How to Choose and Work with a UX Design Team

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As devices from mobile phones to smart household appliances evolve to become more natural and easier to use, the expectation by medical device users—physicians, nurses, techs and patients—is medical device design will evolve as well. Intuitive interfaces that are quick to understand, versus outdated styles that are tedious to use and demand hefty training time to master, are among the expectations of today's medical device users.

To deliver this heightened level of usability, medical device developers are increasingly turning to usability professionals such as user experience (UX) designers to create better user experiences. Working with a UX designer or design team can streamline the regulatory process and make a product easier to understand, more pleasant to use, and more successful with users and customers.

A knowledgeable design team can create an appealing user experience that fosters greater user satisfaction and loyalty, which can enhance a brand's reputation and increase ROI. Additionally, good UX can sharply decrease the training necessary to use a device, as well as increase device safety by reducing use errors.

So how do you select a designer or design team, and once selected how do you work with them—incorporating UX into an existing development process—to reach your goals?

How to Choose the Right Designer

Like most professions, UX encompasses a broad range of skills. Typically, designers specialize in one or a few areas, not the full range of UX. While generalists do exist, they are in the minority. Here's a big picture look at the key roles in the UX design profession: Note the most common split in skill categories is between user researchers, interaction designers, and visual designers.

- **User researchers** study users, including needs and pain points, so designers have accurate data insights on which to base their designs.

- **Interaction designers** create the workflows needed to interact with a product or service. They draw on user data and research (most often generated by user researchers) to ensure digital applications work for target users.

- **Visual designers** create strategic implementations of images, colors, fonts, and layouts. Their goal is to create a user experience that is optimal in terms of comprehension, readability, beauty, and clarity.

- **Human factors engineers** combine interaction design and user research with emphasis on ergonomics—the physical interaction of human and machine—and have traditionally been the designer of choice for safety-specific machine systems.

These are the major categories in the UX profession but there are subspecialties that are also highly important—in particular, strategists and project managers.

- **UX strategists** provide a detailed plan to most effectively align the design, design process, and deliverables with the product goals and timeline.

- **UX project managers** manage the meetings, deadlines, and budget during active design.

All of these roles are vital. When hiring an external design company or forming an internal team, there will likely be access to this broad range of UX skills, which benefits the design process. But if the budget precludes hiring a full UX team and an individual specialist must be chosen, go with a human factors engineer or interaction designer. As a team of one, they will get you the farthest in terms of usability.

When creating a Class I or a non-regulated product, for instance a fitness app, it is less crucial to work with designers with expertise in regulated design. However, still consider doing so, as their deeper level of insight can be very helpful when designing a robust interface, even for less complex products.

You might wonder whether you need to find a designer who has created a device similar to the one you're developing. Surprisingly, the answer is no.

While you'll want to find a designer or a team that has had success creating complicated devices (if it will be complicated) or regulated devices (if planning to seek FDA approval), you don't need someone who has already designed the exact infusion pump or defibrillator planned.

That's because all UX professionals understand how people work, regardless of the field they're in. UX designers study the processes and steps people use to execute specific tasks, then parse research and user studies into actionable data to create their designs. This ability to understand users is a transferable skill. That means designers who understand how assembly line workers think, move, and make decisions can use this insight to inform their designs for doctors handling devices in the OR.

In other words, UX designers must be workflow experts and have the ability to quickly get up to speed on your domain once a project begins. They don't need to be domain experts; they will rely on your expertise. In the medical device realm, prioritize UX professionals who already know how to design for safety and understand how to mitigate risk factors through thoughtful design.

Project Requirements Drive Staffing Decisions

Now with an appreciation for the breadth of skills needed to execute good UX design, you can let project requirements drive staffing decisions. That means beyond the individual skills needed to bring a product to life, you'll also want to retain a team (or individual designer) with relevant experience.

For instance, when developing a regulated device, it makes sense to hire designers that have knowledge and expertise developing regulated products, rather than someone with a portfolio filled with beautiful consumer devices. It is far more complex to create and gain FDA approval for a regulated medical device like a pacemaker, than design a smart toaster or thermostat. There is a steep learning curve to acquire that knowledge—that's why when creating a Class II or Class III medical device it's prudent to hire a UX team that has already been down that road successfully.

Incorporating UX Designers into the Development Lifecycle

Now that you know what to look for in a UX team, make a plan for when and how to incorporate them into the development process. Although a designer can help a project at any point, "design first, build second" makes common sense and avoids reworking a project to fix a poor user experience. That means as a rule of thumb, the earlier in the product lifecycle the UX can be brought in, the better.

Understanding users begins at the outset of the project and establishing user stories and user requirements are tasks UX designers can take on. In practical terms, this means involving UX designers in very early stages, while you are establishing rough, high-level project requirements. To make a user interface human-centric, requirements should be written from a human-centric perspective. To achieve this, UX designers should be involved in establishing requirements, rather than receiving them fully baked from a heavily engineering-based product team.

Early UX involvement can also help streamline development. Transforming design ideas and prelim inary requirements into mockups and prototypes always triggers re-evaluation of ideas and requirements. Iteration is the secret sauce for moving from a so-so (or even bad) design to a good design. The bulk of a UX design should be complete before the start of a Quality Management System (QMS) or before design controls are turned on.

This is a very important point: Refine usability design early, outside of any regulatory process, to keep the design process free and fluid until there is a good solution. If this is done, you will enter the QMS on solid footing for success with both users and the FDA.

You're just about ready to hire the designer or design team. But before this is done, there's one last decision to make: Determining how much assistance you actually want. Designers can contribute to projects in any size chunks, from simply making a few suggested improvements to an interface, to being part of an integrated project team for the duration of development. You can also choose to hire a designer to execute a specific task, such as performing a heuristic analysis, an evaluation of an interface's usability, or handling user interviews. A designer can even be called on to make small visual design improvements like increasing the readability of a few UI screens.

Project requirements, budget, and any skills gaps you may be looking to close will guide decision making. Remember: UX designers exist at all skill levels, and experience matters. Choose wisely; the success of your product may depend on it.

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