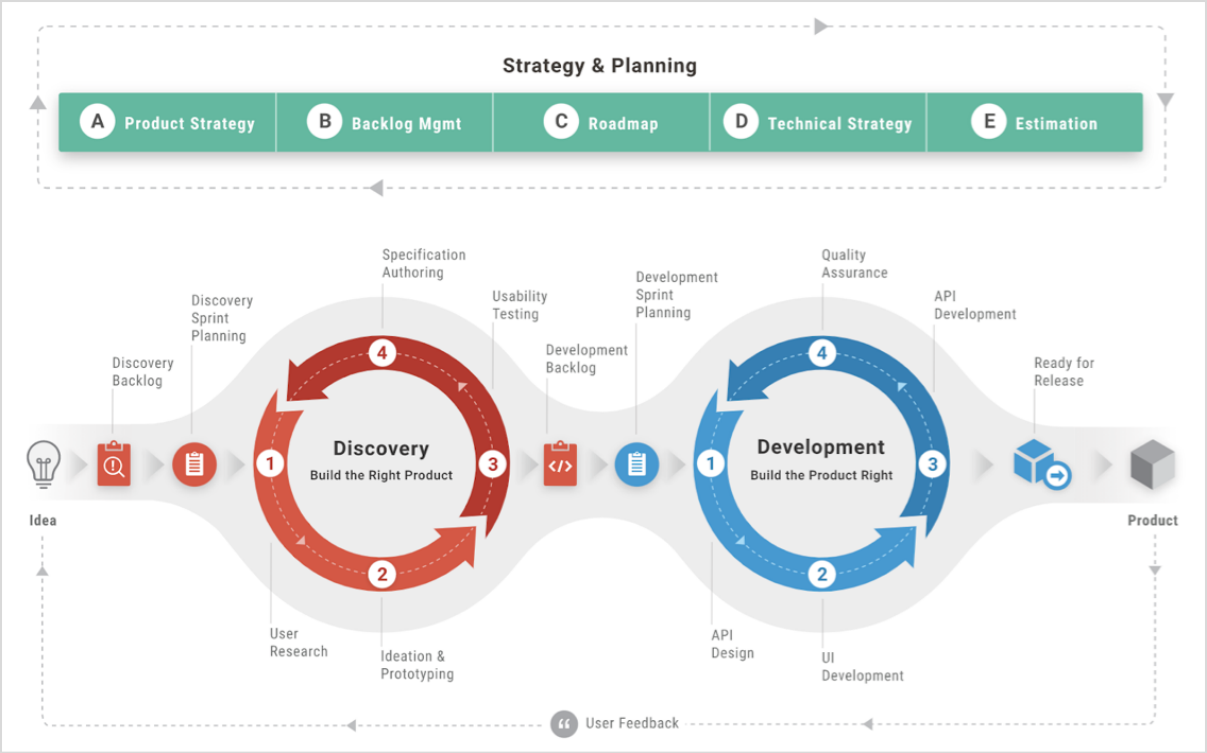
Engineering Excellence (EEx)

- Software development practices have evolved over time and each has had its own limitations which have resulted in adopting new practices or processes every time.
- What many have missed is, combining the best practices of the past and current to drive software development.
- Novo is currently transitioning from the **Building the right product** phase to the **Building the product right** phase of the product life-cycle.
- This means, shipping newer version of the product that do not frustrate users and do not burn out our Engineers!
- While the engineers are working dedicatedly to focus on the product deliverables, we need a team that works for them!
- In other words, we need to put in extra time and effort to traverse both horizontally and vertically across the engineering teams to identify the different low-level, mid-level and high level problems faced by the engineers to deliver efficiently.
- This needs to be taken care of by a dedicated team that focuses on the Engineer challenges and problems, uplifts the current ecosystem from the birds eye, as well as from the fish eye.
- These challenges could be as simple as not having time to research, to as complex as what is the strategy that we should adapt to migrate our current repo to the latest versions without affecting business as usual.
- In simple words, EEx Team works for the engineers, does the research for them, validates their ideas, assists them hands on by taking up tasks one after the other to uplift the technology, or improve a functionality.
- While the engineers focus on product deliveries and the life-cycle, the EEx Team focuses more on the challenges faced by the engineers by observation, counselling, coaching, training, mentoring, or even coding.
- Research, innovation spikes, teaching a new framework or a technology, identifying issues in the approaches and suggesting improvements, migration strategies, finding the right tools, could be considered as some attributes that the EEx Team would focus on.

Initial Plans

- Execute the approved ADRs and set examples.
- Increase code readability for the engineers and ensure to set a standard.
- Improve the log traces for more efficient debugging and ensure to set a standard.
- Suggest, build and maintain best practices across engineering teams.

Why do we need an Engineering Excellence Team?



- As you can see, in a product's life-cycle, there is a discovery phase and a development phase. In the discovery phase we are trying to figure out what to build.
- In this phase, the team or company has limited budget and time to figure out what is the product that users will want to use. The team just needs the level of quality of the product so as not to annoy test users and perform *validated learning* to refine the MVP (Minimum Viable Product).
- However, once the product-market fit has been determined, the objective shifts from figuring out what product to build to building the product right.
- Somewhere during this transition, the engineering team will have to reach the stage of *sustainable development* and in order to achieve that, you need Engineering Excellence.

What does the Engineering Excellence Team do?

In order to better understand the core focus area of the EEx Team, let us bifurcate it into four pillars.

1. Craftsmanship
2. Effectiveness
3. Productivity
4. Happiness

Craftsmanship

The very heart of excellence, Craftsmanship is about our skill-sets, how well we build our software, how much thought has been put into the architecture, implementation and testing of the product. Some thought attributes to keep in mind:

At an engineer level:

- How confident are you that your work will stand up to the scrutiny of your peers?
- Are you as an engineer proud of your work? Would you feel embarrassed if it were to be open sourced?
- Do you keep yourself up to date with current technologies and the state of the art of your field regularly?

At an organisation level, we look at:

- Does the organisation provide the resources for engineers to upgrade themselves?
- Does the organisation provide the mechanism to reward or celebrate engineers?
- Do the leaders provide mentorship and counsel to the rest of the organisation?
- Do the leaders regularly update themselves with current technologies at the level that enables them to make good decisions?

Effectiveness

Deals with problem solving, project management and execution ability. Some aspects:

At an engineer level:

- Do you have the confidence to execute commitments on time and on budget?
- How well do you estimate effort when scoping our engineering tasks?
- How good do you identify technical and project risks and communicate them effectively?
- How efficiently are you able to isolate root cause of the issues?
- How effectively do you use data to make decisions, analyse impact and communicate findings?
- How do you hand over your code bases? Do you design, document in a standard way?

At the organisation level:

- What are the obstacles at the team level that engineers face blocking them from delivering on time?
- What are the sources of inter and intra team friction that obstruct team cooperation?
- How effective are leaders in building and fielding teams for tasks and projects? Does the organisation provide them with the tools needed to do this?

Productivity

This deals with the efficiency in problem solving and execution of tasks. Some aspects:

At an engineer level:

- Are you spending more time on things that matter rather than the things that don't?
- * Do you have sufficient, uninterrupted blocks of maker time to design, build and test?
- How quickly are you able to zoom in to the most critical issue at hand, be it troubleshooting a bug, isolating a design flaw or identifying an "unknown unknown" in requirements?
- How good are you at getting things done right the first time?
- Do you document your work and systems or make them self-service so that you don't have to be constantly bugged to support it?

At the organisation level:

- Does the organisation have the infrastructure in place so that much of the run-of-the-mill tasks are either automated or self-served? Does the organisation have the culture of automating routine tasks?
- Does the organisation have the infrastructure in place to enable and empower engineers to troubleshoot issues in as short a time possible?
- Does the organisation create too much distraction that engineers have difficulty establishing blocks of uninterrupted maker time?
- Is key technical information easy to locate and navigate?
- Do leaders shield their teams from time wasting and potentially highly interrupting activities?

Happiness

It is quite clear that if engineers are not sufficiently engaged and supported, there is no way they will be able to derive satisfaction in the work and the finished product or wake up each day to build better and be better at their craft. Also, in the global tech talent grab, great engineers are always in demand. You can't have Engineering Excellence if your best engineers are frequently being poached away.

To this end, some of the questions the engineering organisation and leaders need to answer are:

- Do engineers feel a sense of ownership of the system they are building or maintaining?
- Do engineers feel part of the team they belong to and are able to contribute to the success of the team?

- Do they (the engineers) agree with and support the technical direction of the team and the engineering organisation as a whole?
- Do they feel sufficiently intellectually challenged with the work they are assigned? Or are they overwhelmed?
- Do they have a creative outlet to try out new ideas eg. hackathons, side-projects, that are supported by the organisation?
- Do they feel sufficiently compensated?
- Do they feel that they are sufficiently supported both technically and non-technically by their team and the larger engineering organisation?
- Do their leaders provide timely and actionable feedback for their work?
- Do they feel they are able to grow and are supported in the growth of their career in the team they are in and the larger engineering organisation?

#engineering/excellence