

# Human Resources Analytics

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HRM 623

Lecture 7



# COLLAPSING THE SILOS

Chapter  
**05**

**Lecture 07**

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## MAIN TOPICS

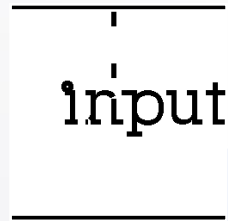


**Any Process: Input, Output, Throughput—Process Analysis  
for Human Resources—A Broader Future View— The  
Integration of HR Services— A Case Study In  
Human Capital Return On Investment**

## WHAT IS COLLAPSING THE SILOS?

- All processes share a fundamental three part model consisting of inputs, throughputs, and outputs.
- Human capital management HCM:21, provides a new view of these processes, and in the bargain collapses the silos that characterize yesterday's organizational structure.
- The result is a means for process analysis and process optimization that makes the HR function part of corporate strategy.

# ANY PROCESS: INPUT, THROUGHPUT & OUTPUT



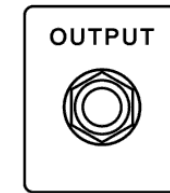
## Input

- At the individual level, inputs are made up of a person's background, past experience, education, knowledge, and current behavior of his or her family, friends, and the constantly changing phenomena that make up this world.



## Throughputs

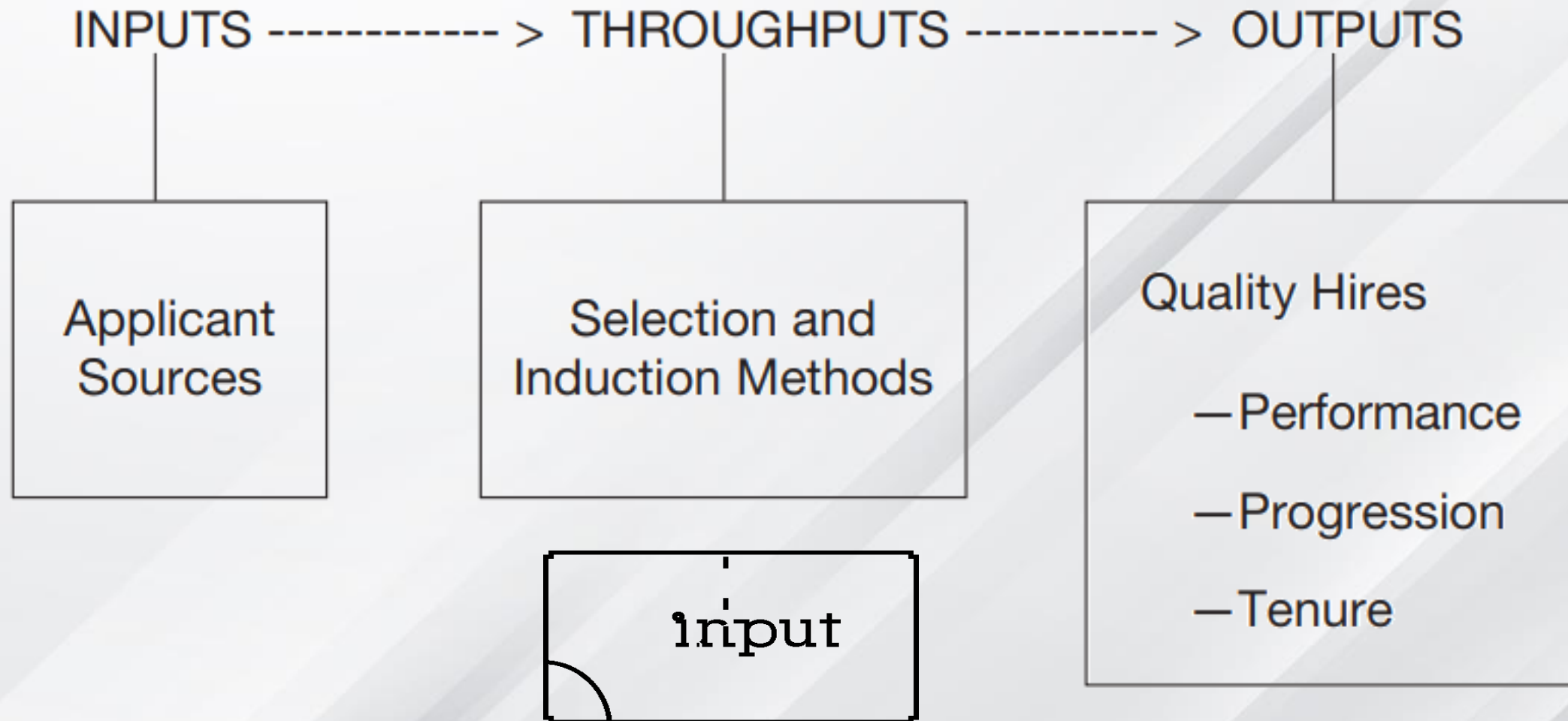
- Actions and methods in a process. This category covers variables such as policies, procedures, systems, tools, and information applied to the process deliberations, decisions, and actions.
- Also included is feedback from previous experience concerning related issues.



## Output

- For example, if you input to an ongoing process, what is the result? Usually, someone takes whatever you do and incorporates it into his process.
- Your output is that person's input.

*Figure 5.1. Staffing process model.*



## HOW TO REALLY PAY FOR PERFORMANCE

- Figure 5.1 shows. Is your contribution to the process well received and appreciated? Or is it ignored or denigrated? Your answer will influence the way you act.
- The programs and services of HR are inputs to the workload of line managers and employees.

## PROCESS ANALYSIS FOR HUMAN RESOURCES

- Periodic process analysis can greatly increase both efficiency and effectiveness.
- The inputs were data from external and internal sources; the throughputs were the
- identification and analysis of human, structural, and relational capital and their interactions.
- This analysis showed that outputs could be changed from simply filling gaps in the workforce to building a capability system.

## PROCESS ANALYSIS FOR HUMAN RESOURCES

- **The values added were twofold.**
  - ❖ One was the change of focus from structure-bound gap analysis to a human capital management that could generate sustainable strategic capability.
  - ❖ The second was a change from an annual plan to an ongoing analysis of the cost and productivity of the workforce.
- These are no small differences. They are an order of magnitude higher and of greater value than the traditional workforce planning model. Such is the importance and value of process analysis.

## A NEW STAFFING PROCESS

Applying process analysis to staffing, HR can determine that the **inputs** are job applicants who come through sources such as advertising, job boards, agencies, and employee referrals.

The **throughputs** are the selection and orientation or induction methods, and can encompass individual and group interviews, testing, assessment, and onboarding.

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## EXTENDING THE STAFFING PROCESS FROM HIRING TO MANAGEMENT

- There is a small problem, analytically speaking, when you evaluate someone's work history and then report the individual as a good or bad hire.
- Once the new hire joins the organization, the staffing function's job is completed.
- Thereafter, the person's performance and tenure are influenced by his or her interactions with others in the organization. This is no longer a hiring issue; it is a management issue.



Figure 5.2. Staffing process analysis.

| JOB GROUP                                                                                                                                                                                                                                                                                                                          | SOURCES |   |   |   |   |   | METHODS |   |   |   |   | RESULTS |   |   |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---|---|---|---|---|---------|---|---|---|---|---------|---|---|---|
| NAME                                                                                                                                                                                                                                                                                                                               | N       | M | S | E | J | W | I       | G | T | A | O | B       | C | P | T |
| Al                                                                                                                                                                                                                                                                                                                                 |         | M |   |   |   |   | I       |   | T |   |   | 2       | 2 | 1 | 1 |
| Bea                                                                                                                                                                                                                                                                                                                                |         |   |   |   | J |   | I       | G | T | A | O | 2       | 2 | 2 | 2 |
| Cee                                                                                                                                                                                                                                                                                                                                |         |   |   | E |   |   | I       | G |   | A | O | 3       | 2 | 3 | 2 |
| Didi                                                                                                                                                                                                                                                                                                                               | N       |   |   |   |   |   | I       | G | T | A | O | 2       | 2 | 2 | 2 |
| Earl                                                                                                                                                                                                                                                                                                                               |         |   |   |   | J |   | I       |   |   | A | O | 1       | 1 | 1 | 2 |
| Frank                                                                                                                                                                                                                                                                                                                              |         |   |   |   | J |   | I       |   | T |   |   | 2       | 1 | 1 | 1 |
| Gina                                                                                                                                                                                                                                                                                                                               |         |   |   |   |   | W | I       | G |   | A | O | 3       | 2 | 1 | 2 |
| Hal                                                                                                                                                                                                                                                                                                                                |         | M |   |   |   |   |         |   | T | A | O | 2       | 3 | 3 | 2 |
| Isaac                                                                                                                                                                                                                                                                                                                              |         |   | S |   |   |   | I       | G |   | A | O | 3       | 3 | 2 | 2 |
| Jon                                                                                                                                                                                                                                                                                                                                |         |   |   | E |   |   | I       | G | T | A | O | 2       | 3 | 2 | 2 |
| Ken                                                                                                                                                                                                                                                                                                                                | N       |   |   |   |   |   | I       |   | T |   |   | 1       | 2 | 2 | 1 |
| Leo                                                                                                                                                                                                                                                                                                                                | N       |   |   |   |   |   | I       |   | T |   |   | 1       | 1 | 1 | 1 |
| <p>N = Newspaper, M = Prof Magazine, S = Search, E = Referral, J = Job Board, W = Walk-In</p> <p>I = Personal Interview, G = Group Interview, T = Test, A = Assessment, O = Onboard/Induct</p> <p>B = Performance, C = Pay Increases, P = Potential Rating    Score: 1 = low, 3 = high</p> <p>T = Tenure: 1 = left, 2 = stayed</p> |         |   |   |   |   |   |         |   |   |   |   |         |   |   |   |

## A BROADER FUTURE VIEW

- To take this further yet, you can build a model that brings into play additional future variables. To do this, you look at factors outside of the past hiring experience.
- Other forces, such as ***competitor actions, entering new markets, new laws, or technology changes***, will also affect your efforts to fill ***mission critical positions***.

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- For a *long-term* view, you could study trends in *college graduates and their fields of interest*.
- Are young people majoring in disciplines you need, or not?
- Through experience you can put the ranges of these effects on the external forces and construct algorithms.

Now, HR can truly become predictable.

## A BROADER FUTURE VIEW

- An algorithm is simply a formula or an equation that contains a set of variables.
- These variables are arranged in such a way as to predict certain outcomes for a given interaction of variables. For example, take a look at a possible equation:
- ***The variables are:***  
$$O = S \times M + / - E \times I$$
  - O = the predictable outcome
  - S = source of applicants
  - M = selection methods
  - E = various external forces (economy, competition, education trends, technology) that are given weights based on their estimated strengths
  - I = various internal factors (state of finances, development investment, turnover rate, etc)

# OTHER HR APPLICATIONS FOR PROCESS ANALYSIS

Figure 5.3. Learning process analysis.

In another application of process analysis, Figure 5.3 displays a brief example comparing the impact of training events from different sources on different job skills, looked at before and after performance. It also shows tenure as a possible variable for correlation.

|                                           | LEARNING SOURCES |   |   |   |   |          |   |   |   |   | RESULTS |   |   |
|-------------------------------------------|------------------|---|---|---|---|----------|---|---|---|---|---------|---|---|
|                                           | Internal         |   |   |   |   | External |   |   |   |   | Impact  |   |   |
| <b>Key Skill 1: Database Admin</b>        | I                | F | M | X | C | O        | E | S | T | U | B       | A | T |
| C. Able                                   | I                |   |   | X |   |          | E |   | T |   | 1       | 2 | 1 |
| G. Baker                                  | I                |   |   | X |   |          | E |   | T |   | 2       | 2 | 1 |
| H. Fox                                    | I                |   | M |   |   |          | E | S | T |   | 1       | 2 | 2 |
| J. India                                  | I                |   | M | X |   |          | E |   |   | U | 2       | 3 | 2 |
| <b>Key Skill 2: Operations Controller</b> | Internal         |   |   |   |   | External |   |   |   |   | Impact  |   |   |
| M. November                               | I                |   | M | X |   |          | E |   |   |   | 2       | 3 | 2 |
| O. Sierra                                 | I                |   | M |   |   |          | E |   |   |   | 1       | 2 | 2 |
| P. Tango                                  | I                |   |   | X |   |          |   |   | T |   | 1       | 2 | 1 |
| R. Lina                                   | I                |   | M | X | C |          |   |   |   | U | 1       | 2 | 2 |
| <b>Key Skill 3: Process Supervisor</b>    | Internal         |   |   |   |   | External |   |   |   |   | Impact  |   |   |
| M. Belta                                  | I                |   |   |   | C |          |   | S |   |   | 2       | 1 | 2 |
| W. East                                   | I                | F | M |   | C |          |   |   | T |   | 2       | 3 | 2 |
| Z. Braver                                 | I                | F | M |   | C |          | E |   |   |   | 1       | 2 | 2 |
| Y. Dong                                   |                  |   |   | X |   |          |   |   | T |   | 2       | 2 | 1 |

Internal Sources: I = Informal OJT, F = Formal OJT, M = Self-directed materials, X = Computer based, C = Corporate college

External Sources: O = On-site, E = Off-site, S = Seminars/conferences, T = Trade school, U = University classes

Results: Performance (B: below, A: after): 1 = Low, 3 = High  
T = Tenure: 1 = Left, 2 = Stayed

## TURNOVER ANALYSIS

- Start your analysis by segregating the turnover into controllable and uncontrollable.
- Sample categorization of each is shown as follows:

### Controllable

J = better job offer  
S = better salary offer  
C = change of career direction  
T = lack of training opportunities  
D = dissatisfied with supervisor  
W = dissatisfied with co-workers

### Uncontrollable

F = family status change  
R = relocation  
S = return to school  
L = leave of absence  
IP = involuntary: performance  
IB = involuntary: behavior

# TURNOVER ANALYSIS

- With the data, you can go back to your engagement and retention processes and reassess their effectiveness. *For instance*,
  - **What are the data telling you about your hiring and induction methods, development opportunities, compensation, interpersonal relations, or supervisory leadership? Outcomes can often be the result of interactions between these and other variables.**
  - **What are or were the inputs and throughputs for those activities?**
- If the sample size is large enough, you might be able to run some statistical analysis to show how you can optimize those processes.

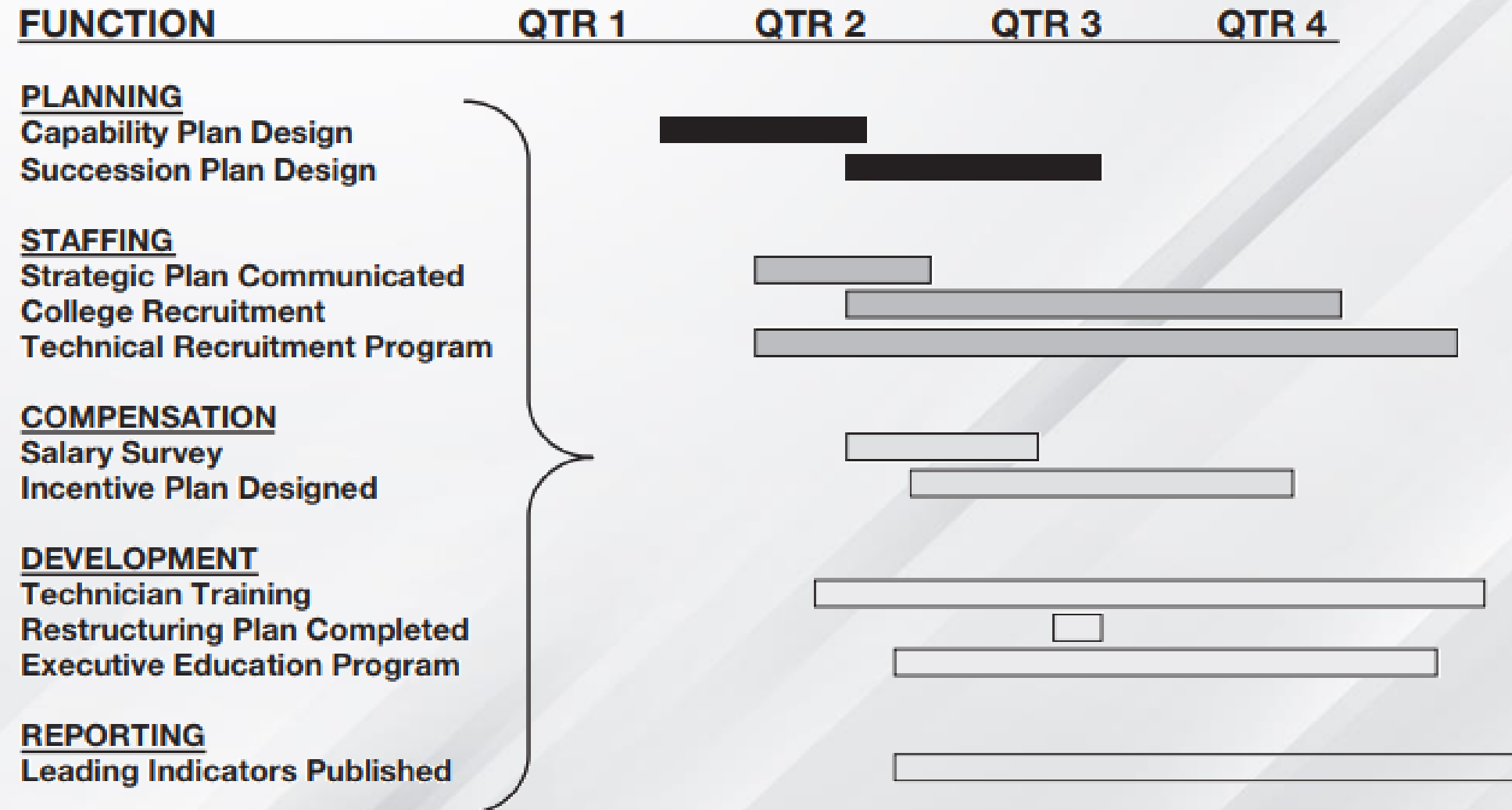
# THE INTEGRATION OF HR SERVICES

- Service integration is absolutely essential to high performance. It improves efficiency through synchronized activity of various groups within a functional unit.
- CEO of Wells Fargo Bank. In a March 2007 interview by USA Today, was asked how it was that Wells Fargo sold more products and services per customer than any other major bank.
- His answer was brief and to the point: “*The first thing we’ve got to do is not to have silos. We had to design our culture and systems to focus on the customer, not on the product line. We reward the behavior we want, which is getting all of our customers’ business.*”

# THE INTEGRATION OF HR SERVICES

- Wells Fargo set up a system wherein all departments work together for each customer. The same idea would be much easier for an HR department, where all functions are closely related to each other.
- Figure 5.4 is an example of an integrated, synchronized delivery system.
- There are different activities timed to start at different times.
- This synchronization of delivery requires an integrated HCM strategy.
- It ensures that employees are signaled by a service at the right time.
- The secret to integrated, synchronized delivery is leadership on the part of the CHRO.

*Figure 5.4. Integrated delivery system for HR function.*



## A CASE STUDY IN HUMAN CAPITAL RETURN ON INVESTMENT

- An example the experience of Sundance Distribution Center, which decided to build a new facility in central Michigan.
- If investments in human capital cannot be linked to financial returns with valid and reliable methods, the current accounting methods for depreciating or appreciating tangible assets cannot be applied.
- The metrics and/or the rules of accounting must be modified if a new way of thinking about investing in people is to be applied and sustained

## Different Expenditures, Different Measurements of ROI

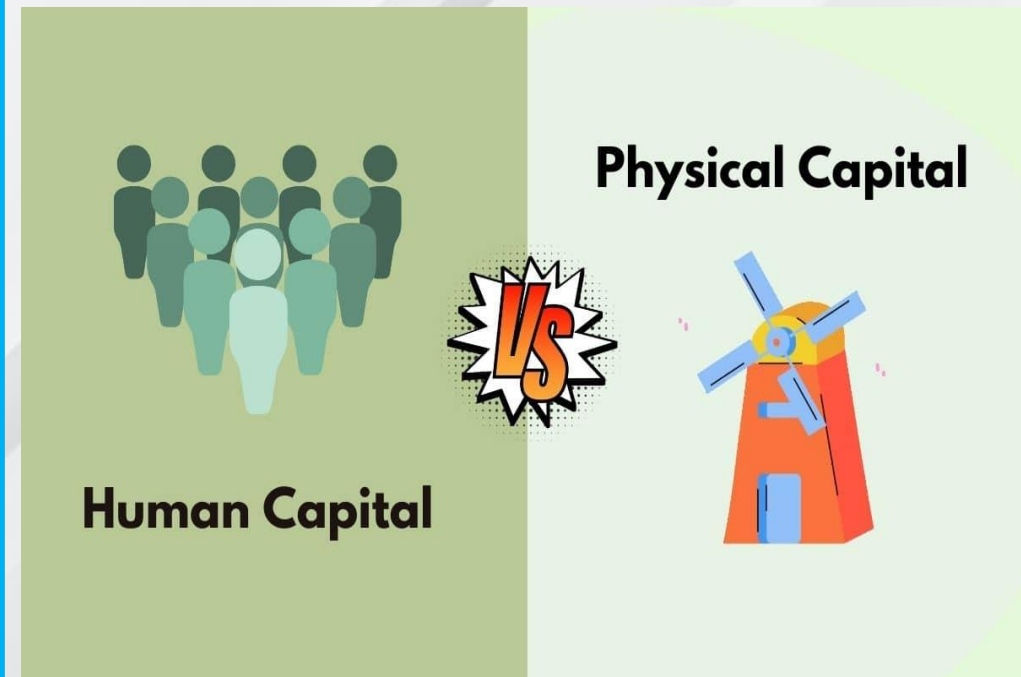
- The business plan for the distribution center included \$20 million to acquire the land, build the facility, and equip the physical plant. The business plan also addressed staffing the center for the first year.
- In this case, the plan anticipated a staff of 125 employees. With an average cost to hire or transfer at \$1,500, initial training at \$1,500, and an average salary and benefits package of \$38,000 per employee, the initial human capital investment for the first year of the plant was \$5,125,000.

## Different Expenditures, Different Measurements of ROI

- While investments in tangible and people assets were directed at the same business outcome, the accounting process for each investment was different.
- The costs of hiring, compensation, and training people were expensed and they impacted Sundance's balance sheet immediately.
- The investment in the physical plant of the distribution center was listed as an asset, and was to be depreciated over thirty years.
- Various categories of equipment will be depreciated over respective depreciation schedules.

## Different Expenditures, Different Measurements of ROI

- As a **result** of these **accounting procedures**, the expense of the physical plant captured on the balance sheet would be significantly less than the initial investment in human capital, even though the total investment was far greater.
- This fact, however, would pass relatively unnoticed in Sundance's report to stockholders.



## The Perennial Accounting Problem

- Investments in buildings and equipment are assets, while investments in people are expenses. This is consistent with over a century and a half's worth of accounting principles.
- **But what happens to the financial value of these two investments over time?**
- Unlike physical assets, however, the value of human capital will increase over time. As each employee gains experience in managing and operating the center, his or her talent and expertise grow.
- **The solution to this problem is clear:** Modify the metrics and/or rules of accounting to reflect a new way of thinking about investing in people.

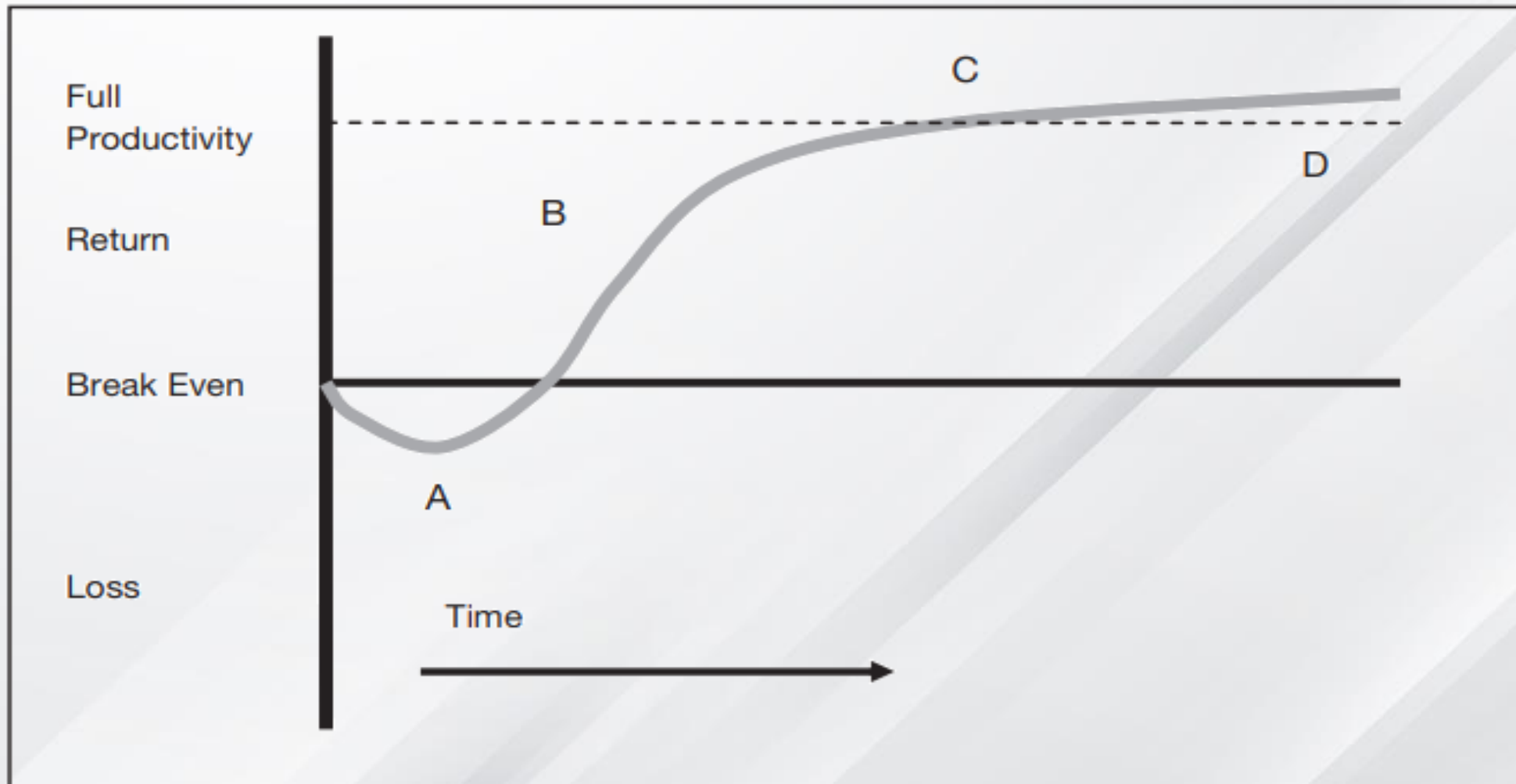
## Four Human Capital Performance Metrics

- The learning-value curve provides a way of thinking about how human capital appreciates over time.
- Representing the curve graphically allows us to visualize the effect of various conditions that could impact return on investment.
- The learning-value curve also introduces the possibility of measuring ROI in human capital with a new set of performance-based metrics. Each of these metrics considers individual and environmental factors that impact the creation of value in human capital over time.

## Four Human Capital Performance Metrics

- Each metric is designed with these three principles in mind
  - 1. Each of these metrics is event driven.** Effective assessment of ROI is determined by how and when measurement takes place.
  - 2. These measures are constructed to be clear and practical.** Any measurement system that cannot be quickly understood by every individual in the organization from C-suite to associate is not likely to have impact.
  - 3. These metrics focus on points of highest leverage for gain or loss of ROI in a human capital system.** A successful measurement system will include fewer strategic measures.

Figure 5.6. Roberta's learning-value curve.



## Performance Metric 1: Time to Full Productivity

- Roberta's learning-value curve will continue to increase over time and reach some level of sustained value.
- A particular point in this value appreciation path will be objectively defined in terms of productivity, skills, and knowledge achieved. This point is labeled **“time to full productivity” (TFP; Point C in Figure 5.6)**.
- TFP is a critical metric of human capital appreciation, as it has the potential to focus and direct investment strategies.

## Performance Metric 1: Time to Full Productivity

**TFP. Strategies for decreasing TFP include:**

- ✓ Integrated talent development systems
- ✓ Selection for competencies and adaptive learning skills
- ✓ Competency-based training
- ✓ An aggressive onboarding process
- ✓ Early identification of development needs
- ✓ Candid and frequent performance feedback
- ✓ Incentive-based pay

## Performance Metric 1: Time to Full Productivity

- If effectively implemented, the value of TFP as a measure is that it drives ownership of the measurement process down into the organization.
- Many performance management systems do this by asking employees to create personal SMART goals aligned with company strategy



## Performance Metric 2: Quality of Hire

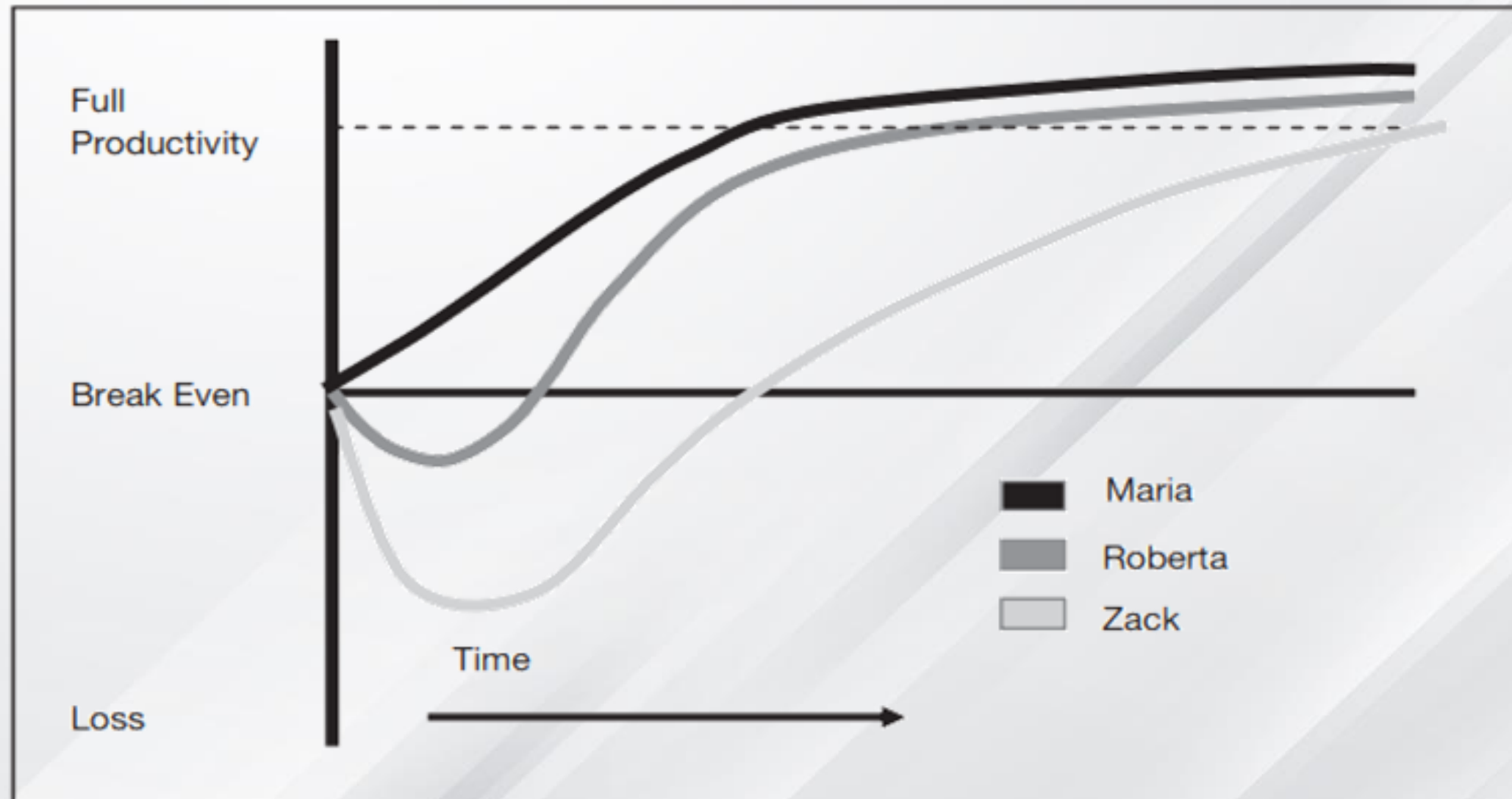
- Individual employees will reach full productivity at different rates.
- Each individual hire will have a different starting point, shape, and trajectory of the value learning curve in TFP.
- While there are many different factors that determine the starting point and shape of the learning-value curve, quality of hire is the strongest.
- Quality of hire includes the degree of employee fit with the organizational culture and the readiness to assume job account abilities.

## Performance Metric 2: Quality of Hire

**Quality of hire is typically determined by several variables:**

1. Key experiences related to the job responsibilities
2. Evidence of past performance
3. Competency assessment of both baseline and differentiating competencies
4. Adaptive learning skills
5. Personality variables measured by validated assessments
  - If successful, measures of quality of hire will help predict both the starting point and shape of the learning-value curve.
  - Consider the learning-value curves of Roberta and two other employees, shown in Figure 5

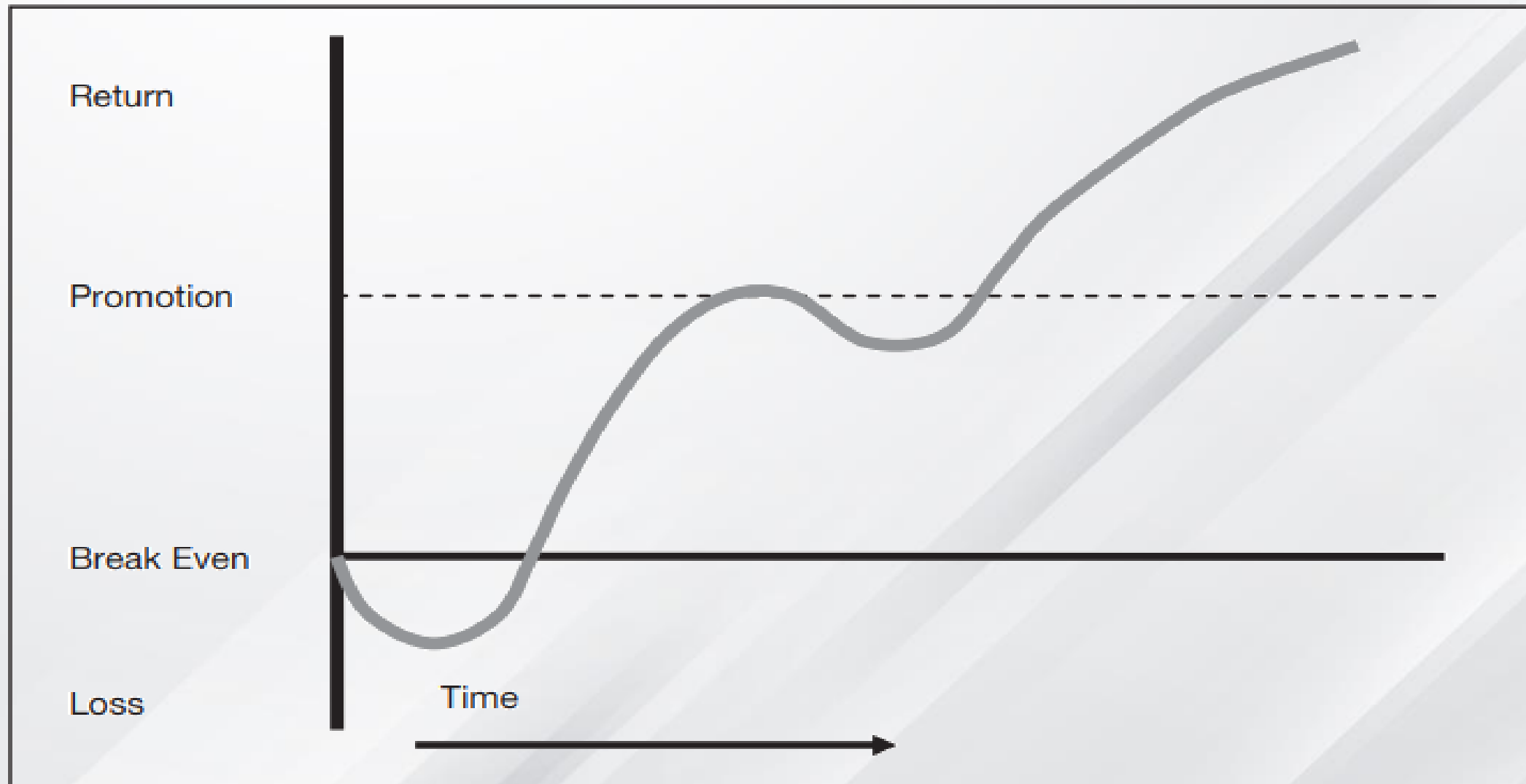
Figure 5.7. Comparative learning-value curves.



## Performance Metric 3: Quality of Promotion

- Quality of promotion depends on new investments in human capital.
- Before exponential ROI can be realized, a promotion typically results in a rise and fall in the learning-value curve.
- Cost of salary and benefits also increases with promotion.
- This new level of investment will create a dip in Roberta's learning-value curve, as shown in Figure 5.8.
- With increased potential for ROI of a promotion, there is also increased risk for loss. All of the characteristics of increased influence on people and processes also increase the opportunity for losses

*Figure 5.8. Roberta's learning-value curve through promotion.*



## Performance Metric 4: Quality of Separation

- If Sundance's inventory control system was to fail for any reason, the economic impact would be sudden and potentially catastrophic.
- If Roberta was to leave her job for any reason, there would also be an immediate economic impact for Sundance.
- Intangible costs of separation include the impact on other employees 'morale and productivity.
- Analysis of separation from a quality perspective is critically important.
- Voluntary separation is the highest leverage point for loss of ROI on human capital.
- Individual separation cases may have a large impact even when overall retention rates are high.
- Failure to systematically track the frequency, quality, and drivers for separation can lead to significant mismanagement of human capital.

## The Role of Line Leadership in Human Capital ROI

- Implementing human capital performance metrics reinforces a systemic view of human capital strategy.
- The data used to measure time to full productivity, value of full productivity, quality of hire, quality of promotion, and quality of separation require information from across the organization.

## Linking ROI in Human Capital to Dollar Amounts

- Time to full productivity, value of full productivity, quality of hire, quality of promotion, and quality of separation offer some opportunities to place dollar amounts on the cost of or return on events within human capital investment.
- **For example**, the replacement cost of a high-quality employee can be figured in approximate dollar amounts by adding the direct and indirect costs associated with hiring, training, and onboarding a new employee. Estimates of 75 to 125 percent of annual salary may be conservative if costs to rehire and lost opportunity costs are included



# Thank You