Paper Prototyping: The 10-Minute Practical Guide

by Jerry Cao

#Documentation   #Process   #Prototyping   #UX Design

In the high tech world of digital design, sometimes the best method is still pen and paper.

To this day, paper prototypes continue to be not only viable, but also widely used. In this article we'll talk about when to use them, why they can help, and how to make one to suit your own needs.

What Is Paper Prototyping?

As you might have guessed, paper prototyping is sketching screenshots on paper as

substitutes for digital representations. What you might not have guess, there are actually different levels of complexity.

The most basic paper prototypes are sketches of each screen. In a demonstration or usability test, the sketches are switched according to user actions.

However, due to the popularity of prototyping on paper, several advanced tools are available to facilitate the process. You can use stencils to quickly and accurately recreate buttons and icons, and even mock phone cases to better depict how the product form will look.

A step above these are paper prototyping kits, which still cost significantly less than design software. These include pre-made sheets, templates, and tools to make paper prototyping even easier, and step up the realism a little. In fact, UXPin got its start making paper prototyping kits, and business was good enough to launch our digital app.

At the most advanced stage, you can upload photos of your paper sketches into digital prototyping software, and add actual interactions. Our app UXPin allows designers to do this, as does the POP (Prototyping on Paper) app. This works best for designers who feel more comfortable with traditional art tools than digital ones.

Advantages and Disadvantages

Obviously, paper prototyping is not a complete substitute for digital prototyping. It does, however, have some advantages its higher-fidelity counterpart does not. Let's review the paper prototyping advantages and disadvantages as we described in The Ultimate Guide to Prototyping.

*Advantages***:**

- **Rapid iteration —** No one wants to throw out a digital prototype that took hours to make, but few shed tears over a 5-minute sketch. Prototyping on paper lets you create — and throw away — multiple versions without wasting time.

- **Inexpensive —** Paper is of course cheap, and even additional tools and kits won't break the bank.

- **Increased creativity —** The freedom of pencil and paper facilitates experimentation and new ideas more than software, which is limited by their features and the designer's familiarity.

- **Team-building —** Don't underestimate the effects of fun arts and crafts in a business environment. Drawing, cutting, and pasting together can build team unity and raise spirits.

- **Less learning curve —** Everyone can sketch ideas, which makes paper prototyping a great way to get other departments like marketing, development, or even stakeholders involved.

- **Automatic documentation —** Paper prototypes are, themselves, a tangible document. Notes can be written directly on them for future iterations, and they can be left in full view as a reminder of what they taught.

Photo Credit: Fairhead Creative

Disadvantages:

- **No gut reactions —** So much of UX design comes from the user's gut reactions on using the product. However, there's just no way to replicate the experience of using a digital product on paper, no matter how detailed it is.

- **Inaccurate feedback —** Paper prototypes require a great deal of imagination, and there's a lot lost when *imagining* what a product will be like. What the users are thinking may be different than what you are, but the feedback doesn't reflect this.

- **Extra steps —** Paper prototyping is often the end in itself, begging the question "is this necessary?"

Considering how streamlined the usability of digital prototyping apps are, it might be quicker to build digital lo-fi prototypes with software than to spend time with paper and later move to the software anyway. Of course, as mentioned before, apps like ours allow you to integrate photos of paper sketches, so it doesn't have to be a waste.

When to Paper Prototype

Jake Knapp of Google Ventures is starkly against paper prototyping, but even he admits it's useful for early-stage conceptualizing.

With its drawbacks in mind, you can understand paper prototypes' limitations in testing high-fidelity graphics, usability, and gut reactions. Even elements like navigation and information architecture seem out of bounds.

That said, paper prototyping is perfect for early stage conceptualizing. Its speed, ease, and simplicity, not to mention automatic documentation, make it far better suited for experimenting with new ideas than more complex digital prototypes.
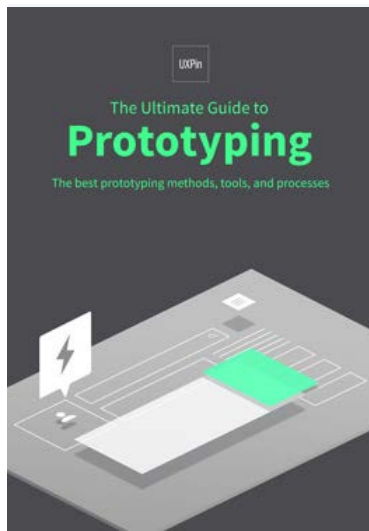
Paper prototypes are ideal for:

• Brainstorming meetings and sessions
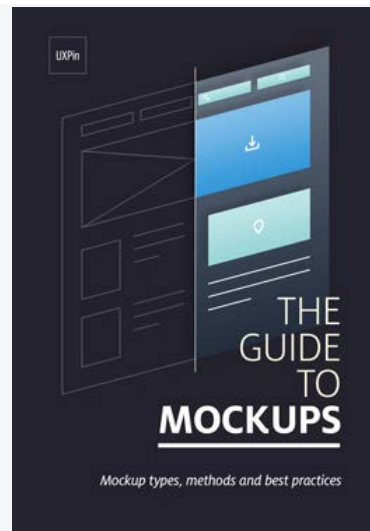• Light usability testing early on

The farther along in the design process you get, the less effective paper prototypes become. The exception is if you want to explore a complete experimental deviation in the later stages.

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How to Paper Prototype

Otherwise known as "the fun part," building paper prototypes draws from many of the skills you learned in kindergarten. Aside from applying the standard design knowledge, keep these tips in mind:

1. Use printer paper and cheap pencils/pens.

The form affects your creative freedom. If you use a Montblac and a Moleskin, you might subconsciously restrict your thinking since you don't want to draw something "ugly".

2. Start by loosening up.

Maybe you need to take a sheet of paper and scribble all over it. Or maybe you need to just start sketching out thoughts and ideas in your head as rapidly as you possibly can. Whatever works for you, start by loosening up. It'll make your lines more confident, and your sketches stronger.

3. Prototype mobile-first.

Because of the limited space on a mobile viewport, you'll be forced to prioritize content. When you prototype mobile-first, you create a 100% experience that you can scale up for other viewports.

4. One sketch per screen.

No matter how big or small they are, draw a separate sketch for each screen.

5. Iterate as the ideas happen.

Don't question your ideas as they come – just let them out. You can question them all later. Remember, sometimes great ideas can come from a little detail within a terrible idea. Let them out, nobody's judging you.

6. Gather everything you need beforehand

Make sure you have enough paper and drawing utensils beforehand, plus scissors, glue, post-its, index cards, tape, and additional tools you might need.
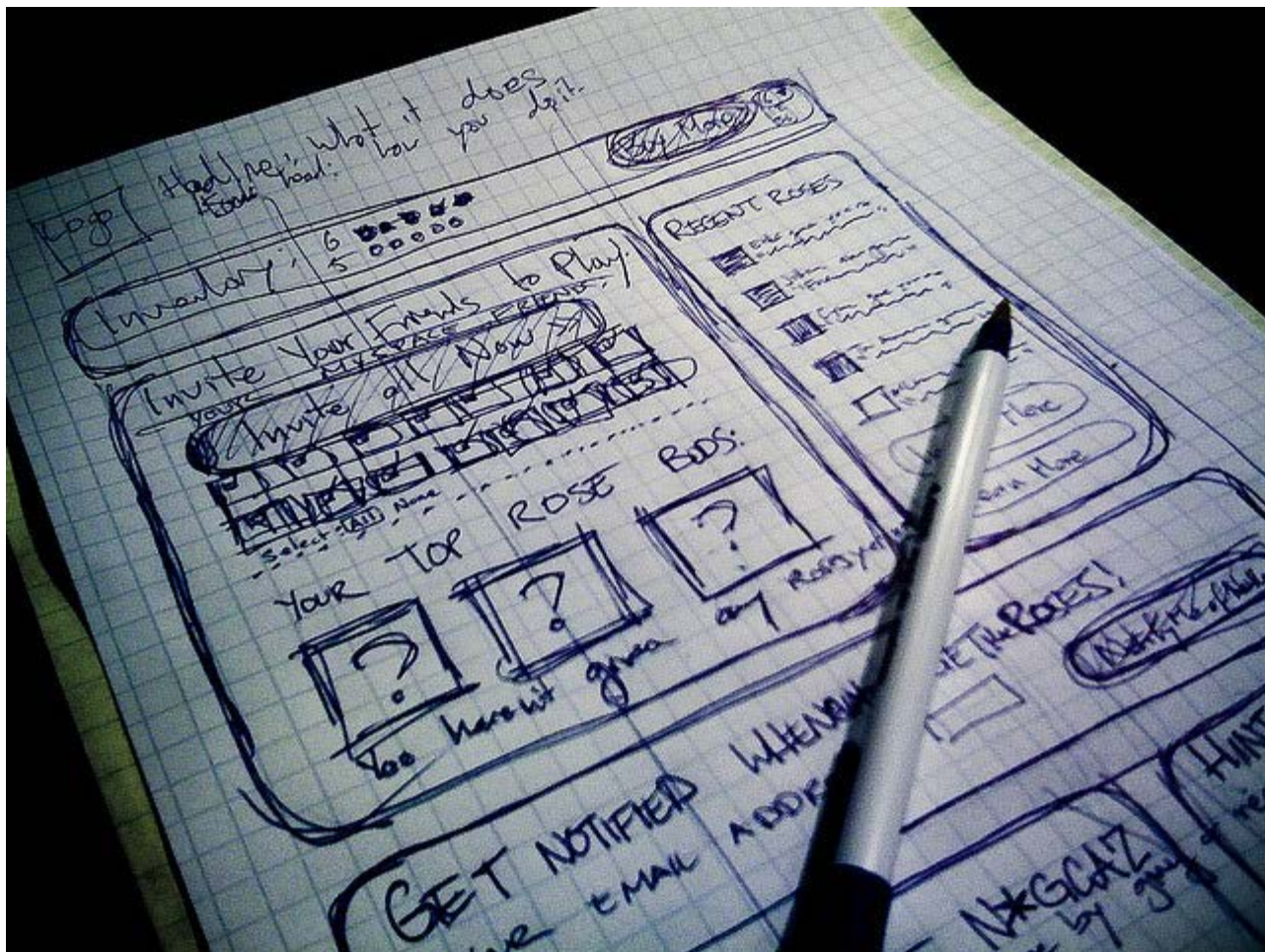
Source: "war of the roses." jm3 on Flickr. Creative Commons.

Testing & Presenting Paper Prototypes

When it comes time to show your paper prototypes to other people — whether stakeholders or testers — things get tricky. Because so much is dependent on the user's imagination, you need to set the right context.

• **Designate one person as play the "computer"** — A common mistake is to have the presenter also control the prototype screens, but the role of the "computer" requires full attention. To best simulate an automated system, one person's only job should be switching the screens according to the user's action.

• **Rehearse** — The role of the computer is not as easy as you might think. Rehearse beforehand to iron out the kinks and prepare the "computer" for a live performance.

• **Follow standard usability test best practices** — Tips like using a minimum of 5 users and recording the tests still apply. For advice on usability testing in general, read the free Guide to Usability

Testing.

- **Guide the feedback.** When showing someone a paper prototype, prime them by explaining the context of the design. What did you design? What have you left out for later? What elements of the design are you looking for input specifically? Generally, you'll want to explain that structure and flow are where the person should focus.
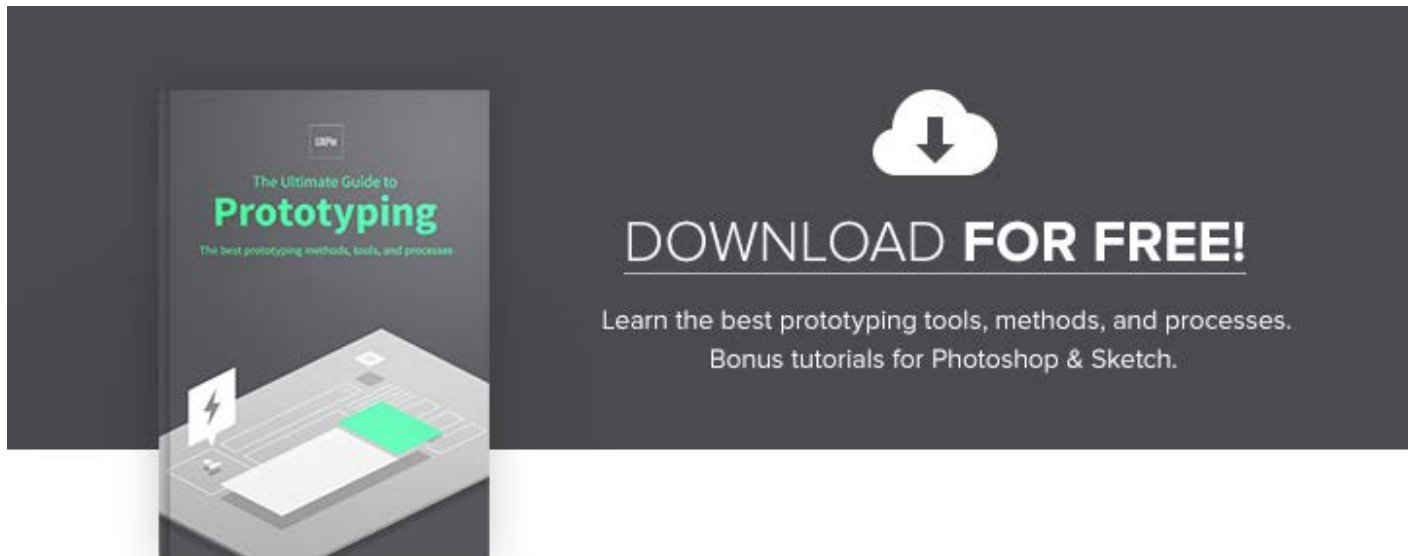
Top Paper Prototyping Tools & Resources

Here are some links to resources that can help you make the most out of prototyping on paper.

- UI Stencil — An e-store dedicated to paper prototyping resources, including stencils of popular icons, pads, instruction books, and accessories like markers.

- Tripwire Magazine: 20 Free Printable Sketching and Wireframing Templates — Sketching on templates gives prototypes a more professional quality, and helps the designer stay organized. Tripwire magazine gives 20 free ones to start from.

- UXPin — Our collaborative UX app allows you to upload photos of your paper prototype, add quick interactions, then get feedback from remote team members.

- POP: Prototyping on Paper — POP allows designers to add interactivity to existing photos of sketches, but specialized for mobile apps.

- Sneakpeekit — Downloadable templates in various formats/devices.

- iPhone User Interface Design, Paper Prototype Study (video) — This YouTube video runs through a paper prototype study for an iPhone interface.

- Board of Innovation: Resources and Tools for Paper Prototyping — A grab bag of useful tools for paper prototyping, including templates, stencils, and a downloadable frame for laser-cutting a plastic iPhone case.

- *Paper Prototyping* by Carolyn Snyder — One of the best books on the topic.

Additional UX Prototyping Advice

For more information of all prototypes, paper and digital, read our free 109-page ebook The Ultimate Guide to Prototyping. This comprehensive guide covers prototyping methods, processes, and best practices for different stages of the design process.

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by Jerry Cao

Jerry Cao is a content strategist at UXPin where he gets to put his overly active imagination to paper every day. In a past life, he developed content strategies for clients at Brafton and worked in traditional advertising at DDB San Francisco. In his spare time he enjoys playing electric guitar, watching foreign horror films, and expanding his knowledge of random facts. Follow him on Twitter.

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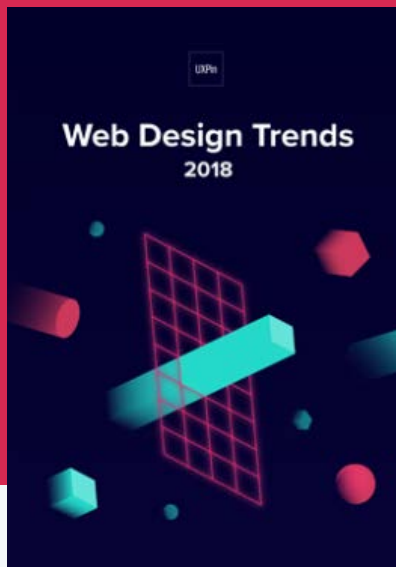
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