# Affiliation, Development and Value Creation

# Ron Elsdon

# Elsdon Organizational Renewal and New Beginnings Career and

College Guidance

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# Summary

Slowing growth of the U.S. workforce, concerns over a decreased sense of individual commitment to organizations and the growing importance of people as the primary source of value creation speak to the need to re-examine the relationship of organizations with individuals both to enhance organizational value and individual fulfillment. With organizational value creation beginning with the individual, the nature of, and support for, this relationship is critical. However, there is uncertainty about the form this relationship should take and how it should be supported. In addressing support, U.S. organizations spend over \$50 billion each year on employee development, and yet a primary reason people say they leave organizations is lack of development. Based on field studies, this paper demonstrates how affiliation is one foundation on which to build the relationship. Based on quantitative modeling, the paper develops guidelines for effectively allocating resources to individual development.

#### Affiliation, Development and Value Creation

Given that, in a growing information and service based economy, value creation in increasingly built on the contribution of the workforce, releasing workforce value is a major strategic issue for leaders. Releasing this value is dependent on building effective relationships with individuals in the organization and then investing in people to enhance productivity. And yet people development constitutes a hidden dimension of value creation. This might seem a strange statement since references in company publications to the importance of people are ubiquitous. Even an organization such as Enron was cited, prior to its downfall, for its innovative talent development practices (Michaels at al, 2001). However, as Enron illustrates there is a gap between behavior and rhetoric. This is reinforced by the proclivity of organizations to use employee layoffs as a means of shoring up short-term financial performance, in spite of longterm loss of institutional knowledge. Layoffs lasting more than 30 days increased by 49% in 2001 and remained elevated in 2002 and 2003 (U.S. Dept. of Labor, 2003). People apparently are important but expendable.

And yet organizations in the U.S. invested \$54 billion for training those who remained in 2002, although this was a decline of about 5% from the prior year (Galvin, 2002). Such investments seek to accelerate the increase in productivity reported by Reichheld (1996) with tenure in an organization, and garner the substantial returns reported on investments in career development infrastructure (Elsdon and Iyer, 1999). Perspectives about resources committed to development of people range from the optimistic to the sanguine (ASTD, 2003; Conference Board of Canada, 2003). Furthermore, anecdotal evidence suggests that training and development expenditures are

particularly vulnerable during economic downturns reflecting uncertainty about how these resources release value in an organization.

Value creation begins at the individual level and is profoundly influenced by the alignment, selfexpression and affiliation of each person in the organization, including senior leaders. Prior studies have explored aspects of organizational culture that contribute to employee commitment (O'Malley, 2000), management behaviors that influence retention and employee perception (Buckingham and Coffman, 1999) and constructs such as embeddedness (Mitchell, 2001) to explain why people leave organizations. The extent to which people reach their full potential and their decision to stay or leave are critical to productivity, value creation and individual fulfillment. Consequently frameworks are needed that encompass both the quest to reach potential and decisions individuals make about staying or leaving. This paper explores two contributing aspects. The first is the applicability of affiliation as a framework for characterizing the relationship of individuals to organizations, building on earlier work that outlined fundamental principles (Elsdon, 2003). The second is exploring how leaders can optimize investments in individual development to maximize value created by an organization.

Why introduce the concept of affiliation? In describing the relationship of individuals to organizations doesn't the concept of retention suffice? Retention is a one-way relationship, something the organization does to the individual. As such it stifles rather than enables performance and it is not practical in times of employee scarcity as we will likely experience in the future. Affiliation, on the other hand, is a two-way relationship of mutual connection between the organization and the individual. Affiliation can link both the discontinuities

associated with the decision to stay with, or leave, an organization and individual productivity. It is defined as becoming closely connected or associated. Its root is in a Medieval Latin word meaning to adopt. Affiliation is built on the principles of understanding individual needs, providing people with options and choices, fostering learning, supporting breadth in development, and incorporating Peter Drucker's idea that we engage individuals as volunteers.

### **Leadership Issues and Questions**

These topics surface a central dilemma facing leaders today, namely that of integrating the drive for organizational performance with the search for individual fulfillment, for organizational performance begins with the individual. Inherent in this challenge is understanding the linkage between the more subjective aspects of individual behavior and the more objective and quantifiable aspects of organizational performance. I well remember a discussion unfolding at a briefing on a related subject with a group of senior human resource professionals and senior financial leaders. In questioning the allocation of resources for individual development the financial executives were pleading for quantitative justification. This challenge is not surprising, as traditional financial measures do not serve us well in addressing the value contribution of the workforce. Traditional financial measures of organizational performance are time bounded (usually annual or quarterly), they look back in time and they are linked to fixed assets (for example return on assets). The impact of the workforce, on the other hand, is not time bounded, it is about future contribution, and the workforce is not a fixed asset. So we are presented with a challenge, how to build perspectives and tools that both effectively describe workforce value creation and provide support for resource allocation decisions. By organizational value, which encompasses workforce value, we mean the sum total of the organization's knowledge, capabilities, operating practices, connections inside and outside, how they fit together, and the ability to marshal these to meet customers' needs. While this can be described in quantitative terms such as the present value of future cash flows, which translates into shareholder value, this is only a subset of a larger contribution, namely the social contribution the organization makes. That is the extent to which it enhances the quality of life for those in its constituent communities by being a key link in the value creation chain. These communities include shareholders, employees, customers, suppliers and the geographic communities within which the organization operates. With this in mind we can pose a number of questions for leaders as follows:

- What is the nature of the relationship that should be built with people in an organization?
- How can we strengthen that relationship for the benefit of both individuals and the organization?
- How can the creation of value in an organization be maximized while respecting the needs of each person in it?
- How can we define the appropriate level of resources to support individual development and enhance organizational value?

Our exploration of these questions occurs in two parts. We first look at building a business case, exploring affiliation as a concept that provides a foundation for the individual/organization relationship. We then use a simulation approach to develop guidelines for allocating and

optimizing development resources. We conclude by summarizing some closing thoughts for leaders.

# **Building a Business Case for Affiliation**

I recall a conversation with a leader in a non-profit organization as he described a recent situation where the organization's Chief Financial Officer was released as a cost cutting measure. As a result the Chief Technology Officer resigned. The Chief Technology Officer was a primary contact for major funders of the organization; it is likely that as a result of his un-planned departure, these funding sources would go elsewhere, jeopardizing the future of this organization. In another case a major law firm executed a workforce reduction strategy ten years previously. As a result, ten years later they have a reputation on college campuses as an unreliable employer and have trouble recruiting top talent, the lifeblood of the organization. In each case management decisions that focused on the short term, created long term organizational problems that far outweighed the initial gain.

Let us explore why affiliation can provide a framework to address such issues. Affiliation directly influences three factors linked to organizational performance:

- The decision that people make to stay with, or leave, an organization.
- The extent to which individuals operate close to their full potential, and therefore their productivity.
- The likelihood of rehiring key individuals who leave.

We will examine each of these items in turn, beginning with the decision that people make about staying with, or leaving, an organization. As we observed in the two examples, the loss of key

individuals from an organization can have major negative long-term consequences. The decisions that a few individuals make to leave can also precipitate the departure of others, potentially causing a mass exodus, analogous to the tipping point phenomenon identified by Gladwell (2002).

The individual decision to look elsewhere and then later to leave is a discontinuity, a singular event. It is intimately linked to the strength of affiliation a person feels with the organization. Figure 1 shows this relationship. It is based on 341 surveys that were administered across the U.S. in 2003 to people in a wide range of organizations<sup>1</sup>. The three-dimensional figure in the upper left shows the number of responses; the axis in the foreground shows the strength of affiliation on a seven-point scale from low (1) to high (7). The axis receding from the foreground shows how long people intend to stay with the organization in years. The figure in the lower right shows this same information in two-dimensional form, where each contour represents a certain number of responses.



#### Figure 1. Link between Strength of Affiliation and Time Will Remain

There are two distinct and separate regions; the peak in the first region occurs at a lower strength of affiliation (about 5) and at a much shorter anticipated time to remain (two to three years or less). The second peak occurs at an affiliation strength of six to seven and at a much longer anticipated time to remain of five to ten years or more. There are no examples of a low level of expressed affiliation and a long anticipated tenure (the upper left corner of the two-dimensional figure), or of a high level of expressed affiliation and short tenure (the lower right corner of the two-dimensional figure). This observed behavior shows how strong affiliation is directly linked to people deciding to stay longer with an organization. It also shows the discontinuity associated with moving from one perceived strength of affiliation declines. Since the cost of losing people is usually equal to about one hundred and fifty percent of annual salary, and it is greater for top performers, stronger affiliation means fewer unwanted losses of people and better financial

performance. The single greatest factor contributing to a decision people make to consider leaving an organization has been shown in one study to be the lack of support for individual career development (Elsdon, 2003). So we see the importance of affiliation and the contribution development resources can make.

The second impact of the strength affiliation is the extent to which it is linked to the ability of people to operate closer to their full potential. Figure 2 illustrates this linkage.





The results from 369 surveys conducted in 2003 are shown. As before the figure at the top left is a three dimensional representation. It shows the number of responses (the vertical axis) the strength of affiliation on a seven-point scale (1 low to 7 high) in the foreground and a self-estimate of how closely people are approaching their full potential also based on a seven-point scale (1 low to 7 high). The figure at the lower right is a two-dimensional representation. There is a direct relationship between the strength of affiliation and the extent to which people are

operating close to their full potential. There are no examples of people expressing a low strength of affiliation and operating close to full potential (the upper left corner of the two-dimensional figure), and there are no examples of people with a high degree of affiliation operating significantly away from their full potential (the lower right corner of the two-dimensional figure). Using the data from this study we can estimate that on average people are operating at 60% of their full potential. In the 40% gap that remains there is much opportunity for senior leaders to enhance organizational value. Closing this gap has immediate business implications. If the 40% gap could be cut in half this would add \$66 million each year to the financial performance of an organization of 10,000 people (using 110% of compensation as a basis for estimating value contribution, and an average compensation of \$30,000). We will explore later how investing in individual development is a key means of closing this gap.

The third impact of the strength of affiliation is the decision that people make to return to an organization. This is illustrated in Figure 3.





The results shown here are based on surveys administered in late 2002 to 81 people who voluntarily left two U.S. organizations, one in the retail area, the other in the medical area<sup>2</sup>. Participants were from a broad range of functions and levels of responsibility. Figure 3 shows the average weighted response to a question using a seven-point scale to assess the strength of affiliation (1 low to 7 high) sorted according to a willingness to return to the organization. The strength of affiliation of those willing to return (the right bar) averaged 4.8, significantly higher than the 3.4 average score of those unwilling to return. Stronger affiliation directly influences an organization's reputation and ability to attract back key talent.

The impact of affiliation is further emphasized by responses from 392 survey participants in 2003 to a question inquiring about their perspective of the importance of building strong affiliation and workforce commitment. Responses averaged 6.4 on a seven-point scale (1 low importance to 7 high importance), a 90% weighted average level of importance.

This brings us to the role of leadership. Figure 4 shows the linkage between leadership's ability to create a sense of inspiring purpose for people in an organization and the strength of affiliation they feel.



Figure 4: Link Between Inspiring Purpose and Affiliation

As before the upper left figure is a three-dimensional representation of survey responses, in this case based on 369 surveys conducted in 2003. The vertical axis shows the number of responses, the axis in the foreground shows the extent to which the organization's purpose is considered to be inspiring on a seven point scale (1 low to 7 high), the axis receding into the background shows the strength of affiliation also on a seven point scale (1 low to 7 high). The figure in the lower right is a two-dimensional representation. These figures show the direct relationship between leadership's ability to create a sense of inspiring purpose and the strength of affiliation that people feel. There are no examples of a low sense of inspiring purpose and a high degree of affiliation (the upper left corner of the two dimensional figure) and there are no examples of a high sense of inspiring purpose and a low degree of affiliation (the lower right corner of the two dimensional figure). So leadership's role in creating this sense of inspiring purpose is fundamental to building strong affiliation, which, in turn, affects organizational effectiveness,

productivity and financial performance. An important component in building this sense of inspiring purpose is enabling people to operate closer to their potential. This, in turn, is driven by the support given for their development. We will now explore one approach to allocating resources for this development.

#### **Allocating and Optimizing Development Resources**

Let us consider the impact of committing development resources to an individual. At one extreme, namely no investment, we lose the benefit that would come from new knowledge. The other extreme, over investing in individual development, is so time demanding that it reduces productivity. Consequently, there is an optimum level of investment in development resources. Indeed, if there were no optimum, resource allocation would be easy. It would simply consist of investing all resources in the single, top-performing individual.

While the optimum allocation of resources in practice will likely be affected by factors such as the industry sector or function involved, there is one critical element with major strategic consequences that crosses industries and functions. That is the question of how development resources should be allocated across groups of employees performing at different levels. For example, should all of the organization's development resources be targeted to a small group of high performing individuals or should the resources be more evenly distributed throughout the organization? It is in addressing this question that modeling and simulation can provide significant insights. By modeling we mean quantitatively describing a situation and making predictions from it. We seek to go beyond the conceptual stage, beyond the descriptive, to approaches that can both predict potential outcomes and help in prescribing preferred approaches. In other words help guide our decision making about allocating development resources. Doing this requires the use of modeling techniques that address underlying mechanisms and cause-and-effect relationships. Simulations build on the tools of quantitative modeling to explore and optimize the impact of decisions on potential outcomes. In our case this means the organizational impact of resources committed to individual development. Simulations provide a powerful means of exploring the influence of these resource allocation decisions without creating upheaval in an actual organization.

We will construct a simulation to explore how to allocate development resources most effectively to individuals performing at different levels in an organization. The simulation provides a basis for defining guidelines that aid future decision-making. The case shown here is used to illustrate the approach and how guidelines can be developed from it. The process consists of first creating a mathematical model that describes the impact of individual development resources on organizational performance. This model is then coupled with a mathematical optimization routine that identifies how resources should be allocated to optimize organizational performance under various conditions.

This process is a first step in what hopefully will be on-going development of simulations of increasing sophistication. The model and resulting simulation described here are simplifications to aid in clarifying underlying principals and operating recommendations.

The foundation for the model and simulation is as follows:

- The workforce is divided into three groups of employees: top performers, middle performers and low performers. The size distribution and relative performance of the groups can vary. The modeling approach can be readily extended to include additional groups, and ultimately to each individual.
- Development resources are limited and provide a constraint that is incorporated into the optimization process.
- Various approaches are possible to describing how cumulative, net value added reaches an optimum with the addition of development resources, for example using an equation form based on time with an organization (Elsdon, 2003). In the current paper the optimum is built from equations describing both cost and value addition as this most clearly illustrates the relevant driving forces.
- The potential value added by each person as a result of the organization investing in their development increases linearly as development resources are added, from a given starting point. This reflects increasing competence and productivity resulting from the development process.
- The cost of investing in development resources increases linearly with the investment in those resources. This includes related aspects such as time spent during development in addition to the direct costs of development.
- The potential cumulative net value added by each person as a result of investing in their development is equal to the sum of the difference between potential added value and

added cost. As we add development resources, we see gains in productivity and effectiveness that are partially offset by the additional costs.

- In practice, actual cumulative net value added by each person is affected by how much they can capitalize on the potential gain from development. We account for this by including a multiplier to potential cumulative net value added reflecting the extent to which each person can move closer to their full potential. Since the average gap reported earlier between actual and full potential was 40%, the base simulation case assumes that high performers can improve by 30%, middle performers by 20% and low performers by 10%. While many profiles could be developed and readily incorporated into the modeling system, this profile was chosen for illustrative purposes consistent with a fundamental tenet of behavioral interviewing (Janz et al, 1986) that past performance is the best predictor of future performance. Consequently high performers are most likely to demonstrate the greatest performance improvement when given additional development resources. Other assumptions can be readily incorporated into the simulation.
- The total value of the organization is equal to the cumulative net value resulting from investing in development resources, added to a base value that existed prior to the investment.
- Since the model equations are non-linear, non-linear optimization techniques are needed to estimate optimum resource allocation. In this case an optimization routine in the Mathcad 2000 system was used.

With this as a framework the equations described in the Appendix were developed. Simulations that coupled the model with an optimization routine provided the basis for the results we will review. Figure 5 illustrates the basic profile showing cumulative net value added in a given year by an individual as additional development resources are added. It is the base case for the middle-performing group.

Figure 5: Cumulative Net Value Addition



Cumulative net value added increases as development resources are added up to \$1000. Beyond this point the costs of additional resources outweigh the benefits. Investing more than \$2000 in a year would actually result in value being subtracted. The maximum value added is \$5000 or five times the optimum investment in development resources. For consistency with typical financial reporting we consider resource investments expressed on an annual basis. The model and simulation readily address any time period of interest.

We can use this basis for the middle performing group, also add both high and low performing groups assigning 10% of the workforce to the latter two groups, and assume a base organizational value of \$200,000 per person in a 10,000 person organization to generate the following optimum value creation profile for the organization.





The figure in the upper left is a three-dimensional representation, that in the lower right a two dimensional representation, in each case showing total organizational value as a function of development resources invested in the high and middle performing groups. (Resources are invested in the low performing group at \$250 per person per year, the optimum for this group when available resources average \$600 per person per year for the entire organization.) The optimum case, with no constraints on resources generates an organizational value of \$2.05 billion, when \$1000 per person of developmental resources are provided for each of the three performance groups. In practice resource constraints exist. The solid line with the arrow

pointing down on the two-dimensional plot in Figure 6 shows the impact of limiting development resources to \$6 million each year, or \$600 per person on average for this organization of 10,000 people. \$600 per person is close to the average actually spent each year on training and development in the U.S. (Graber, 2003). The region at or below the line satisfies the resource constraint. Applying this constraint results in an optimum allocation of development resources of \$750 per person per year to high performers, \$625 per person per year for middle performers and \$250 per person per year for low performers (not shown on the chart). The optimum occurs where the constraint line is tangential to a contour line. Figure 7 shows the optimum development investment per person in a given year for each of the three performance groups at different levels of available developmental resources.

Figure 7: Optimized Development Resources Per Person



Several key points that emerge from the simulation are illustrated in this figure. First, as the bars at the right side of the figure show, once the optimum level of development resources of \$1000

per person per year for this case is reached, there is no incentive to invest additional resources regardless of resource availability. That is shown by the investment of \$1000 per person for all three groups, at both an average of \$1000 and \$1200 of available resources. Second, when there are no resource constraints, resources should be invested to the optimum level in all three groups, in this case \$1000. However once resources become constrained, as we move further to the left in the figure, they need to be removed preferentially from the low performing group first, then the middle performing group, and finally the high performing group. However, this occurs gradually as the constraints tighten and specifically it is not optimal to apply all resources to the high performing group in most situations. For example, when the average resource availability is \$500 per person per year, the optimum distribution of resources is \$688 per person for the high performers in a given year, \$531 per person for the middle performers and \$63 per person for the low performers. Ultimately when resource constraints are very severe then, and only then, are all the resources directed to the high performing group. The likely cumulative net value added at this point is low reflecting a low total level of resource addition.

Figure 8 shows how the optimum cumulative net value added per person in a given year increases with available development resources. In this case it levels out when the optimum of \$1000 per person is reached.

Figure 8: Cumulative Net Value Added Per Person



This translates into the following total cumulative net value addition to the organization in a given year:





When sufficient resources are available to invest at an optimum level for all groups, \$10 million in this case, then \$50 million of additional cumulative net value is created in a given year. When resources are constrained the value created is less, for example it is \$42.5 million when available resources are only \$6 million. Figure 9 also underlines the critical importance of the middle-performing group, which, accounting for 80% of the organization in numbers, is also the primary engine of value addition.

Having established the basic implications of the simulation it is now possible to examine the effect of selected variables. Figure 10 shows the impact of enhanced performance, in this case the extent to which middle performers reach their full potential.





As performance enhancement, resulting from development, increases from 10% to 30% for the middle performers, the optimal resource commitment varies from equivalency with the low performers to equivalency with the high performers. The resources for the other groups adjust

accordingly to meet the overall resource constraint. Overall resources are limited to \$600 per person per year on average in this case. Achieving maximum performance enhancement (30%) translates into an additional \$34 million per year of cumulative net value addition relative to minimum performance enhancement (10%) as shown in Figure 11.

Figue 11: Cumulative Net Added Value with Increase in Performance of Middle Group



If the optimum level of resources increases for a given group, for example moving from \$1000 to \$3000 per year for high performers, then the optimum allocation of resources among groups shifts to favor this group. This is shown for high performers in Figure 12. Again, in this case the average available resource is \$600 per person per year.

Figure 12: Impact of Increasing Optimum Resource Level for High Performers



The following general observations, expressed in the form of guidelines follow from the simulation based on the assumptions used for this case:

- If resources are unlimited then invest to the optimum level for all employees in the organization.
- Do not invest beyond the optimum level, even if resources are available, as this will subtract value from the organization.
- As resources become more tightly constrained invest proportionately less in the lower performing groups first.
- As resources become available invest first in high performers then in others
- Do not lose sight of a primary engine of value creation, the middle performing group, and barring an extinction of available resources support this group appropriately.

• As the impact of development resources on the performance of any group increases so does the optimal allocation of resources to that group.

The overall impact of optimizing resources is substantial. For example, the difference between the optimized case with a \$400 per person per year average resource constraint, which results in \$615 of development resources for high performers, \$423 for middle performers and no investment in low performers; and simply providing \$400 each year to all groups is over \$1 million per year of additional value. Tools such as the modeling and simulation shown here can contribute to capturing this value and to senior leadership's stewardship responsibility.

#### **Closing Thoughts for Leaders**

We have seen that it is possible to define guidelines to address both the level and focus of development resources. Indeed, it is possible to quantify the optimum allocation of those resources. We have seen that leadership is a crucial component in building strong affiliation, which, in turn, enhances organizational performance and individual fulfillment. Such issues fit into a broader context. Here is how Max DePree, the chairman of Herman Miller describes it (DePree, 1992): "From a leader's perspective, the most serious betrayal has to do with thwarting human potential, with quenching the spirit, with failing to deal equitably with each other as human beings." Goleman et al (2002) identify four styles, they characterize with the word resonant, that contribute to effective leadership. They are: visionary, coaching, affiliative and democratic. Again this underlines the importance of enabling people to reach their maximum potential through development. Cashman (1998) reinforces a similar theme: "Leadership is

authentic self-expression that creates value. The closer we come to enriching our employees, our community, our environment, the more value we are potentially creating."

And yet, behind well-publicized examples such as Enron, Worldcom, Tyco, Adelphia, and Global Crossing, lay either serious management shortcomings, and/or concerns over accounting practices that illustrate a very different management ethos. In a world in which people will become a more scare resource, in which there is concern over a decreased sense of connection of individuals to organizations and in which value creation is all about people, senior leadership support for individual development will be central to enhancing affiliation and building productivity. We might ask what barriers prevent leaders exhibiting the courage that is needed to guide their organizations to excellence through their people? Underlying the social and environmental, organizational system and individual barriers there is a common element. That element is fear. It is fear compounded by uncertainty about where to apply resources that mobilize people within organizations. One means to overcome such fear is to create frameworks such as those we have described that guide the allocation of resources. It is partly through the application of quantitative tools, applied within a compassionate domain of leadership that we will progress to a new, brave organizational world in which each person is respected, in which partnerships are built and in which local and global communities are strengthened.

# **Appendix: Derivation of Modeling Equations**

For a given performance group, the added value due to the addition of development resources, V, (\$ per year), is described as follows:

$$V = N * (k_a * L + k_b)$$

where N is the number of people in the group, L is the investment in development resources per person (\$ per year), and  $k_a$  and  $k_b$  are constants.

The additional cost due to investment in development resources, C, (\$ per year), is described as follows:

$$C = N * (k_c * L + k_d)$$

Where  $k_c$  and  $k_d$  are constants.

The cumulative net value of investing in development resources, CV, (\$ per year), is equal to the integral of the difference between the added value, V, and the additional cost, C, where  $L_{10}$  and  $L_{up}$  are the lower and upper levels of investment in development resources per person respectively.

$$CV = \int_{L_{lo}}^{L_{up}} N * ((k_a - k_c) * L + (k_b - k_d)) dL$$
$$CV = 1/2 * N * (L_{up}^2 - L_{lo}^2) * (k_a - k_c) + N * (L_{up} - L_{lo})(k_b - k_d)$$

This can be simplified when  $L_{lo}$  and  $k_d$  are both equal to 0 to the following expression:

### **Equation 1**

$$CV = 1/2 * N * L_{up}^{2} * (k_a - k_c) + N * L_{up} * k_b$$

The two roots of this equation, the points where cumulative value, CV, is equal to 0, are  $L_{up} = 0$  and:

$$L_{up} = 2 * k_b / (k_c - k_a)$$

The value of  $L_{up}$  at the optimum can be determined by differentiating Equation 1 and setting the result equal to 0.

$$L_{upopt} = k_b / (k_c - k_a)$$

The corresponding value of CV at the optimum can be determined by substituting  $L_{upopt}$  into Equation 1, the result is as follows:

$$CV_{opt} = 0.5 * k_b^2 / (k_c - k_a) = 0.5 * k_b * L_{upopt}$$

Unless otherwise indicated, the following parameter values were used in the case developed for this paper:

 $k_a = 2.5, k_b = 50, k_c = 2.55, k_d = 0, L_{lo} = 0, N = 10000$ 

#### Footnotes

<sup>1</sup> The survey information was collected by distributing questionnaires to participants at a series of 25 briefings about workforce issues conducted at various locations spanning the U.S. in 2003. Participants optionally could identify themselves in the questionnaire, 47% elected to do so. Participants were primarily employed in the Human Resource field in various positions from entry level to Vice President. There were some participants from other functions. Many public and private sectors were represented with the largest being semiconductor, manufacturing, healthcare and financial services. No sector represented more than 10% of total participants. There were 8 questions on the survey, one of which contained 6 sub-parts. Questions addressed demographic background of participants and a series of questions probed issues related to affiliation. Those questions seeking to quantify responses were based on a 7-point scale from Strongly Disagree to Strongly Agree (for example to the statement: I can articulate the primary purpose of my organization).

<sup>2</sup> The information for these surveys was gathered by conducting telephone interviews in late 2002 using a structured questionnaire with people who voluntarily left two organizations. Fiftyone interviews were with people who left a retail organization, 30 interviews were with people who left an organization in the medical area. The surveys included a combination of qualitative and quantitative questions that was subsequently coupled with demographic data about participants.

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