The Best Part Is No Part

Idea In Short

Before optimizing a part or process, ask whether you need it at all. Musk's five steps are make requirements less dumb, delete, simplify, accelerate and automate. Deletion comes before optimization because improving unnecessary work wastes effort.

Radical Simplicity in Engineering

Some people call it unconventional or outside-the-box thinking. Being radically different means asking a different question. Instead of optimizing an existing part or process, ask whether you even need the part. This is lean thinking at its core. The breakthrough for many practitioners comes when learning about Critical to Quality [CTQ] thinking, which asks what truly matters to the paying customer. Lean is beautiful because it asks all the right questions. What is critical to quality that really matters to the customer? What is superfluous or nice to have? What is core to the function of the product, process or experience? If you took it away, would anyone care or notice? Have you asked the question why five times in succession? Clayton Christensen asked it differently but just as elegantly: what is the job you want the product to do for you?

Tour of Starbase

Dozens of Musk interviews and Tesla investor relations presentations exist, but few cover SpaceX. A YouTube influencer named Tim Dodd, known as Everyday Astronaut with 1.6 million subscribers, walked with Elon Musk through SpaceX and Starbase. The two of them talk rockets for hours in a conversation that is both impressive and largely unintelligible to the layperson. The turning point comes when Musk starts talking about lean. The goal of creating a fully reusable rocket requires dramatically different thinking. 1 Musk outlines a five-step engineering philosophy that applies far beyond rockets.

Step One: Make the Requirements Less Dumb

Musk's first step is to make the requirements less dumb. A lot of existing rules, standards and assumptions are dumb. As Musk notes, everyone is wrong some of the time, no matter who they are. It is entirely possible that a requirement, however logical at one time, is no longer relevant. Musk warns that getting requirements from very intelligent people is particularly dangerous because you might accept them as gospel without asking tough questions. Musk requires that all requirements are questioned and stress-tested. Do we really need that, and why? This is difficult to execute. Very few organizational cultures have the mission-driven focus or open-mindedness to openly question convention. Most organizations succeed precisely because they adhere to tradition, norms and precedent. 2 The cultural inertia against questioning requirements is strong.

Extreme Ownership of Requirements

Accountability is too diffuse in most organizations. Too often a department, a group or the vague they make a requirement. To cut through the confusion, Musk requires that every requirement have a specific person's name attached to it. This principle of extreme ownership prevents the common situation where everyone has a criticism but no one wants to own it. When a name sits beside a requirement, the conversation shifts from anonymous complaint to direct accountability. The named individual must defend the requirement or remove it. This practice forces intellectual honesty and surfaces requirements that exist only because no one bothered to challenge them.

Step Two: Delete

The second step is delete, and it is refreshing because companies so rarely do this. Organizations add products, offices, customers, employees, processes, exceptions, committees, task forces and meetings until it becomes bloat. Then comes layoffs, restructuring, re-engineering, cost reduction, cost takeout, zero-based budgeting and cutting the fat. Musk asks why not start at step one. What is the requirement? What is truly critical? How does the customer define quality? What is the customer willing to pay for? What alternatives exist for customer self-service, less periodic updates or a public dashboard? Can the problem be solved with a simple indicator flag? Strategy is saying no to things that are less important, non-critical or dilutive to winning. 3 If it is not needed, take it out. Musk remarks that if you are not occasionally adding things back in, then you are not deleting enough. The bias tends to be adding a process or part in case it is needed. You have not reached the limit of what should be removed until you have gone too far and need

to add it back.

Step Three: Optimize and Step Four: Accelerate

The third step is optimize, which is the part most people are accustomed to. Tweaking, improving and fixing what is already there is what MBAs and consultants do well. The problem is that they may be improving something that should have already been deleted. Musk gives an example of the Tesla team failing because they did all the steps backwards. Peter Drucker captured the risk: there is nothing so useless as doing efficiently that which should not be done at all. The fourth step is accelerate. The process is necessary, having passed the first three tests, and has been tightened. Now the team goes faster. The team knows what needs to be done and how to do it. The work proceeds at high quality, in the spirit of Six Sigma, and the team cranks through it.

Step Five: Automate

The fifth and final step is automate. Let the machine do the work. Let the process flow with no human interference. This principle reminds experienced consultants of an adage from 2006: do not use technology to automate a broken process. You will just die faster. Automation amplifies whatever exists upstream. If the upstream process contains waste, automation produces waste at higher volume and speed. The discipline of following the five steps in order prevents this failure mode. Requirements are questioned, waste is deleted, what remains is simplified and accelerated, and only then is automation applied. The sequence is the point.

The Best Part Is No Part

The phrase the best part is no part captures the entire philosophy. It is easy to love the concept and yet hard to apply. Most professionals spend significant time on activities that add no value. A realistic self-assessment might conclude that 30 percent of their time is spent metaphorically optimizing something dumb. The reminder is direct. What is the requirement, really? Can it be deleted? When was the last time something was added back because too much was deleted? A more meta point is that the intensity of lean varies according to the ambition of the mission. If the goal is a 5 percent improvement, the organization does not need to question everything and attach names to requirements. If the goal is to make humans an interplanetary species or to reorient the world's energy away

from hydrocarbons, then this level of lean may be the only way to get there. The ambition of the mission dictates the rigor of the method.

- 1Tim Dodd Everyday Astronaut Starbase Tour With Elon Musk
- 2Harvard Business Review On Questioning Assumptions And Organizational Change
- 3Peter Drucker On Doing Efficiently What Should Not Be Done At All

Summary

Musk's five-step philosophy is lean thinking at its purest. Question every requirement, delete what is unnecessary, simplify what remains, then accelerate and automate. The intensity of lean should match the ambition of the mission. The best part is no part.