Using the Generator

The generator gives your team a single place to share your progress on your primary task: creating innovative engineering value for your customer.

The generator is a flexible tool. It needs to be flexible as projects are diverse, teams are diverse. These notes are thought-starters rather than a “follow the bouncing ball” set of procedures.

Innovation Tracker: The colored diagram in the top left corner is the first thing to consider. Let’s call it the Innovation Tracker.

The Innovation Tracker was developed from an article by Evanson and Dubberly

Here is how you use it:

Start with your project hypothesis…. It should state something falsifiable that, if true, will allow you to take a relevant value-creating action. This might be a statement like “many older motorcycle riders would love a fully self-balancing motorcycle and would pay a premium to own one”.

Then move down and clockwise round the diagram as you gather new information and insights. This will gradually lead you to create a prototype (this might be physical, conceptual…) and try it out.

While you are having a team meeting, or working alone, notice the kind of work you are doing. Then check with the model to see if this is the best place to be. If you get ahead of yourself you may be building on shaky foundations. You may go ahead a bit and then realize the need to backtrack. If you mark your location as you use the
generator, and join up the marks, the hard copy in your generator book will provide you with a trace of where your thinking/doing journey has taken you …..

The Pitch Deck: The pitch deck is a powerful tool that helps you see how you are going and whether you really have your thinking clear.

Many people will write the statements they are unsure of in RED, the ones they are more sure of in BLUE and the ones they are confident of in BLACK. Again, this will evolve over time.

The Business Model Canvas (BMC): There is lots of material on the use of the BMC as any search engine will show you. Here is one and you may use it a little differently in CIE.

It is useful to know the business context if you are to do effective engineering. In fact most engineering is in the service of a business goal, either directly or indirectly. If you create a canvas that captures the context of your project then, as with the pitch deck, it is useful to indicate your level of confidence in RED, BLUE, and BLACK.

The BMC and the Pitch Deck give you the context to see what sort of engineering innovation is required to meet the commercial context. Remember, “great engineering” that nobody wants to buy is not really great at all. No customer, no future!

What Now: Once you have this context and direction you can see what questions you need better answers to. That is where the “What now” section comes in.

Lessons Learned: These lessons are from the previous week as well as any new learning from this week. You may even need an additional A4 sheet pasted on to capture all the learning (if you are learning a lot).

A last thought. Many businesses, and academics too, are starting to see Engineering as encompassing the commercial design as well as the technical design. In this way, the “full design” of the opportunity can effectively synthesize the technical and commercial aspects by iterating between them. This avoids technical designs that are limited (when they underestimate) or imperiled (when they overestimate) by what the commercial design assumes is possible.