

KEEP IT LEAN

USING "KANBAN TOC"

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WHO AM I?

- **M Sc in Industrial Manufacturing and Management**
- **Senior technical writer at SimCorp, a financial services software company.**
- **Passionate about Lean and automation**
- **Blog at www.techwritingengineer.com**
- **Find me at @mattiassander**
- **From Malmö, Sweden (Go Malmö FF!)**



WHAT IS LEAN?

“The core idea is to maximize customer value while minimizing waste. Simply, lean means creating more value for customers with fewer resources.”

WHAT IS LEAN?

”Each individual employee is given the opportunity to find problems in his own way of working, to solve them and to make improvements. ”

WHAT IS LEAN?

Build people, then build products!

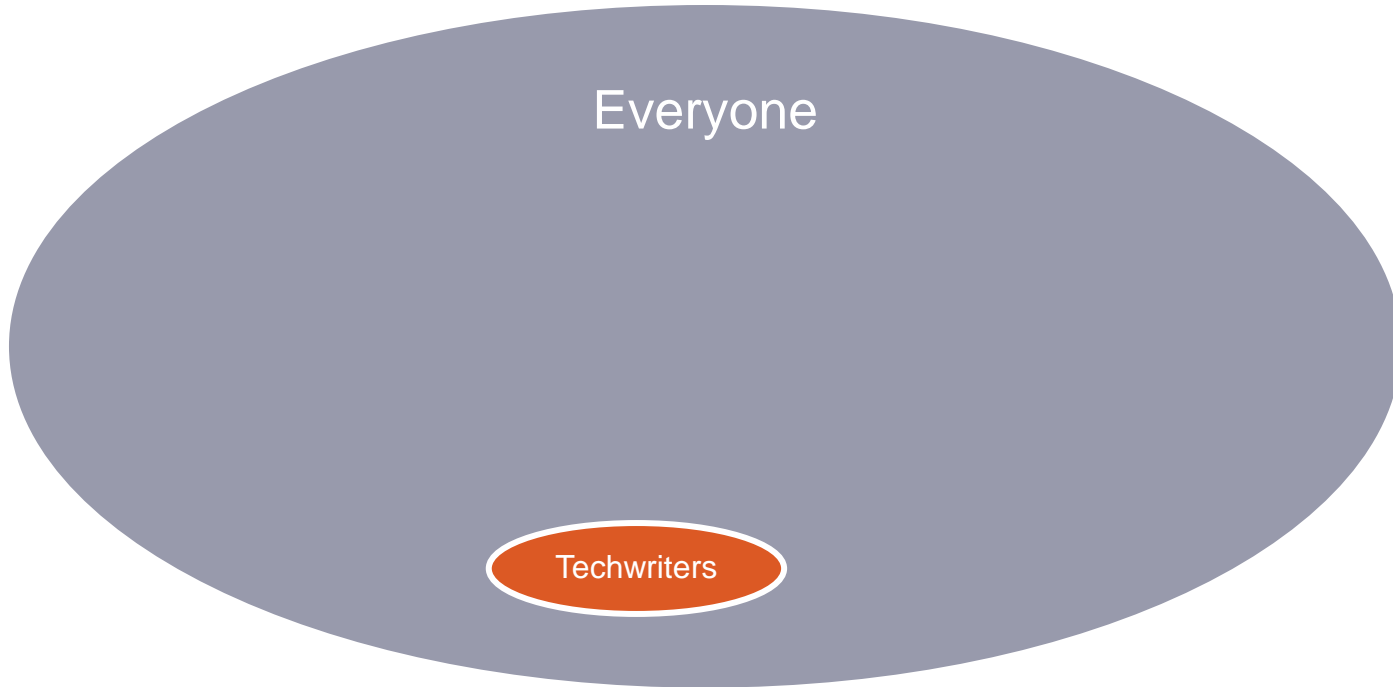
Challenge the status quo!

WHY SHOULD WE AS TECHWRITERS CARE?

Use “Lean thinking” to

- ✓ Get more (important) things done, with less effort
- ✓ Add more customer value
- ✓ Reduce waste
- ✓ Improve your processes

WHY SHOULD WE AS TECHWRITERS CARE?



SO, MATTIAS - TELL ME MORE!

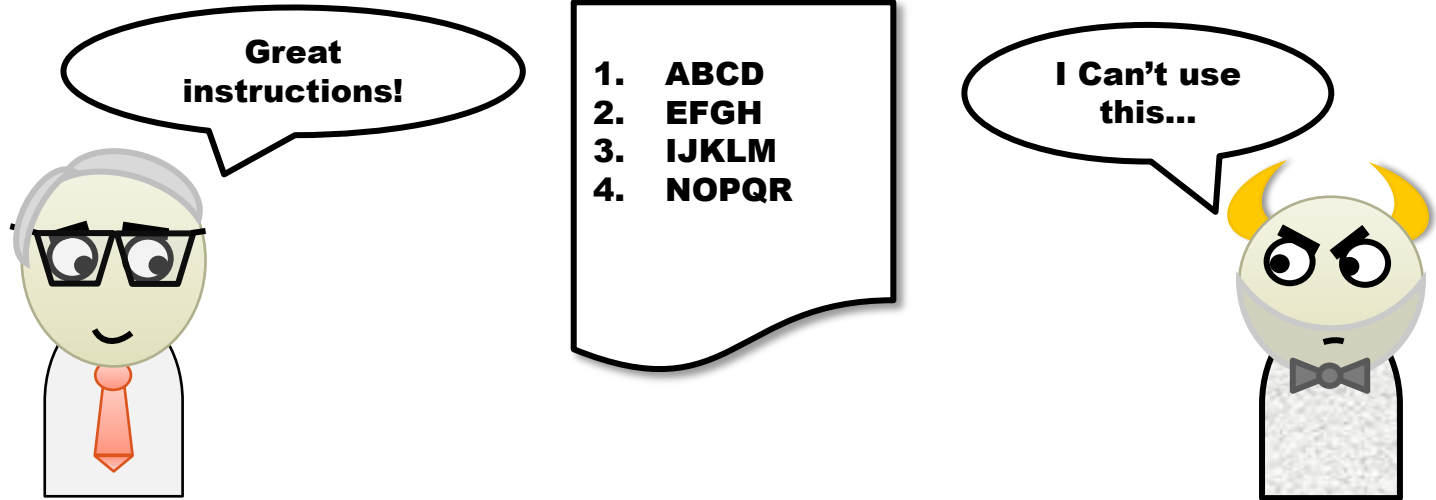
- **What are the Lean principles?**
- **How can I use Lean tools?**
- **Show me the science!**
- **How do I get started?**

LEAN PRINCIPLES

- **Define value**
- **Identify the value stream**
- **Challenge all the wasted steps**
- **Make the work item flow continuously**
- **Strive towards perfection**

DEFINE VALUE FROM YOUR CUSTOMERS' PERSPECTIVE

What is your customer willing to pay for?



IDENTIFY YOUR PRODUCT AND THE VALUE STREAM

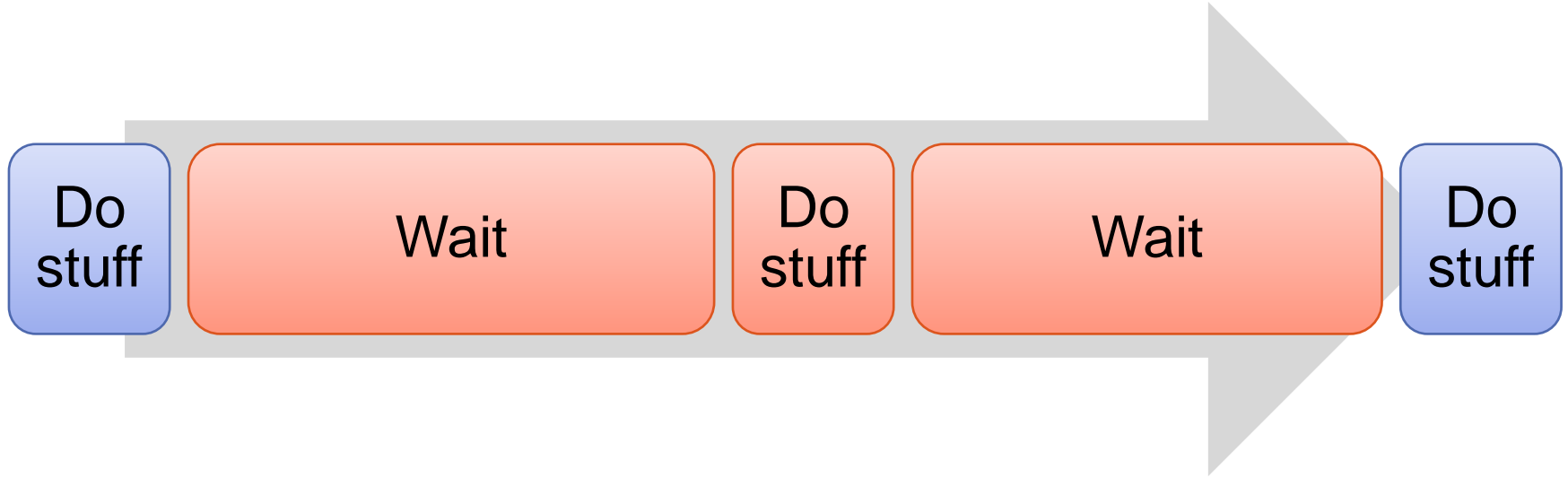
WORK ITEM

- New software feature
 - Release notes
 - Context-sensitive help
 - Supporting topics

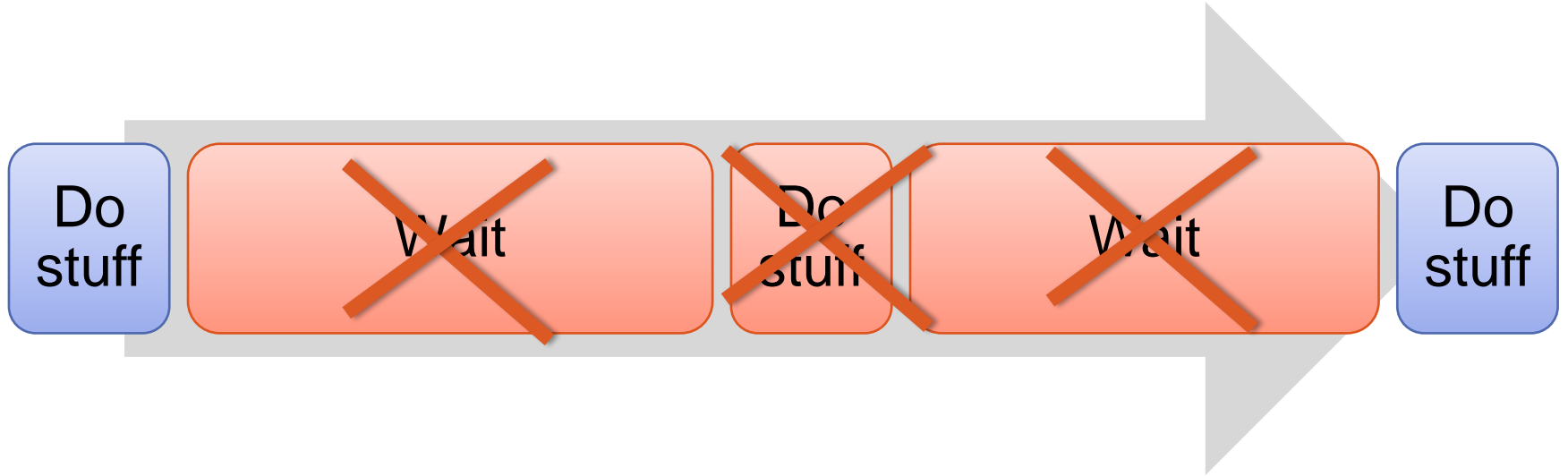
VALUE STREAM

1. Design
2. Write
3. Review
4. Edit
5. Package
6. Test

VALUE STREAM (REAL)



FIND AND CHALLENGE ALL THE WASTED STEPS



VALUE STREAM (IDEAL)



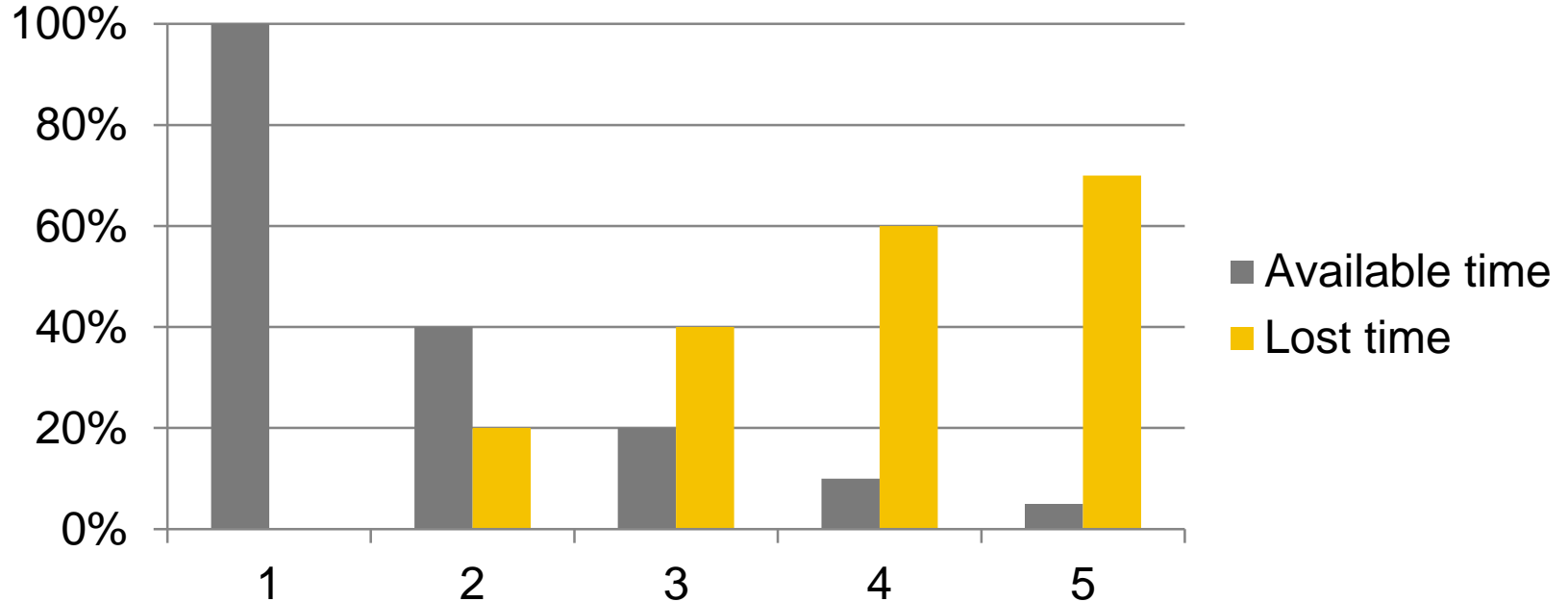
CREATE FLOW

- **Introduce single-piece flow, and stop doing batch work.**
- **Pull work from the previous step when you have available resources.**

<https://www.youtube.com/watch?v=3s2VdtYw-g0>

BATCH WORK VS SINGLE PIECE FLOW

Stop losing time on context-switching:

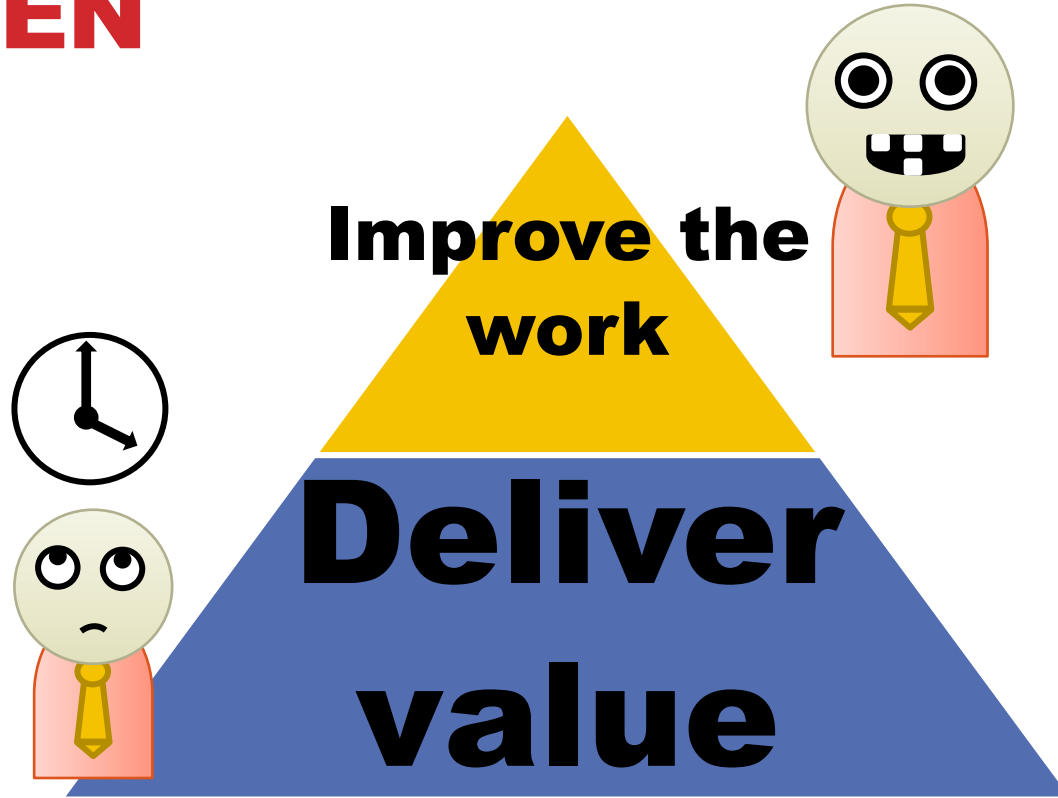


STRIVE TOWARDS PERFECTION

MAKING CONTINUOUS IMPROVEMENTS

**Never stop thinking
of ways to improve
the process.**

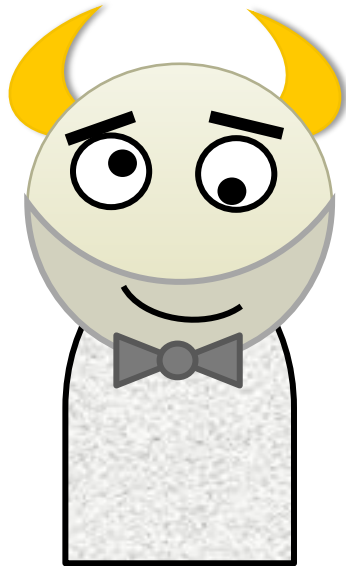
KAIZEN



LEAN TOOLKIT

- **Finding waste/problems**
 - The 8 wastes framework
 - 5S – organisation and visualisation
 - Kanban - visualisation
- **Solving problems/reducing waste**
 - 5 Whys – finding the root cause
 - A3 Problem Solving – developing countermeasures

THE 8 WASTES



**TIM
WOODS**

TRANSPORTATION

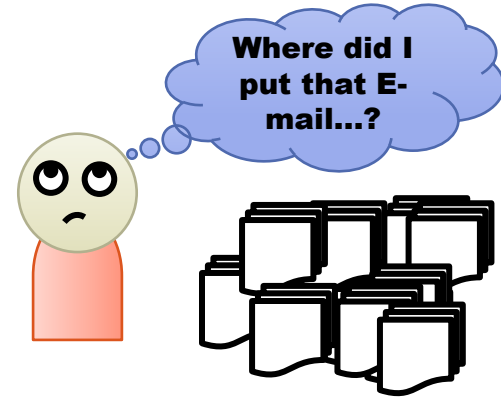
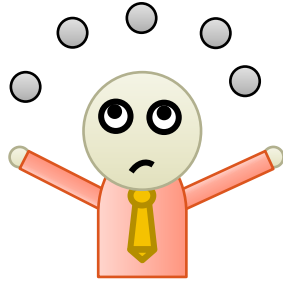
- **Converting formats**
- **Communication barriers**
- **Disconnection from SMEs**
- **...**

INVENTORY

- **Backlog of e-mails**
- **Lots of topics in progress**
- **...**

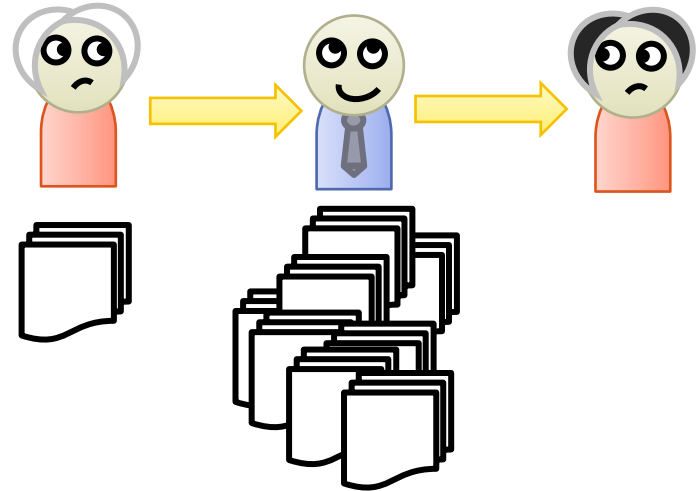
MOTION

- Task switching
- Searching
- Interruptions
- ...



WAITING

- **Waiting for reviews**
- **Waiting for edits**
- **Waiting for work**
- **Waiting for approvals**
- ...



OVERPROCESSING

- Re-entering data
- ...

IS SPELL-CHECKING OVERPROCESSING?

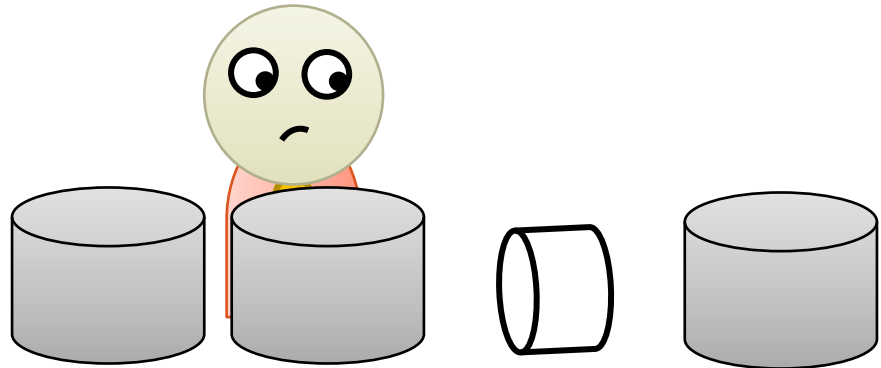
According to research, it doesn't matter in what order the letters in a word are, the only important thing is that the first and last letter be at the right place. The rest can be a total mess and you can still read it without a problem. This is because the human mind does not read every letter by itself, but the word as a whole.

OVERPRODUCTION

- **Writing more than your users want or need**
- **Unnecessary data**
- **...**

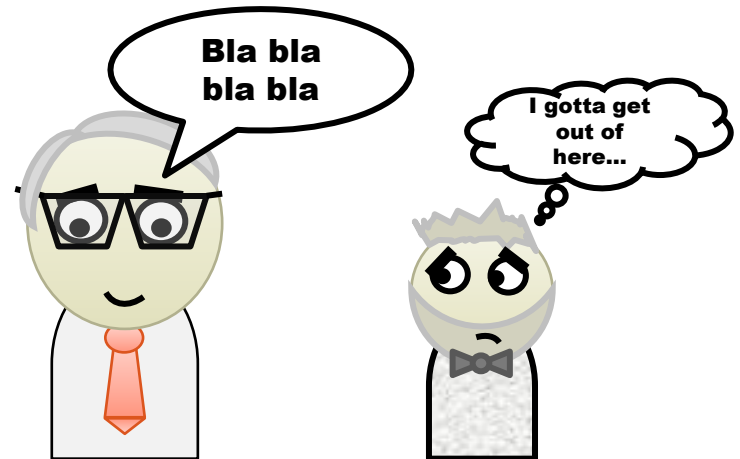
DEFECTS

- **Inaccurate or incomplete topics**
- **Topics not appropriate for the target audience**
- ...



UNUSED SKILLS

- Not being all that you can be
- Attending pointless meetings
- ...



WHY FOCUS ON WASTE?

Focusing on improving value-adding work means you have to think of how to make already working things better.

Focusing on waste is really about fixing what bugs you, and that comes naturally to most people.

5S

5S is the name of a workplace organization method that uses a list of five Japanese English words:

- **Sort**
- **Straighten**
- **Shine**
- **Standardize**
- **Sustain**

BENEFITS OF 5S

- **Find things and information faster**
- **Surface abnormalities and waste**

5S AT ALCATRAZ



5S - WARNING

5S does not mean you should shackle yourself to a pointless standard:



KANBAN

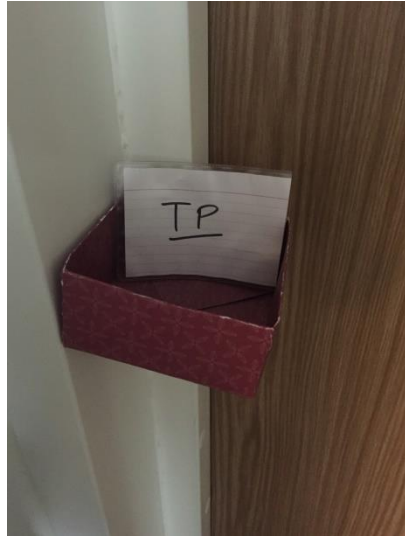
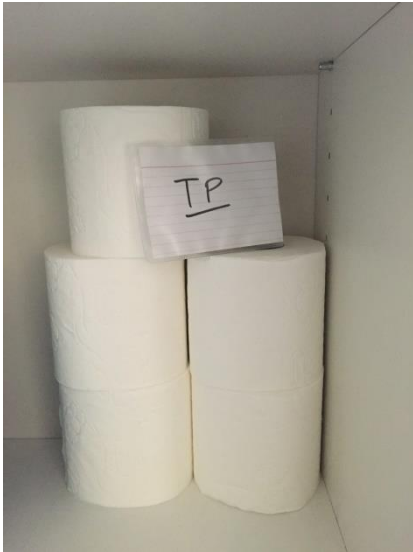
Visual cues to facilitate flow, introduce pull, and limit inventory levels.

- It's a communication system.**
- It's a continuous improvement tool.**

BATTERY KANBAN



TP KANBAN



KANBAN FOR KNOWLEDGE WORK

Backlog

Work-item

Work-item

Work-item

Doing

Work-item

Work-item

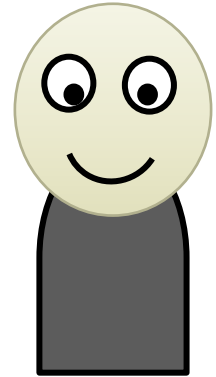
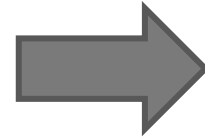
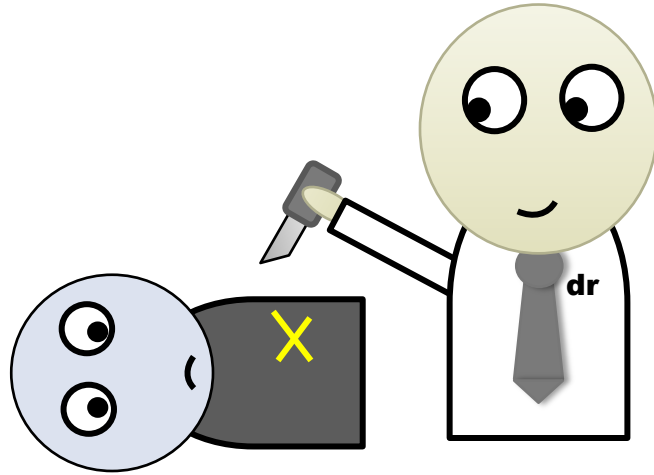
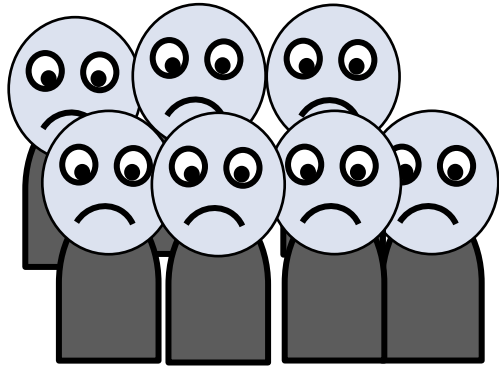
Done

Work-item

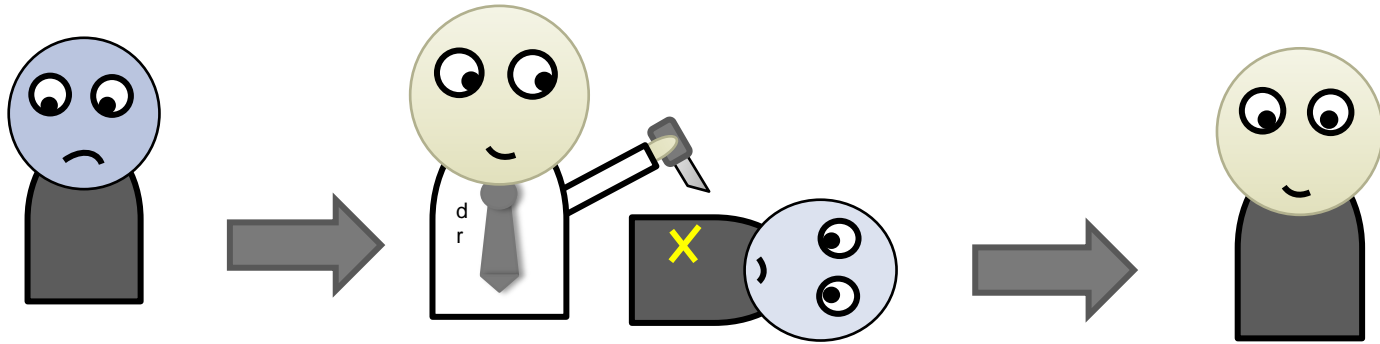
LEAN – BEHIND THE SCENES

- **Resource efficiency vs Flow efficiency**
- **Queueing theory**

RESOURCE EFFICIENCY



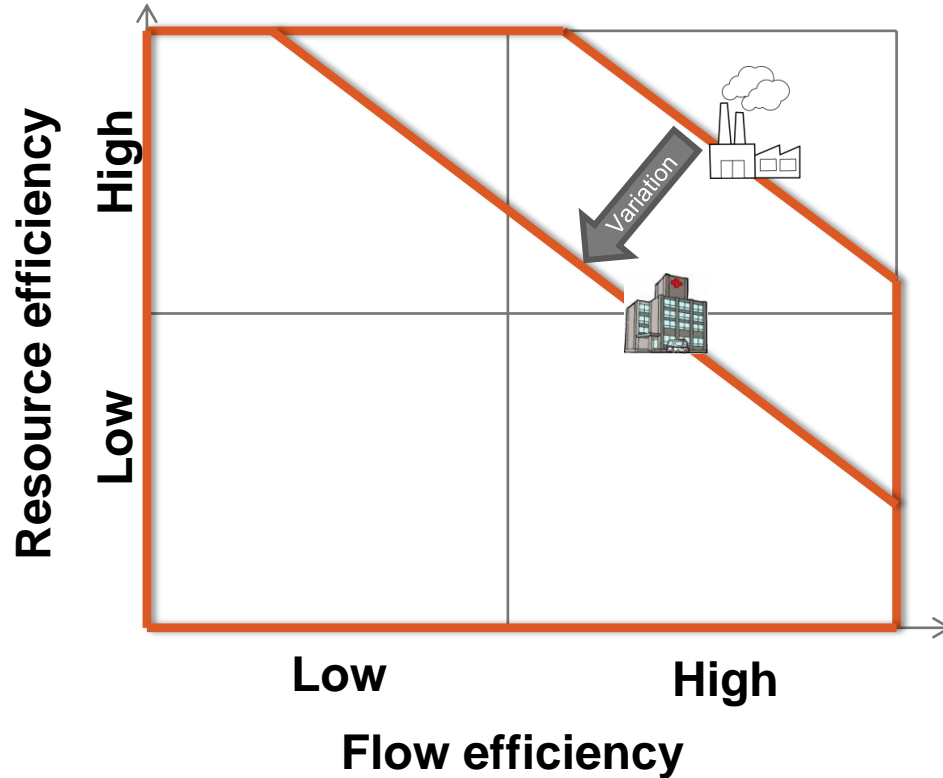
FLOW EFFICIENCY



FOCUS ON THE PATIENT

NOT THE DOCTOR

CAN'T YOU HAVE BOTH?



STANDARDISATION IS THE KEY

- **Create Standard Operating Procedures**
- **Use checklists**

CHECKLISTS

- Don't try to remember everything.
Write it down in the form of
checklists.
- Doesn't mean you're not skilled, just
that you're human.

THE CHECKLIST MANIFESTO

Before induction of anaesthesia ▶▶▶▶▶▶▶▶▶▶

SIGN IN

- PATIENT HAS CONFIRMED
 - IDENTITY
 - SITE
 - PROCEDURE
 - CONSENT
- SITE MARKED/NOT APPLICABLE

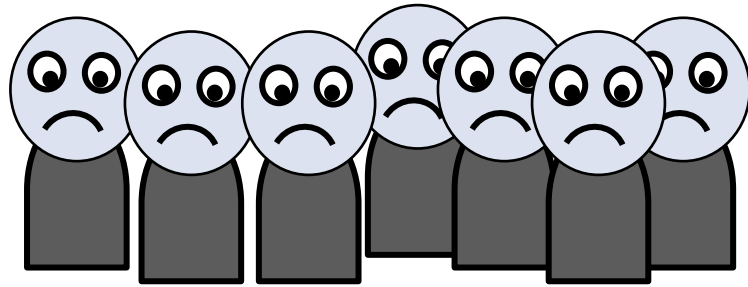


QUEUEING THEORY

- What is queueing theory?
- Kingman's formula
- Little's law

WHAT IS QUEUEING THEORY?

”Queueing theory is the **mathematical** study of waiting lines, or queues. In queueing theory a model is constructed so that queue lengths and waiting time can be predicted.”



KINGMAN'S EQUATION

Input variation

Process variation

$$E(W_q) \approx \left(\frac{\rho}{1 - \rho} \right) \left(\frac{c_a^2 + c_s^2}{2} \right) \tau$$

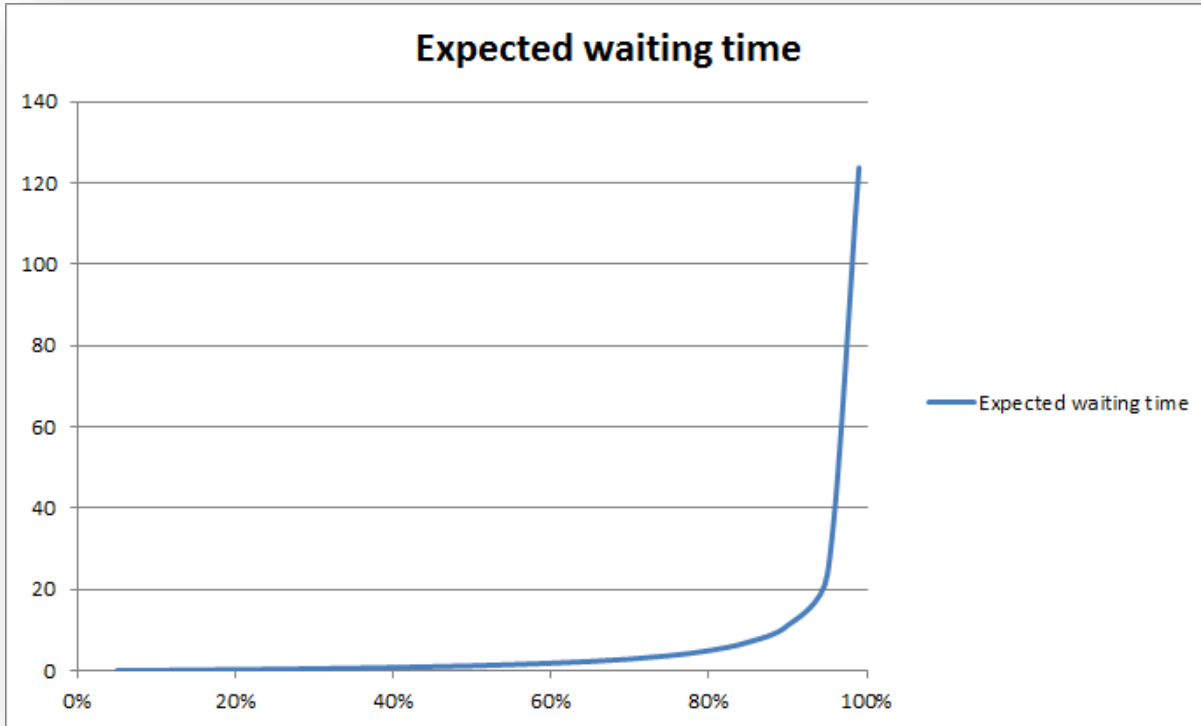
Waiting time

Resource efficiency

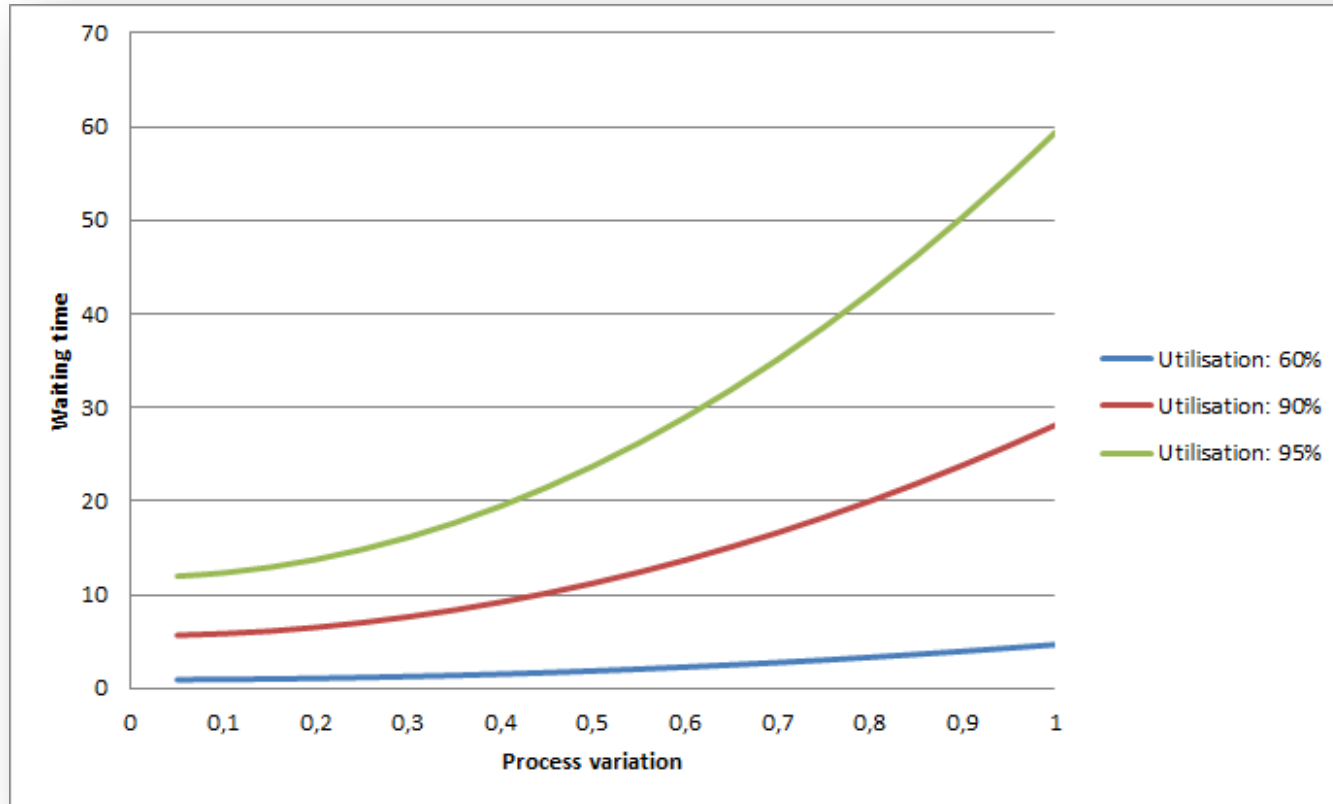
Cycle time

The diagram illustrates Kingman's Equation, which relates the expected waiting time in a queue, $E(W_q)$, to system parameters. The equation is shown as $E(W_q) \approx \left(\frac{\rho}{1 - \rho} \right) \left(\frac{c_a^2 + c_s^2}{2} \right) \tau$. Five arrows point to the components of the equation: 'Waiting time' points to $E(W_q)$; 'Resource efficiency' points to ρ ; 'Cycle time' points to τ ; 'Input variation' points to c_a^2 ; and 'Process variation' points to c_s^2 .

VARIATION MAKES YOU WAIT



RESOURCE EFFICIENCY MAKES YOU MORE SENSITIVE TO VARIATION



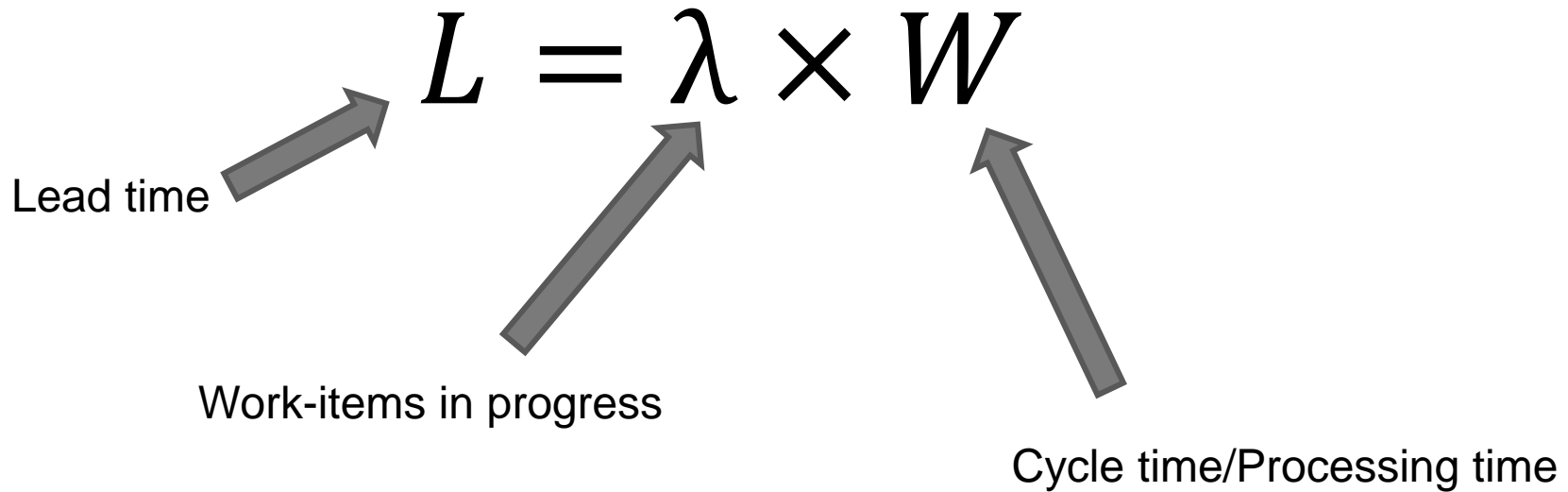
LITTLE'S LAW

$$L = \lambda \times W$$

Lead time

Work-items in progress

Cycle time/Processing time

The diagram shows the equation $L = \lambda \times W$ in a large black font. Three grey arrows point from text labels to the variables in the equation: one from 'Lead time' to L , one from 'Work-items in progress' to λ , and one from 'Cycle time/Processing time' to W .

LITTLE'S LAW

- **Reduce lead time by**
 - Reducing cycle time
 - Limiting Work-In-Progress

HOW DO I GET STARTED?

I believe in starting small.

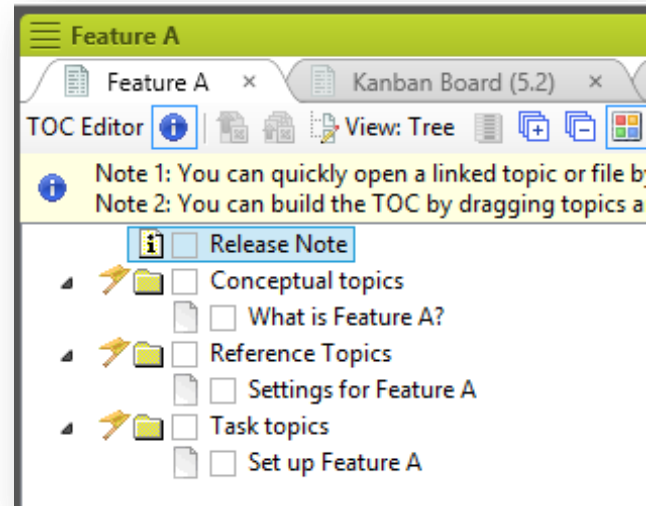
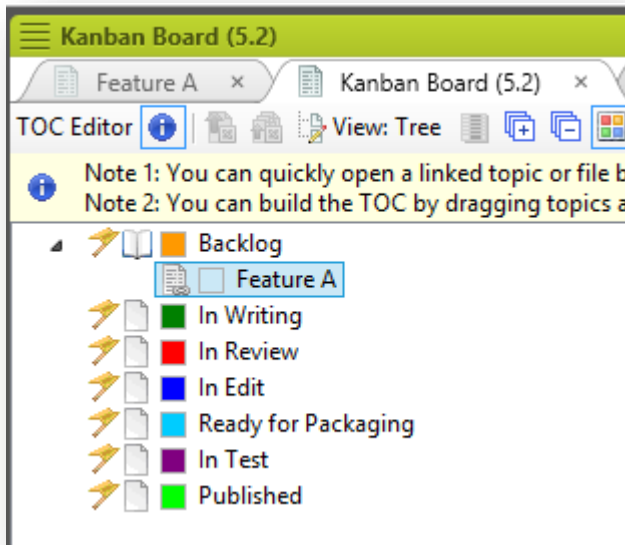
**Using the Kanban TOC is an easy starting point,
and uses:**

- Visual value-stream mapping
- Work item standardisation

**...and will help you find problems and develop
countermeasures.**

WHAT'S A KANBAN TOC?

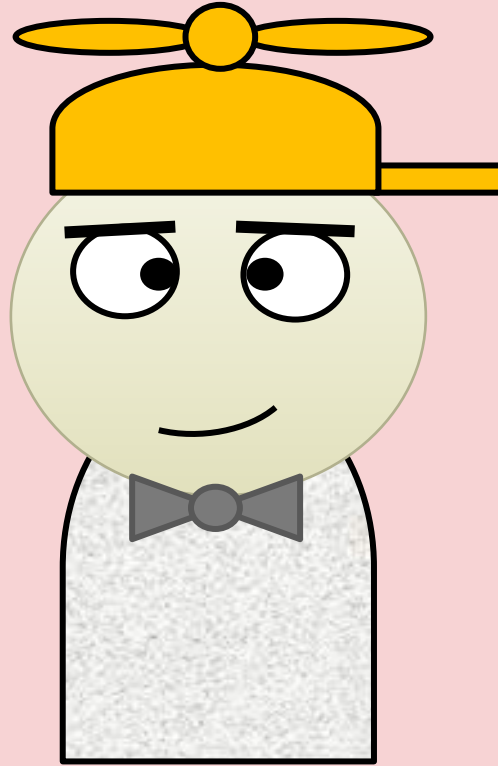
A table-of-contents with all the steps of your value-stream for a given type of work item, for example, a documentation set for a new software feature.



SET UP A KANBAN TOC

- 1. Define your work-items**
- 2. Map your value stream to a table-of-contents**
- 3. Find problems, Make improvements
– Keep it lean!**

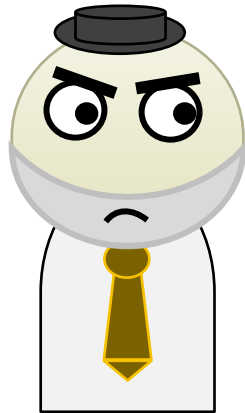
DEMO IN MADCAP FLARE (UH-OH!)



**PLEASE ASK
QUESTIONS!**

LOOKING FOR TROUBLE?

- 5 Whys
- A3 Problem Solving



I Got 99
problems...

5 WHYS

Get to the root cause of a problem by asking "Why?".

The number 5 is not important, it might as well be 3 or 15!

5 WHYS - EXAMPLE

The vehicle will not start. (the problem)

- **Why?** - The battery is dead. (first why)
- **Why?** - The alternator is not functioning. (second why)
- **Why?** - The alternator belt has broken. (third why)
- **Why?** - The alternator belt was well beyond its useful service life and not replaced. (fourth why)
- **Why?** - The vehicle was not maintained according to the recommended service schedule. (fifth why, a root cause)

(https://en.wikipedia.org/wiki/5_Whys)

A3 PROBLEM SOLVING

PROBLEM:		NAME:		DATE:	
1. PROBLEM: WHAT HAPPENED?		3. CAUSE: WHY DID IT HAPPEN?			
2. GOAL: WHAT SHOULD HAPPEN?		4. IMPROVE: HOW DO WE KEEP IT FROM HAPPENING?			
		5. CHECK: HOW WILL WE KNOW IF IT WORKED?			

A6 PROBLEM SOLVING

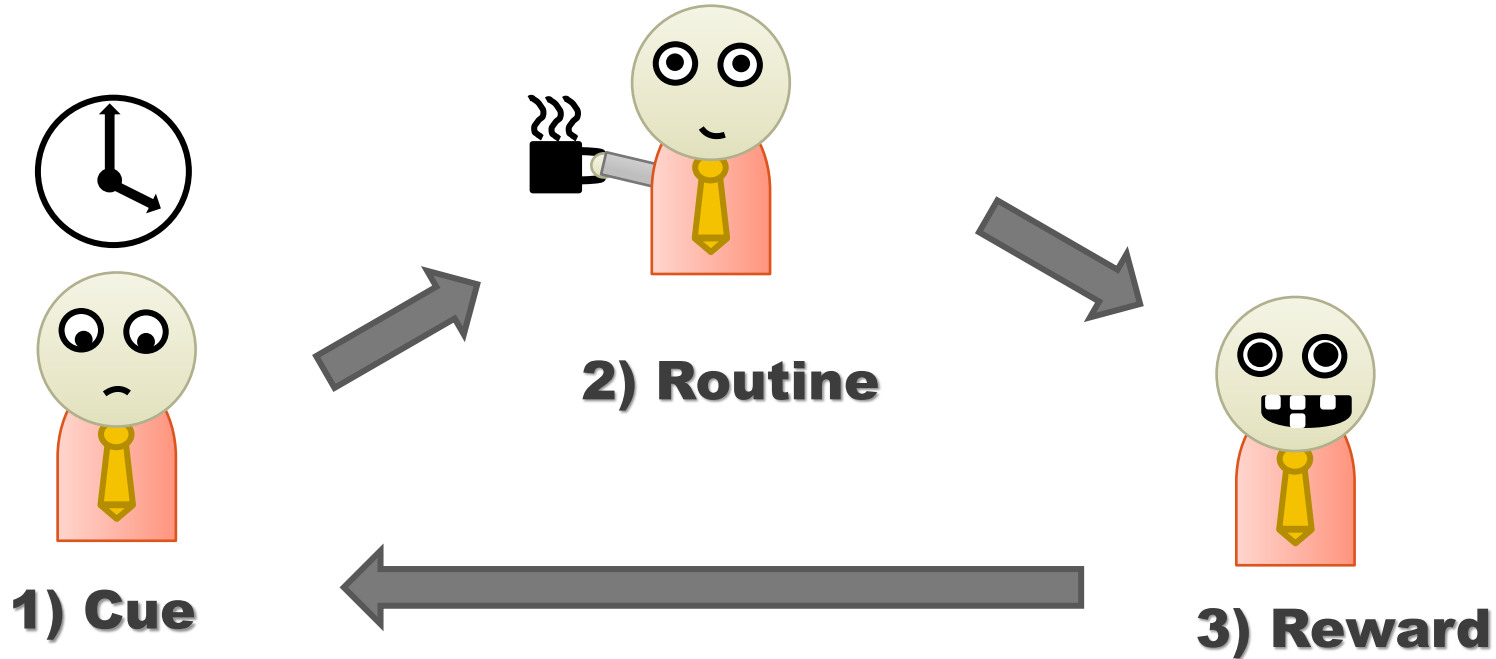
PROBLEM	NAME	DATE
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	5. CHECK: HOW WILL WE KNOW IF IT WORKED?	

THE ART OF CHANGING HABITS

Lean thinking and continuous improvement is all about changing your habits.

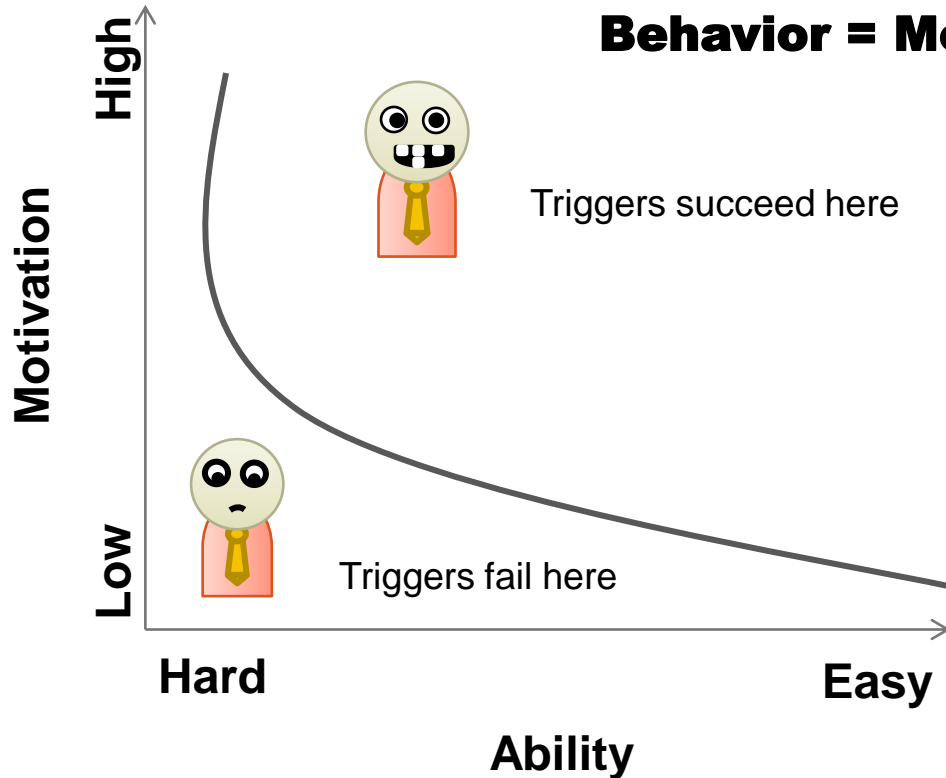
Let's turn to the science...

THE POWER OF HABIT



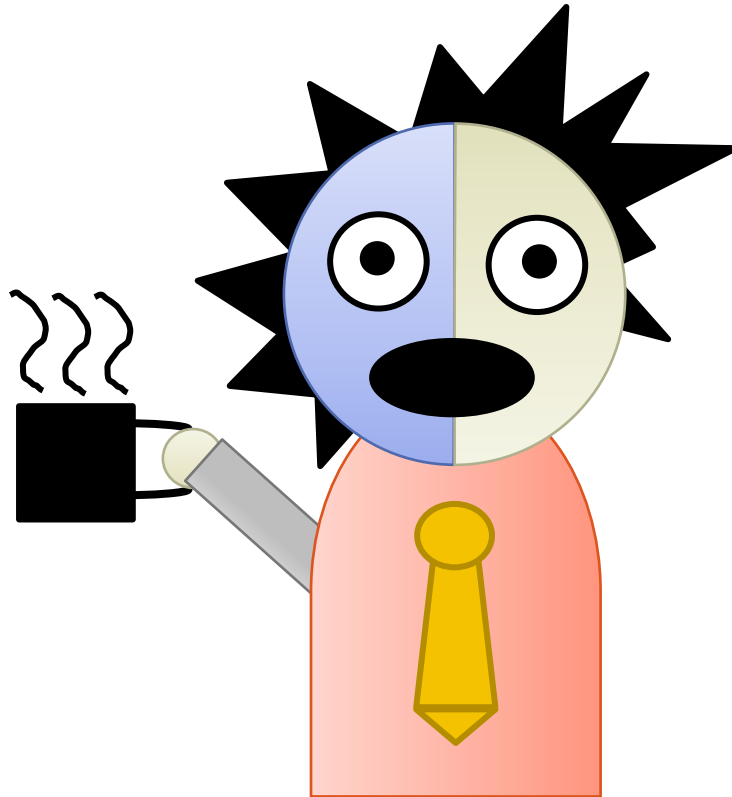
Author: Charles Duhigg

TINY HABITS



- www.tinyhabits.com
- After I [anchor] I will [new tiny behavior]

CALL TO ARMS!



QUESTIONS?

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