The Insurance Crisis
[MGM 315 Systems Thinking and Problem Solving
Extra Credit Assignment 2]

Below is a portion of a paper by Senge & Sterman\(^1\) on eroding service quality in the insurance industry. It describes a case study on insurance claims processing relevant to problem solving. It shows how blaming external causes prevents improvement and even adds to the problems attributed to external causes.

After reading the questions at the end, read the following and complete the assignment described for extra credit.\(^2\) The comments in brackets [ ] in the text and in footnotes are mine. Key points are highlighted in blue. We will go over this case study in class.

Note: Some of the highlighted points will be on the final exam, so even if you do not complete the assignment for extra credit, you will benefit from reading it and asking questions about points you do not understand when we review this in class.

A CASE STUDY: THE INSURANCE CRISIS

...Commonly cited causes of the crisis include the high number of lawyers in the United States, increasing litigiousness of society, juries which side with victims rather than uncaring big business, and the growing technological complexity of society (Huber 1987). Notably absent from such accounts are explanations relating to the management practices of insurers themselves. Why are there so many tort lawyers and lawsuits? Why are insurers perceived to be uncaring? Some of the top managers at Hanover Insurance, of Worcester, Massachusetts, were asking the same questions. These managers intuitively felt that their own management practices had contributed significantly to the problem. They distrusted easy explanations that fix the blame on outsiders. Blaming greedy lawyers, juries, and policyholders is psychologically safe, absolving insurers from responsibility. While not denying the role of these factors, they also saw that blaming the problem on external forces prevented the company from contributing to constructive solutions.

Hanover Insurance is a medium-sized firm specializing in property and casualty (Table 8-1). In 1989 Hanover earned $83 million on premium income of about $1.5 billion. Assets were $3 billion. Founded in 1852, Hanover went through a dramatic transition in the last twenty years. In the mid-1960s the company was at the bottom of the industry. In 1969 State Mutual purchased a 50 percent interest in Hanover, injecting much-needed reserves and installing a new president, Jack Adam.\(^3\) With his marketing vice president and eventual successor, Bill O’Brien, Adam began to reorient the company around a new set of guiding principles designed to address deeply rooted problems in Hanover’s traditional authoritarian management style:

1. **Purpose:** an antidote to a weak sense of common direction;
2. **Merit:** an antidote to rampant politics and bureaucracy;
3. **Openness:** an antidote to widespread game playing through hoarding information or operating from private agendas;
4. **Localness:** an antidote to institutional blocks to strong morale and decision making by front line units;
5. **Vision:** an antidote to low self-image and difficulties in communicating the scale of the firm’s aspirations.

The new culture did not quickly take root. Personnel and structural changes accompanied the internalization of the new philosophical foundation. Many of Hanover’s original managers were unprepared for the organization Adam and O’Brien envisioned. During the early 1970s management turnover was high. A level of regional management was eliminated to encourage local autonomy and authority. Later, internal boards of directors were established to further strengthen the autonomy of local business units.

By the mid-1980s Hanover emerged as a leader in the property and liability industry. Hanover’s combined ratio, the ratio of operating expenses to premium income (a measure of the profitability of the insurance side of the business), has bettered the industry average in each of the past eleven years. During the same period Hanover grew 50 percent faster than the industry as a whole. There is a widespread belief in the organization that the company’s business success is linked to its guiding principles (Bergin and Prusko 1990).

After some exploration with managers throughout the firm, claims management emerged as a candidate for a systems thinking experiment. The problem is highly dynamic: Hanover’s growth placed ever greater demands on the claims operation. There were more complex claims and increasing numbers of claims requiring litigation or subrogation (recovering costs from other insurers). The problem cut across all levels of management, corporate functions, and regions. Most importantly, the claims managers knew they faced difficult issues and were open to a new approach.

The project proceeded in three stages. First, a team of

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2 I scanned this and used OCR to generate the text, which could contain typos, even though I did spell check.
3 Since this article was written, Hanover was acquired by State Mutual.
top managers worked with MIT researchers to develop shared models of the problem. Next, a simulation model developed in phase one was converted into an interactive “Management Flight Simulator.” The Hanover team designed a three-day workshop, the Claims Learning Laboratory (CCL), using the flight simulator. Over one hundred managers have now participated in the CCL. In the third stage, now underway, a second workshop is under development to help in managing change, systems thinking tools are being introduced throughout the firm, and the effectiveness of the approach is being evaluated through longitudinal studies.

The first stage involved a management team consisting of the senior vice-president for claims and two of his direct reporters. The team met every two weeks for about a year with the MIT researchers. The group appeared to have a high level of openness and mutual trust, reflecting several years of working together in Hanover’s culture. At the first meeting the team developed an initial statement of objectives, strategies, and problems. The team’s vision statement expressed their intent to be preeminent among claims organizations in the insurance industry, to provide “fair, fast, and friendly” service. Their image of the ideal claims adjuster soon emerged: a person capable of conducting thorough professional investigations, possessing excellent communication and negotiation skills, keeping accurate and complete records, and able to educate claimants regarding the fair value of their claims, while spotting those with the slightest fraudulent inclinations. They enumerated ten measures of performance and a dozen strategies to achieve them.

When asked to discuss the problems they faced, the claims VP talked about having too many “balls in the air,” the challenge of simultaneously keeping many performance standards on target, like a juggler. Whenever Hanover worked to improve performance on a particular objective, such as controlling settlement costs, there was backsliding on others, such as prompt settlement of claims. Typically, the team’s vision statement expressed high aspirations but was unconnected to the current situation or how to get there from here. They had created a laundry list of disjoint problems and solutions. Interconnections were expressed through operationally vague metaphors such as the juggler with too many balls in the air.

The process of mapping, challenging, and improving mental models began in the first meeting. STELLA® was used to map assumptions of the current strategy. Simple reality check models quickly showed a mismatch between the anticipated growth in underwriting volume and the resources allocated for claims settlement. The team was soon developing and testing their own models (Senge 1990b provides a detailed description). The final model, though more complex than the original map, was comparatively simple. It had been thoroughly tested. The model contains numerous nonlinear response functions, e.g., how do adjuster productivity and turnover respond to chronic pressure to settle more claims per person? Many of the critical relationships involve such “soft variables” for which there are few quantitative data. These were estimated with qualitative data where available, supplemented by expert judgment (the roles of soft variables in and criteria for validation of simulation models discussed in Sterman 1988b). Most important, it was the team’s model. They had built it. They knew what was assumed and why. The laundry list had been transformed into a sophisticated theory of the problem dynamics. Moreover, the team’s model carried potentially significant implications for long-standing management practices.

The analysis suggested rising settlement costs are largely caused by systematic, long-term underinvestment in claims adjusting capacity. Hanover simply has too few adjusters, with inadequate skills, experience, motivation, and incentives, to provide the quality of investigation and personal attention to the customer required to be fair, fast, and friendly. Figure 8-1 shows the feedback structure that underlies the drift to low performance Hanover, and the industry, has experienced. We stress that this diagram was developed after the project. While such causal diagrams are excellent aids to conceptualization and communication, simulation was essential in the iterative process of formulating and testing the theory described below.

Individual adjusters in a claims organization constantly adjust the pace of work to control the backlog of pending claims. A high pending pool means more dissatisfied customers as claimants find themselves waiting longer. Claims processing centers carefully monitor the pending pool, regularly reporting various measures of work flow. An increase in incoming claims causes the pending pool to rise, intensifying the time pressure on each adjuster. Time pressure measures the adequacy of the adjuster staff and skills available to handle the current case load. There are only three ways in which high time pressure can be relieved:

- devote less time to each claim
- increase work intensity
- add adjuster capacity

[I have modified the model to show 4 ways:]

- time per claim
- non-productive activity
- hours worked per week
- hiring ]

Each option forms a balancing feedback process that seeks to restore time pressure to normal. However, the
three channels for controlling the work flow involve very different time delays, costs, and side effects.

- Adding adjuster capacity means hiring additional adjusters, improving training, and reducing turnover, thereby increasing time available and settlements, reducing the pending pool, and relieving time pressure (the Capacity loop in Figure 8-1). But building adjuster capacity takes time. New adjusters must be found, hired, and trained. Adjusting is a highly skilled profession, and the ability to handle complex claims effectively requires years of experience. Building capacity is also expensive and requires top-management authorization. Adding adjuster capacity was therefore the last resort in the organization.

- Increasing work intensity means longer work weeks, fewer breaks, and less time spent in “non-productive” activities such as talking with colleagues or training new hires, thereby increasing the time spent settling claims and draining the pending pool (the Work Week loop). Overtime is frequently used to control the pending pool. However, sustained high work intensity produces stress, low morale, and burnout, thereby lowering productivity and increasing turnover. These delayed side-effects form reinforcing feedbacks, vicious cycles, which can actually worsen time pressure (the Burnout and Turnover loops in Figure 8-1).

By far the easiest and quickest way to control time pressure is to settle each claim faster. Individual adjusters have a high degree of control over the time they spend on a claim. They decide how aggressively to pursue investigation, whether to visit the claimant or handle the claim by “telephone adjusting,” how long to negotiate with the claimant, how much time to spend keeping records. When time pressure rises adjusters cut back on all of these activities, quickly cutting the pending pool and easing time pressure.

However, spending less time on each claim inevitably erodes the quality of the settlements.

- Inadequate attention to documentation means the firm is less successful in litigation and subrogation, increasing settlement costs. Effort is wasted trying to locate and reconstruct evidence improperly recorded at the time of the loss, increasing the time required to settle and further intensifying time pressure in a vicious cycle.

- Less investigation and negotiation means settlements are likely to be inflated. Settlement costs increase as adjusters under time pressure tend to agree to a claimant’s initial request, up to the amount they are authorized to pay without a supervisor’s approval: “Hello, Mr. Smith? Your basement was flooded? How much was your loss? Fine. The check will be in the mail tomorrow.”

- Telephone adjusting and limited customer contact reduce customer satisfaction. Experienced adjusters report that customer satisfaction arises more from procedural fairness rather than objective results — more from listening to a customer, empathizing with them over their loss, and negotiating a settlement value that the customer understands rather than the

![Figure 8-1](image-url)
dollar amount of the settlement. After hanging up the phone, Mr. Smith’s first reaction is likely to be “They gave me what I asked for it must have been worth more!” Spending less time on each claim creates a paradox: costs increase and quality falls. Worse, the unhappy policyholders, having had little opportunity to develop personal relationships with company representatives, are more likely to litigate or attempt fraud, further increasing the burden on the adjusters and legal staff. The result is higher settlements and increased financial pressure to control costs, making it even harder to increase adjuster capacity — another vicious cycle (the Settlement Cost loop).

These feedbacks describe a system biased towards quality erosion and gradual escalation of settlement costs. Whenever pending claims increase, management exerts strong pressure to increase the rate of settlements. Given the costs and delays in building adjuster capacity, adjusters are driven to process ever more claims per week. To the individual adjuster, lowering standards is the easiest way to relieve the time pressure. In the short run spending less time on claims appears to increase productivity. But in the long run customer dissatisfaction, inadequate investigation, and poor documentation cause settlement costs to rise. The financial burden created by higher losses creates organization-wide campaigns for cost reductions and further reductions in capacity, intensifying time pressure and forcing quality standards even lower.

Counterpressures to the erosion of quality are weak. Management focuses on the tangible, measurable aspects of performance: settling claims, controlling the pending pool, and controlling expenses. Quality, in contrast, is hard to assess. It is multidimensional. Customer feedback about quality is delayed, diffuse, and often distorted by customers’ desires to influence their settlements — and by management’s suspicions about customer motives. The claims VP called these intangible aspects of quality “the fuzzies,” saying, “in this business there are lots of ways to look good without being good.” Feedback from poor quality is not only delayed, it manifests in other areas such as increased litigation, market share erosion, and pressure for government regulation. By the time low quality is apparent, rising settlement costs, increasing turnover, low morale, and high stress may prevent the organization from increasing quality. Periodic campaigns to increase quality fail because they increase time pressure, causing powerful compensating pressures to settle claims more rapidly.

The culture of the claims organization changes as quality erodes. Adjusters who reduce quality to handle a backlog crisis quickly learn that lower standards are not only acceptable but even rewarded since they allow the adjuster to excel on the salient measures of production. Because turnover is high, new adjusters enter a culture that increasingly focuses on processing claims swiftly, and are neither trained in nor asked to perform to the old standards. The firm’s response to high turnover is to routinize the adjuster’s job to reduce training costs and minimize the skill level and salary requirements of recruits. Bob Bergin, senior manager for property claims at Hanover, notes:

In my thirty years in the business, I have seen a steady decline in the pay and status of insurance adjusting. Once it was a respected profession. Today, most adjusters are young college graduates with no aspirations to a career in adjusting. Our management practices both react to and reinforce this attitude.

The insidious aspect of these dynamics is the gradual shift in the burden of controlling the workload from capacity expansion to quality erosion. The erosion in quality standards becomes self-reinforcing: Once time pressure is relieved, so are the signals that more capacity is needed. In the short run, slipping quality standards works. Pending claims drop. Time pressure is relieved. Management will not authorize an increase in adjuster head count since there is no apparent problem. In fact, management attention shifts to other problems, for example, what appears to be an inadequate legal staff to handle a growing volume of litigation — litigation brought on, in many cases, by insufficient adjuster capacity.

[I call this “The Road to Hell.”]

There are several implications of the feedback processes revealed by the model. First, the adequacy of capacity cannot be assessed through comparisons to competitors. The claims vice president wondered aloud if perhaps “We may have half the adjusting capacity that we actually need for our current case load, from the standpoint of high service quality and low total costs.” One of us (Senge) responded that it seemed quite possible. The VP said, “You don’t understand what a crazy thing I am saying. We already have a lower case load per adjuster than almost all of our competitors.” When all firms suffer similar quality erosion none serve as role models to demonstrate the potential leverage of increased adjuster capacity. Entire industries can thus experience eroding quality standards, as exemplified by many U.S. firms in the 1960s and 70s.

A second implication is that simply increasing the adjuster head count will not solve the problem. Low quality standards have been institutionalized. Adjuster skill levels are constantly depleted by high turnover. Ambitious and talented people avoid claims and seek careers in underwriting, finance, or marketing. Increases in resources will be effective only in concert with changes in the prevailing mental models throughout the organization.

Yet the potential impact of increased investment in adjuster capacity is substantial. The model, consistent with the judgment of the project team, suggests reductions in settlement costs of 5 to 20 percent may be realized by increasing investigation and negotiation quality...
The assignment:

On the diagram on the next page, connect the variables to form the feedback loops that create the behaviors described in the case study. Show link and loop polarities.

Hints:
- Remember, flows can be influenced directly by other variables (including stocks), but only flows can influence stocks directly.
- Two variables affect burnout.

Some definitions:
- required settlement rate = Incoming Claims + Pending Claims (i.e., a function of)
- time pressure = required settlement rate - time available for settling claims (i.e., a function of)
- settling claims rate = productivity * time available for settling claims

Associate these names with the loops:
- Handle Claims Faster
- Take Out Slack
- Take Out Slack - Burnout
- Adjust Work Week - Time Pressure
- Adjust Work Week - Claims Settling
- Adjust Work Week - Burnout
- Claims Handling Capacity
- Settlement Costs
- Turnover

There are two “Settlement Costs” loops. List the variables in both loops, starting with “time per claim”.

(Moissis 1989), Since settlements comprise about two-thirds of all expenses, a reduction of ten percent would more than double net income.

THE CLAIMS LEARNING LABORATORY

After working for a year with the claims managers, the MIT team felt that the model captured the causes of important dynamics. The managers had been intimately involved in conceptualizing and analyzing the model. They could articulate the policy implications of the model with clarity and conviction. A traditional consulting project might have ended here with high confidence of implementation. In fact, the results of the model were virtually unimplementable. The model suggested a need for investment in adjuster capacity at a time when the firm, and the entire industry, is under intense pressure to cut costs. Moreover, the model implied that responsibility for the insurance crisis rests in part with established management practices, when most within the firm regard the problem as externally caused. Specifically, the model suggested that established policies had produced declining quality and increasing settlement size — precisely the opposite of the organization’s lofty vision and espoused policies.

The problem now facing the team was how to develop shared understanding throughout the organization. The managers who went through the intense learning process could not expect those who had not to agree with its “counterintuitive” implications. At Hanover, and increasingly in other firms, decision-making responsibility is widely distributed. There are hundreds of individuals who implement new policies and may easily thwart new initiatives. For significantly new policies to come into practice, each person must go through their own personal learning process.

The team decided to develop a workshop for claims managers to stimulate thinking of established policies and practices. The workshop had to compress into a few days the process of mapping, challenging, and improving mental models the team itself went through in the previous year. The resulting Claims Learning Laboratory (CLL) is a three-day workshop attended by groups of about fifteen managers. It was impractical in a workshop format to have each group of managers build their own model from scratch. Instead of STELLA, the CCL employs a computer simulation game or Management Flight Simulator embodying the model. The game uses easily learned software to simulate a claims processing center together with the decisions, data, pressures, and constraints characteristic of the real organization. Significantly, the Hanover team developed and delivers the CCL without substantial assistance from the MIT modelers.

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This simplified structure also illustrates the dynamic. It is a modified CLD from *The Fifth Discipline*, page 330, and an example of the “Shifting the Burden” systems thinking archetype.

Explanation: There are two ways to reduce time pressure on claims adjusters: **B1**, reduce time spent per claim by reducing quality and **B2**, hire more adjusters to handle the load.

It’s easier to reduce quality, but doing so tends to increase the size of insurance settlements in some cases, **R3**, and provokes more litigation in other cases, **R4**. These decrease the company’s ability to hire additional adjusters and accelerates the death spiral.
A stock & flow diagram showing links and loops.

The balancing loops B1, B2, B4a&b, & B6 are corrective actions that have "side effects." They become overwhelmed by the reinforcing loops R3, R5, R7, & R8 that can become vicious cycles that create an organizational death spiral.

The causal loop diagram (Figure 8-1) in the referenced paper.

Note the restoration of the stock and flow structure in the diagram above that clarifies "what's flowing" for claims handling and adjusters coming into and leaving the organization.