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# Prototyping

A guide backed by science

Information Adapted from: <https://uxplanet.org/back-your-prototypes-with-science-8-methods-explained-cdd58d9a8f42>

**Prototype however is a very broad term, describing handful of items.**

- What are the differences then?
- Is it always worth going for a hi-fi mockup?
- A rough sketch may bring you more honest answers.

# **What a prototype *actually* is:**

- “A **prototype** is an early sample, model, or release of a product built to test a concept or process” – Blackwell, A. H.; Manar, E.
- The word ‘early’ is critical for understanding the main purpose of prototyping – cutting costs of the development process.
- Testing early and often requires prototypes to appear early + often



## Napkin Sketch

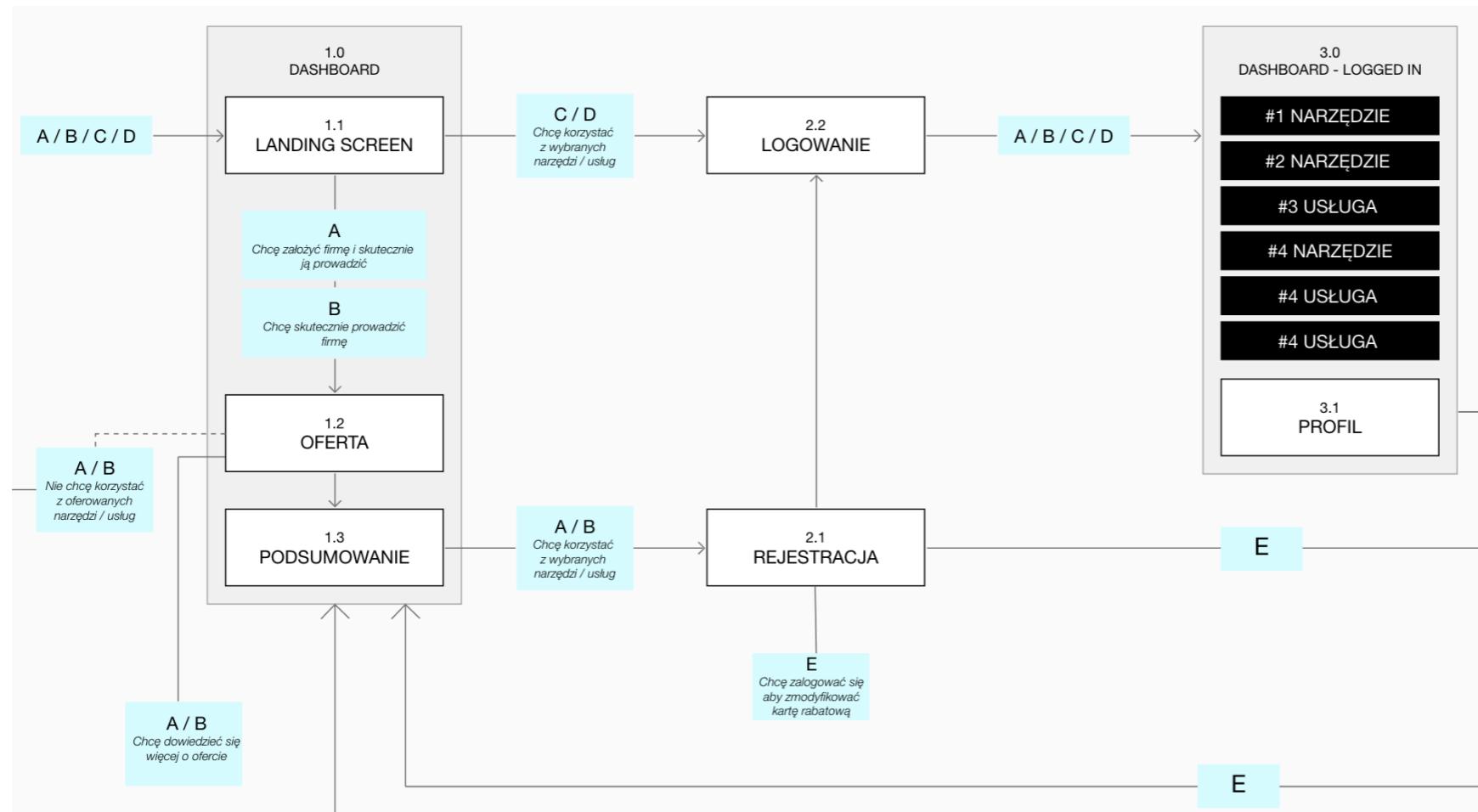
- When working on a completely new service, product, or feature, ideas come at unexpected moments.
- Or maybe we just want to generate as many of them as possible.
- So-called 'napkin sketches' are a great way to grasp those ideas in the form of a memo for us, so we can develop them later.
- The sketches can be good enough to share good ideas with someone and detailed enough to trash the worst ideas.

# Benefits of a napkin sketch

- Simple sketches have fewer elements users need to focus on when trying to understand your idea. Our short term memory is capable of storing  $7 +/− 2$  elements (Miller, 1956), so the fewer, the better.
- Humans are more likely to focus on visual rather than auditory stimuli (Witten & Knudsen, 2005), so if you want people to listen to your idea, focus on talking, not showing.
- When seeking early opinions, you probably talk to your teammates, or relatives first. They naturally will try to avoid hurting your feelings during a design review. **A way to minimize the impact of that bias is a rough sketch because it looks like you didn't put much effort into it (even if you did).** It is easier to criticize an idea you've been working on for 3 min, rather than 3 weeks.

# Content maps

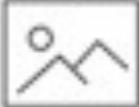
- A site map, enhanced with a basic screen layout.
- Content maps have a benefit of explaining complicated interactions between not only screens but pieces of content on all pages.
- Map-out the complexity of the system early on, thinking only about that will appear on each page, and ignoring a visual aspect of it.



# Benefits of a content map

- Because you see how many screens, and interactions there are, it is easier to estimate the time you need to complete the next steps.
- You minimize the chances of forgetting about smaller features that may significantly delay your process later on.
- It is difficult to perform any tests on such design, however it opens-up conversations with developers, analysts, and business owners. As (usually) analytical minds, they can clearly see the depth of the project and quickly highlight any missing pieces. We all know how painful it is to incorporate a sudden additional branch of pages into a hi-fi mockup – avoid it with a content map.

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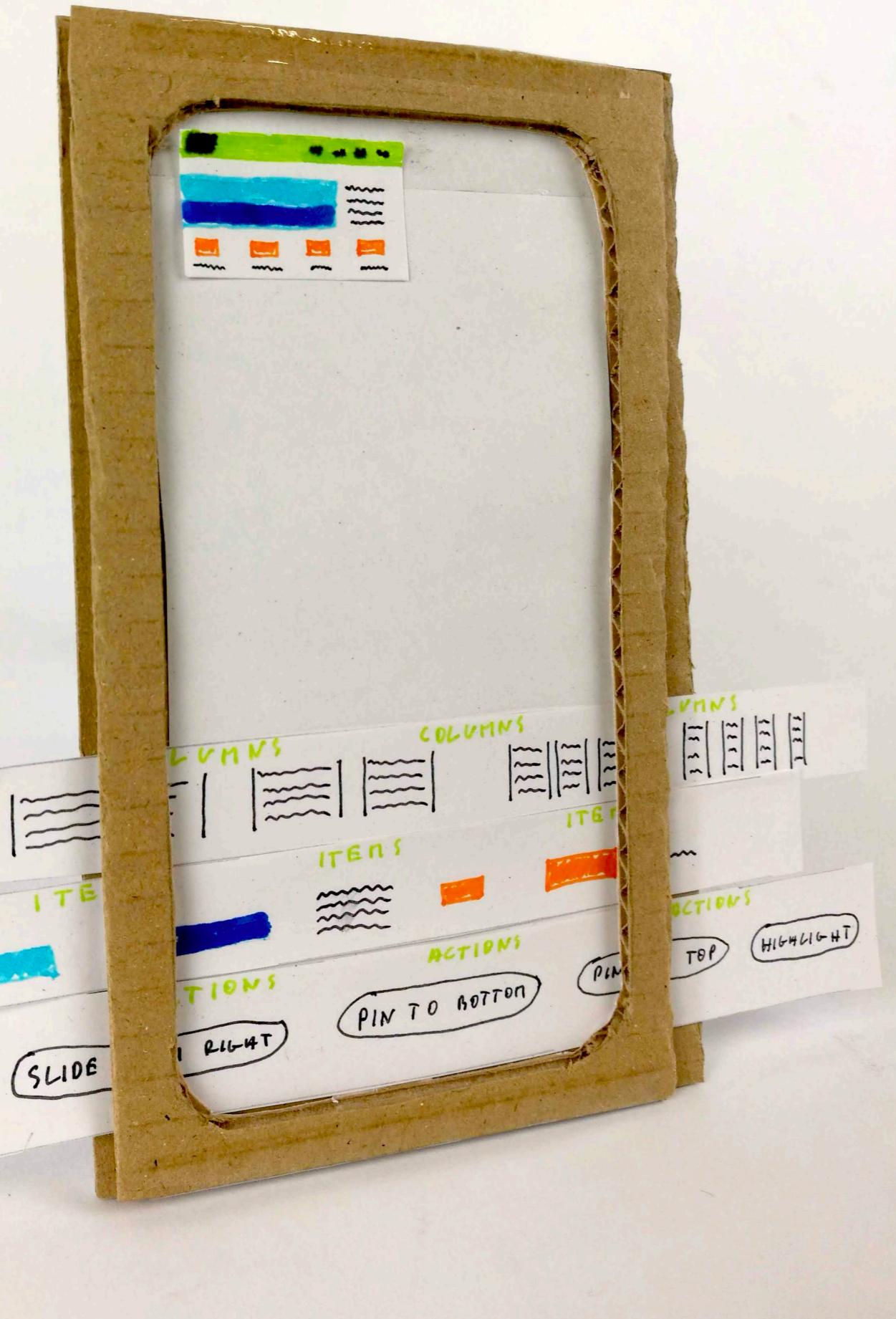
## Low-fidelity digital

- When you know which direction your project should follow, a low-fi prototype/design is usually a way to go.
- Those can be made digitally, hand-drawn, or made out of anything that works for you.
- Their simplicity gives us a chance to experiment, build multiple versions of the layout and do it quickly.

# Why choose it over a sketch?

- Use low-fi designs to plan-out content on the page. Using digital tools like Sketch, Figma or XD makes it really simple and more precise than pen and paper. Not feeling confident enough? Clean looking paper prototypes will do the trick too!
- Low-fi are also good enough for the first usability tests (NN Group). Black and white screens can carry enough information for participants to ask them to navigate, or what particular screen represents. Testing this early has the best learnings to cost ratio.
- The fewer resources we spend on a prototype, the easier it will be to abandon it when needed. This principle is called sunk cost fallacy (Arkes & Blumer, 1985), so test your ideas early, before you become invested. Time and psychology is against you ;)
- When a flow of the product is a complicated and important matter, wiring low-fi screens together can result in a quick wire flow, showing a whole sequence of screens together. Particularly useful when working with a business or other non-designers, to show them the bigger picture.

# Cardboard prototypes



- Prototypes made of cardboard, foam or other product are fantastic when designing physical products.
- Can they be useful when working in digital? Sure!

# Benefits of cardboard

- Going this path is beneficial at the early stages of a design process when input from other stakeholders is needed, or co-design activities are being undertaken.
- Cardboard, pens and paper are democratic in a sense everyone can draw “something” and comment right on the design itself. It’s also much easier to gather around a table and talk freely when design in question is available to everyone, not only to those who have laptops with adequate software installed.
- Having a paper equivalent of a digital prototype for a testing session is also a good idea. I often used them towards the end of an interview, to summarize all findings and mark them right on the design itself.



## Wizard of Oz (modified)

- Has numerous interpretations, but I'd like to focus on the one, that changed the way I approach designing user flows for good.
- All you need is one partner and enough imagination to become the system you are designing.
- Now simply answer every query your user has in a rather robotic, interface like manner.
- Say out loud every form label, every checkbox, every basket summary, every CTA button.
- You'll be amazed how many insights you'll gather, and how clear the user's needs become after just a few minutes.

# Re-enactment

- Not so much a prototype, but rather a technique you can use to test your ideas at any moment of the process.
- It's as simple as just trying to use your product. It's not ready yet? Play with some cardboard to simulate missing parts, or use labeled post-it notes to turn for ex. a plate into a steering wheel.
- Working with a digital product? I bet the majority of tests happen in a lab, or while sitting behind a desk. **Go ahead and try to navigate your app when standing in a crowded bus, or type an address in while holding an umbrella above your head!** It's an eye-opening exercise, that exposes you to real-world usability, or functional issues, that may go unnoticed otherwise.