

A Simple Framework for Designing IoT Products (Microcourse #2)

IoT Product Pitch

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Use Case

Traditionally, when counting stitches or rows while knitting, the crafter must count in their head, on paper using a pen, or with markers that have a built-in counter that you manually turn. This requires them to either slow down their knitting speed or halt it altogether, so they can record their progress and not lose track of where they are. Plus, the human factor makes it error-prone.

Solution: Wireless Stitch Counters

1. **Product Infrastructure** – Stitch markers (one type for counting rows, another for counting stitches), smart phone, crafter
2. **Sensors** – Accelerometer, gyroscope, microprocessor, shield
3. **Connectivity** – WiFi, cellular
4. **Analytics** – Uses *Product Data* gathered from the motion generated by the knitting needles (for counting stitches) and the project itself (for counting rows) while the crafter is working. Also uses *Enterprise Data* by going out and getting information from other Ravelry¹ users who have also made the pattern. From this, the user can understand their stitch count and rows completed (for this one project, for all time, or other time periods), how fast knitting speed is from one day to another or compared to others who did the same project, compare status with friends, earn “trophy” or other rewards, how many rows/stitches to do per day to complete the project by a certain date, even help with understanding tension and consistency with regard to that (something most knitters struggle with!), and more.
5. **Smart Apps** – An app the crafter has open in front of them dynamically updates to show at any given moment the current stitch count and how many rows completed, and when not actively knitting they can explore the app features and stats available (described above in Analytics).

Benefits

This makes stitch counting fun and interactive (usually, it’s the opposite). By strategically placing the wireless stitch markers, a crafter can use an app on their phone without having to halt their crafting progress or lose track of where they were. The crafter can get encouragement and tips from other crafters, earn rewards that help them stay motivated, and access helpful data about a particular project. Pattern makers could even leverage the app to do group activities, such as a knit-along, for their pattern where those interested in participating are put into a group with others who are doing the same thing, furthering the interaction, encouragement, and fun with statistics and learning.

¹ Popular social website for knitters and crocheters.