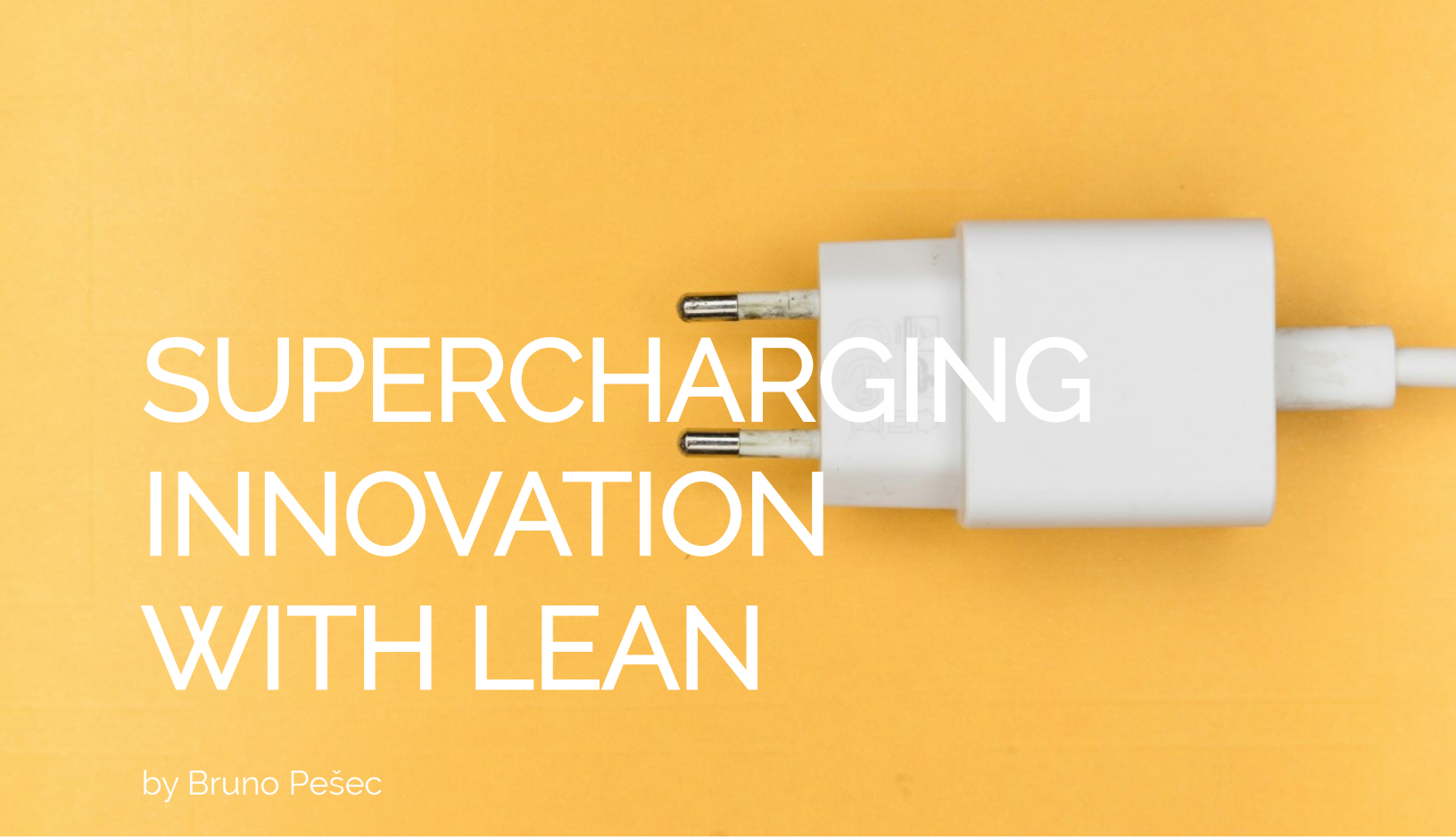

SUPERCHARGING INNOVATION WITH LEAN

by Bruno Pešec

Lean is about flow of value. Innovation is about creation of value. And they have more in common than some might like to admit.

In this article I will spotlight five specific lean practices and how they can be leveraged to innovate better. Each practice is briefly introduced, followed by applicability for innovation. Finally, I include recommended reading for further erudition and enjoyment.

My aspiration is to inspire you to action, for merely reading the list below won't make you a better innovator!

1. Go to the gemba

Practice

Although gemba means "real place" in Japanese, it is most often used to describe a place where work happens and value is created. This was, and remains, one of the most important aspects of any lean practice for one simple reason: if you want to improve work, you have to experience the work. And the best way to do so is to be right where the action happens!

Paying attention is a skill just like any other. The more you practice it, the better you become. Sakichi Toyoda would quietly observe the work at hand for days if needed.

He'd ponder and think and ruminate and pay attention to finest of details. By doing so he came up with over hundred patents that made a difference for his business.

One has to wonder if there is place for people like him in today's fast-paced world? Can you imagine a manager quietly sitting in the office, just observing and thinking how could they help their employees do work better? Faster? Safer? Less wasteful? Can you imagine yourself doing that?

Taiichi Ohno's chalk circle is one small practice worth trying. He would draw a circle on the ground and tell people to stand in it and observe everything around them. And take notes, of course. Combining that with assuming a curious mind—like that of an innocent child—will reveal a world full of wonderful opportunities to do better.

Using it to innovate better

In lean context gemba refers to the workplace, as I explained above. But for innovation context, the original meaning of the word is much more pertinent: "real place." Coming up with ideas in a context-less vacuum only results in wasted time and talent. Best ideas emerge at the points of friction, dissatisfaction, and frustration.

To generate better ideas, one has to immerse themself in the hands-on practice, whatever that might be in their business. Innovation is about creating value for the customer through new products, services, or business models. Therefore, one must become intimate with the customers' gemba! Experiencing their "real place" is critical to understanding what they truly value.

Recommended reading

Imai, M. (2012). *Gemba Kaizen: A commonsense approach to a continuous improvement strategy* (2nd ed.). McGraw Hill.

2. CEDAC

Practice

Cause-and-Effect Diagram with the Addition of Cards (CEDAC) is what you get when you combine Ishikawa's cause-and-effect diagram (i.e. fishbone diagram) with Johari window technique and crank it up to 11. It is a wonderful tool for participatory problem solving that combines data collection and analysis with peoples' creativity and experience.

CEDAC, as Fukuda explains it, is actually a whole process rather than "just" a diagram. First we analyse the desired effect (e.g. a specific problem and its effect) using the modified Johari window technique. Then we construct the CEDAC diagram which has straight line leading to the effect and a number of lines connecting to it which represent probable causes. We list fact cards to the left of each causal line, and improvement cards to the right of the same line. Final step is testing improvement ideas and standardising those that work.

I'll explain the window technique, since that feature distinguishes CEDAC the most from traditional Ishikawa diagram.

Window analysis is an important step because it helps us categorise the nature of the situation: A is the ideal, B indicates there is a problem with practice, C signals problems with communication, and D means there are problems with standardisation. It is essentially a 3 by 3 matrix comparing how much do two sides (e.g. current/future process or department A/B or company/customer) know about the problem and how to prevent it (see Figure).

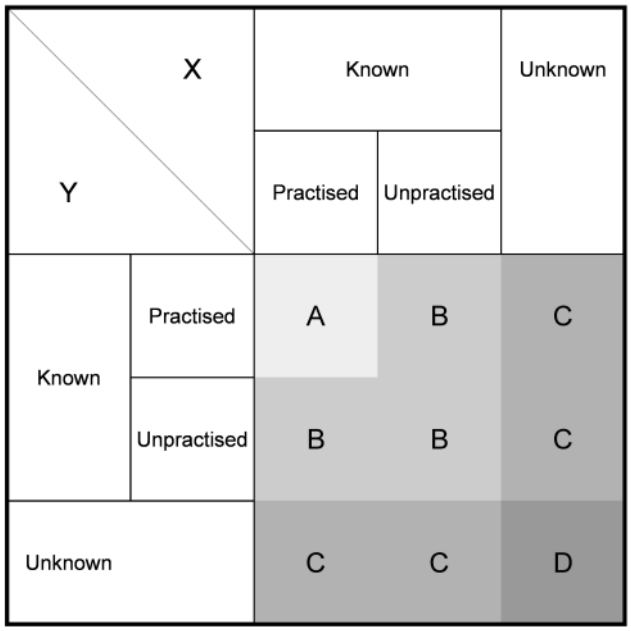

Figure: Window analysis for CEDAC. Adapted from Fukuda (1989).

Using it to innovate better

Outcome-driven innovation and jobs-to-be-done theory are two strong and reliable approaches to innovation. Even if you are not familiar with them, you might guess what they focus on just from their names. Yes, they are about understanding what outcomes the customer desires and what jobs customers do achieve that. If only there was a whole host of practices about job analysis... OK, I'll stop with cheeky allusions.

CEDAC is a complementary tool to popular visual tools in the innovation space like Empathy Map and Value Proposition Canvas. By putting customers' desired job at the end of CEDAC diagrams (e.g. define problem and target effect from the customer's perspective), then one can follow CEDAC steps to (1) understand the nature of what prevents customer from getting the job done, and (2) figure out how to help them achieve that better—based on facts, first-hand data and tested ideas.

Recommended reading

Fukuda, R. (1989). *CEDAC: A tool for continuous systematic improvement*. Productivity Press.

3. Suggestion cards

Practice

Suggestion systems (kaizen teian or meyasubako) never really took off like they did in Japanese companies. But that doesn't mean there isn't anything to be learned from them. Practising how to write suggestions is one of those skill that is very useful!

The only way to candidly discuss ideas is by taking them out of our heads and making them more tangible by (a) writing them down, and (b) illustrating them. Once we have this tangible artefact we can examine it critically, scrutinise it, shake and rattle it, and do any other unpleasant thing that we would not do to each other.

Good suggestions are clear; describe the current situation using data, observations, and visualisations; describe the improvement plan, including underlying rationale for it; and describe the benefits for all involved stakeholders. They evoke vivid images, and are concrete in their focus.

Bad suggestions are abstract and fluffy; consider opinions, wishes and complaints instead of data and facts; have no rationale for improvement; require large investments; and are too narrow or broad for the problem at hand.

Using it to innovate better

The only difference between improvement and innovation ideas is scope! (For a more granular way to distinguish between improvement and innovation initiatives we recommend the "Dogmabuster: On why improvement versus innovation is nonsense" published in theleanmag #17.) Therefore, getting better at writing idea suggestions is very useful for innovators as well.

At the very minimum, good idea card will have answers to questions like who is it for, what is it about, how is it made, and how do the stakeholders benefit from it. Simple? Yes, and that's the point!

Recommended reading

Japan Human Relations Association (Ed.). (1988). *The IDEA Book: Improvement through TEI (Total Employee Involvement).* Productivity Press.

4. Standard work

Practice

"This doesn't make sense..." I still vividly remember how confused I was at my first engineering job. I've been working at the plant for few weeks, and I noticed that each shift worked very differently—despite end product being exactly the same. Complaining about the (lacking) quality of previous shift was mandatory routine, regardless of actual state.

Having read the Toyota Production System and spent some time with their engineers, I thought it'd be smart to standardise this whole show a bit. After all, aren't we all trying to achieve the same thing here?

Since end product would always conform to the customer's requirements, my suggestions were waved away. "You have to forget everything you learned at school! This is the real world!" At that time I was gullible and inexperienced enough to question that, so I found my own way of doing things too.

Today I recognise the immense value of creating standard work. It might not always be in the form of standard work sheet containing cycle time, work sequence, and standard inventory, but it still delivers on the core concepts: providing at-glance visual with clear and standardised steps everyone agrees upon.

Using it to innovate better

Some people believe innovation and standard work combine as well as water and oil. But that couldn't be further from truth. Usual

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argument is that innovation is about unbridled creativity and incomprehensible uncertainty. But that is myopic view of innovation.

While outcomes might be uncertain, that doesn't mean that our own innovation processes cannot be standardised! I'm talking about things like how do we come up, capture, and document ideas; how do we decide which ideas to invest in; how do we create innovation teams; how do we manage innovation portfolios; how do we design and implement innovation strategy; and so on.

Parts of the innovation process can—and should—be standardised. By doing so we create even more space for human creativity and expression, not less.

Recommended reading

Ohno, T. (1988). *Toyota Production System: Beyond large-scale production*. Productivity Press.

5. Know thy knowledge waste

Practice

I'm sure you are familiar with the classic seven wastes: overproduction, waiting, transporting, over-processing, inventories, moving, and making defective parts and products. When Ohno came up with them he was primarily concerned with flow and transformation of material and maximising value in the process.

But what about processes where generating knowledge is the main value driver? Like a product development or R&D function? Here Ward and Sobek offer three categories of knowledge waste, each with two associated wastes:

- Scatter. Waste caused by interruptions in the design process.
    - Communication barriers. Waste caused by interrupted flow of knowledge.

    * Poor tools. Waste caused by ineficiente techniques.
- Hand-off. Waste caused by separation of knowledge, responsibility, action, and feedback.
    * Useless information. Waste caused by having to create progress reports and observe red tape due to hands-off approach.

Waiting. Waste caused by waiting for each other due to gated, linear processes.

- Wishful thinking. Waste caused by making decisions without data.
    * Testing to specifications. Waste caused by testing according to design specifications instead of failure.
    * Discarded knowledge. Waste caused by failing to document all the learning accumulated during development.

Just like becoming aware of seven wastes pointed out by Ohno helped us improve production processes, so can becoming aware of knowledge wastes help us improve development processes.

Using it to innovate better

Innovation, as a process, is fundamentally about knowledge generation. We have a number of unknowns, and we are running experiments to learn more about our assumptions and hypotheses. As we learn, we tweak our direction little by little, until we have that hit innovation.

Unfortunately, too few innovation teams spend time to meticulously document their learning, which is quite a pity for the following reason. Most of the innovation projects don't show any returns for at least three to five years. The easiest way for them to immediately generate organisational value is by making their learnings accessible to others in the organisation. That way existing functions can use valuable insight to tweak existing products and process for the benefit of everyone.

Recommended reading

Ward, A. C., & Sobek, D. K. (2014). *Lean Product and Process Development (*2nd ed). lean Enterprise Institute.

Parting words of wisdom

Please do not consider the above as an exhaustive list of lean practices relevant for innovation. Rather think of them as inspiration for reflecting upon your own lean skills and how you too can be a valuable contributor to innovation initiatives, projects, programmes, and other endeavours. Worlds of improvement and innovation are much closer than they might seem at first. Go out and create some value!. ■