

## **Proven Method to Estimate Headcount**

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#### **Summary:**

This article describes the step by step method to accurately calculate the number of staff required to perform assigned tasks and activities. The methodology is based on policy deployment principles, strategy and objectives, process observation, efficiency, and lean management. The method described has been used in many staffing and headcount studies conducted for clients in the public and private sectors.

#### **Process Flow:**

The level of staffing required is a function of work performed to achieve objectives, informal and formal procedures, staff productivity, and staff knowledge and experience. These factors can be easily developed and assessed in the completion of the staffing assessment.

- 1) The starting point will be the development of organizational and departmental objectives
- 2) The second step is to develop the list of primary tasks required to accomplish the objectives
- 3) The third step is to develop average cycle times to complete tasks
- 4) The fourth step is to determine the frequency and number of times a task is completed
- 5) The next step is to reduce the time through lean implementation or process improvement activities
- 6) The six step is to apply a level of efficiency based on hours available
- 7) The last step is to calculate the number of Full time Equivalents (FTE) necessary

#### **Development of the Staff Estimate:**

##### Step 1: Development of Objectives

Start with the overall goals and objectives of the organization. These can be found in published reports or annual goals developed for budgetary purposes. The objectives should be as quantitative as possible. These overall objectives should be translated into departmental and localized objectives for the staffing area being reviewed.

An example follows:

Organizational Objective: Improve service quality by 10%

Departmental Objective for Customer Service: Reduce service calls by 20%

Customer Service Representative Objective: Complete on-line service resolutions in at least 80% of cases



### Step 2: List of Primary Tasks

The next step is to develop the list of key tasks to be completed to accomplish the objectives. These are typically repetitive tasks such as sales calls, service calls, Accounts Payable transactions, order fulfillment and the like. We recommend no more than 5 tasks in support of each objective.

Examples would include:

- 1) Complete 10 sales calls per week
- 2) Fulfills 5 orders per hour
- 3) Process 15 AP transactions per hour

### Step 3: Develop cycle times for each task

The next step requires that the process cycle time be developed for each key task. This can be done by time studies, observations, review of historical data, analysis of productivity versus headcount, benchmarking, and process analysis workshops. The result is the amount of time required to complete the task.

Examples would include:

- 1) Average time to plan for, complete, and document sales call: 12 hours
- 2) Average time to pick and process on order: 20 minutes

Once these time frames have been developed, the times can be evaluated using lean management and process improvement.

### Step 4: Determine the frequency of tasks being completed

Using historical records, and future requirements, project the number of times tasks will be completed. This will require an estimate of frequency based on the need to meet the set objectives. For instance, to increase sales, how many sales call need to be completed? To increase the fulfillment rates, how many orders need to be picked more frequently?

An example follows:

In an average day with \$100,000 of sales per day, 100 orders are picked. To reach a goals of \$120,000 per day, 120 orders have to be picked and shipped.

### Step 5: Use Lean Management and/or Process Improvement

This step requires the analysis of the process used to complete the tasks. This would include planning, execution, and documenting the work. The various process elements can be represented in a process flow, and time, cost and quality factors can be identified and evaluated. The lean portion of the analysis will reduce the wastes and queues in the process, thereby making it the most efficient possible.

An example would be:

- Print out list of orders to be picked: 10 minutes
- Prioritize the sequencing the orders: 10 Minutes
- Begin picking the first order: 3 minutes
- Locate the product: 5 minutes



- Transport the cart through the warehouse' pick other items: 30 minutes
- Pack the order: 10 minutes
- Print our shipping documentation: 5 minutes
- Total order time: 53 minutes plus 20 minutes for planning (to be spread over all orders to be picked)

With lean principles applied, this number will be reduced.

#### Step 6: Establish Efficiency Factor

Once the process has been subjected to lean management techniques, an efficiency factor is developed for each task. This factor is a function of the skills and experience of the staff completed the task. Some staff are more gifted and have years of experience while others are new to the work. The best way to do this is create the weighted average of the time to complete. This can be done by assessing the skills sets of the staff using broad assignment factors.

An example would be:

Total Order time to complete: 53 minutes (established by a staff member in the 25% of top performers) times an efficiency factor of 1.2 (most staff can complete the work in 20% more time). So the amount of time to complete the order is 64 minutes (without lean considerations).

#### Step 7: Calculate the number of FTEs

Now that the number of tasks has been developed and the time to complete has been established, the total time to complete the orders is determined. The FTE count is then established based on the number of hours available in a work year, minus holidays, vacation, and other time off. We assume 10 holidays and three weeks of vacation to calculate the number of hours available in the year. We also reduce that result with factoring with productivity based on breaks, training, personal style and speed. We use the factor of 85% for that purpose.

So the equation is:

2080 (maximum hours) minus 120 hours vacation minus 80 hours holiday = 1880 times .85 = 1598  
Available Hours

Now we can develop the FTE Headcount using the order fulfillment example:

Number of orders picked: 120 day for 5 days a week for 52 weeks = 31,200 orders

31,200 orders at 64 minutes each = 1,996,800 minutes or 249,600 hours

Using the number of available hours, the resulting FTE is  $249,600/1598 = 199.75$  or 200 staff.

These are the simple steps to complete an effective headcount analysis and estimate

