CONTINUOUS IMPROVEMENT AND RESPECT FOR PEOPLE:

LESSONS LEARNED & IMPLEMENTED FROM STUDYING THE
TOYOTA PRODUCTION SYSTEM (TPS) PRINCIPLES

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Slides: d-scholarship.pitt.edu/42922

BACKGROUND

- How did two academic librarians go down the research rabbit hole of lean manufacturing?

- Why settle on Toyota and TPS?

- Liker's *The Toyota Way* highlighted his view of Toyota's success

  - Foundation based on two pillars: Continuous Improvement and Respect for People

TOYOTA PRODUCTION SYSTEM AND LEAN

- The concept of lean was popularized in the 1980s, but the Toyota Production System (TPS) had been in place for decades.

- The founders of Toyota implemented the pillars; the principles were synthesized by Liker

- Everything stems from **continuous improvement** and **respect for people**

- Others studied TPS to create systems suited for their work

  - Offshoots include Six Sigma, Total Quality Management, Lean Six Sigma, others

LEAN MEANS STREAMLINING EVERYTHING, RIGHT?

- "Lean" is not meant to automatically imply or justify lean staffing

- Toyota, as we will talk about, focuses on respecting people and removing burden/waste from employees' tasks

- In the literature, downplaying respect for people usually results in employee stress and other workforce issues
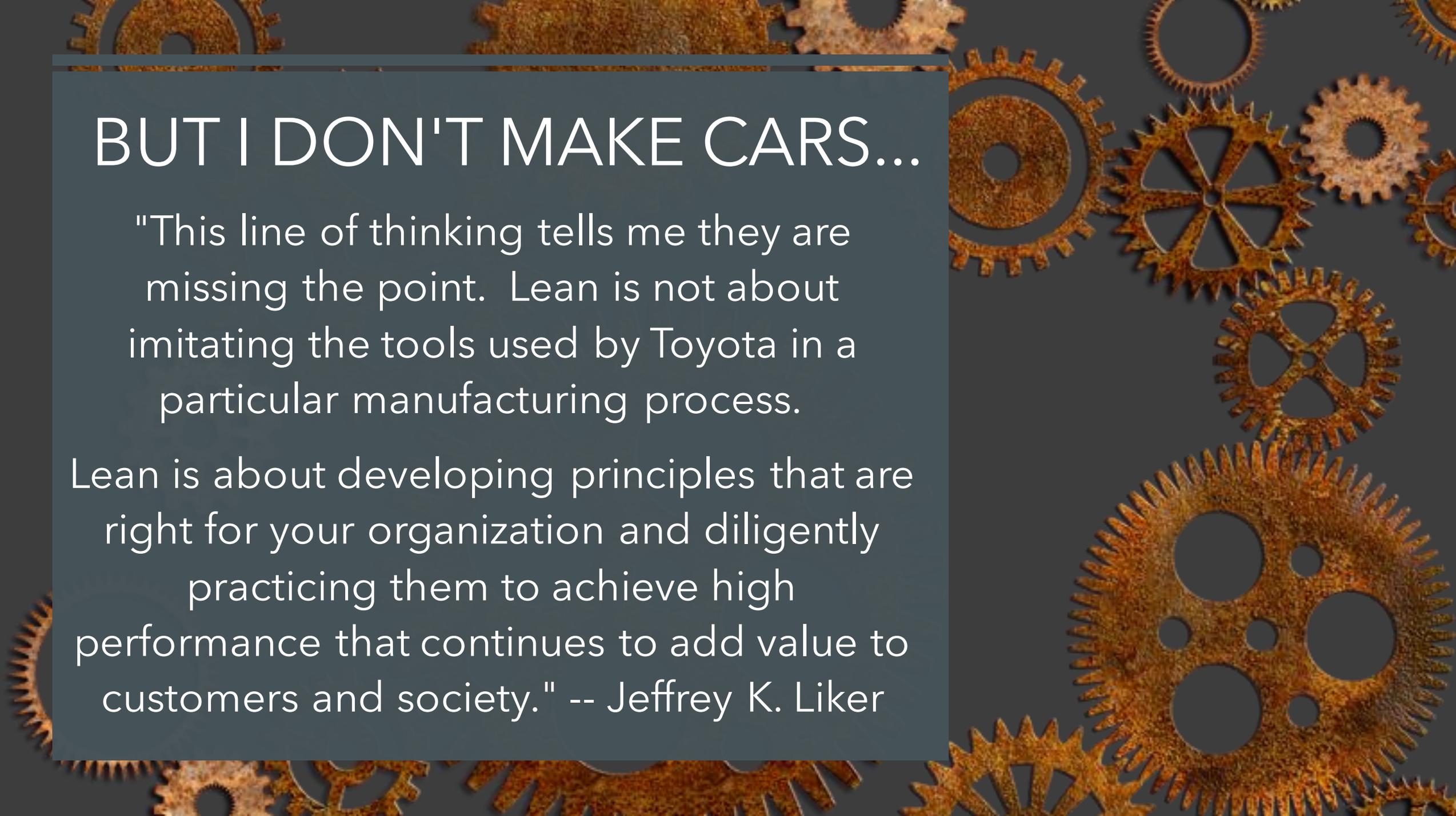
BUT I DON'T MAKE CARS...

"This line of thinking tells me they are missing the point. Lean is not about imitating the tools used by Toyota in a particular manufacturing process.

Lean is about developing principles that are right for your organization and diligently practicing them to achieve high performance that continues to add value to customers and society." -- Jeffrey K. Liker

LIKER'S PRINCIPLES

- On the following slides we will review Liker's 14 Principles

- We are going to highlight how aspects of our work can be examined through these Principles

# CONTINUOUS IMPROVEMENT
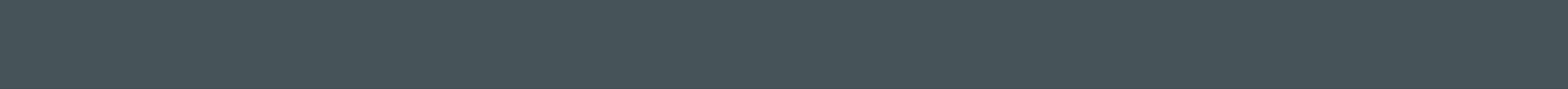
PRINCIPLES 1-8

1. Base management decisions on a long-term philosophy, even at the expense of short-term financial goals
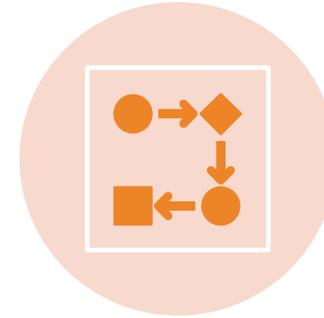
2. Create continuous process flow to bring problems to the surface
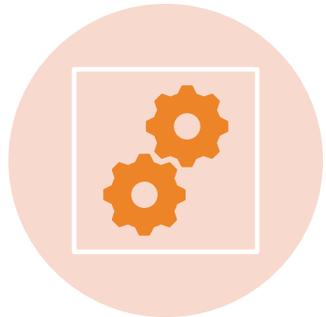
3. Use "pull" systems to avoid overproduction
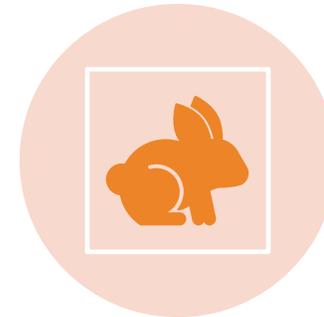
4. Level out the workload... work like the tortoise not the hare
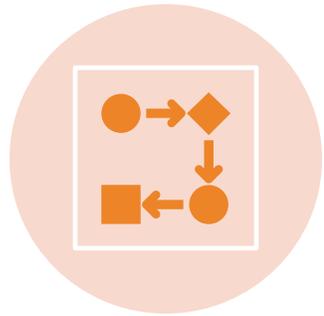
5. Build a culture of stopping to fix problems, to get quality right the first time

6. Standardized tasks are the foundation for continuous improvement and employee empowerment
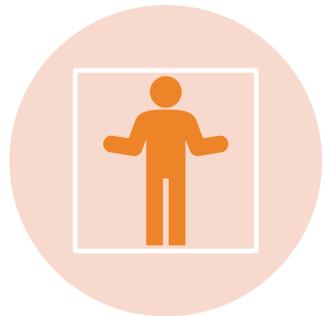
7. Use visual control so no problem is hidden (why? 5 times)

8. Use only reliable, thoroughly tested technology that serves your people and process

RESPECT FOR PEOPLE

PRINCIPLES 9-14
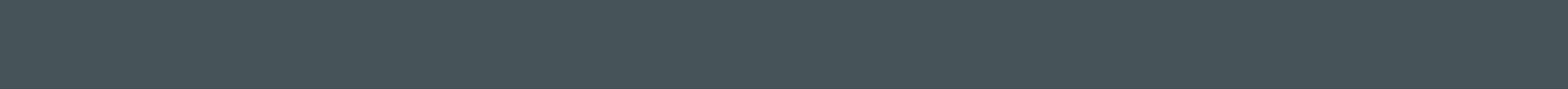
Grow	9. Grow leaders who thoroughly understand the work, live the philosophy and teach it to others
Develop	10. Develop exceptional people and teams who follow your company's philosophy
Respect	11. Respect your extended network of partners and suppliers by challenging them and helping them improve

Go and See	12. Go and see for yourself to understand the situation
Make Decisions	13. Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly
Become	14. Become a learning organization through relentless reflection and continuous learning

ACADEMIC LIBRARIES AND LEAN

A few examples:

- After touring a bindery that applied lean principles, U. of Chicago library eliminated bottlenecks in their processes for shelving books and reduced the time from book return to reshelving (Kress, 2008)

- A swim-lane diagram was used to show non-value-adding processes and handoffs that hampered e-resources management workflows at Kansas State libraries (Yeh et al., 2021)

- University of Newcastle, England, used a Six Sigma process (continuous improvement) to increase the efficiency of self-service book lending (Kumi & Morrow, 2006)

TPS IS MORE THAN A CHECKLIST

Culture change is the key to success

Everyone can contribute to change, but sustainable culture changes needs to be embraced by administration

These principles and ideas can be applied in our day-to-day processes

Liker's work provides language that can be useful when trying to determine the source of a problem, or articulate why there is a problem

CONTINUOUS IMPROVEMENT PRINCIPLES 1-8
WITH LIBRARY EXAMPLES

1. Base management decisions on a long-term philosophy, even at the expense of short-term financial goals	Information Literacy, Lifelong Learning, Continuous Improvement, Respect for People
2. Create continuous process flow to bring problems to the surface	Problems=changes/unknowns. Curriculum mapping; awareness of class schedules, new courses, assignment changes
3. Use "pull" systems to avoid overproduction	Inventory=lesson plans. Put more energy into classes with known demand and activities that can be done in multiple courses
4. Level out the workload... work like the tortoise not the hare	Design group activities that encourage collaboration

5. Build a culture of stopping to fix problems, to get quality right the first time	Don't "pass the problem" – fix what is not working based on observation and feedback
6. Standardized tasks are the foundation for continuous improvement and employee empowerment	Teaching styles may differ, but content is the same. Different sections of the same course are taught the same key concepts
7. Use visual control so no problem is hidden (why? 5 times)	Read the room; stop to check for understanding
8. Use only reliable, thoroughly tested technology that serves your people and process	Test technology before classroom use; adopt only what works effectively

RESPECT FOR PEOPLE PRINCIPLES 9-14 WITH LIBRARY EXAMPLES

9. Grow leaders who thoroughly understand the work, live the philosophy and teach it to others	**Internal**: mentorship. **Student-facing**: Information literacy relevant to "real world" and future careers, citizenship, leadership roles
10. Develop exceptional people and teams who follow your company's philosophy	**Internal**: mentorship, leadership training. **Student-facing**: collaborate on class content; post-class debrief; foster constructive feedback
11. Respect your extended network of partners and suppliers by challenging them and helping them improve.	Partner with instructors: Suggest clarifications on assignments, incorporation of research consultations or other services

| 12. Go and see for yourself to understand the situation	If possible, team teach or ask a colleague to observe a class. Ask instructors for updated syllabi/assignments to align lesson plans
13. Become a learning organization through relentless reflection and continuous learning	Self-reflection after class; constant assessment and review of feedback; pedagogical theories; incorporate new technology; etc Ask why five times if a problem arises
14. Make decisions slowly by consensus, considering all options	Lesson plans of classes that are taught by multiple librarians are changed as a unit

ASKING WHY 5 TIMES

Define the Problem or Concern → Why is this happening? → Why is that? → Why is that? ↓ Why is that? ← Why is that? ← Root Cause
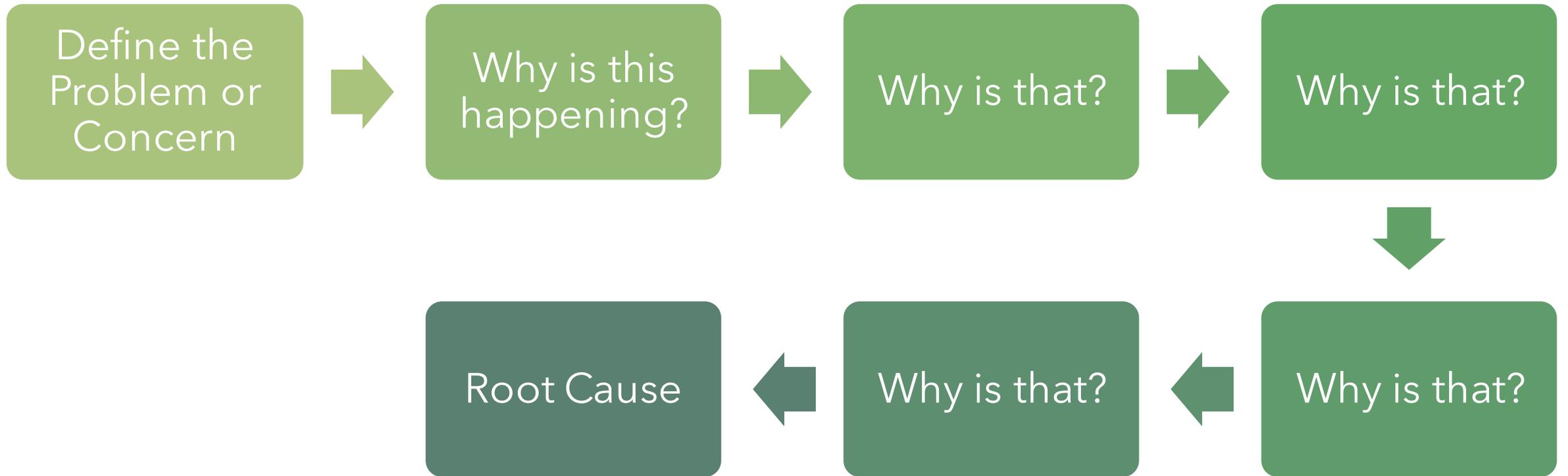
PAPER INSTRUCTION FEEDBACK FORM NOT GETTING INFORMATIVE RESPONSES
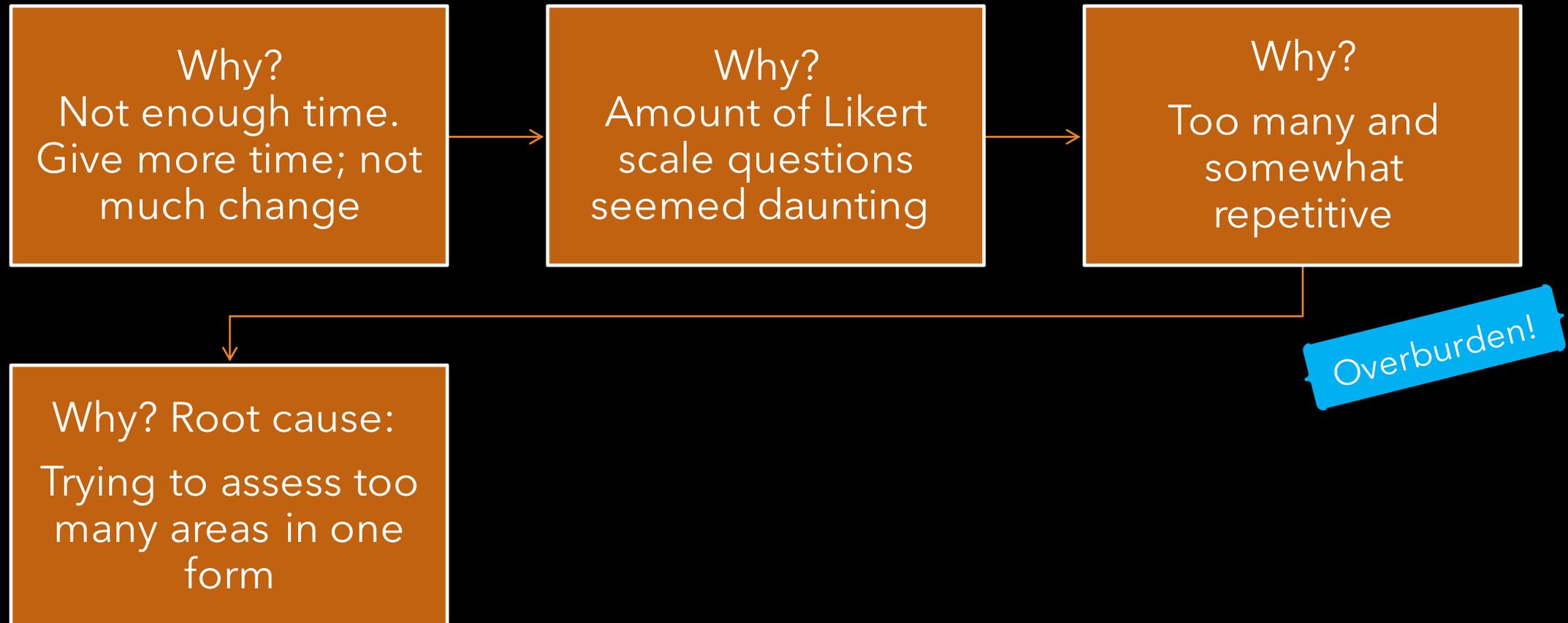
Why?
Not enough time. Give more time; not much change

Why?
Amount of Likert scale questions seemed daunting

Why?
Too many and somewhat repetitive

Overburden!

Why? Root cause:
Trying to assess too many areas in one form
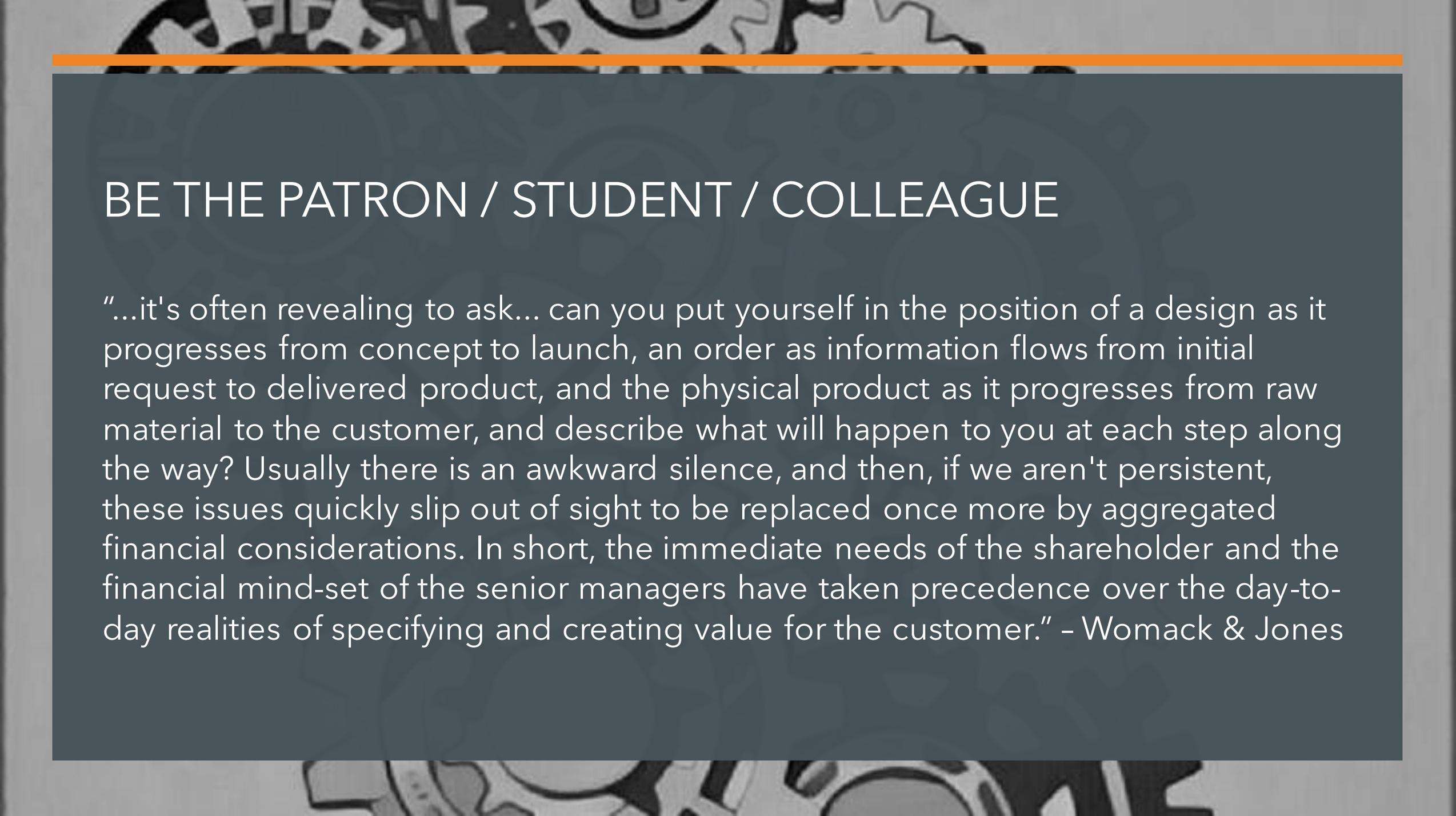
BE THE PATRON / STUDENT / COLLEAGUE

"...it's often revealing to ask... can you put yourself in the position of a design as it progresses from concept to launch, an order as information flows from initial request to delivered product, and the physical product as it progresses from raw material to the customer, and describe what will happen to you at each step along the way? Usually there is an awkward silence, and then, if we aren't persistent, these issues quickly slip out of sight to be replaced once more by aggregated financial considerations. In short, the immediate needs of the shareholder and the financial mind-set of the senior managers have taken precedence over the day-to-day realities of specifying and creating value for the customer." – Womack & Jones

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QUESTIONS? COMMENTS?

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