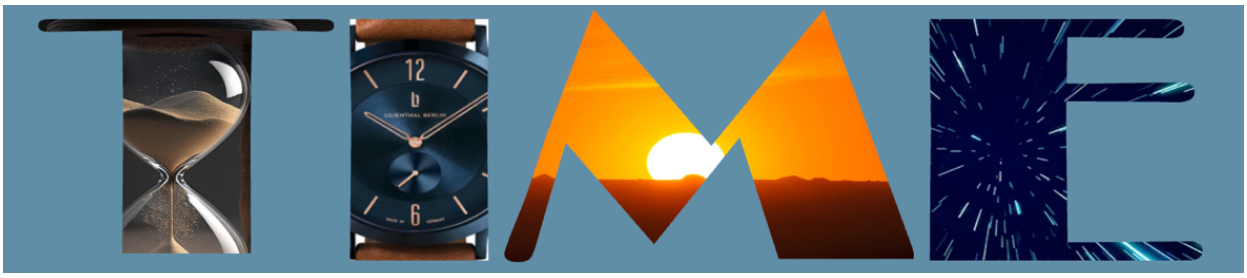

Time matters: Consideration on timing and speed

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Much has been written about the difference in amount of time needed to implement a change between hardware and software (between the time to change a few lines of codes and the time to change a dimension or features on a physical part). But what about timing? And how can you "buy yourself some time"? Giving a few examples, this blog dives into the importance of **speed and timing**.

Timing. Manufacturing still relies on humans taking a lot of decisions, and humans need rest. Holiday time is important, but when most of the employees take it at the same time, it will slow business down. Avoid needing decisions made or parts manufactured in a rush during the Chinese New Year (when manufacturing in Asia), or during the summer months of July and August (when using contract manufacturers in Europe).

Speed optimization. To maximize your speed of change, consider developing a close relationship with nearby machine shops. This means selecting a few partners based on the quality and lead-times, and not running an RFQ for every set of parts. With time, your manufacturing partners will also know your style and your product, which can avoid costly mistakes (if they pick it up before the start of production) or even results in improvements to your product.
You can also choose the path to building up your own capabilities. A properly manned small machine shop with some CNC machines and a few additive machining equipment can shorten the lead time for testing.

Cost of slowness. When you keep in mind the manufacturing triangle (Quality, Cost, Time) it becomes clear that if you want to go fast, it will cost you more (and if you sacrifice quality, it will cost you even more!). The more money you can spend on manufacturing, the faster you can go (up to a point).
If you do not have enough fund, the only acceptable option is to go slow, and that is a risk. A speaker company I know about was planning on leveraging a novel technology but took so much time to finalize and manufacture the product that by the time they delivered it, the technology had become mainstream. As a result, not only were the customers not

impressed, but the company then faced a lot of competition. It could not justify their planned premium price and went bust (I oversimplify a bit here to make a point).
If your product is in a niche market, you are given a bit of leeway. You can keep on going for a while, even ever so slowly, because no commercial venture is interested in your space. This of course says something about the market and the possibilities, but if you believe that there are good reasons to do it (not all financial), then you can keep going for a long timcan afford to go slowly up to a point. A few months ago I met with Debby Marchena at the Waag-FutureLab in Amsterdam. She has been working on the LightUp cane for over six years now. She knows all that is needed to bring her hardware product to consumers. The map is clear, what has been done and what is left to do also (she even made some handout cards summarizing it all for potential investors). Her product is meant to solve a real problem (the visibility, from a vehicle, of a visually impaired person holding white-cane in the dark) but for a relatively small number of people, and it is intentionally not using a lot of high-tech. Debby can keep on bootstrapping for a bit longer but at some point, funds are needed (because this is not craft (like a birchwood conductor baton that can sell for $100 a piece) but an improved (safer) product that cannot justify a much higher price than the basic, mass-produced model.

Changes will need to happen, and resources can only be stretched so far to increase the speed of change. A good business executive will know how to leverage the strength of its team, the company funds, and the business relationships to minimize the impacts of changes on the timing of product release. Not all battles need to be won in order to win the war, or, since it is Tour de France season, you do not need to win all stages to win the Tour.

I am looking forward to your comments on this blog focused on the importance of **speed and timing** when implementing changes to a hardware product.

Information and disclaimer: This article is based on the work I have delivered as manufacturing, operational excellence, and NPI advisor (through Enging), as industrialization expert teacher (S2Xpeed accelerator), and as business development director (Kaifa Technology Co.)