



KPMG leverages predictive analysis for cost efficiency

A case study

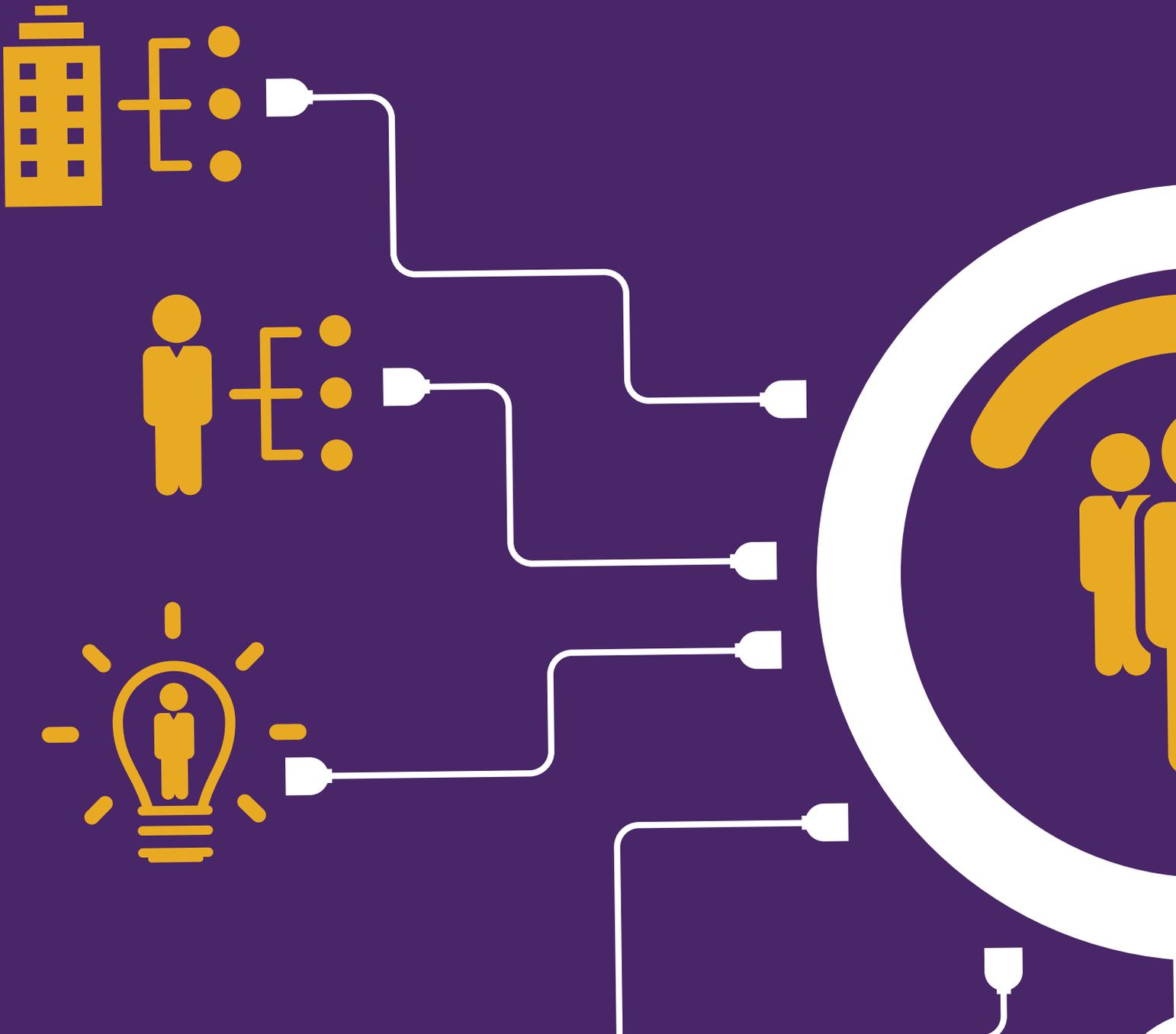
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01.

About the customer

In an organisation with multi facet service delivery, it becomes mandatory to have a centrally managed human resource (HR) operations. This is required to have centre of excellence and knowledge related to the HR operation managed centrally. The role of 'HR Global Operations' (HRGO) is to ensure that organisation's business team is provided with high-quality HR services in a standardised and cost-effective way.

HR global operations provides business teams with HR services in a standardised and cost-effective way within the following areas:



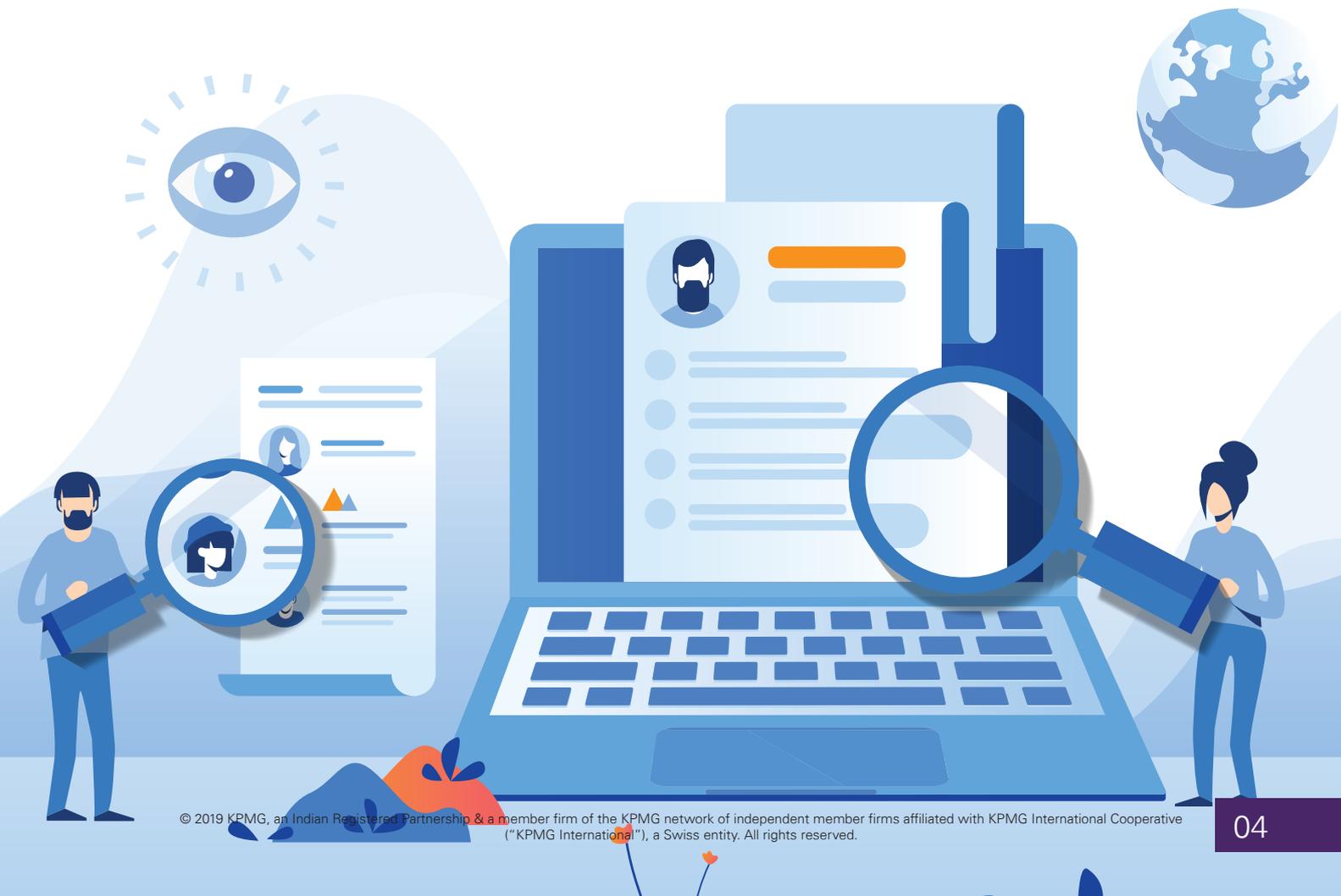
Clients HR global operation organisation operates from different locations and consist of over 550 employees supporting range of HR processes ranging from 'hire to retire'.

02.

Business need and challenges faced

HRGO at leading IT services provider has proved the service delivery in the area of shared services with the G-local (global process executed locally in India) delivery model. By seamlessly transforming from global to 'G-local delivery model', HRGO needs to spread its successful way of delivering services. It also demonstrate the planning and delivery capabilities, through adoption of formal capability improvement model like capability maturity model integration (CMMI) for services, so that it can benchmark its services against the established industry framework. Not only demonstrate analytics to the outer world but also, continuously improve the services through proven data practices. The challenges faced by the HRGO function currently are as:

- Demonstration of cost efficiency improvement year-on-year as organisational initiatives
- Dynamic business conditions
- Demonstrate improvement outcomes using quantitative data
- Sustenance of the improvement



With vast experience in process excellence and data analysis, KPMG suggested to standardise the process. While standardising the processes, predictive analytics may be used to support the process improvements and their relevance with business initiatives. Steps undertaken to implement predictive analysis are as follows:



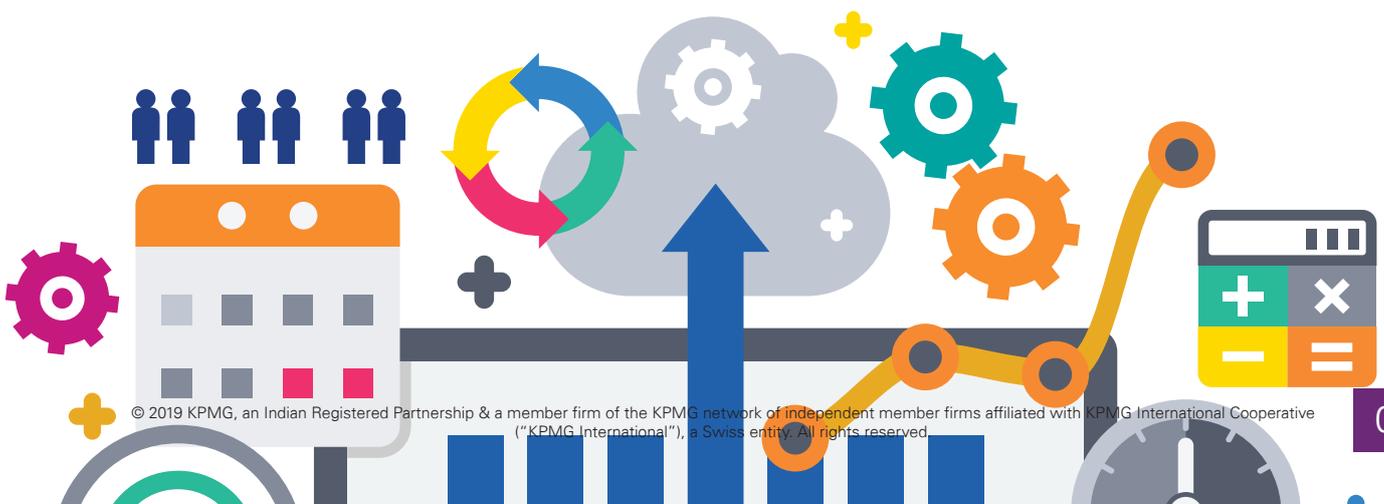
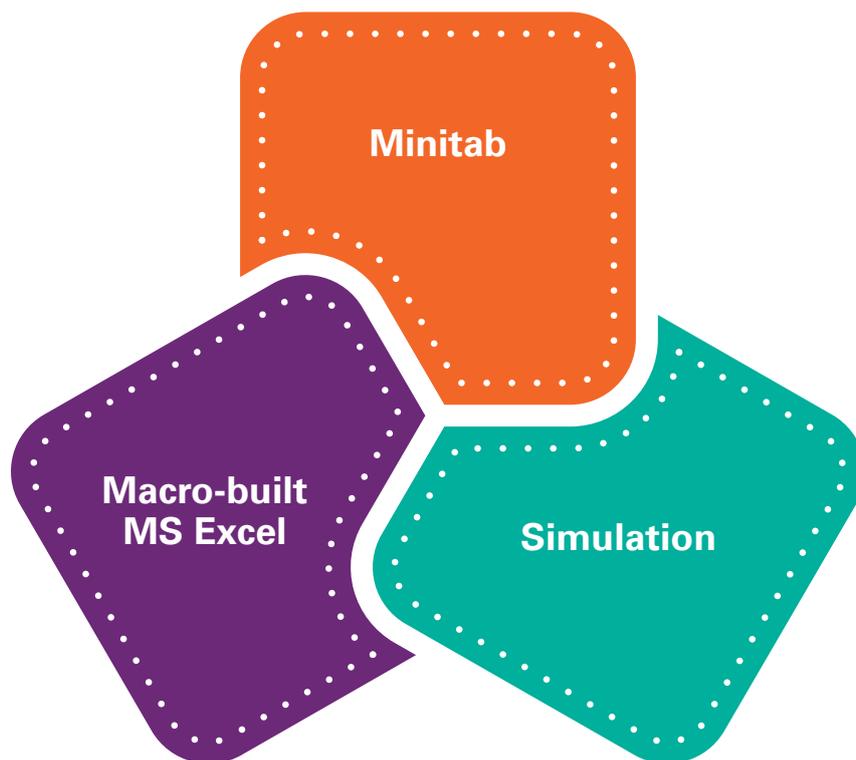
04.

Predictive analysis tools and techniques

Data on business objectives and transformational objectives were collected by the HRGO team. Each transformation objectives were mapped with supporting processes and sub processes. Measures for the process and sub-processes were defined using goal-question-metric (GQM) technique. 'Process performance baselines' to understand the current situation were prepared and 'process performance models' were developed using technique like multiple linear regression techniques.

As an initial step, probability of success was calculated to predict the success. If predicted success was below the threshold then simulation techniques were used to identify process improvement opportunities. What-if analysis was done to identify best scenario to achieve desired success.

Tools used during the analysis are:



Details of each steps are mentioned as follows:

- **Business objectives and transformational objectives**

As per the best practices, business needs are translated into 'Business and Transformational Objectives' by the leadership team. These objectives are the performance indicators that provide focus and direction to the service management activities. Flowing from the vision of the organisation, HRGO at the IT services organisation had also derived the business objective for its function. Based on the business results and markets dynamics, improvement in the cost efficiency was taken as a business objective for FY 17-18 by HRGO. Using brainstorming techniques and through establishing causal relationship using techniques like 5 why and fishbone diagram, transformational objectives were identified by the leadership team viz. (not limited to)

- Better resource utilisation
- Improve span of control
- Improve organisation layers
- Improve pyramid structure
- Generate internal efficiencies
- Global to G-local delivery model.

These objectives were quantified for delivery teams using the SMART techniques:

S ➔ **Specific**

M ➔ **Measureable**

A ➔ **Achievable**

R ➔ **Relevant**

T ➔ **Time bound**

- **Identification of critical processes**

Standard work instruction forms the base of the regular and repeatable delivery performance, which are understood and continuously improved. HRGO at the leading IT service organisation had structured work instruction available for all process and sub processes. Ideally, it is not possible or justifiable to do statistical management of all the processes or to apply statistical management techniques to all processes or sub processes of the organisation's set of standard processes. So, critical processes were identified using both qualitative and quantitative techniques. Qualitative technique includes fishbone analysis, brainstorming. Quantitative techniques include multiple regression analysis. The selection of the critical process helped the team to focus on the process which had the major impact on the outcome or the transformational objective and align the team's effort to monitor and control the process.

- **Establishing relation between transformational objectives and sub processes**

Transformational objectives were the key performance indicators which were to be achieved by all verticals.

Achievement of transformational objectives would lead to fulfilment of business objectives. The next question that arose was how the transformational objectives would be achieved? This was done through mapping of objectives with processes and sub-processes. Once the mapping is established, data was collected for certain period of time so that quantitative relation can be established. This was done using multiple regression principles. The relationship established between transformational objectives and sub-processes enabled the team to understand the statistical relationship and impact of the sub-process on the outcome. HRGO had mapped the transformational objectives to the following sub processes like:

- Net availability of individual contributors
- Lower bottom pyramid ratio
- Existing reporting structure (ratio of people manager: Individual contributors)
- Percentage automation of processes
- Cross utilisation of resources
- Centralisation of activities

- **Composing the right process**

There could be many methods for implementing the same set of process or work instructions. Process composition enabled the team to choose the right set of methods (from the various existing methods) that provided the optimum results based on transformational objectives. The selection was based on statistical analysis using simulation techniques and probability of success. Using the simulation technique, HRGO team could prioritise the methods of performing the process which could yield the right results for the transformational objectives.

- **Identifying the innovation**

Innovative ideas were identified for improvement in the methods to perform processes and sub-processes. The ideas were prioritised based on statistical validation of results. Based on selection, innovations were deployed, their implementation was monitored. Effectiveness of actions taken were evaluated using hypothesis techniques.

- **Predicting the outcome**

Using high maturity practices like quantitative work management from CMMI framework, one of the significant benefit was that, team was able to predict the outcome of the key performance indicators (KPIs) using the data analysis techniques.

As per the best practice, based on the relationship established in the prediction model, outcome is predicted by substituting different values of sub-processes according to the need of the business, using the prediction interval and probability of success techniques. These outcome is monitored periodically. The prediction model enables the team to predict the outcome at the start of the activity. It helps them perform mid-course correction. And also validate the predicted outcome based on realised value. Periodic calibration of the prediction model is performed to ensure continuing suitability of statistical relationship between the outcome and sub-processes.

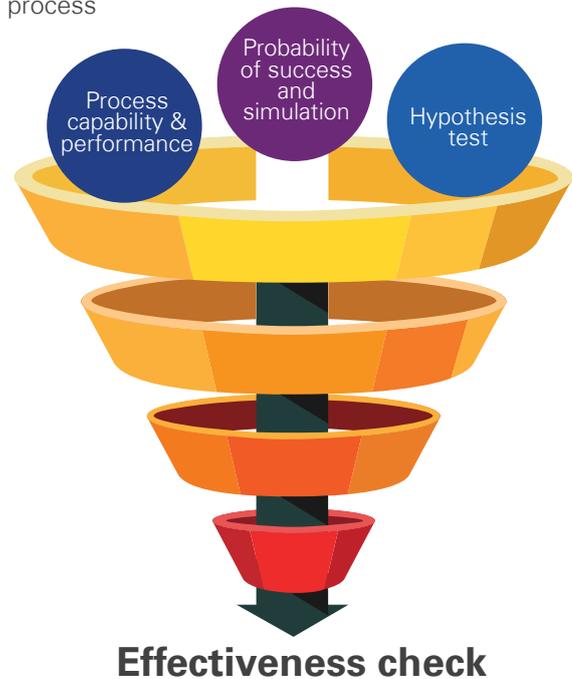
HRGO used the regression model for predict the outcome of the transformational objectives and could perform midcourse correction wherever needed.

- **Managing the outcome**

Statistical process control techniques like control chart were used by HRGO team to see the trend of the transformation targets and sub-processes over the period of time. For any outliers, positive and negative root cause analysis were performed. Negative root cause analysis helped the team to identify the reasons for special causes thereby identifying the actions so that the reasons for special causes could be eliminated. However, positive root cause analysis was done for favourable deviations so that reason for such outcomes could be repeated to get the better performance.

- **Evaluating the effectiveness of actions**

Actions identified based on process composition and innovations were implemented during the implementation of structured process model like CMMI including high maturity practices. Results of these actions were recorded and compared with previous performance. Following techniques were used to evaluate effectiveness of the implemented process



Through implementation of predictive analysis benefits in the business and transformational objectives were achieved:

- Almost 7-10 per cent improvement in cost efficiency
- Nearly 16 -18 per cent improvement in utilisation of resources
- Nearly 40-45 per cent improvement in span of control
- About 14-15 percentage improvement in organisational layers.

Other improvements which were realised through the above process improvements were as:

- Effective leave management
- Efficient workforce planning
- Positions deskilling
- Productivity improvement.

Predictive data analysis played a vital role in this success story. Timely collection of data and its analysis helped us to understand inherent capabilities of processes. Process improvement opportunities were identified. Modified processes were monitored statistically this ensures the success.





KPMG *josh* **IT SHOWS**

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