Mobility management and Resource Management

Mobility management is one of the major functions of a GSM or a UMTS network that allowsmobile phones to work. The aim of mobility management is to track where the subscribers are, allowing calls, SMS and other mobile phone services to be delivered to them.

Location update procedure:
A GSM or UMTS network, like all cellular networks, is a radio network of individual cells,known as base stations. Each base station covers a small geographical area which is part of auniquely identified location area. By integrating the coverage of each of these base stations, acellular network provides a radio coverage over a much wider area. A group of base stations isnamed a location area, or a routing area.

The location update procedure allows a mobile device to inform the cellular network, whenever it moves from one location area to the next. Mobiles are responsible for detecting location area codes. When a mobile finds that the location area code is different from its last update, it performs another update by sending to the network, a location update request, together with its previous location, and its Temporary Mobile Subscriber Identity (TMSI).

There are several reasons why a mobile may provide updated location information to the network. Whenever a mobile is switched on or off, the network may require it to perform an IMSI attach or IMSI detach location update procedure. Also, each mobile is required to regularly

report its location at a set time interval using a periodic location update procedure. Whenever a mobile moves from one location area to the next while not on a call, a random location update is required. This is also required of a stationary mobile that reselects coverage from a cell in a different location area, because of signal fade. Thus a subscriber has reliable access to the network and may be reached with a call, while enjoying the freedom of mobility within the whole coverage area.

When a subscriber is paged in an attempt to deliver a call or SMS and the subscriber does notreply to that page then the subscriber is marked as absent in both the Mobile Switching Center /Visitor Location Register (MSC/VLR) and the Home Location Register (HLR) (Mobile not reachable flag MNRF is set). The next time the mobile performs a location update the HLR is updated and the mobile not reachable flag is cleared.

Resource Management:

In organizational studies, resource management is the efficient and effective deployment of an organization's resources when they are needed. Such resources may include financial resources, inventory, human skills, production resources, or information technology (IT). In the realm of project management, processes, techniques and philosophies as to the best approach for allocating resources have been developed. These include discussions on functional vs. crossfunctional resource allocation as well as processes espoused by organizations like the Project Management Institute (PMI) through their Project Management Body of Knowledge (PMBOK) methodology of project management. Resource management is a key element to activity resource estimating and project human resource management. Both are essential components of a comprehensive project management plan to execute and monitor a project successfully.[1][2] As is the case with the larger discipline of project management, there are resource management

software tools available that automate and assist the process of resource allocation to projects and portfolio resource visibility including supply and demand of resources.

HR (Human Resource) Management

This is the science of allocating human resources among various projects or business units, maximizing the utilization of available personnel resources to achieve business goals; and performing the activities that are necessary in the maintenance of that workforce through identification of staffing requirements, planning and oversight of payroll and benefits, education and professional development, and administering their work-life needs. The efficient and effective deployment of an organization's personnel resources where and when they are needed, and in possession of the tools, training and skills required by the work.

Corporate Resource Management Process

Large organizations usually have a defined corporate resource management process which mainly guarantees that resources are never over-allocated across multiple projects.[3]

Techniques

One resource management technique is resource leveling. It aims at smoothing the stock of resources on hand, reducing both excess inventories and shortages.

The required data are: the demands for various resources, forecast by time period into the future as far as is reasonable, as well as the resources' configurations required in those demands, and the supply of the resources, again forecast by time period into the future as far as is reasonable. The goal is to achieve 100% utilization but that is very unlikely, when weighted by important

metrics and subject to constraints, for example: meeting a minimum service level, but otherwise minimizing cost.The principle is to invest in resources as stored capabilities, then unleash the capabilities as demanded.A dimension of resource development is included in resource management by which investmentin resources can be retained by a smaller additional investment to develop a new capability thatis demanded, at a lower investment than disposing of the current resource and replacing it with another that has the demanded capability.

In conservation, resource management is a set of practices pertaining to maintaining natural systems integrity. Examples of this form of management are air resource management, soil conservation, forestry, wildlife management and water resource management. The broad term for this type of resource management is natural resource management (NRM).