

## Finding Causal Loops and Systemic Solutions through an Ethnographic Approach to Needs Assessment

**By Erica Cormack, Diana Fenicottero, John O'Connor & Glen Scott**

*Tales from the Field, a monthly column, consists of reports of evidence-based performance improvement practice and advice, presented by graduate students, alumni, and faculty of Boise State University's Instructional and Performance Technology department.*

### The Performance Issue

Global Delivery Services (GDS, a pseudonym) is a worldwide package distribution company with operations in over 200 countries, servicing 7.9 million customers every day. The operation of concern is a small package sorting facility in the northwest region of the United States made up of three shifts employing part-time employees to unload, sort and reload packages. Employees are supervised by part-time supervisors directly responsible for producing the desired performance.

Prior to 2002, this facility had a reputation for providing strong results. Since then, performance had decreased measurably. By the end of the third quarter of 2008 (see Table 1), the operation was meeting its goal in only one of the five major performance elements being tracked (\*), and had experienced only minor improvements in just two of the five areas (^).

Table 1. Performance Results of Year 2008

Performance Element	Goal	2008 Results			YTD
		1st Q	2nd Q	3rd Q	
1. Safety	100% to goal of OSHA recordable injuries	80%	60%	50%	63%
2. Production	100% to goal of packages per hour	94%	96%	98%^	96%
3. Scanning	1/80 frequency	1/20	1/61	1/54	1/37
4. Misloads	1/2500 frequency	1/1291	1/1657	1/1666^	1/1513
5. Damages	1/4500 frequency	1/10199	1/8161	1/7333*	1/8428

From the perspective of organizational leaders, erosion of performance was the result of deficiency in the competencies and skills of part-time supervisors, an element that had previously been viewed as a key strength. A team of students in Professor Don Winiecki's Needs Assessment class conducted a needs assessment on this performance issue.

### Planning, Data Collection, and Data Analysis

To provide a systemic solution to this gap, the team used Gilbert's (1996) Third Leisurely Theorem as a guide throughout the project. This theorem states:

For any given accomplishment, a deficiency in performance always has as its immediate cause a deficiency in a behavior repertory (P), or in the environment that supports the repertory (E), or in both. But its ultimate cause will be found in a deficiency of the management system (M). (p. 76)

Utilizing Gilbert's Behavior Engineering Model (BEM) as a framework for developing interview questions and analyzing results, the team employed an ethnographic approach to 'get the story' behind the management system. There were multiple phases in this approach:

- Initial open-ended interviews with all part-time supervisors and 10% of the sort employees.
- Data from the initial round of interviews were analyzed and sorted into categories in Gilbert's BEM framework. This analysis revealed a more systemic problem, which prompted a second round of interviews.
- A second round of semi-structured interviews was conducted with part-time supervisors.
- In-field observations were conducted and archival data collected on performance measure. Archival data were triangulated with interview data.
- Based on analysis of data gathered, a causal loop diagram (Anderson & Johnson, 1997) was developed, graphically depicting the system. We identified a leverage point that would have the greatest systemic impact on long-term performance outcomes.

### The Causal Loops of Performance

Our analysis determined that as performance increased, organizational support elements for supervisors decreased. Decrease in organizational supports affected other factors in the system to ultimately lower performance. With performance eroding over time, it was determined that the greatest leverage for improving the system, and thus performance outcomes, rested within the element of organizational supports.

This phenomenon is illustrated by the Causal Loops as shown in Figure 1. The relationship between variables in the figure is represented by an "s" when variables move in the same direction or an "o" when variables move in opposite directions. For example, in Figure 1, as performance goes up, organizational support decreases; and as training increases, so does performance.

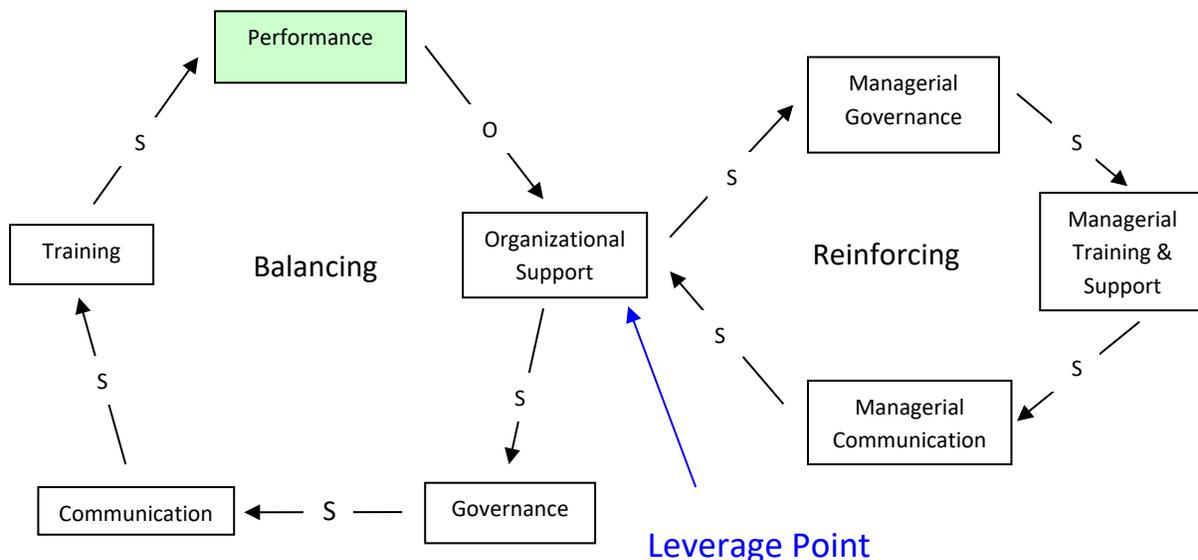


Figure 1. Causal loop diagram of sort team management.

### IPT-Grounded Advice

The following recommendations were provided for leveraging organizational support for part-time supervisors:

- Managerial Governance –Including daily job aids and checklists for part-time supervisors.
- Managerial Training – Consistent training for part-time supervisors in data collection, communication skills, training skills, and labor relations.
- Managerial Communication – Regular strategy and planning meetings with full-time and part-time sort supervisors to support in communication of goals, expectations and results and facilitate peer coaching of part-time supervisors.

Increases in these factors impact multiple elements such as Data, Tools, Knowledge, and Capacity, as Gilbert reflected in his 'diffusion of effect' theory. The result was improvement of sort performance even with increased production demands.

### **References**

Anderson, V., & Johnson, L. (1997). *Systems thinking basics: From concepts to causal loops*. Waltham, MA: Pegasus Communications.

Gilbert, T. (1996). *Human competence: Engineering worthy performance* (tribute ed.). Washington, DC: International Society for Performance Improvement

### **Author Bios**

Erica Cormack manages a regional law enforcement training academy. She is pursuing a Master of Science in Instructional & Performance Technology (IPT) at Boise State University. She can be contacted at [erica\\_cormack@hotmail.com](mailto:erica_cormack@hotmail.com).

Diana Fenicottero has worked for many years in organizational training and support. She is earning a Master of Science in IPT at Boise State University. She can be contacted at [dianafenicottero@u.boisestate.edu](mailto:dianafenicottero@u.boisestate.edu).

John O'Connor is pursuing his Master of Science in IPT from Boise State University. He can be contacted at [jboconnor@cableone.net](mailto:jboconnor@cableone.net).

Glen Scott is working towards his Master of Science in IPT at Boise State University. His work experience includes: Operations Management, Human Resources, Safety Compliance and Industrial Engineering. He can be contacted at [glenscott@cableone.net](mailto:glenscott@cableone.net).