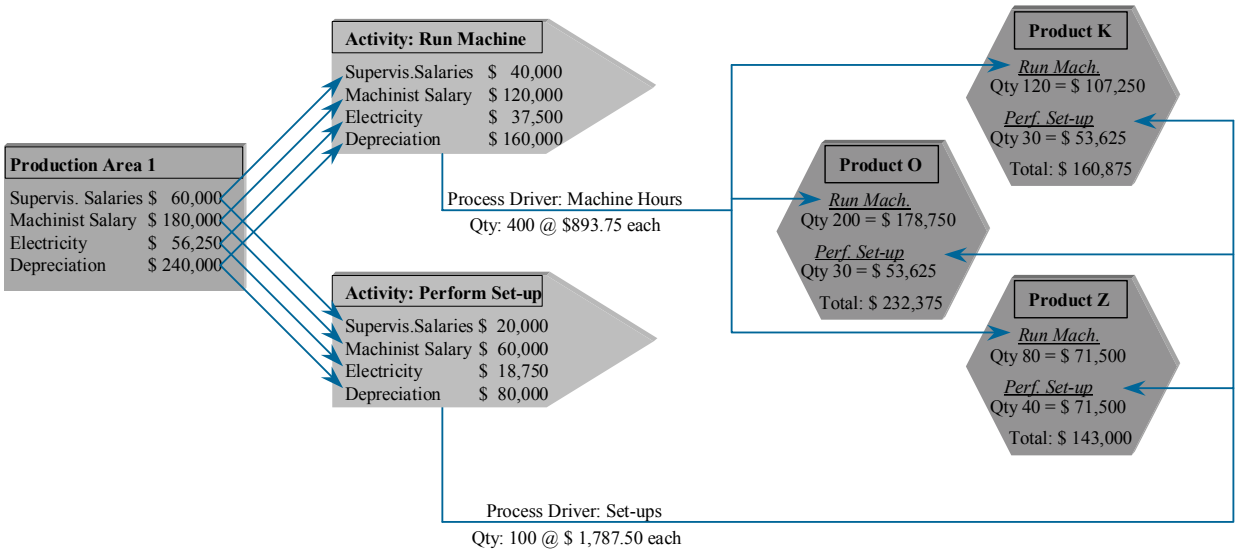
To determine whether Approach 1 properly accounts for excess and idle capacity it should be measured against the evaluation criteria:

- **Point to idle resources:** Assigning all excess and idle capacity to one activity will at best result in a hodge-podge of resources that fails to identify where the idle resources are.
- **Provide insights into causes and effects:** Causes will be difficult to pinpoint since the profitability of a number of products changes as shown in Exhibit 5. The effect is the spreading of excess and idle capacity costs across products. Insight required for the decision-making process is therefore lost.
- **Provide information to support the decision-making process:** Detailed decision support information will go unfulfilled since no detailed information on the resource pool is available. Quantities are not provided and the value of excess and idle capacity has been lost in the indiscriminate spread among products.

ABC Approach 2: Incorporate Excess/Idle Capacity into Every Activity/Process

Another ABC approach is to update the model by reallocating the resources/expense accounts. This spreads the excess and idle capacity costs to all activities. In the example, this means allocating some of the excess and idle capacity costs to run machine. Exhibit 6 illustrates this model and the effects of ABC Approach 2 when improving product K. Now both product O and product Z become unprofitable. The results are neither more transparent nor less irrational than with the first approach.

EXHIBIT 6: ACCOUNTING FOR EXCESS/IDLE CAPACITY – ABC APPROACH 2



Product Profitability Report

	Product K	Product O	Product Z	Total
Revenues	$ 205,625	$ 231,375	$ 142,000	$ 579,000
Product Costs	160,875	232,375	143,000	536,250
Profit	$ 44,750	$ (1,000)	$ (1,000)	$ 42,750*

* Note: Overall profitability increases by the amount of the electricity reduction, i.e. $ 3,750

EVALUATION OF ABC APPROACH 2

To determine whether Approach 2 properly accounts for excess and idle capacity it is also measured against the evaluation criteria:

- **Point to idle resources:** The following two problems hinder the identification of idle resources:
  - + A resource can perform multiple activities (i.e. a 1:n relationship exist). Excess capacity on one activity does therefore not necessarily indicate real excess capacity, since the resources might have been consumed by the other activities that had higher output levels.

+ In addition, an activity with excess and idle capacity that requires inputs from multiple cost centers (i.e. n: 1 relationships exist) will not clearly indicate the idle resources.
+ Activities do not have homogeneous drivers. Activities would have to be aggregated under Approach 2 to reflect the utilization of resources. A problem arises when activity drivers have diverse units of measure (e.g. # of pickings, # of packings and # of shippings), these cannot be aggregated at will. Unless a way can be found to add activities and/or portions of activities, which relate to a specific resource, in a homogeneous unit of measure, the first criterion will go unfulfilled.

- **Provide insights into causes and effects:** The causes will be difficult to pinpoint since the profitability of all products has changed. The true effects of excess and idle capacity are misstated if the costs are allocated to products.
- **Provide information to support the decision-making process:** Supplying adequate decision support information is largely unsupported, with respect to detailed resource information.

Both ABC approaches fair poorly against the evaluation criteria, failing to fully satisfy even one. This indicates that activities are unsuitable to account for excess and idle capacity - an observation that is confirmed by conceptual conflicts stemming from the accommodation of excess and idle capacity on activities within ABC, as highlighted in Sidebar B. This analysis of two ABC solutions for excess and idle capacity treatment helps illustrate the supportive and complementary role that resource consumption accounting can play with ABC.

SIDEBAR B: CONCEPTUAL CONFLICTS WITH EXCESS CAPACITY IN ABC.

Attempts to incorporate excess capacity in ABC depart from its execution focused. According to Kaplan and Cooper, "An ABC model is an economic map of the organization's expenses and profitability based on organizational activities (*Cost and Effect – Using Integrated Cost Systems to Drive Profitability and Performance*, Boston MA: Harvard Business School Press, 1998, page 79). Perhaps referring to it as an activity-based economic map rather than as a cost system clarifies its purpose." To illustrate what this means consider the following:

ABC is about activities - best expresses what ABC is. It concerns itself with the actions within an organization's value chain that entail the execution of activities and processes. Hence, ABC has an execution focus in valuing products and services, providing information for process improvement and identifying non-value-added processes for elimination.

ABC does not concern itself with inactivity - If early ABC principles are used, 6 to 12 months of general ledger expenses are flushed through the ABC model without distinguishing between expenses related to practical capacity and actual utilization levels, per Kaplan and Cooper (*Cost and Effect*, page 135). Having as its raison d'être the goings-on of the business, it is not intended to account for the events when nothing happens.

This observation is borne out by conceptual conflicts with established ABC principles that result from attempts to accommodate excess capacity in ABC. These are:

- 'Products/services consume activities' (Ernst & Young, *Guide to Total Cost Management*, John Wiley & sons, Inc., 1992, page 140) – including the excess/idle activity? Allocating excess capacity costs is arbitrary, not consumption based. ABC is advocated as a concept that reduces arbitrary allocations, not one that perpetuates it.
- A well functioning ABC initiative will lead to more excess capacity as tasks are performed more efficiently and undesired tasks not at all. Can working smarter and leaner lead to more activities instead of less? The irony in attempts to incorporate excess capacity into ABC is apparent.
- How are costs allocated to the excess capacity activity? What is the driver of the excess capacity activity? Both questions pose some conceptual challenges.
- An activity is by nature an expression of execution or 'busyness'. 'Idle activity' or 'idle busyness' imposes on the value chain something that it is not. The "inactivity" activity, whether wholly or in part so, is an oxymoron within the execution focus of the value chain and ABC.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

In the preceding examples, only one change, that of a product improvement, was introduced but many other changes can have the same effect on the cost model. Examples of such decisions/events that have a direct bearing on capacity utilization are:

- Fluctuations in product mix and volumes.
- Product make-buy decisions.
- Resource outsourcing decisions.
- Dropping or adding products and product lines.
- Dropping or adding target markets.
- Dropping or adding customers.
- Selecting from among options for a manufacturing site, a distribution channel or a storage location
- Process improvements as well as process eliminations.

The primary consequence, of not properly accounting for inactivity, is the indiscriminate allocation of excess and idle capacity costs to products, services, customers, etc. Moreover, profitable products cross-subsidize unprofitable products leading to potentially erroneous decisions (e.g. in pricing and dropping of products and services). There is clearly a need to properly account for excess and idle capacity and provide adequate decision support information.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

THE RCA APPROACH

ACCOUNTING FOR EXCESS AND IDLE CAPACITY ON THE RESOURCE POOL

Exhibit 7 illustrates two homogeneous resource pools, one for labor and one for machines, each with its own output measure. Capacity for each resource pools is expressed in hours, 4,800 labor hours and 640 machine hours respectively. Using the associated costs, a rate for each resource pool output measures is calculated; $50/labor hour and $468.75/machine hour. (In practice, a fixed cost rate and a proportional cost rate for each pool would always be calculated.) Activities are charged for the actual resource output consumed. Products consume activity quantities per the post product improvement scenario mentioned, profitability is calculated and the excess capacity variance separated out in the profitability report. Using resource consumption accounting, the product improvement scenario results in changed profitability for only Product K (as compared with Exhibit 4 and Exhibit 5).

EVALUATION OF THE RCA APPROACH

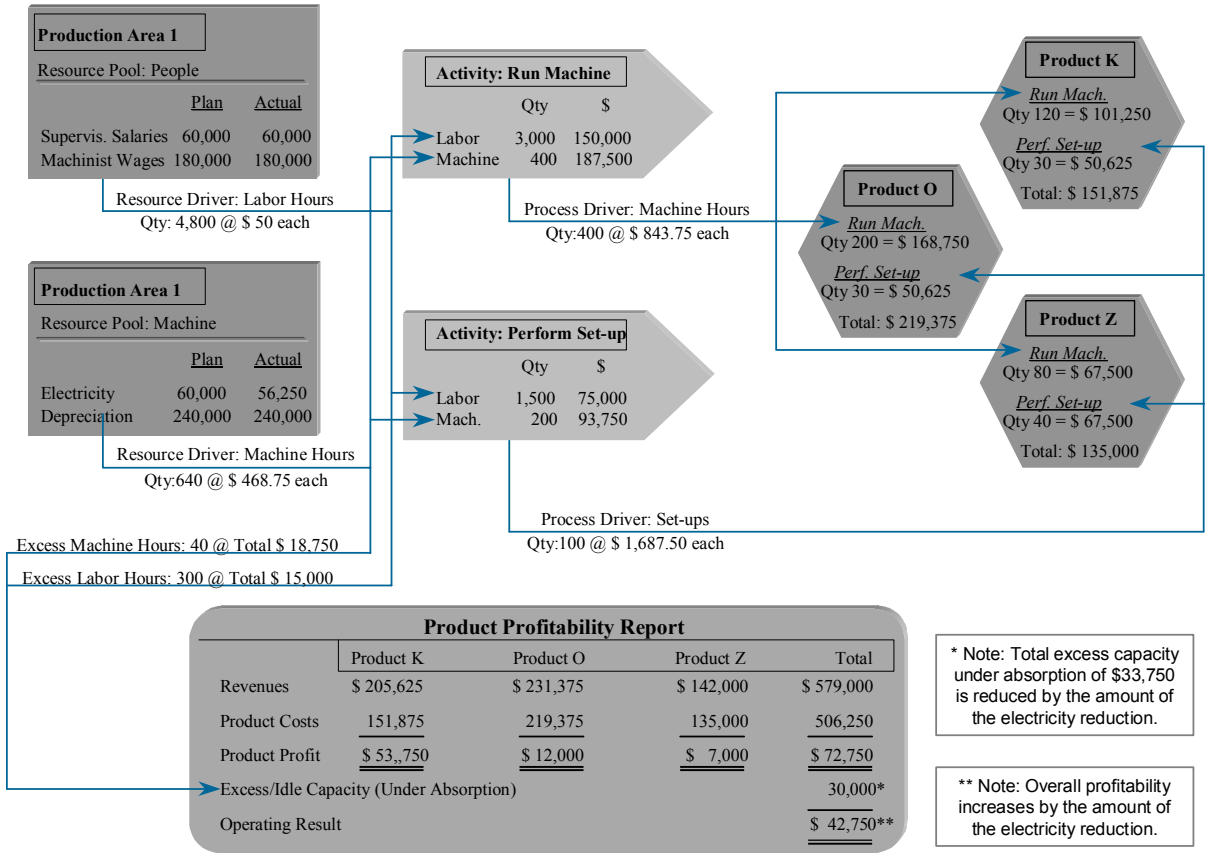
Resource consumption accounting fully satisfies all three criteria to properly account for excess and idle capacity.

- **Point to idle resources:** The variance, delineated in the profitability report, highlights the idle resources.
- **Provide insights into causes and effects:** The cause for the variance is clear. The effect on overall profitability is apparent and unambiguous; profit of only Product K has increased.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

- **Provide information to support the decision-making process:** The magnitude of the excess capacity, in dollars and by quantity is provided (i.e., 300 labor hours and 40 machine hours to the value of $30,000).

EXHIBIT 7: ACCOUNTING FOR EXCESS/IDLE CAPACITY – THE RCA APPROACH



CONCLUSION

Resource consumption accounting, when used in tandem with ABC, resolves the first four shortfalls. Resource elements are associated in a resource pool with an output measure that serves as the measure of capacity. The initial inherent nature of cost is reflected by primary cost

elements. Fixed and proportional unit cost rates are used to charge consumers of resources. In accounting for excess and idle capacity the approach is superior in focusing attention on idle resources, accurately accounting for excess and idle capacity and providing detailed decision support information. A disadvantage of this approach is increased complexity in relationships for resource output consumption. C.S. Lewis said "Reality is more complex than fiction." - this will be borne out as management accounting systems strive to more accurately reflect, the real world with its capacities, activities, inactivities and related costs.

This article addressed 4 shortfalls of ABC as it related to resources and resource elements. The second article will look at a further three shortfalls of the view that was adopted for ABC in regard to resources. These shortfalls are in the area of resource pool interactions and relate to; interrelationships between resources, the changing nature of cost at the time of consumption, and fully burdened resources.

Published in Journal of Cost Management, Jul/Aug 2001 – reproduced with permission RCAinfo.com

BIBLIOGRAPHY.

1. Price Waterhouse, '*CFO Book*.' 1997. Various. p.81 and CFO Europe web page '*Not as Easy as ABC.*' at www.cfoeurope.com/199810f.html , viewed Feb. 13, 2000.
2. '*ABM Design Framework Development Team*' under the auspices of the CAM-I Group. Historical backdrop: "This group was assembled in June of 1999 in light of the significant number of ABC Project failures and an awareness that one of the principle causes is the lack of clear definition and scope at the onset." CAM-I, Cost Management Systems Program, 1st Quarter 2000 meeting agenda.
3. *Flexible Plankostenrechnung und Deckungsbeitragsrechnung.* Wolfgang Kilger, 10th Edition updated by Kurt Vikas. Gabler, Weisbaden, Germany. First published in 1961. p 304
4. Ibid, p305.
5. Ibid, p341.
6. Ibid, p 494ff.
7. Ibid, p 570ff.
8. Ibid, p 518.
9. Ibid, p 494.
10. Ibid, p 528.
11. Ibid, p. 590, 805ff. Authorized expense (also called target expense) refers to the calculation based on actual driver quantity and utilizing unit standards to derive what the budget should be given the actual output level. Thus authorized expense reflects a revised value that has eliminated the volume variance.
12. Ibid, p 595.