Manpower Model for Human Resource Planning Management

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Abstract—**Human resource planning has traditionally been used by organizations to ensure that the right person is in the right job at the right time. The increasing of environmental instability, demographic shifts, changes in technology, and heightened international competition are changing the need for and the nature of human resource planning in leading organizations. Therefore, it is required to have a appropriate tool to assist management in order to present overview and visibility of manpower numbers by deciding the effect of variables on the optimal level of manpower force. This tool shall be the one-stop information gateway for users to achieve.**

Keywords- Manpower Model; Human Resource Planning; Manpower Force; Attrition Model; Migration Model; Productivity Model

I. INTRODUCTION

Human Resource (HR) Planning has attracted the attention of management scientists in the past few years as a fruitful area both for theoretical analysis and practical application. It has traditionally been used by organizations to ensure that the right person is in the right job at the right time. Under past conditions of relative environmental certainty and stability, human resource planning focused on the short term and was dictated largely by line management concerns. Increasing environmental instability, demographic shifts, changes in technology, and heightened international competition are changing the need for and the nature of human resource planning in leading organizations.

Planning is increasingly the product of the interaction between line management and planners. In addition, organizations are realizing that in order to adequately address human resource concerns, they must develop long-term as well as short term solutions. As human resource planners involve themselves in more programs to serve the needs of the business, and even influence the direction of the business, they face new and increased responsibilities and challenges. Vetter [1]

defined human resource planning as "The process by which management determines how the organization should move from its current manpower position to its desired position. Through planning, management strives to have the right number and the right kinds of people, at the right places, at the right time, doing things which result in both the organization and the individual receiving maximum long-run benefits". (p. 15).

Modern human resource planning occurs within the broad context of organizational and strategic business planning. It involves forecasting the organization's future human resource needs and planning for how those needs will be met. It includes establishing objectives and then developing and implementing programs (staffing, appraising, compensating, and training) to ensure that people are available with the appropriate characteristics and skills when and where the organization needs them. It may also involve developing and implementing programs to improve employee performance or to increase employee satisfaction and involvement in order to boost organizational productivity, quality, or innovation [2].

Therefore, the organization has come out a proper tool to assist the management in doing resource planning called Manpower Model. The objective of this tool will decide the effect of variables on the optimum level of manpower strength under given scenario. This tool will enable practitioners of manpower analysis to employ and present resource planning at all operating levels of the enterprise the necessary information to make informed decisions.

II. SYSTEM DESIGN

Current procedures defined in the most recent policy documents, while not necessarily incorrect, do not provide the manpower community with the depth and breadth of analytical tools available to improve resource decision making. The tools developed using the manpower model outlined herein will enable practitioners of manpower analysis to employ tools to

present resource planning at all operating levels of the enterprise the necessary information to make informed decisions.

Currently, the organization using manual (traditional) recording system which is still stored using Microsoft Office Excel might results to difficulties to search for specific data especially in finding thousands of data. The possibility of the data to be destroyed or lost by natural disaster such as flood or fire is high, not to mention the redundancies and also the security issues. The number of data will increase by each day and year and the department might also face the problem in storing all the files.

In view of the robust market situation whereby optimum manpower strength is very vital to meet the demand by the Line of Businesses (LOBs), it is required to have a proper tool to assist management to decide on the effect of variables on the optimum level of manpower strength under given scenario. This model is to assist manpower planning execution under `what if scenario` to ascertain the optimum level of manpower strength under those situation. It shall be the one-stop information gateway and knowledge based exchange for users to achieve.

The project scope shall consist of the following main deliverables:

   a) *Initially data source is downloading from SAP.*
   b) *Migration schedule plan from NGND Group*
   c) *Productivity input from Network Operation (NO) Group.*
   d) *Productivity indicators for Network Delivery (ND) group such as numbers of projects, capex from ND Group itself etc.*

Thus, to use basic baseline manpower data, to produce attrition, migration & productivity model for manpower planning. The target user of Manpower Model system is for the Network Development Department in HR Planning. The platform use is an online access via URL address. The benefits of this model as follows:

   a) Initially to establish online tool on manpower model under migration planning schedule, productivity and attrition input affecting the current manpower strength.
   b) The platform use is on line access via URL address provided by the organization.
   c) Data is latest upon user update.
   d) Able to assist in doing resource planning such as succession planning, job rotation, movement of position, promotion etc.
   e) Management report in the form of graphical presentation of the data.
   f) Able to populate scenario on productivity, migration and attrition in `what-if-scenario` environment.

III. LITERATURE REVIEW

Human resource planning has traditionally been used by organizations to ensure that the right person is in the right job at the right time [3]. Under past conditions of relative environmental certainty and stability, human resource planning focused on the short term and was dictated largely by line management concerns. Increasing environmental instability, demographic shifts, changes in technology, and heightened international competition are changing the need for and the nature of human resource planning in leading organizations. Planning is increasingly the product of the interaction between line management and planners. In addition, organizations are realizing that in order to adequately address human resource concerns, they must develop long-term as well as short-term solutions. As human resource planners involve themselves in more programs to serve the needs of the business, and even influence the direction of the business, they face new and increased responsibilities and challenges [3].

Workforce planning and scheduling entails anticipating supply availability and job requirements in order to have the right people, with the right skill, at the right time, in the right place, at the right cost [4]. The problem of matching future availability of employees with future job requirements is quite complex since HP has hundreds of thousands of employees in project delivery roles, with thousands of skills distributed in countries all over the world. The other challenge of matching future availability of employees with future job requirements is that supply and demand is uncertain. Finally, there are no clear costs when matching an employee to a job.

IV. SYSTEM ADAPTATION

For HC BP ITNT Manpower Model, the features that would be included are Attrition Replacement of Job Position, Migration Staff Transfer that is subject to the business and operational needs in specific area, Productivity for Flexi Working Day or Working Hour and 'Calculator' to calculate/populate report / summary / chart of the models.

There is some example from existing system that find through the internet which is General Practitioner (GP) Manpower Model. This model was developed in Vensim by one of Ventana System UK's Consultants to assess the realities and practicalities of Governments pledge to increase number of GP's in England. GP Manpower Model illustrates the main potential sources of inflow (e.g. recruitment) and outflow (e.g. lack of retention/loses) of all categories of GP's in workforce (e.g. registrars, principals and non-principal). Together these determine the size and shape of the active stock at a given time.
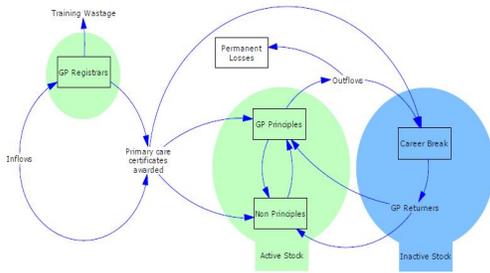
Figure 1 The Structure of GP Workforce with Vensim

Another is The Navy Manpower System. This system is provided by Center For Naval Analyses (CNA) Hudson Institute that describes and evaluates the process used by the Navy to set, implement and execute manpower requirements. The Navy Manpower System can choosing the proper quality and quantity of personnel needed to operate the Navy in peace and in war as well as to provide a feasible, affordable mix of active, reserve and civilian personnel who can meet the Navy's peace-time needs and mobilize within a specified interval to meet the Navy's wartime needs.

V. DEVELOPMENT APPROACH

The development approach for this system is incremental type which is the combination of linear and iterative frameworks. A series of mini-waterfalls are performed, where all phases of the Waterfall development model are completed for a small part of the system, before proceeding to the next increment.
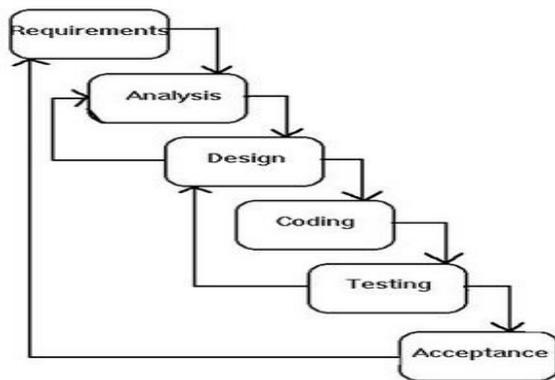

Figure 2 The Waterfall Model (System Development

Life Cycle)

The System Development Life Cycle (SDLC) involves [5]:

- Project planning, feasibility study: In this phase, it establishes a high level view of the intended project and determine its goals

- System analysis, requirements definition: In this phase it refines project goals into defined functions and operations of the intended application. Also, analyzes the end-user information needs.
- System design: This phase is all about describing desired features and operations in detail, including screen layouts, business rules, process diagrams, pseudo code and other documentation.
- Implementation: The real code is written in this phase.
- Integration and testing: In this phase it brings all the pieces together into a special testing environment, then checks for errors, bugs and interoperability.
- Acceptance, installation, deployment: This is the final stage of initial development, where the software is put into production and runs actual business.
- Maintenance: This phase is all about what happens during the rest of the software's life: changes, correction, additions, move to a different computing platform and more.

This framework exists for exploiting knowledge gained in an early increment as later increments are developed. The moderate control is maintained over the life of the system through the use of written documentation and the formal review and approval/signoff by the user and information technology management at designated major milestones [6 - 8]. It also helps to mitigate integration and architectural risks earlier in the system. Moreover, this framework allows delivery of a series of implementations that are gradually more complete and can go into production more quickly as incremental releases. It requires highly interactive applications where the data for the system already exists (completely or in part), and the system largely comprises analysis or reporting of the data [6]. Stakeholders can be given concrete evidence of the system status throughout the life cycle and gradual implementation provides the ability to monitor the effect of incremental changes, isolate issues and make adjustments before the organization is negatively impacted [6] [9-10].

VI. SPECIFICATION REQUIREMENT

For this model, there have three main features which are Attrition model, Migration model and Productivity Model. In Attrition model, the division will confirm the replacement requirements including new intake, acting and reassignment in monthly meeting. Then, the Human Capital Business Partner (HCBP) will be verify using this manpower model and the replacement plan

are agreed which is endorsed by Vice President (VP). Next, HCBP submit to Group Human Capital Management (GHCM) for temporary post ID creation and instruct Human Capital Shared Service Organization (HCSSO) to move body to temporary post. Then, the HCSSO will inform HCBP if post ID is available to execute for recruitment, transfer, acting, or redeployment.

In Migration model, the transfer is subject to the business and operational needs in specific area. The job scope and competency required are well defined. The transfer could be prioritized within state with exception of Wilayah Persekutuan Labuan branch and transfer body and position (lock stock and barrel) is allowed. All transfer must obtained Human Capital Board of Director approval via HCBP and based on business call.

Lastly in Productivity model, the working hours are not more than 39.5 hours per week as per Article 29.2 Collective Agreement 8. Flexi rest days are on Saturday and Sunday or Thursday and Friday or Friday and Saturday (for Kelantan, Kedah, and Terengganu). The flexible lunch break is one hour. Number of management to decide on the needs of flexi rest days and flexi working hours schedule is based on operational needs. The schedule is going to be published to staff at least one month before the effective date. The overtime policy is apply as usual for outside working hours and the frequency of flexi working day and hour is up to business requirements. This flexi rotation is done for every four weeks.
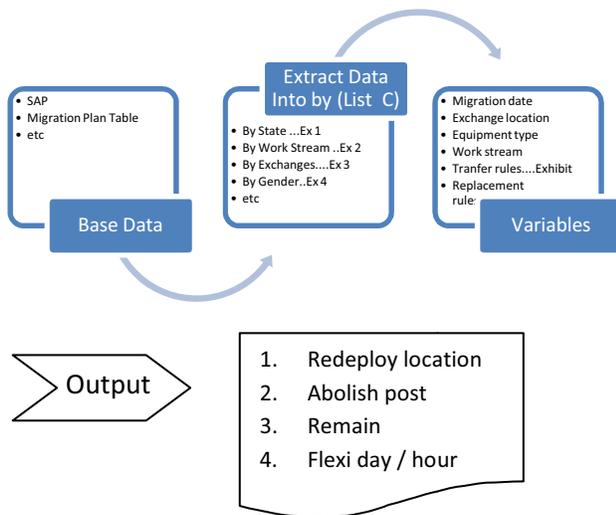

Figure 3 The Productivity Model

Figure 3 shows one example of manpower model that focus on the productivity model. This model basically downloads the base data from the migration plan table. Then it will extract the data by state, work stream, gender and exchanges based on some variables

to provide output such as whether to redeploy location or redistribute team members.

VII. CONCLUSION

Since the purpose of human resource planning is to ensure that the right people are in the right place at the right time, it must be linked with the plans of the total organization. Recently, some organizations have moved toward having a completely integrative linkage between business planning and human resource planning. In these organizations, organizational effectiveness is facilitated by a human resource executive who is a fully participating member of the top management team. As organizations change more quickly, so will the knowledge, skills, and behaviors needed from employees. This means that people working in organizations will be asked continually to adjust to new circumstances. Assessing and facilitating peoples' capacity for change are two activities that psychologists are likely to be called on to do, yet there is very little research available to consult for guidance. Whereas organizations are seeking changes from employees, employees will be demanding that organizations change to meet the needs of the increasingly diverse work force. Thus a final challenge in human resource planning is balancing current needs-of organizations and their employees-with those of the future. The criterion against which this balancing act is measured is whether employees are currently at the right place doing the right things but yet are ready to adapt appropriately to different activities.

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