Twitter Thread by Gene Kim



Gene Kim
@RealGeneKim

Many of you have seen the famous Westrum Organizational Typology model, so prominently featured in State of DevOps Research, Accelerate, DevOps Handbook, etc.

This model was created Dr. Ron Westrum, a widely-cited sociologist who studied the impact of culture on safety

One Of The Highest Predictors Of Performance

Scenario A (Pathological)	Scenario B (Bureaucratic)	Scenario C (Generative)
Information is hidden	Information may be ignored	Information is actively sought
Messengers are "shot"	Messengers are tolerated	Messengers are trained
Responsibilities are shirked	Responsibility is compartmented	Responsibilities are shared
Bridging between teams and functional groups is discouraged	Bridging between teams and functional groups is allowed but discouraged	Bridging between teams and functional groups is rewarded
Failure is covered up	Organization is just and merciful	Failure causes enquiry
New ideas are crushed	New ideas create problems	New ideas are welcomed

Source: Typology Of Organizational Culture (Westrum, 2004)

@RealGeneKim

Thanks to Dr. @nicolefv, I was able to interview him for an upcoming episode of the Idealcast! ■

It was a very heady experience, and while preparing to interview him, I was startled to discover how much work he's done in healthcare, aviation, spaceflight, but also innovation.

@nicolefv I've read 4+ of his papers, so I thought I was familiar with his work. (Here's one paper: https://t.co/7X00O67VgS)

I was startled to learn he has also studied in depth what enables innovation. He wrote a wonderful book "Sidewinder: Creative Missile Development at China Lake"



@nicolefv Dr. Westrum writes about China Lake Research Labs: "its design and structure had one purpose: to foster technical creativity. It did; China Lake operated far outside the normal envelope... Sidewinder & others were "impossible" accomplishments, w/aplomb"

https://t.co/OjY5KSDbNK

@nicolefv I love this book because it describes traits of organizations that routinely create and maintain greatness: US space program (Mercury, Gemini, Apollo), US Naval Reactors, Toyota, Team of Teams, Tesla, the tech giants (Amazon, Google, Netflix, Google)

@nicolefv "Research and development is not a business that can be carefully planned and directed, not if you expect to make progress rapidly and economically." Burton Klein, Economist, 1958.

"What is the underlying science [and theory]?

@nicolefv "What accounts for successful innovation? What role do leadership and organizational design play?" What incredible questions!

"Today Rabinow, professional inventor w/230+ US patents, an advisor to NIST: 'all inventors come up w/many idea; you must know that most are trash."

@nicolefv One aspect Westrum hints at is need for constraints & scarcity. One factor for Sidewinder success is that it was hidden as an official program for years, classified as "fuse research," which could be easily classified.

This prevented expansions in budget, oversight, meddling

@nicolefv Counter-examples at this time were the Falcon (which became Phoenix), and Sparrow, both of which underperformed for years, unable to hit their targets.

Dr. Bill McLean is the center of the narrative, Ph.D. from Caltech, who led the program, and eventually China Lake

@nicolefv One dynamic with China Lake (let's call it CL) was minimum of organization and hierarchy: the important point: "Each person did the job for which they were best fitted. One day they'd be directing associates. Next day, it could be other day around."

@nicolefv In the interview, Dr. Westrum suggested that this is the opposite of a hierarchy, where managers tell workers what to do — instead, you want an org that give the job who can best do it.

That could be answering a question, dictating what the work should be, or doing the work.

@nicolefv Aside: that sounds kind of obvious, right? But contrast this to how many orgs actually work. This is about whether or not the organization respects knowledge.

"Lockheed Skunk Works shared many similar traits... Director "Kelly" Johnson promised P-80 Shooting star in

@nicolefv "...in 180 days; his hand-picked team did it in 141 days." Skunk Works was a small team, but China Lake had figured out how to scale this dynamic to thousands of employees

@nicolefv "Merle Tuve, maestro in charge of developing the proximity fuse in WWII, once said: "I don't want any damn fool in this laboratory to save money. I only want them to save time."

(Also resonates w/me. As @chawlady wrote: we stopped optimizing for cost, and optimized for speed)

@nicolefv @chawlady "Management theorist Deborah Dougherty argued successful products generally come from orgs whose design, mfg, sales, & marketing depts focus on meeting customer’s carefully studied needs.

@nicolefv @chawlady "Getting these four departments to focus on a common, well-chosen goal is the secret to success. What is remarkable about McLean is that he combined in a single person all these activities."

Dr. Westrum says that the literature calls this the "technical maestro"

@nicolefv @chawlady "In conceiving his missile, McLean determined to use “the minimum amount of garbage you had to hang on the rocket in order to make it home.” Experiments would tell him just how much garbage this was.."

(other missile programs burdened with lots of premature requirements)

@nicolefv @chawlady The dynamics of large, public, official missile programs (not Sidewinder): "years of effort go into preparing the systems, and often tests went badly. Millions of $$, and in some cases, fate of whole business divisions rode on the outcomes... Raytheon had 6K engrs on Falcon

@nicolefv @chawlady "...emotions ran high in the control room, and a man could break into tears when his missile failed." (painting the high-stakes dynamics in these massive programs that prematurely created rigid boundaries)

@nicolefv @chawlady Okay, taking a break. Will continue soon. I feel like I highlighted the entire book — I'm writing up my notes to clarify my own thinking on this. (thank you @RoamResearch)

...also, in addition to @nicolefv, while I'm thinking about it, my thanks to @jezhumble who first introduced me to Dr. Westrum's work, as it appeared in Lean Enterprise, and @allspaw, who sent me two of his papers over the years!

More to come later...