What is engineering culture

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Abstract

Many organisations say things such as "engineers work here not for the money, but for *the great soda*, *the games consoles in the office*, or *for the beer o'clock on Fridays*." How is it possible that in some organisations these superficial measures appear to make a huge positive difference; while in other organisations they seem to either not make any difference at all, or sometimes make the morale and attitude worse? Are these trinklets truly the core of what makes good culture in an organisation?

1 An anecdote

A small team that is preparing for a production release of a critical system; under the *DevOps* culture, the team is expected to support it in production. This meant working as hard as possible to improve the system's resiliency before it is released. The team prepared scenarios for what would happen if something went wrong; they practiced in several *war games* sessions in a pub, where one member of the team would break something in the development environment, and the remaining team members' task was to fix the problem–assuming they were notified through the monitoring system. Whoever managed to break something that the others did not notice or could not fix, won a beer. The total cost to the team lead was around £50 over several sessions, but the benefit of well-tuned system, and the team cohesion was indeed priceless.

Interview: The team
We found it exciting to be doing something that's we need, but with a twist of the naughty. We discovered several failures that would have caused us major headaches if not fixed by the time we went live. We felt that we really worked together, and that we could trust each other to get things going.

Interview: Team lead
It was exciting and invigorating to *hack* together. I was a bit frustrated that there appeared to be no support from the company. I didn't mind the money, but this is precisely the culture that the company has to support. I understand the beancounters' position that they can't be paying for pub outings, though.

How did this happen? It clearly wasn't organisationally-mandated (nor approved, as it would seem), yet it delivered the results that the organisation needed. It was an example of the team exercising *autonomy*. The morality of the anecdote is somewhat more difficult to judge: the outcome was desired, but result does not justify the means[2].

2 The hidden meaning

Notice that in the interviews in the anecdote above, the team members did not once mention any of the *typical corporate values*. It is therefore tempting to dismiss values such as diversity, inclusiveness, teamwork, and similar as *corporate nonsense*, but these are simply the *necessary, not sufficient* conditions. In addition to these standards, many organisations offer the treats mentioned above–coffee, soda, fruit, games, and many others. What difference do they make?

They make a positive difference is when the soda or the console are understood to mean that *the company values* its people; that beer o'clock means that *the company trusts* its teams to make the right choices without explicit supervision *and* when the other actions of the company align with the feeling of being valued and trusted[6].

They bring zero or even negative impact when other policies suggest that the engineers are not actually being valued or trusted. (It is even worse if the organisation does anything that might be seen as dishonest, unfair, or discriminatory.) It is difficult to provide an exhaustive list of what makes one feel not valued or not trusted; though examples from a sample of 152 engineers in various organisations show the following top 5 reasons for not being valued or trusted in Table 1.

	!valued	!trusted
Invasive monitoring	0	0
Unfair compensation	0	0
Special rules	0	0
Requiring, not giving flexibility	0	0
Unclear expectations	0	0

Table 1. Detrimental effects on morale

The damage done by allowing these top five to spread is immense; it is amplified by not acknowledging the damage, pretending that the deep problems do not exist. The two humorous examples that follow demonstrate just how easy it is to identify examples of trivial pronouncements of value

and culture, and just how grating it is when the stated and the experienced values and culture do not align.

to: everyone@acmecorp.com[4]

Employees are a company's greatest asset - they're your competitive advantage. You want to attract and retain the best; provide them with encouragement, stimulus, and make them feel that they are an integral part of the company's mission.

Pointy-haired boss

P. H. B. Our differentiating value-added strategy is transformational change.
P. H. B. How was that? Does anyone feel different?
Alice: My urge to hurl has increased a little bit.
P. H. B. That's what change feels like.

It appears that organisations should abandon pronoucements of culture and purpose and focus instead on proper incentives. Unfortunately, Alfie Kohn[3] writes "at least two dozen studies over the last three decades have conclusively shown that people who expect to receive a reward for completing a task or for doing that task successfully simply do not perform as well as those who expect no reward at all." He concludes that "incentives (or bribes) simply can't work in the workplace". DeMarco and Lister[1] go further, stating unequivocally that any kind of workplace competition, any scheme of rewards and punishments, and even the old fashion trick of "catching people doing something right and rewarding them," all do more harm than good.

That sounds like great news!–it appears that engineers do not care about money, and incentives are harmful, so the organisation does not have to worry. On the topic of compensation, Spolsky[5] writes "they don't care about money, actually, unless you're screwing up on the other things. If you start to hear complaints about salaries where you never heard them before, that's usually a sign that people aren't really loving their job. If potential new hires just won't back down on their demands for outlandish salaries, you're probably dealing with a case of people who are thinking, »Well, if it's going to have to suck to go to work, at least I should be getting paid well.« That doesn't mean you can underpay people, *because they do care about justice, and they will get infuriated if they find out that different people are getting different salaries for the same work*, or that *everyone in your shop is making 20% less than an otherwise identical shop down the road*, and suddenly money will be a big issue. You do have to pay competitively, but all said, of all the things that programmers look at in deciding where to work, as long as the salaries are basically fair, they will be surprisingly low on their list of considerations, and offering high salaries is a surprisingly ineffective tool in overcoming problems like the fact that programmers get 15" monitors and salespeople yell at them all the time and the job involves making nuclear weapons out of baby seals."

Best intentions gone wrong

The organisation introduces DevOps culture, which requires its teams to support the systems they develop in production. The organisation recognises the impact this will have, and decides to offer a bonus as compensation for the extra duties. To introduce the change, the company says that the support duties are *voluntary*, though in private the engineers are told that rejecting this *voluntary* duty will affect their bonus. Some engineers say that they have young children, some have medical problems that would make it very difficult for them to take on the support work. The organisation tells those employees that they can indeed opt-out.

The organisation is trying to do the right thing: DevOps is indeed a good way to build good quality software, and the experience the engineers gain from this is extremely valuable. The organisation also recognises the impact on its employees, and attempts to be flexible, and offer some benefits for the extra work. However, it fails. Using the word voluntary in this context is *dishonest*: examples of voluntary work are running the work football club, or managing a local technical meet-up, not providing production support. Offering a bonus computed as percentage of salary as compensation leads unequal pay for equal work: different projects need different levels of support, the team sizes are different: this breeds deep resentment. Even worse, the percentage-of-salary bonus may be downright discriminatory (e.g. engineers not getting a bonus *for having children*, or having to do more work for *not having children*).

The only systematic way out of this situation is to rename the bonus to *compensation*, and to compute the amount based on actual work done. Any other approach leads to unequal pay for the equal work or the possibility of discrimination.

Applying this to the first anecdote (where the demands for supporting the system in production clearly lead to more work) result in the organisation *not doing / providing anything extra*, *offering a bonus for the support*, or *offering regular pay for the support.*

The first option seems to fit the intrinsic motivation argument (the primary reason why people work here is not money); the second option provides clear incentive

References

[1] Tom DeMarco. *Peopleware: Productive Projects and Teams*. Addison-Wesley Professional, 2013.

[2] Thomas Hurka. *Drawing Morals: Essays in Ethical Theory*. Oxford University Press, 2011.

[3] Alfie Kohn. *Why Incentive Plans Cannot Work*. `https://hbr.org/1993/09/why-incentive-plans-cannot-work`.

[4] Anne M. Mulcahy. *Anne M. Mulcahy Quotes*. https://www.brainyquote.com/quotes/anne_m_mulcahy_424886.

[5] Joel Spolsky. *A Field Guide to Developers*. https://www.joelonsoftware.com/2006/09/07/a-field-guide-to-developers-2/.

[6] Joel Spolsky. *Joel on Software*. Apress, 2004.