



## Exercise I: Dealing with Drugs

The abuse of heroin, cocaine, and marijuana is called “drug abuse.” In 1971, the U.S. government declared a “war on drugs.”

The abuse of opioids is called the “opioid crisis” or “opioid epidemic.” In 2017, the U.S. government declared a “public health emergency” to address it.

**Question 1:** What are the ramifications of these frames? How does it affect the way you approach the problem?

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**Question 2:** How else could you frame each problem?

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**Question 3:** What alternative solutions does this new problem statement open up? What are the ramifications of your framing?

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**Exercise 2: Just-in-Time Inventory****The Wall Street Journal****A Key Strategy of Japan's Car Makers Backfires***By Amy Chozick*

Updated July 20, 2007 12:01 am ET

TOKYO -- For want of a piston ring costing \$1.50, nearly 70% of Japan's auto production has been temporarily paralyzed this week.

Blame it on kanban, the just-in-time philosophy of keeping as little inventory on hand as possible. The strategy keeps inventory costs down and ensures quality. It generally works because Japan's auto makers have long prided themselves on the almost familial relationships they have with a handful of suppliers of custom parts that deliver several times a week or even daily.

The strategy also has a downside, as became evident after the 6.8-magnitude earthquake that hit central Japan on Monday damaged Riken Corp. Riken, which supplies all major Japanese car makers, makes the sought-after \$1.50 piston ring but has been unable to make deliveries. And because piston rings and other key parts are made specifically for each car maker and little inventory is kept in hand, it is nearly impossible for auto makers to simply switch to another supplier at the last minute.

"It's very difficult [for Japanese auto makers] to hedge any risks," says Hirofumi Yokoi, a Tokyo-based manager at auto-industry consultancy CSM Worldwide. "Just-in-time manufacturing is the culprit in this case."

What's more, Riken, which has 1,500 employees and had revenue of \$631.3 million in the year ended March 31, is one of the few suppliers focusing on such specialized parts as piston rings, which fit around the head of the piston to create a seal that traps combustion gases and minimizes oil burning. With market share of more than 50%, Riken has a reputation for quality and a close relationship with many car makers, making them all vulnerable to the earthquake-induced damage.

The Riken closure has forced Toyota Motor Corp., the nation's No. 1 car maker by sales, to cease production for at least a day and a half at all 12 of its domestic plants, causing a loss of output of at least 25,000 vehicles, about 60% of which are made for export. Honda Motor Co. said it would close a plant that produces the popular Civic and Fit models today, resulting in the loss of 2,000 vehicles. Nissan Motor Co. also will halt operations on several production lines at three of its plants today and will shut down all four of its plants tomorrow and Monday. Mitsubishi Motors Corp., Mazda Motor Corp., Suzuki Motors Corp. and Fuji Heavy Industries Ltd., which makes the Subaru brand of vehicles, also have stopped or slowed down production.

It's not clear what impact the disruption at Riken will have on U.S. production of Japanese cars. "We are investigating and communicating with our colleagues in Japan to see whether or not there will be an impact," says Victor Vanov, a spokesman for Toyota's U.S. manufacturing operations. Ed Miller, a spokesman for Honda's U.S. manufacturing operations, says Honda doesn't expect interruptions in production in the U.S.

The production delays in Japan may serve as a cautionary tale for the many manufacturers of all kinds around the world that are keeping smaller inventory and sourcing key parts from the same companies. But it isn't as if this were the first example of its kind here or elsewhere. In 1993, an explosion destroyed a Sumitomo Chemical Co. factory in southern Japan that made 65% of the world's supply of a chemical used to seal computer chips into plastic cases. The accident pushed prices for computer memory chips up 50%.

In 1999, a 7.6-magnitude earthquake in Taiwan severely damaged the island's chip makers, which supply chips to about 10% of the world's semiconductors. Personal-computer and semiconductor makers world-wide suffered from shortages and delivery delays during the busy Christmas season.

Nor is this the first time Toyota has been paralyzed by an unexpected disaster. A 1997 fire at a factory of Aisin Seiki Co., the main maker of the brake valves Toyota uses in most of its cars, forced the auto maker to shut down for five days, resulting in a production loss of about 70,000 vehicles.

Toyota admits that this type of unforeseen disaster is a big worry. "In the case of special parts [like piston rings], we don't have any backup," a company spokesman says....

**Question 1:** What would be the problem statement for this argument? In other words, how is the problem framed?

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**Question 2:** What are the ramifications of this framing? How does it affect the way you think about the problem? What solution(s) does it suggest?

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**Question 3:** How else could you frame the problem? What problem statement would you use if you were writing this article?

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**Question 4:** What alternative solutions does this new problem statement open up? What are the ramifications of your framing?

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**Application:**

Think about the problem you want to address. What's your default framing (in other words, how did you think about your problem before you came into class)?

“The problem is that \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.”

Now, provide four alternative frames/problem statements for that problem.

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
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4. \_\_\_\_\_  
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