**Steps in the Closed Loop Approach**

1. **Set quantitative demands**. Using the organization’s strategy, the quantity of demand in the upcoming period is estimated for each product or service. This estimation is done purely in quantitative terms, such as number of units, tons, accounts, customers, shipments, and so on
2. **Determine resource requirements (CLM**). Step two in the CLM consists of two distinct actions
	1. First, the quantity of demand is converted into activity requirements, expressed in operational terms, using activity consumption rates. Activity consumption rates are defined as: *the number of occurrences of an activity required to generate a single unit of output.*
	2. Second, the activity requirements are converted into the individual resource requirements using resource consumption rates. Resource consumption rates are defined as*: the quantity of each resource required to undertake a single occurrence of an activity.*
3. **Balance resource requirements with resource supply (CLM)** The most critical aspect of the CLM is establishing operational balance by matching resources requirements with resource capacity in a given time period.

The practical difficulty in comparing resources supplied and resources required occurs when the unit of measure used for supply of a resource differs from the unit of measure in which the resource is used. (e.g., requirements for people are often expressed in hours whereas people are generally acquired in FTEs)

Once a common capacity measure is determined, management ***compares each resource’s supply with its corresponding requirement***. This comparison results in one of three situations:

* 1. Too much capacity: Too much capacity can be operationally feasible, but is only operationally balanced if the amount of excess capacity is needed as a buffer. If this is the case, the situation needs to be analyzed to see if it meets financial balance.
	2. Too little capacity: Demand requirements cannot be met because there is a shortage of resources. This situation is not operationally balanced and therefore cannot be operationally balanced.
	3. Exact balance of capacity and demand: This situation is operationally feasible and, by definition, in operational balance. The situation needs to be analyzed to see if it meets financial balance.

Armed with the knowledge of any imbalances, management must ***assess capacity*** by determining whether or not:

d. A surplus or shortage of resources is large enough to justify action or if it should just be accepted.

e. The surplus or shortage is expected to last for a long time. Shortages that continue for a long period of time can cause excessive costs for overtime or decreased performance or service levels.

f. The capacity cannot be changed in the time period being addressed,given prevailing economic conditions.

With a ***capacity assessment*** in hand, there are three distinct ways that the organization can achieve operational balance (see Fig. 1, operational balance on left side of graphic):

g. A surplus or shortage of resources is large enough to justify action or it should be accepted. NOTE: The CLM is a calculation algorithm. As such, it will treat a situation where resources required exceed resources supplied as infeasible and therefore the organization could theoretically not meet its demand requirements. In extreme cases, this may be true. However, in many cases, the use of overtime, tEMP model labor, or extremely high machine utilization-especially for short time periods-may be EMP model loyed to meet demand. This case is, in effect, a new plan with greater capacity and higher costs.

h. The surplus or shortage is expected to last for a long time. Shortages that continue for a long period can cause excessive cost for overtime or decreased performance or service levels

i. The capacity cannot be changed in the time horizon being addressed, given prevailing economic conditions.

With a ***capacity assessment,*** there are three distinct ways that the organization can achieve operational balance:

*j. Adjust capacity or improve usage of resources.* With operational balance, the demand requirements can be met and there is either no excess capacity or an acceptable quantity of idle or buffer capacity.

*k. Adjust the activity and/or resource consumption rates to resolve or at least reduce the magnitude of the problem.* Management usually seeks to implement any available economic effectiveness or efficiency opportunity.

*l. Change the absolute mix of products/services demanded.*  A well planned product change may either absorb the excess or reduce the shortage or resources without affecting the organization’s overall strategy.

**4. Determine resource costs and derive financial results (CLM).**

To determine resources costs, two elements are required:

a. the unit cost of each resource required and

b. the quantity of each resource as determined from the operational plan.

The financial elements need to complete this step are:

c. Unit cost of each resources, such as the hourly wage or annual salary and

d. Revenue (price) per unit of demand

The cost of each resource is assigned to the resource and using the relationship between resources and each activity these costs are assigned to the activities requiring or consuming tat resource. These activity costs are then assigned to products to derive product and service costs.

**5. Add non-activity-based costs to obtain the total financial result**

Certain organizational costs may not have a direct or tangible correlation with activity volume and therefore are better handled through a more traditional budgeting approach than the CLM . These types of costs are sometimes referred to as “business sustaining” costs. Examples include directors’ fees, certain building leases, SEC filing fees, etc. Ultimately, all costs (activity-based and non-activity-based) that apply to the organization must be considered to generate a financial plan.

**6. Balance Financial Results with Financial Targets**

When a financial plan has been prepared, an assessment is made of whether or not the total projected financial results meet the required targets of the organization. If these targets are not achieved, three options can be pursued either individually or in combination with one another. These options are:

* 1. Adjust demand pricing, assuming that the new pricing is compatible with the market. An organization must estimate the impact of an increase or decrease in price on the quantity of demand.
	2. Modify resource costs including the possibility of outsourcing. The second option is to adjust or eliminate shift premiums or overtime. Options include:
		1. Re-calibrating shifts to reduce or eliminate current shift premiums or overtime
		2. Adopting a two-tier wage structure where new EMP model loyees are paid less than existing ones
		3. Adjusting compensation plans to allow for incentive pay to be more closely tied to organization results
		4. Increasing or decreasing wages to encourage EMP model loyees to join or leave the organization
		5. Paying for skill rather than seniority
		6. Outsourcing to obtain lower costs from more efficient suppliers or reducing ecess capacity costs by paying only for what is used
		7. Negotiating more favorable energy and other supply contracts
		8. Substituting less expensive materials, providing that other costs (e.g., processing effort or waste) are not increased. As with the approach of changing prices for products and services, chaning resource unit costs might also affect resource quantity.. If that is the case, the operational plan must be reviewed to ensure the new level of resource quantity continues to provide operational balance.
	3. Change one or more of the operational parameters directly:
		1. Quantity of demand including mix
		2. Activity and/or resource consumption rates
		3. Available capacity

At some point, a satisfactory operational and financial balance will be achieved that meets the strategic requirements for the organization. At this point, a formal budget (or plan, authors’ addition) can be generated in the appropriate format and structure for the organization.

**7. Create a Formal Plan**

When both operational and financial balance have been achieved, a more formal line-item budget can be created.

In some organizations it may not be necessary to go to this level of detail. The operational and financial plans generated by the CLM may be sufficient to run the business. Alternatively, the formal budget detail may be required but on a less frequent basis. For example, the CLM could be used on a quarterly basis and the detailed formal budget generated annually.

We view the APBP Process as having more to do with planning than budgeting.

In the long run, a successful organization will switch from a primary focus on generating budgets to a more fruitful focus on planning”