**SIX PAC –Performance Appraisal of Companies**

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# Abstract of Solution:

A company has grown inorganically by taking over its competitors and it wants to do financial reporting at group level and wants to report its financial metrics for various branch levels eg. National branches, regional branches, Sub regional branches, county level, city level. Its various constituent companies however have different levels of branch hierarchy and call various branch levels by different names. For example : one company may have 5 different levels of branches starting from Zonal, region, state, City, district level branches, while another just has county, city and local branches Our utility needs to create a Normalized, harmonized reference hierarchy and map the various different branch levels of the various companies to one of the levels of master hierarchy. This will allow for group level reporting of financial numbers for various branch levels on equal reference.

# Solution Approach

**Problem:** The problem is difficulty and tedious in comparing the performance like Revenue Sales of different Companies which have different set of Hierarchy for Financial metrics.

**How Six Pac helps**: Assuming the financial metrics data available, but the hierarchy not maintained, and then this Six Pac tool helps to make conscious decision.

1. Initially the Company data is set up to normalize Company’s financial metrics based on the available Hierarchy.
2. To achieve that, the existing raw data is loaded into the fundamental table which will have the data in predefined format.
3. Afterwards, Group Hierarchy is defined like Global, Region, Country, State, District, City and Local.
4. Once that is completed, Company Hierarchy is defined.
5. Based on company Hierarchy and Group Hierarchy the Hierarchy mapping is done.
6. In the tool, the various combinations can be selected.
7. Only the available hierarchies will be available for comparison.
8. Any missing hierarchy for a company will be blank.
9. Once that is done, the database query fetches the data and sent to the UI Graphical tool.
10. The comparison is visible in graceful UI tool of D3 JS.
11. The performance metrics of different companies can be compared by selecting various combinations in the dropdown and the management can make a decision.

# Design Architecture

**Six Pac System**

USER

Graphical View

Comparer

Group Hierarchy

Company Hierarchy

Hierarchy Mapping

Database

# System Architecture

The persisted data from database is fetched using [stored procedures](https://en.wikipedia.org/wiki/Stored_procedure). The business logic is placed in the stored procedures, as a database-centric approach has practical advantages from the standpoint of ease of development and maintainability.

Microsoft Visual Studio ASP.Net is used as middle tier to execute stored procedures in the database and fetch the data and feed it to the Graphical Interpretation tool.

The D3 JS is the open source JavaScript plugin is being used for Graphical representation. It is advantageous because it reduces the server resources compared to other tools.

1. Technologies used:

* Microsoft Sql Server
* Microsoft Visual Studio 2013
* D3 JS open source for Graphical representation.

# Business Impact:

Currently, the Company in problem statement makes a decision about performance or acquisition of a company based on unscientific approach which is quite risky and may lead to loss of investor money/investor loss of faith.

This tool helps in making decision very fast, with less of tension and confidence in taking decision based on the output.

The potential outcomes can be predicted and the decision making will become dynamic

The company can take appropriate action whether to scale or to reduce investment or sell the holdings.

The Company can make decisions regarding product expansion, marketing operations, international expansion, international contraction, hiring employees or even merging with another company. Organizing all considered alternatives with a decision tree allows for a systematic means to evaluate these ideas simultaneously.

By this approach, the management can easily compare the financial metrics, performance (sales, profit) of companies at **Global, regional, Country, State, District and City** level and make a right decision and avoid regretting for bad decision without any tools for help.

# Future Scope

The Comparison is can be applied to other comparisons like price comparisons of raw material, comparison of logistics costing of various locations and also can be made available as API to external agencies/Companies