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**Capacity Plan**

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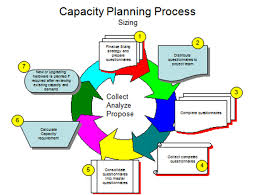
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# Capacity planning

Capacity planning is the process of determining the production [capacity](https://en.wikipedia.org/wiki/Capacity_utilization) needed by an organization to meet changing [demands](https://en.wikipedia.org/wiki/Demand_curve) for its [products](https://en.wikipedia.org/wiki/Product_(business)).[[1]](https://en.wikipedia.org/wiki/Capacity_planning#cite_note-NCSU-1) In the context of capacity planning, design capacity is the maximum amount of work that an organization is capable of completing in a given period. Effective capacity is the maximum amount of work that an organization is capable of completing in a given period due to constraints such as quality problems, delays, material handling



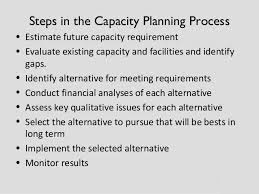
# Goal of Capacity Planning

The ultimate goal of capacity planning is to meet the current and future level of the requirement at a minimal wastage. The three types of capacity planning based on goal are lead capacity planning, lag strategy planning and match strategy planning.



# Strategies

The broad classes of capacity planning are lead strategy, lag strategy, match strategy, and adjustment strategy.



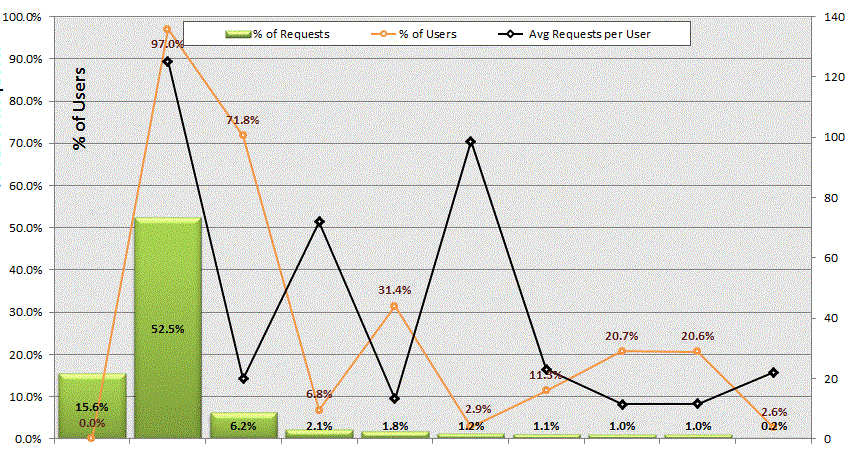
# Determine Service Level Requirements

The overall process of establishing service level requirements first demands an understanding of workloads. We will explain how you can view system performance in business terms rather than technical ones, using workloads. Next, we begin an example, showing workloads on a system running a back-end Oracle database. Before setting service levels, you need to determine what unit you will use to measure the incoming work. Finally, you establish service level requirements, the promised level that will be provided by the IT organization.



# Workloads Explained

Workloads Explained From a capacity planning perspective, a computer system processes workloads (which supply the demand) and delivers service to users. During the first step in the capacity planning process, these workloads must be defined and a definition of satisfactory service must be created.



# Determine the Unit of Work

Determine the Unit of Work For capacity planning purposes it is useful to associate a unit of work with a workload. This is a measurable quantity of work done, as opposed to the amount of system resources required to accomplish that work. To understand the difference, consider measuring the work done at a fast food restaurant. When deciding on the unit of work, you might consider counting the number of customers served, the weight of the food served, the number of sandwiches served, or the money taken in for the food served. This is as opposed to the resources used to accomplish the work, i.e. the amount of French fries, raw hamburgers or pickle slices used to produce the food served to customers

# Establish Service Levels

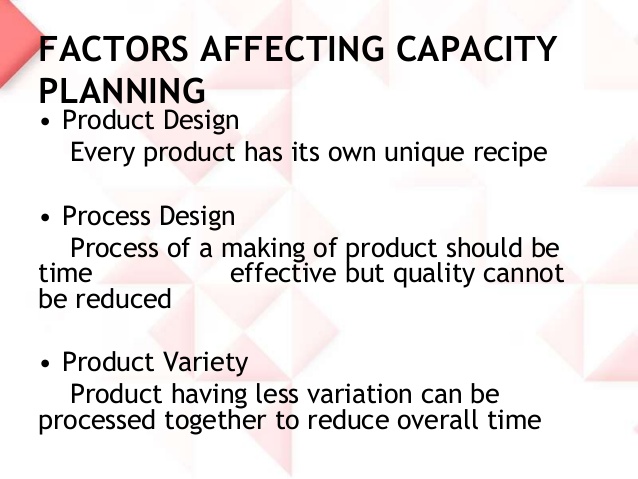
Establish Service Levels The next step now is to establish a service level agreement. A service level agreement is an agreement between the service provider and service consumer that defines acceptable service.. All Rights Reserved. The service level agreement is often defined from the user’s perspective, typically in terms of response time or throughput. Using workloads often aids in the process of developing service level agreements, because workloads can be used to measure system performance in ways that makes sense to clients/users.

# Plan for the future

Plan for the future a. Determine future processing requirements b. Plan future system configuration By following these steps, you can help to ensure that your organization will be prepared for the future, ensuring that service level requirements will be met using an optimal configuration. You will have the information necessary to purchase only what you need, avoiding over-provisioning while at the same time assuring adequate service.

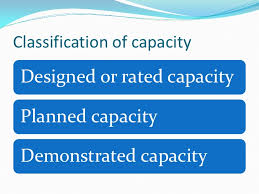
# Factors Affecting Capacity Planning

Effective capacity planning is dependent upon factors like production facility (layout, design, and location), product line or matrix, production technology, human capital (job design, compensation), operational structure (scheduling, quality assurance) and external structure ( policy, safety regulations)



# Capacity Planning Classification

Capacity planning based on the timeline is classified into three main categories long range, medium range and short range.



## Long Term Capacity

Long range capacity of an organization is dependent on various other capacities like design capacity, production capacity, sustainable capacity and effective capacity. Design capacity is the maximum output possible as indicated by equipment manufacturer under ideal working condition.

Production capacity is the maximum output possible from equipment under normal working condition or day.

## Sustainable capacity

Sustainable capacity is the maximum production level achievable in realistic work condition and considering normal machine breakdown, maintenance, etc.

## Effective capacity

Effective capacity is the optimum production level under pre-defined job and work-schedules, normal machine breakdown, maintenance, etc.

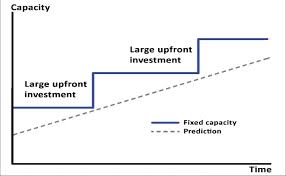
## Medium Term Capacity

The strategic capacity planning undertaken by organization for 2 to 3 years of a time frame is referred to as medium term capacity planning.

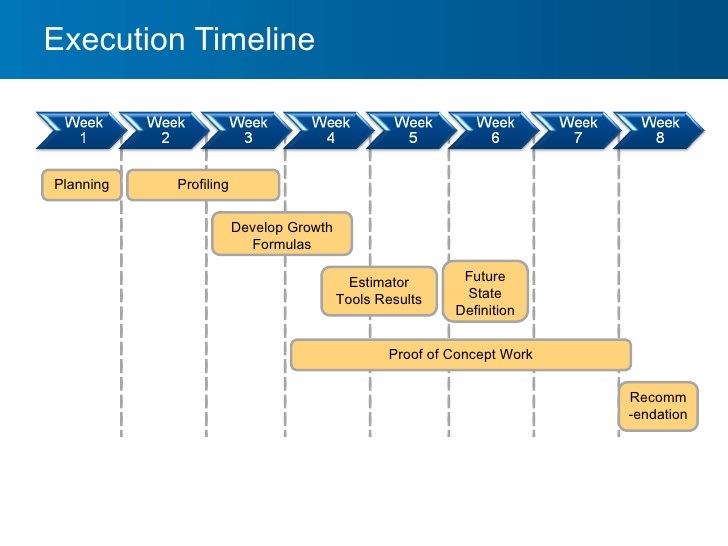
## Short Term Capacity

The strategic planning undertaken by organization for a daily weekly or quarterly time frame is referred to as short term capacity planning.

# Cost of Capacity Planning



# Time line of Capacity Planning



# Benefits of Capacity Planning