Digital Versus Paper Prototyping

Advantages, Disadvantages & When to Use Digital

Margaret Seymour, 2022

There has been a proliferation in Digital Prototyping Tools in the last 5 years, making costs go down, skills-availability go up, and the library of leverageable resources to help innovate your designs exponate. Paper Prototyping has its advantages, but Digital should be in consideration for specific use cases.

NOTE: Survey the field first if it's been a while, it is fluid. A Google search will yield several good summary comparisons.

When would you use a digital prototype instead of a paper prototype?

Use Digital Prototyping when:

- You need to show a design in a way that connects more aesthetically and emotionally with people.
- Distributed teams need to experience the design physically.
- There are more screens, states and/or interactions to show.
- You want or need to be more explicit than paper may allow.
- You need specific and exact narrative overlay.
- You have the required technical skill.
- Your team is more comfortable or faster working in digital.

What's the value of creating a Digital Prototype?

- It allows you to show an entire experience, with narrative in the case of video.
- Can be rendered much higher fidelity.
- Allows stakeholders: users, developers, team, to quickly understand the design experience.
- There are scores (to the max) of templates, tools, and widgets leverageable to help you design. By nature, paper does not have these.
- **Some tools create reusable source code, which may be leveraged for production.**

What's the cost, or downside of creating a Digital Prototype?

- Can be very expensive and time-consuming to produce. Longer than paper prototyping (though tine and cost can be reduced by storyboarding in advance).
- Requires specific digital skill.
- Does not allow for hands-on experience.
- Cannot as easily be changed or adapted mid-test as paper.
- Cannot be iterated as quickly as paper.
- May expect more design perfection.

- May make users think it is closer to complete than it is. Can elicit stronger, negative reactions as such (that it's "too done") from particularly analog thinkers. Consider your audience.
- Requires technical skill.

How would you use a Digital Prototype?

John Wayne Hill's Portfolio case study, in our **UC Berkeley Extension: *Diagramming and Prototyping*** course reading comprehensively outlined steps for creating and using a Video prototype, with additional tips to save money.

Note: He reports it took about 25 minutes to record the video, in total the Video Prototype took 4 hours. I regard his Skill-level as VERY HIGH.

The process that was used:

1. Choose/create a design.
2. Ideate on how to tell the story with empathy.
3. Create a storyboard.
4. Shoot the video, edit, and upload.

TIPS

Storyboarding first is critical. It will save you time and money.

- Form your basic concept for telling your story, identify the building blocks.
- Sketch out a basic narrative using 6 post-it notes and gather critique.
- Place the post-it notes on foam core or other, to easily rearrange and iterate quickly.

And when shooting the video.

- "With storyboard in tow," gather a couple friends and start shooting the video.
- Give each actor a 'role'.
- If there's any length break it up into scenes. For John Wayne, at least, this greatly sped up his process.
- Have your storyboard broken into scenes. It speeds up the process of shooting and makes editing easier.

SUMMARY

When you need to elicit emotion, involve distributed teams, provide illustrative words, and you have a team with the skills and savvy to understand that video does not mean "Cast in Stone", consider Digital Prototyping for its advantages.