



# Five Steps to Optimizing Human Capital

The right employee in the right position at the right time and location for the right cost

“The War for Talent is not a looming crisis for which we must prepare; it is upon enterprises and organizations of all sizes right now. The New Reality is that we are in the midst of talent management challenges at all levels of management.”<sup>1</sup>

This reality requires organizations to use human capital information in a purposeful, precise and proactive way to optimize the work force.

At its most basic level, workforce optimization means securing the right employee in the right position, at the right time and location for the right cost. More specifically, it can mean minimizing outsourced or unproductive workers, maximizing retention of critical workers through reorganization or downsizing, or minimizing time and costs associated with vacant positions. Unfortunately, most organizations lack not only a consistent and holistic view of the work force, but also the necessary analytics to perform workforce optimization.

Human capital management software can help managers optimize their work force by providing relevant, holistic and predictive human capital information that drives strategic and tactical decisions. A recent human capital study by IBM notes, “Companies that successfully

leverage human capital information ... provide key metrics that can improve workforce productivity and performance; they also enable their HR personnel to translate human capital data into executable strategy.”<sup>2</sup> Optimization software takes the next step by helping to create workforce decision plans that make the most of this information. With this insight, foresight and guidance, organizations can better address workforce demands at every stage of the talent life cycle while supporting critical business decisions.

## **Reallocating personnel after an acquisition**

Sixty-six percent of CEOs plan to use mergers and acquisitions as part of their global integration strategies, according to IBM’s *Global CEO Study*.<sup>3</sup> Naturally, organizations completing an acquisition will often need to reallocate personnel among a network of existing and newly acquired sites. Given the skills, location and mobility of this work force, how should these resources be allocated most effectively?

The answer is “it depends.” The best way to allocate resources depends on the nature of the resources, the constraints at hand and the organization’s mission.

In less than 3.5 seconds, the management team can calculate, simulate and determine the optimal career path for approximately 100,000 employees.

**Workforce distribution optimization case study: A leading energy company**

In an effort to cut costs, this company set a goal of replacing only one worker out of every two retiring. Reallocating existing employees would allow the company to save money and reduce the number of external hires. With a growing number of retirees and high employee turnover costing millions of Euros each year, the company wanted to find a way to utilize the internal mobility of its employees.

By combining workforce analytics, forecasting and optimization software from SAS®, the company was able to address complex workforce issues by:

- Analyzing the career path of individual employees.
- Modeling the probability of mobility between job positions and locations.

- Calculating associated costs and time involved.
- Building optimization models to synthesize this information into recommended actions.

Given the objectives, data inputs, decision variables and constraints, managers have been able to act on recommended actions from the optimization model. Putting the proposed plan in action has delivered impressive results. Metrics show that employee turnover and cost per employee have been dramatically reduced. Furthermore, in less than 3.5 seconds, the management team can calculate, simulate and determine the optimal career path for approximately 100,000 employees – representing 3,000 employee segments and 3,000 possible career paths. Management now focuses primarily on intelligence for its decision making, thanks to the SAS solution’s ability to define what actions are needed to achieve goals based on a rational and well-supported hypothesis.

**Applying optimization principles**

Employees are not the only resource that can be optimized. Optimization principles apply equally as well to any type of resource – for example, money and technology. We tend to use the term “optimization” generically or broadly; but in simple terms, optimization involves designing a system or process to perform as well as possible in some defined sense. It’s the “defined sense” that makes things murky. What’s optimal for you – with your goals and values – could very well be suboptimal for the next organization.

**SAMPLE WORKFORCE DISTRIBUTION MODEL**

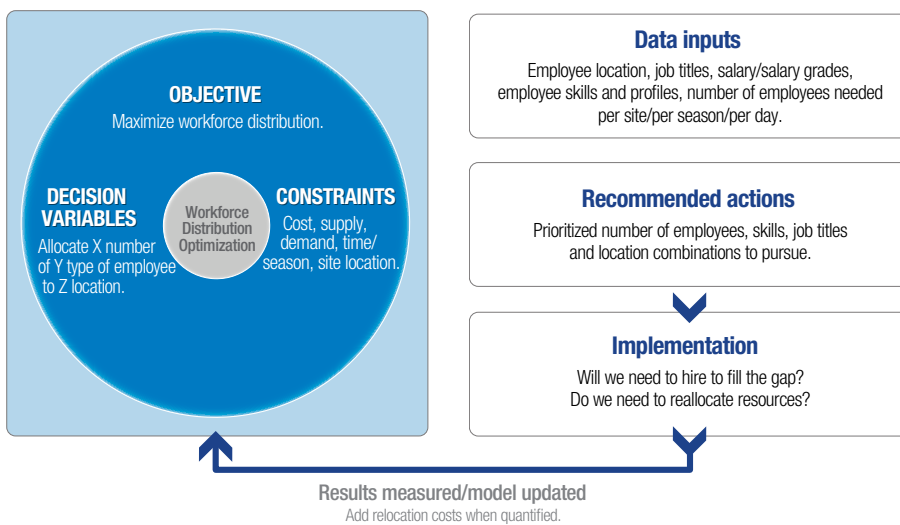


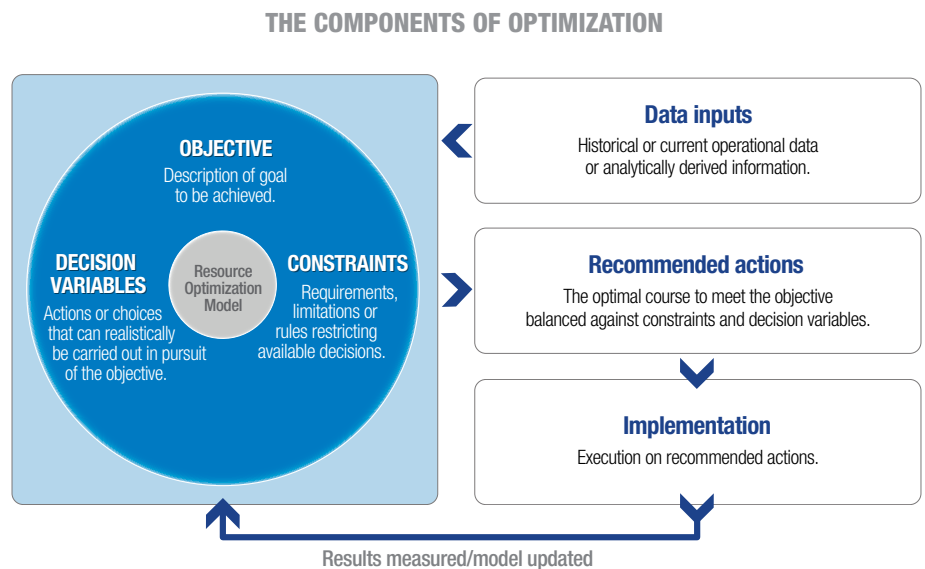
Figure 1: Workforce distribution optimization model

Every performance management paradigm, every mission statement could point to a different definition of success – and therefore, to a different way to optimally allocate resources.

How do you optimize resources in poorly defined decision-making environments or in cases where scenarios are well defined but ineffective? Effective resource optimization requires a certain rigor, consistency and agreement on processes. Whether you are explicitly developing a mathematical model or just trying to drive more effective and efficient resource usage across the organization, all resource optimization models should be based on objectives, decision variables and constraints that are relevant for your organization. Within this framework, you will select a key performance metric that you want to optimize. The advantage of optimization is that it delivers a solution that will work within your constraints and the decisions you can reasonably make. The following five steps will guide you through this optimization framework and apply to any resource optimization scenario – whether you are optimizing your work force or any other resources.

**Optimally allocating resources in five steps**  
**Step 1: Define the objective to reflect organizational mission and strategy.**

The resource optimization model must reflect not only well-defined, often-narrow departmental or divisional objectives, but also the objectives that are most important to the organization as a whole. For example, HR needs to be cognizant of the skills/talents needed to support long-term organizational



**Figure 2: The optimization model analyzes all possible decisions or actions based on given data, objectives and constraints.**

objectives. There also needs to be an understanding of how activities will support these objectives, and how success or failure will be measured.

*Workforce example: Optimize workforce productivity via distribution to reduce or eliminate hiring need.*

**Step 2: Get buy-in and foster accountability.**

It's not enough for executives to agree on the goals, business rules, constraints and decisions that will be made. Putting the best choice for each decision variable into action requires accountability and commitment from implementers and executives.

*Workforce example: Ensure managers are willing to relocate personnel to*

*different sites or departments in order to support overall organizationwide goals.*

**Step 3: Define the conceptual resource optimization model.**

To define the model (see Figure 2), you first need to determine what input data is available. It's best to use the cleanest, most accurate data that's available. In addition, the data should have historical depth and relevance. Next, identify variables that can actually be changed and decisions that can/will realistically be made in your organization within the given time frame.

*Workforce example: Gather historical data from employment data sources to account for required skills, position, salary, experience and location. If possible, seek*

out ways to gather qualitative, subjective data from surveys to help identify variables (e.g., willingness to relocate, family and desired salary considerations). Identify decisions that can be made (e.g., how many people at which salary/position can be allocated, for what cost, at which locations).

#### Step 4: Formulate the resource optimization model.

This step is the translation of your conceptual model into an analytic model – with more rigor and detail – represented in mathematical terms. In this step you begin to formally code the key elements of the optimization model – objectives, constraints and decision variables (see Figure 2). There is no single right way to use mathematical expressions to represent the elements of a decision problem. Every formulation represents a compromise because no mathematical representation can (or should) reflect every detail of a real-world scenario. Good modeling balances realism and workability.

*Workforce example: See Figure 1– Sample Workforce Distribution Optimization Model.*

#### Step 5: Implement and update the analytical model.

Using analytical software such as SAS, build and implement the model. Its output can provide recommendations for the best decision-variable values to support the objective, given the constraints and available data.

Test the optimization model for suitability. Training and experience will

help you to choose the best model. It's important to understand how well the model works in the real world and to incorporate the knowledge from previous versions of the model into future ones.

Analytical models must be validated and continually updated. Best practices for resource optimization are tied to performance management by answering questions such as: “Were recommended decisions put into action?” and “Were those decisions effective for driving improved alignment with organizational goals?” If the results were not what you would expect, revisit the model to determine whether the identified objectives, decisions, constraints, resources and other elements reflect your current reality. Make changes and updates as needed, according to the available data.

*Workforce example: Add relocation costs to an existing model to better account for their influence on cost-oriented decisions.*

#### Committing to resource optimization and remaining focused

Changing conditions will warrant corresponding changes in your resource optimization models. Periodically cycling through this five-step process will help your organization highlight areas to improve as you update your models to generate insights that continue to be relevant and valuable. A commitment to resource optimization will help ensure that your organization remains focused and productive in an ever-changing competitive environment. ■

<sup>1</sup> *Business Implications of the New Reality 2008: How the War for Talent Is Impacting Organizations Throughout North America and What to Do About It.* Stanton Chase and Birkman International. 2008.

<sup>2</sup> *Unlocking the DNA of the Adaptable Workforce: The Global Human Capital Study 2008.* IBM Corporation. 2007.

<sup>3</sup> *IBM Global CEO Study: The Enterprise of the Future.* IBM Corporation. May 2008.

#### [author bio]

Becca Goren is a Global Product Marketing Manager for Strategy Management and Human Capital Management for SAS, where she drives go-to-market plans. She also leads research studies, authors white papers and articles, and speaks internationally. [Becca.Goren@sas.com](mailto:Becca.Goren@sas.com)

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