# More Buzzwords Won't Help

Andrew Clay Shafer

goto; chicago

Ergonautic

*Stop Chasing Buzzwords*
*Start Working Better*

# The Long History of DevOps Failures

# The Long History of X Failures

Where ‘X’ is your favorite buzzword

# The Long History of Socio-Technical Failures

# Prologue

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*Failure, writ large and small*

Macro and Micro

In the moment and across time

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*Science advances one funeral at a time.*

– Plank's Principle

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*For every complex problem there is an answer that is...*

*...clear,*

*...simple,*

*...and wrong.*

– H. L. Mencken

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*probably the longest and most reprehensible delay in the adoption a known cure for a disease in the whole of history of medicine*

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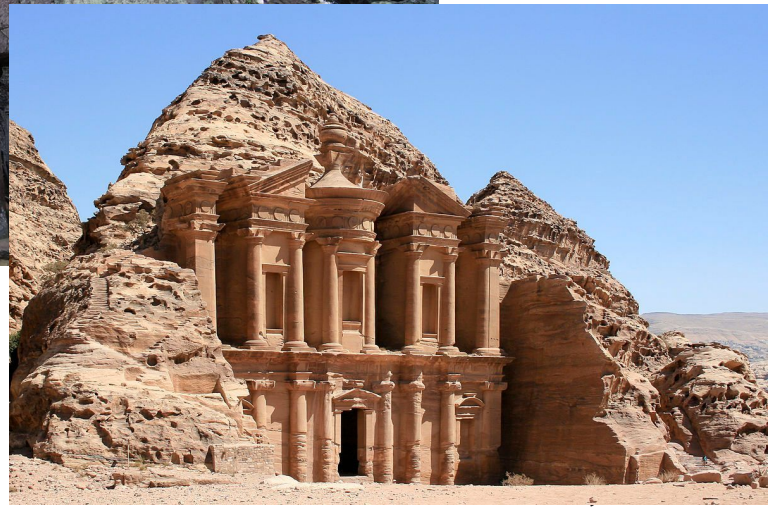
# Timeless Failures of Greatness



# Introduction

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IBM

# Prelude

# I invented DevOps

*This is embarrassing*

*I didn't invent DevOps*

*I stole it*

*good DevOps copy*

*great DevOps steal*

Optimizing the human experience and performance of operating software… with software… and with humans

—Andrew Clay Shafer

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*I didn't want a new word*

# *Agile Infrastructure*

*continuously devops microserverless with software and with humans™...*

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*My ideas were deeply influenced by W. Edward Deming*

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*"One gets a good rating for fighting a fire. The result is visible; can be quantified. If you do it right the first time, you are invisible. You satisfied the requirements. That is your job. Mess it up, and correct it later, you become a hero."*

# W. Edward Deming

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*During the second World War, Deming worked as a quality expert in armament plants throughout the United States*

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*Deming's approach helped them produce higher quality products while raising productivity and decreasing costs*

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*Deming approached everything as an opportunity to improve the system*

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*Then the war ended...*

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*He had all the data, but no one would listen to Deming*

*In the US*

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*And that might have been the end of it...*

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*Meanwhile, in the 1950s British coal mines...*

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# Trist and the Tavistock Institute

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The work organization of the new seam was, to us, a novel phenomenon consisting of a set of relatively autonomous groups interchanging roles and shifts and regulating their affairs with a minimum of supervision. Cooperation between task groups was everywhere in evidence; personal commitment was obvious, absenteeism low, accidents infrequent, productivity high.

The organizational model that fused Weber's description of bureaucracy with Frederick Taylor's concept of scientific management had become pervasive. The Haighmoor innovation showed that there was an alternative.

# Socio-Technical Theory:

*the quality of any organisational system can only be understood and improved if 'social' and 'technical' are both considered as interdependent parts of a single system.*

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Some of the principles involved were as follows:

1) The *work system,* which comprised a set of activities that made up a functioning whole, now became the basic unit rather than the single jobs into which it was decomposable.

2) Correspondingly, the *work group* became central rather than the individual job-holder.

3) *Internal regulation* of the system by the group was thus rendered possible rather than the external regulation of individuals by supervisors.

4) A design principle based on the *redundancy of functions** rather than the redundancy of parts (*Emery*, 1967) characterized the underlying organizational philosophy which tended to develop multiple skills in the individual and immensely increase the response repertoire of the group.

5) This principle valued the *discretionary* rather than the prescribed part of work roles (*Jaques*, 1956).

6) It treated the individual as *complementary* to the machine rather than as an extension of it (*Jordan*, 1963).

7) It was *variety-increasing* for both the individual and the organization rather than variety decreasing in the bureaucratic mode.

The idea of separate approaches to the social and the technical systems of an organization could no longer suffice for one such as myself who had experienced the profound consequences of a change in social-technical relations such as had occurred in the Haighmoor development. Work organizations exist to do work – which involves people using technological artifacts (whether hard or soft) to carry out sets of tasks related to specified overall purposes. Accordingly, a conceptual reframing was proposed in which work organizations were envisaged as socio-technical systems rather than simply as social systems (*Trist*, 1950a). The social and technical systems were the substantive factors – the people and the equipment. Economic performance and job satisfaction were outcomes, the level of which depended on the goodness of fit between the substantive factors.

| *Old Paradigm* | *New Paradigm* |
|---|---|
| The technological imperative | Joint optimization |
| Man as an extension of the machine | Man as complementary to the machine |
| Man as an expendable spare part | Man as a resource to be developed |
| Maximum task breakdown, simple narrow skills | Optimum task grouping, multiple broad skills |
| External controls (supervisors, specialist staffs, procedures) | Internal controls (self-regulating subsystems) |
| Tall organization chart, autocratic style | Flat organization chart, participative style |
| Competition, gamesmanship | Collaboration, collegiality |
| Organization's purposes only | Members' and society's purposes also |
| Alienation | Commitment |
| Low risk-taking | Innovation |

Hence the interest of the Haighmoor development, which pointed to the existence of an alternative pattern going in the opposite direction to the prevailing mode. The Divisional Board, however, did not wish attention drawn to it. They feared the power change that would be consequent on allowing groups to become more autonomous at a time when they themselves were intent on intensifying managerial controls in order to accelerate the full mechanization of the mines.

Having reached the whole organization system level, our research efforts (though on independent funds) were again stopped when a new Divisional Chairman took over. What had happened was seen in an entirely technological perspective – that of the new cutter-loader which had been introduced. Since this was judged not as good a bet for further mechanization as another similar machine, the whole project was regarded as not meriting continuation. Besides, granting more autonomy was not popular. The union regionally negotiated special pay for operators of new equipment. This broke up the unity of the face groups, which were further decimated when bonuses were introduced for various classes of workers. Within a year or two, the conventional system reinstated itself.

A report was submitted to the National Coal Board (*Trist and Murray*, 1958). The results were not disputed. But the Board's priorities were elsewhere – on the closing of uneconomic pits in the older coalfields and carrying the union with it in implementing the National Power-Loading agreement, deemed critical for full mechanization. It was not willing to encourage anything new that might disturb the delicately balanced situation as the industry contracted in face of the greater use of oil. On the union side, the Durham Miners' Association sent the report to the National Executive. No reply was received at the Tavistock Institute.

Autonomous groups do not always succeed. A good deal has become known about the conditions affecting their success or failure. These will not be reviewed here, except to note that one of the most common reasons for failure is lack of support in the surrounding organizational milieu.

Very early on in socio-technical studies it became evident that innovations in work organization based on principles different from those on which conventional bureaucratic organizations were founded were not likely to survive for long unless the organization as a whole changed in the new direction. Joint optimization involves a different principle from following the technical imperative. The group-centered primary work systems which are evolving in relation to it are radically different from the one-man-one-job units upon which conventional organizations have built their top-down hierarchies.

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*The primary reason we know of Deming now is because he went to Japan*

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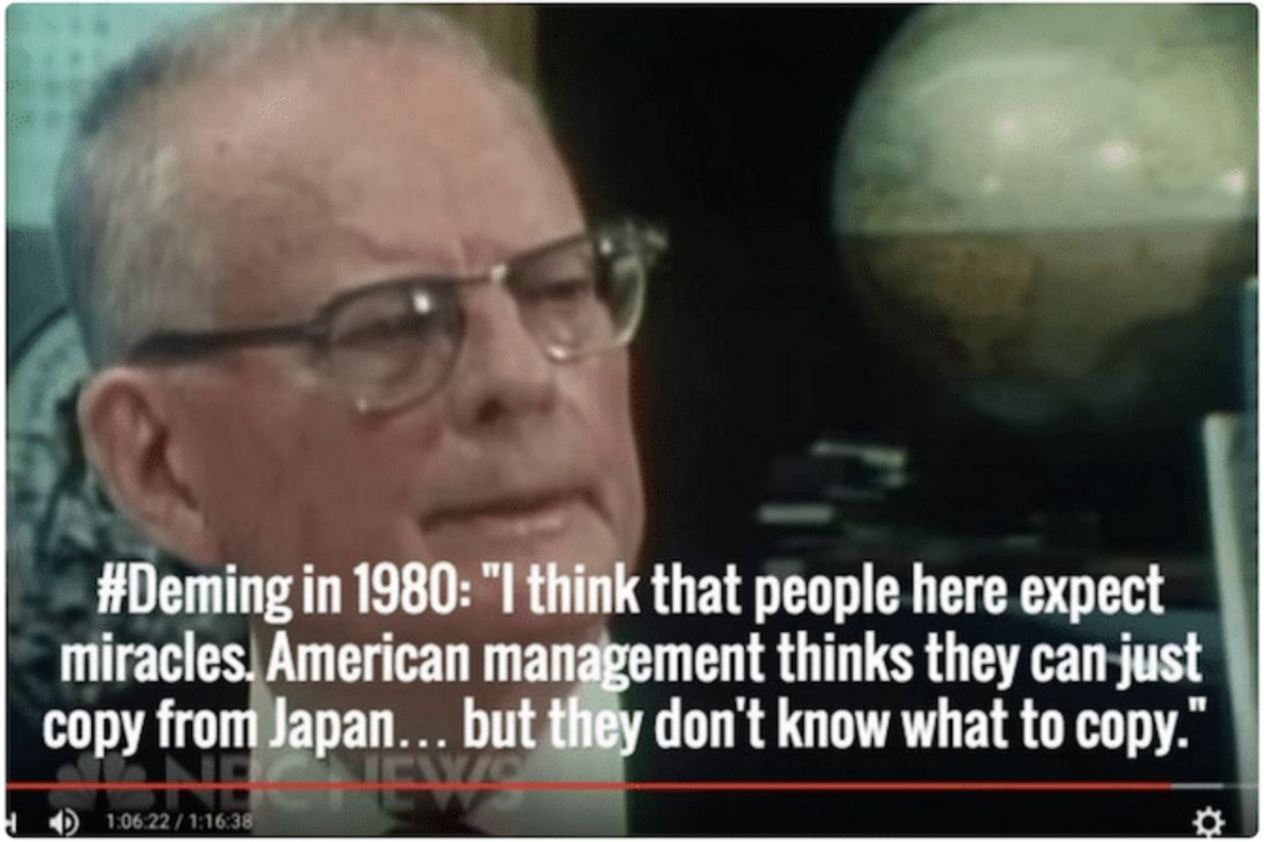
# If Japan Can, Why Can't We?

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# A prophet ignored in his homeland


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*No Deming, No Toyota, No Lean*

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*when American executives visited Japanese factories,*

*they thought the Japanese were hiding the truth,*

*they believed they were witnessing a pageant*

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# GM’s decline truly began with its quest to turn people into machines

Meanwhile, GM continued to lavish spending on big capital investments, confident that the secret to competitiveness lay in replacing humans with technology. But as in Lordstown, the spending bore little fruit. As automotive analyst Maryann Keller recounted in her 1989 book Rude Awakening, one GM executive observed that, between 1980 and 1985, the company shelled out an eye-popping $45 billion in capital investment. Despite that spending, its global market share rose by but a single percentage point, to 22%. "For the same amount of money, we could buy Toyota and Nissan outright," said the executive -- which would have instantly bumped GM's market share to 40%.

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*quality suffered because:*
*"Instead of making flawless cars, workers simply did their assigned jobs, workers had no big-picture goal of building cars together to motivate them."*

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# *Focusing on the technical without accounting for the socio never goes well…*

*"all you do is to automate confusion"*
*– GM Executive*

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# Ironies of Automation*

*Therefore one can draw the paradoxical conclusion that automated systems still are man-machine systems, for which both technical and human factors are important.*

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*The more advanced a control system is, so the more crucial may be the contribution of the human operator.*

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*Despite anyone's hope to the contrary*

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If this was easy, everyone would be good at it by now

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# everyone wants DevOps

well actually...

# what they really want

- reliability
- availability
- scalability
- operability
- usability
- observability
- all for free
- without changing anything

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without
changing anything

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without
changing anything

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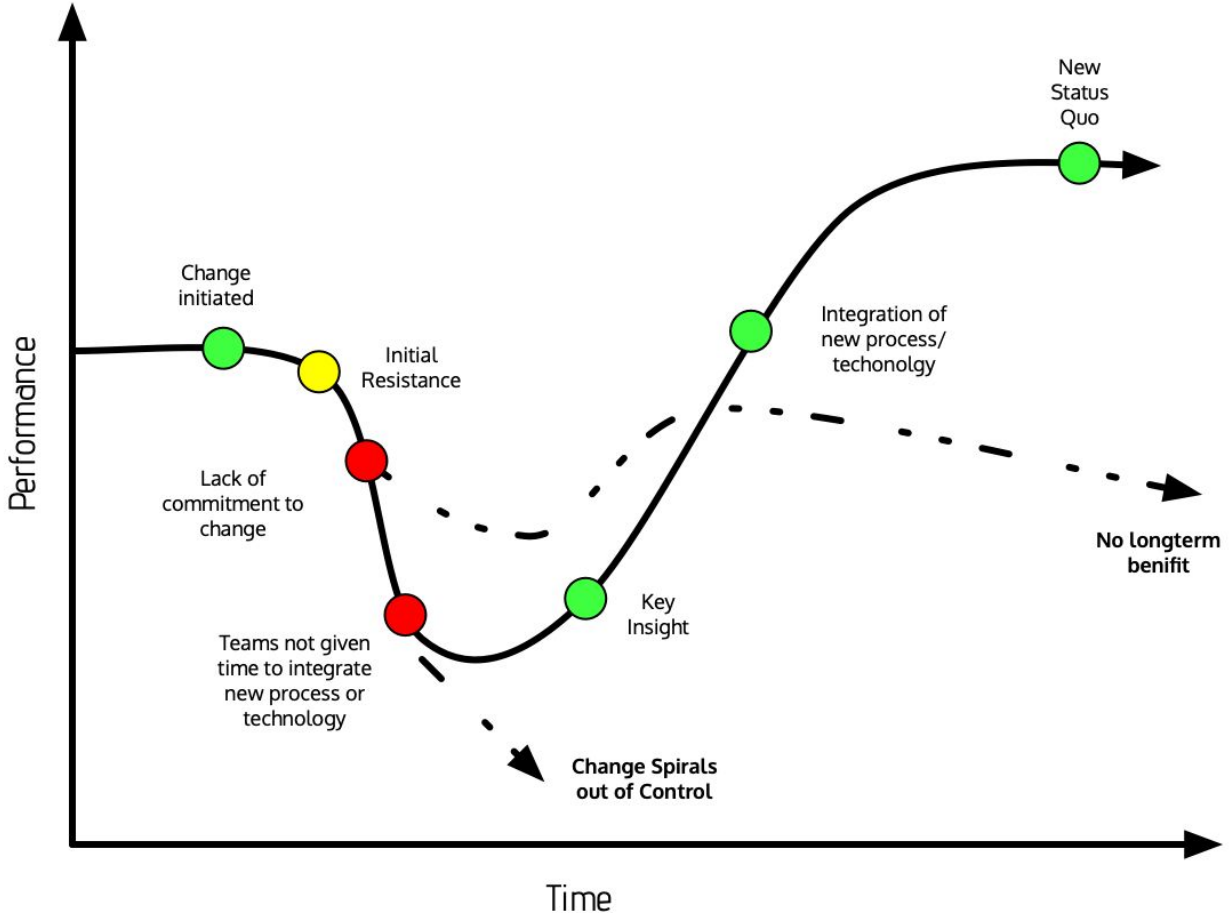
without
changing
anything

Performance almost always goes down

before going up

# J-Curve of Change is Hard

Jabe Bloom - @cyetain

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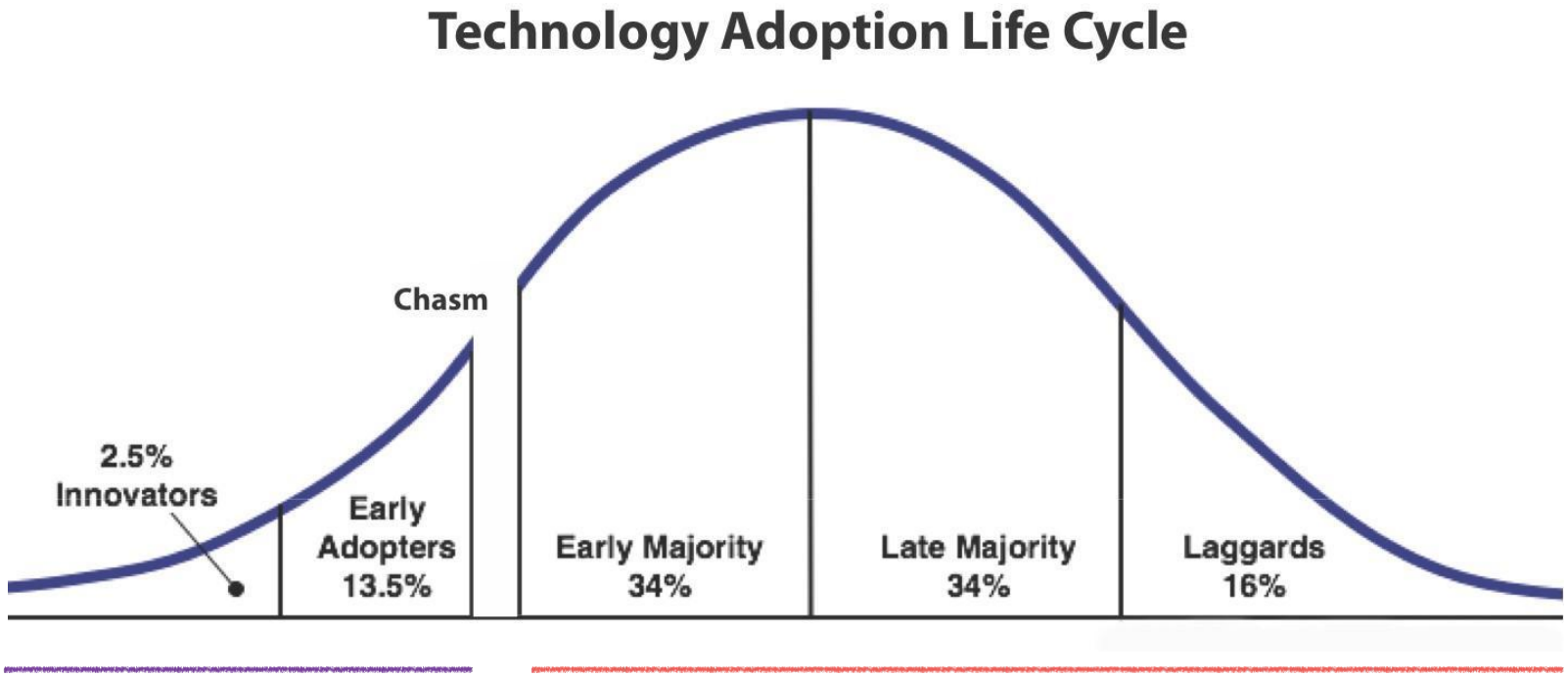


seeking advantage

seeking legitimacy

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words cross the chasm before understanding and practice

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*new words because novelty*

*new words because fashion*

*new words because funding*

*new words because tribalism*

*new words because org chart*

new words, same systems

same outcomes

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Very few organizations are actively optimizing their process

Very few individuals are empowered to do so

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the best time to plant a tree was 20 years ago...

the second best time is now...

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forego legitimacy

seek advantage

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change your organization...

or change your organization

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We can't just copy.

Netflix Google Honeycomb

Spotify Amazon Whatever

We don't know what to copy.

– W Edwards Deming

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This is a hard problem.

Was hard for Deming, hard for Trist.

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# Parting Thoughts

- Hard problems remain hard
- This isn't a technical problem
- This isn't a people problem
- We have to solve both together
- Don't give up 😊

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# Change is hard

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A bad system will beat a good person every time.

It is not necessary to change. Survival is not mandatory.

– W Edwards Deming

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# Thanks

## Praxis Makes Possible

*You have permission to learn anything... from anyone*

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