Deming's Wisdom for Staff+ Engineers

A Modern Take on Timeless Principles

Annie Vella | 11 June 2024

New Zealand

Who Am I?

Software Engineer | Technical Leader | Self Professed Nerd

Present: Distinguished Engineer at Westpac NZ

Previously:

- 2004 - 2014 - Software Engineer
- 2014 - Present - Technical Leader

Agenda

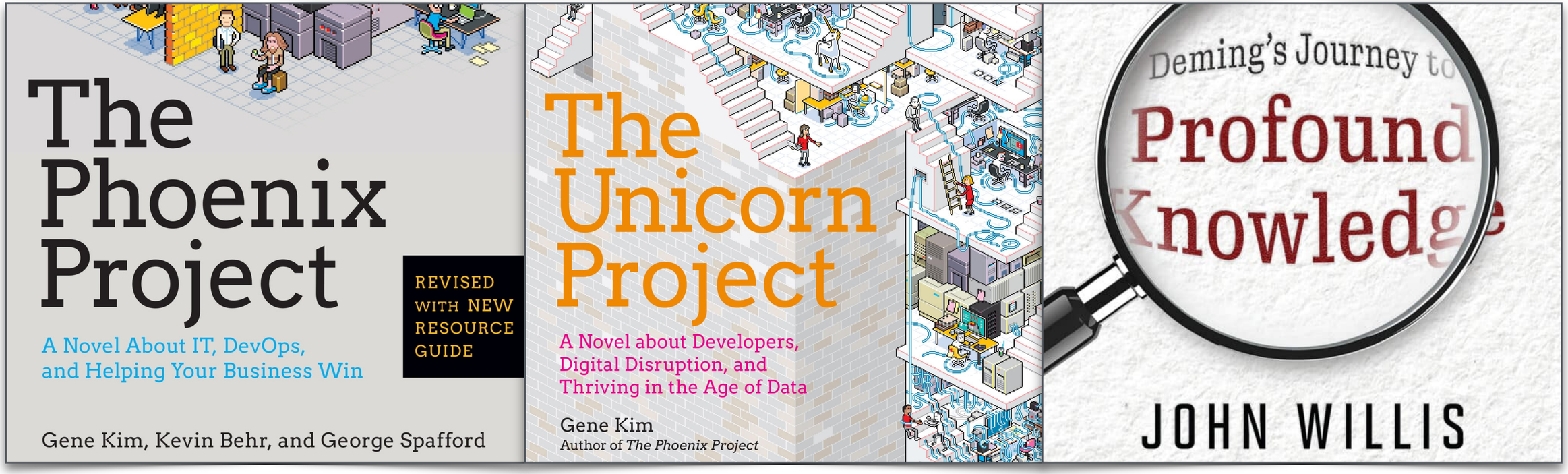
1. Why this topic is important to me
2. Who is W. Edwards Deming
3. Applying Deming’s philosophy
4. How else could we apply Deming’s work

“So, what is it that you *do*?”

I wander around and talk to people until good things happen.

Staff Engineering
is
Technical Leadership

But what has this got to do with W. Edwards Deming?


The Phoenix Project
REVISED WITH NEW RESOURCE GUIDE
A Novel About IT, DevOps, and Helping Your Business Win
Gene Kim, Kevin Behr, and George Spafford
The Unicorn Project
A Novel about Developers, Digital Disruption, and Thriving in the Age of Data
Gene Kim
Author of The Phoenix Project
Deming's Journey to Profound Knowledge
JOHN WILLIS

W. Edwards Deming

- Born in 1900 in Sioux City, Iowa
- Business theorist, economist, industrial engineer, management consultant, statistician, writer and composer
- A humanist who understood the meaning of leadership
- Known as the father of the total quality management movement
- Passionate about continuous improvement

Photo courtesy of The W. Edwards Deming Institute®

“To manage one must lead.

To lead, one must understand the work that he and his people are responsible for.”

Deming, W. Edwards. (2000). Out of the Crisis – 2nd Edition. Kindle Edition. The MIT Press.

Deming to DevOps

Deming

Visited Japan in 1950 to aid reconstruction, teaching SPC and continuous improvement. He predicted a turnaround in 5 years if they followed his advice.

Toyota Production System

Taiichi Ohno established TPS in the 1960s, heavily influenced by Deming's teachings on statistical quality control and management principles.

Lean

Lean manufacturing evolved from TPS, focusing on minimising waste and optimising processes. Adopted by software development.

Agile

Developed for software development, Agile methodologies were inspired by Lean principles and the idea of adapting to change quickly.

DevOps

DevOps extends Agile principles beyond software development to include operations, promoting collaboration, CI/CD and IaC to improve quality and speed.

How can Staff+ Engineers apply Deming's theories & teachings in today's modern technology landscape?

Deming's System of Profound Knowledge

Appreciation for a system

Knowledge about variation

Theory of knowledge

Psychology

Deming's 14 Points for Management

1. Create constancy of purpose toward improvement
2. Adopt the new philosophy
3. Cease dependence on inspection to achieve quality
4. End the practice of awarding business on the basis of price tag
5. Improve constantly and forever
6. Institute training on the job
7. Institute leadership
8. Drive out fear
9. Break down barriers between departments
10. Eliminate unclear slogans, exhortations and targets
11. Eliminate management by objectives
12. **Remove barriers to pride of workmanship**
13. Institute a vigorous program of education and self-improvement
14. Put everybody in the company to work to accomplish the transformation

Three use cases

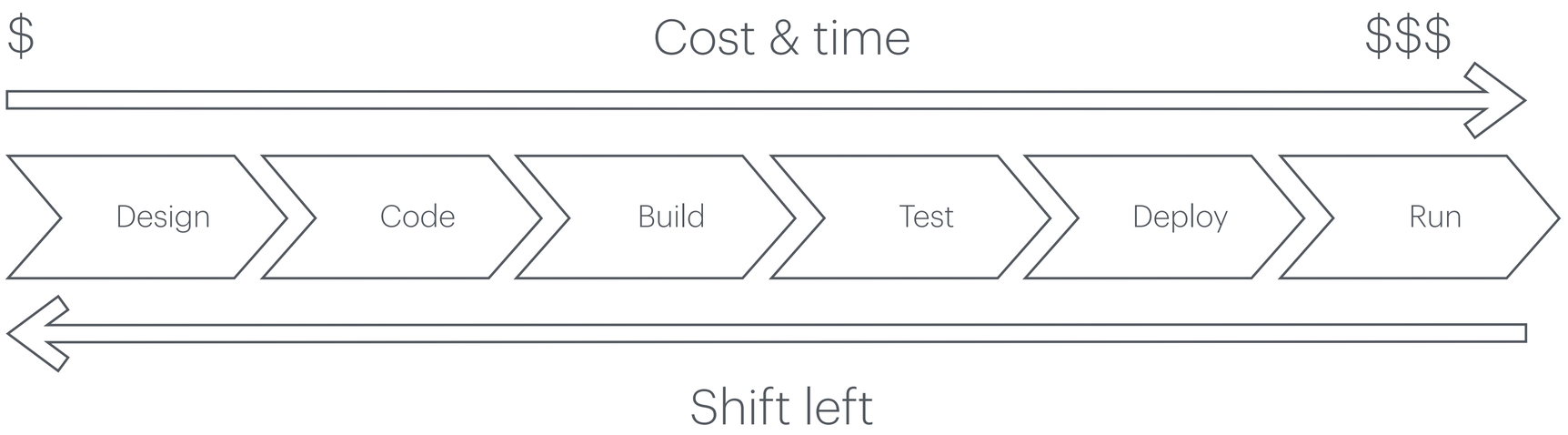
Shift Left

Site Reliability Engineering

Developer Productivity

Shift Left

- What: The practice of moving quality and security testing earlier in the SDLC
- Why: To enhance quality, reduce defect rates, and save time and costs
- How: Start testing early, more automation, fast feedback, increase collaboration



Enhancing Shift Left with Deming's Wisdom

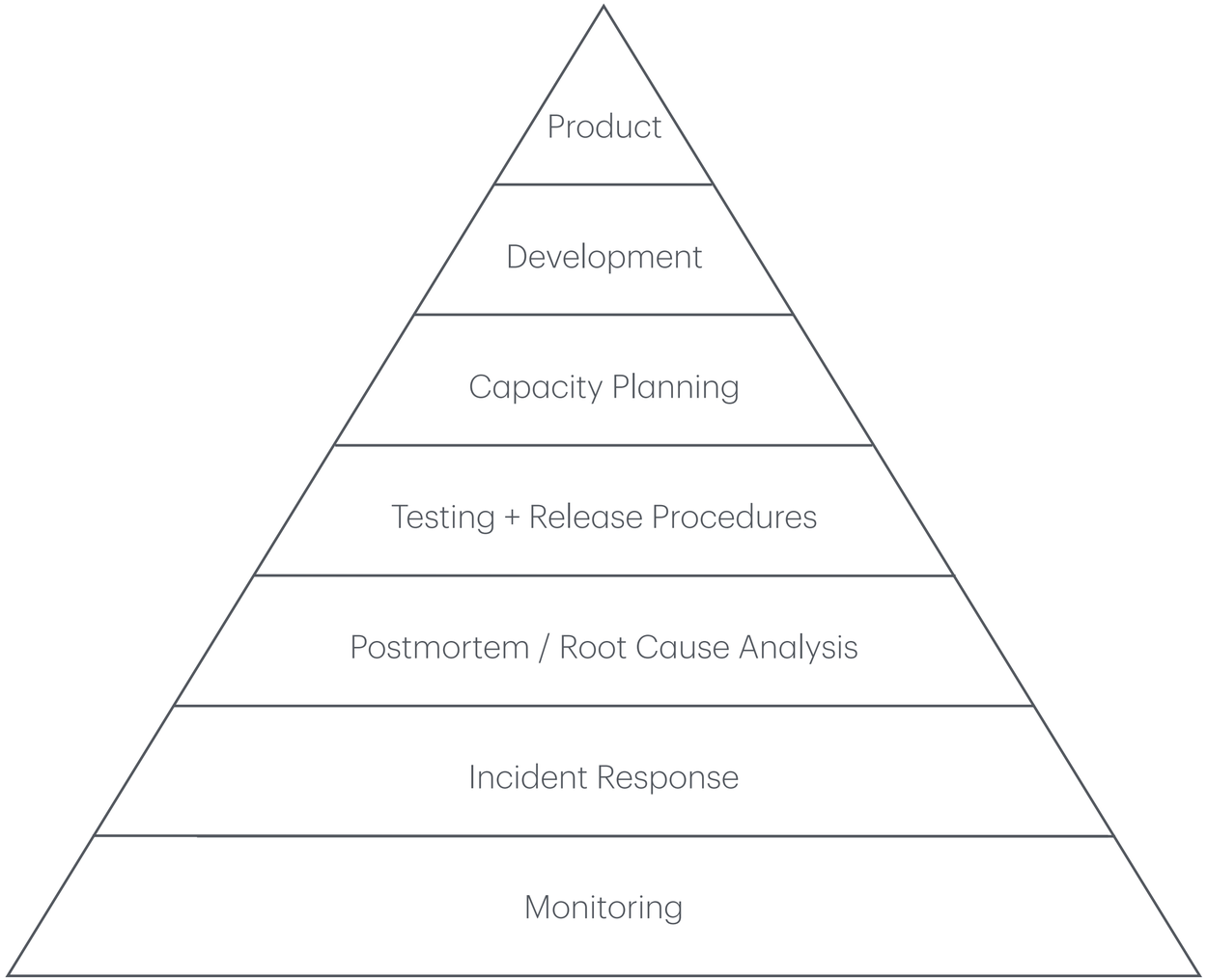
"Quality does not just happen: it is built in."

Deming, William Edwards. Sample Design in Business Research. United Kingdom, Wiley, 1990. Reprint. Originally published 1960, page 27.

- Adopt the new philosophy
- Appreciation for a system
- Break down silos
- Training & self-improvement
- Continuous improvement of the system

Site Reliability Engineering

- What: A set of principles and practices that applies aspects of software engineering to IT infrastructure and operations
- Why: To create highly reliable and scalable software systems
- How: Implement automation, embrace proactive monitoring, and foster operational efficiency



https://sre.google/sre-book/part-III-practices/#fig_part-practices_reliability-hierarchy

Enhancing SRE with Deming's Wisdom

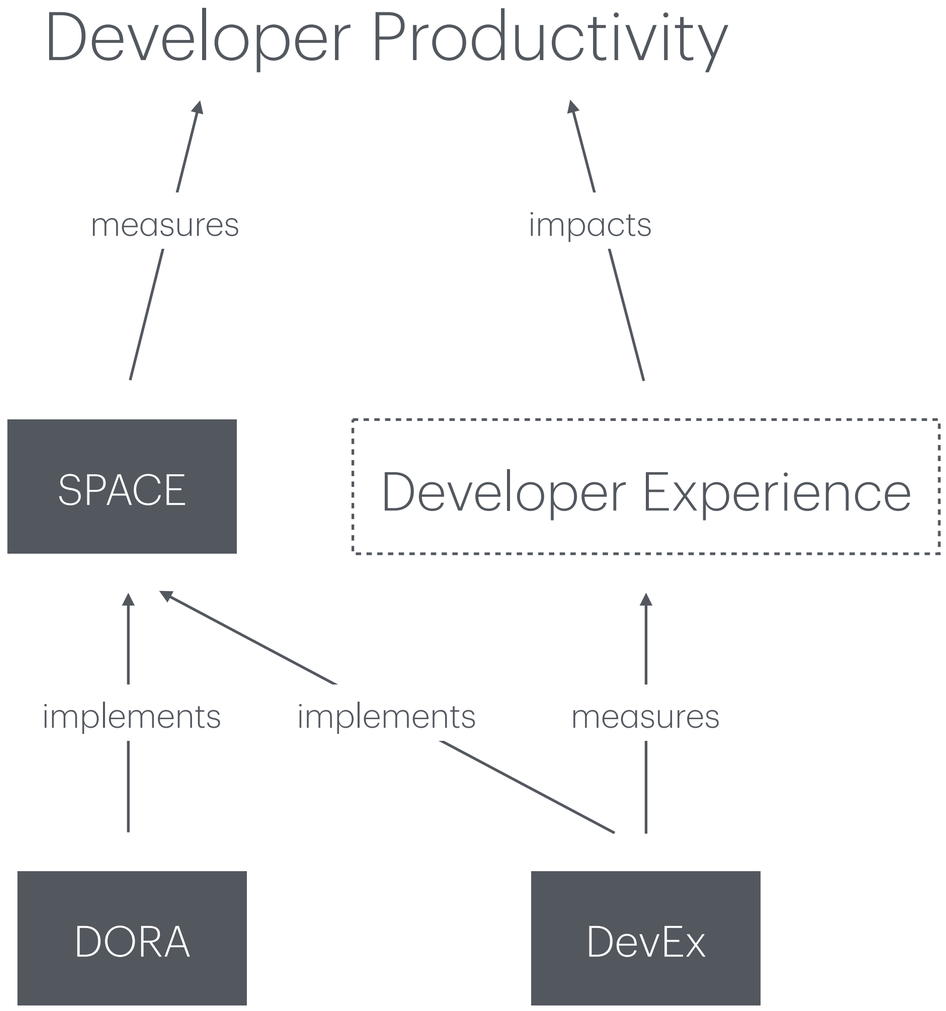
"A bad system will beat a good person every time."

Four Day Deming Seminar in Phoenix, Arizona, February 1993, from the notes of Mike Stoecklein.

- Knowledge about variation
- Theory of knowledge
- Drive out fear
- Break down silos
- Training & self-improvement

Developer Productivity

- What: A measure of a team's ability to efficiently deliver high-quality code that drives business value
- Why: To improve quality, accelerate delivery, and boost business value
- How: Use existing frameworks to measure and improve developer productivity



Inspired by https://www.witczax.com/2023/dora-space-devex/

Enhancing Developer Productivity with Deming's Wisdom

"It is not enough to do your best; you must know what to do, and then do your best."

W. Edwards Deming

- Theory of knowledge
- Appreciation for a system
- Psychology
- Remove barriers to pride in work
- Continuous improvement of the system

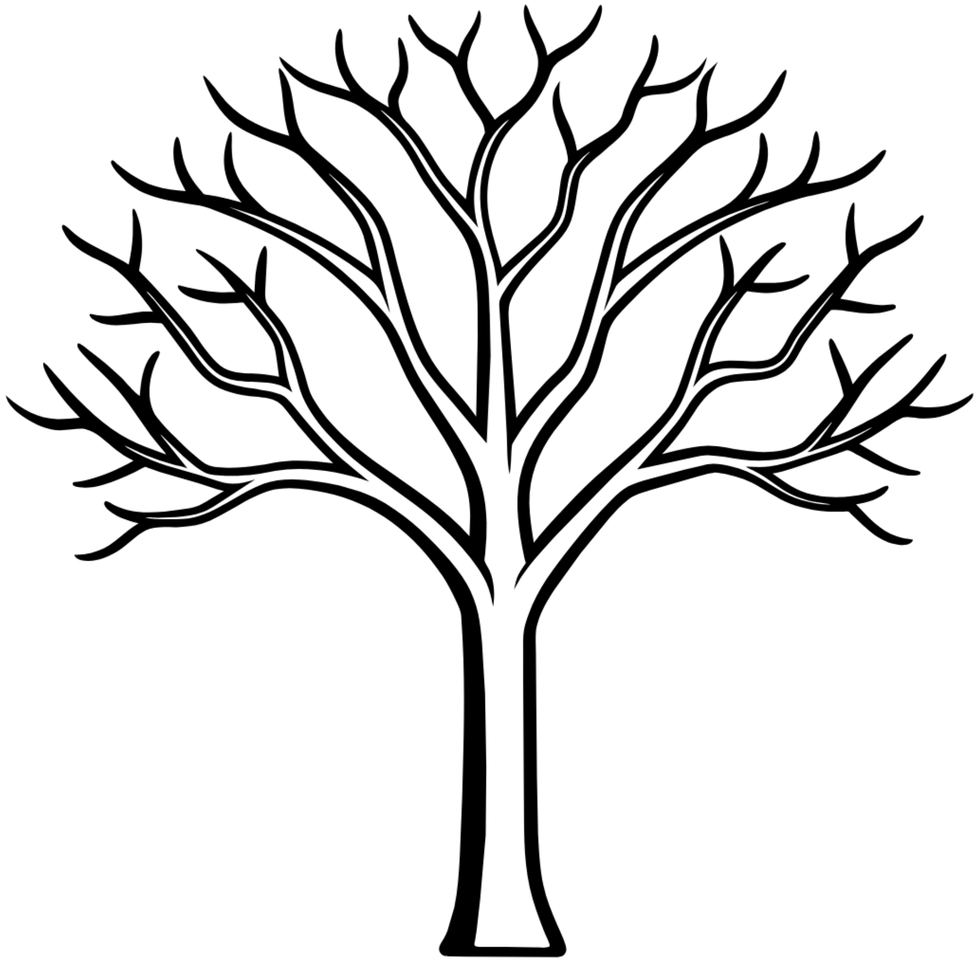
In what other ways could we leverage Deming's principles as Staff+ Engineers?

Keep searching for profound knowledge

- Big Picture Thinking
- Project Execution
- Levelling Up Others

- *7 Deadly Diseases of Management*
- *Plan-Do-Study-Act (PDSA) Cycle*
- *Red Bean Experiment*
- *Statistical Process Control*

A journey of discovery and self-reflection



"A leader's job is to understand his people, understand their differences; optimize their interactions, their educations, their experiences."

W. Edwards Deming at Western Connecticut State University
February 6, 1990

“You have heard the words; you must find the way. It will never be perfect. Perfection is not for this world; it is for some other world. I hope what you have heard here today will haunt you the rest of your life. Then I have done my best.”

W. Edwards Deming

Resources

For more information about Deming, please scan:

Photo courtesy of The W. Edwards Deming Institute®