**EXISTING SYSTEMS**

ANALYTIC HIERARCHY PROCESS

Analytic Hierarchy Process(AHP) is a type of criteria assessment(MCA)technique for analyzing complex decisions.

APPLICATION OF THE METHOD

AHP step 1:Define

* Define the ‘problem’,the need and purpose of the decision(goal).
* List the alternatives to evaluate.
* Set up the criteria and sub criteria(attributes).
* Define the stakeholders and groups to involve in the process.

AHP step 2:Structure

* Structure the Decision hierarchy.
* Set up the hierarchy using the elements defined in step1.
* Goal on the top level,criteria in the intermediate level,set of options in the lowest level.

AHP Step 3:Pairwise Comparison

* Compare elements to one another,two at a time,with respect to their impact/importance on an element above them in the hierarchy.
* Use numerical values to conduct the pairwise comparisions,constructing a set of pairwise comparision matrices.Values in cells that are diagonal are mathematical inverses of each other.
* Several matrices to compare the options(alternatives)with respect to each criteria,and the criteria with respect to the goal.

AHP Step 4:Calculate relative priorities

* Values in step 3 are processed to obtain numerical priorities or weights given to the elements.
* Mathematically,AHP derives priorities using the values of the principal right eigenvectors of the comparision matrices.
* Priorities are absolute numbers between zero and one,without units or dimensions.
* Depending on the problem at hand,a priority or weight can refer to importance,or preference,or likelihood.

AHP Step 5:Aggregate priorities

Aggregate relative priorities to produce overall priorities(final evaluation metrics)which sum to 1.000.

Compare the final results:

* As trend data.
* In ranks(normalizing the priorities).
* In categories(significant difference between aggregates can be predefined eg. a difference of 0.15).
* As progress targets.

EXAMPLE:

The first step in AHP to ignore the jobs and just decide the relative importance of the objectives.Charles does this by comparing each pair of objectives and ranking them on the following scale:Comparing objective i and objective j,give a value aij as follows:

1 Objectives i and j are of equal importance.

3 Objectives i is weakly more important than j.

5 Objectives i is strongly more important than j.

7 Objectives i is very strongly more important than j.

9 Objectives i is absolutely more important than j.