The Value of Integrated UX Design
Why It Produces Better Software

User experience (UX) design has a crucial part to play in software development, yet many firms either treat it as an afterthought or ignore it entirely. Even if a software development firm is terrific at gathering requirements, writing code, and designing an attractive user interface, it’s no guarantee that their software will succeed because people ultimately judge an application on its usability. Nobody wants to use bad software. This white paper explains why the best software development firms integrate user experience design into their process.
Introduction

Take a moment to visualize the best software application you’ve ever used. Got it? Okay, now answer this question: What made it so good?

Was it the features? Could the software do everything from word processing to corporate accounting? Probably not. You likely bought (or downloaded) it to do one or two things really well.

What was it about the application that allowed you to excel at those tasks? What made the application a pleasure to use? Why was it so remarkable that you immediately thought of it just now? If you’re a manager who will be responsible for an upcoming software development project, you’ll need to find answers to these kinds of questions.

Like it or not, there’s more to building great software than figuring out business requirements, writing code, and designing an attractive user interface. When you stop to think about it, you’ll realize that it’s entirely possible to develop software that satisfies business requirements and looks really sharp, yet is, at the same time, practically unusable.

A positive user experience (UX), however, is critical to the success of a software application, so it’s important not to leave anything to chance.

If users don’t like your software, then you’ve wasted a lot of time and money.

But not all software firms incorporate UX design services into their development process. For some, UX design isn’t even in the picture. Others are happy to leave it in the hands of their developers, whose primary focus is writing code, not optimizing usability. Some development firms even expect their clients to design the user experience for them!

Firms that do include UX design in their development process often tack it on at the end, when the code is virtually set in stone and only superficial changes can be made to improve the user experience. This is analogous to building a car with no doors and then “fixing” it with a nice coat of paint. It’s too little, too late.

However, there is another option—a better one. UX designers can work closely with engineers, architects, and programmers from start to finish on every software project. Usability guru Jakob Nielsen advocated this approach in a 2009 article, saying:

All experiences from our case studies indicate that UX people must be co-located with developers and other project team members. Indeed, UX should be considered a part of the project team, not an outside department.\(^2\)
This white paper explains why a firm that skilfully integrates UX design into the development process is more likely to deliver high-quality software that works the way users do.

UX by Any Other Name…

Even if you’re unfamiliar with the term user experience design, you’ve probably come across other terminology that describes the same discipline, such as:

- usability engineering
- user-centered design (UCD)
- user interface design (UID)
- interaction design
- human-computer interaction (HCI)
- computer-human interaction (CHI)
- human-machine interface (HMI)
- man-machine interface (MMI)
- operator-machine interface (OMI)
- human factors (HF)

Yet regardless of how you refer to this important discipline, its primary goal remains the same: to make it easier for people to use technology.

Benefits of UX Design

User experience design improves the usability of a software application, but, in the absence of a compelling business case, such improvements can be perceived as simply “nice to have”, especially when the user interface is visually appealing. (Some people mistakenly equate “visually appealing” with “easy to use”.)

If you regard UX design as an optional add-on, then any argument in favour of embedding it in the software development process will naturally seem less important.

Fortunately, though, it’s easy to explain how an organization can profit from software that’s been developed with a user-centric focus.

Here are some of the benefits:

- **Increased user satisfaction**
  Happy users become loyal customers who tell others about your great application. When introducing a new in-house application, you’re likely to encounter less resistance to change, experience more rapid adoption, and enjoy a smoother transition. Users will be less inclined to work around a new system if it’s been specifically designed to meet their needs.

- **Higher productivity**
  Users will be able to complete tasks faster and with fewer mistakes.
Higher ROI on software
Positive user experience will translate into more sales. With in-house software, you will reap the financial benefits of higher productivity and a longer service life for your application (with fewer repairs required).

Competitive advantage
If your application delivers a better user experience than the competition, you have an advantage. If highly usable in-house software enables your organization to work faster, better, and more economically than the competition, you also have an edge.

UX Design vs. Software Development
Development firms can produce better software—software that’s more intuitive to users and more valuable to customers—by including UX design in their overall process. On a similar note, graphic design agencies can develop user interfaces that are great looking and great working by partnering with a software development firm that has in-house UX specialists.

Of course, this sounds good, but it also begs the question: What’s the difference between UX design and software development? Or more specifically, what’s involved in designing the user experience and why should every software development team include a UX designer?

Designing the User Experience
The goal of a UX designer is to produce software that’s easy to use. To accomplish this goal, a UX designer maps out the most likely pathways that a user will follow through the application and then optimizes those pathways. Designers often lay out the user interface using rough, wireframe mock-ups that can be quickly drawn and revised.

UX designers working on big projects sometimes have the opportunity to conduct extensive user tests in a controlled environment. However, for smaller projects, they usually rely on focused user tests and well-defined best practices that have evolved over decades of industry testing and experience.

Some developer tools—like Google Web Toolkit, Yahoo! UI Widgets, and JQuery—can be used to create user interfaces that adhere to many of these industry standards. When developers employ such tools, UX designers are able to guide development of the user experience and resolve unique usability challenges. Thus, UX designers can add real value without having to reinvent the wheel on every project.

Synergistic Perspectives
Software developers—engineers, architects, programmers, testers, and others—undeniably play a huge role in determining the user experience of a finished software application. Obviously, the most desirable outcome is for their efforts to enhance the usability of the application, but that might not happen because busy developers are usually preoccupied with technical matters. UX is rarely their primary focus. Consequently, the best way to build
user-centric software is to field a team that includes a UX designer who can influence technical choices in favour of usability.

Skilled developers are often considered software experts, but that doesn’t qualify them as typical users of a software application because the perspective of a technically proficient developer is fundamentally different from that of a user. So, even if you ask the most skilled and experienced professionals to look at software entirely from the user’s perspective, you’re asking the impossible. Again, you need a UX design specialist on the development team to faithfully represent the user’s point of view.

Prudent developers often solicit advice from users and allow themselves to be guided by the feedback they receive. Although user feedback is desirable at every stage of the development process, it does have one inherent problem: the potential disconnect between what users say they want and what they actually need. A UX specialist can not only interpret user feedback for the developers, but can also determine users’ actual needs by testing them and observing their behaviour.

When you take everything into account—the developers’ technical focus, the complexity of modern software applications, the intense nature of the development process, the difficulty of determining users’ real needs—it makes sense for a development team to have their own UX specialist who’s responsible for advocating user-centric options.

The best development firms understand the value of this synergistic approach, and they use it to build software that works the way people do.

**Why Integrated UX Design Makes Sense**

The value of UX design is well-known, but many software development firms either ignore it or implement it in a superficial way. The best approach to UX design is to integrate it into the development process.

Here are some of the reasons why:

- **UX designers maintain a holistic view of the software.** Agile developers build software applications incrementally, one small piece at a time. UX designers, on the other hand, look at each software application as a whole and bring a different perspective to the Agile development process. By taking a dual approach that integrates holistic UX design with Agile principles, a team can delve into the nitty-gritty of transforming abstract business requirements into working code while never losing sight of the big picture. If you think of software as a machine, a user experience specialist enables all moving parts to work together from the start.

- **UX designers promote user-centric development.** The UX designer on a development team essentially becomes an evangelist for the user experience, raising awareness and generating interest in this challenging aspect of software development. The UX specialist is there in every meeting to represent users’ interests and influence the course of development in their favour.
• **UX designers help the team make better design choices.**
With a UX specialist at the table, a development team can make design choices that are best from a technical standpoint and from a usability perspective. Not only that, but the application can be improved even further if the results of user testing are fed back into the iterative development process. The finished software will be more usable and better quality.

• **UX designers help the team make timely design choices.**
With a UX designer on the team, design choices that have UX implications can be properly evaluated and acted upon whenever it makes sense to do so, without reservation or qualification. With user experience being factored into software design decisions, it’s unlikely that difficult and compromising changes will have to be made later in development.

• **UX designers improve development efficiency.**
By integrating UX design into the overall development process, the team concentrates on building the right application from the start, with less wasted effort. Generally speaking, thorough planning leads to smoother operations. In a software project, UX design should be a key part of planning activities.

The bottom line: A software development team that integrates user experience design into their process is more likely to produce high-value, usable software.

**Conclusion**

Great software doesn’t happen by accident; it must be conceived and developed with users firmly in mind.

Since usability is crucial to the success of any software application—regardless of whether it’s intended for external or in-house users—you can’t leave anything to chance. Choose a technology partner that understands the value of integrating UX design into the software development process.

**Remember:** Developers design and build software applications, while UX specialists make those applications palatable to users. A winning development team relies on both disciplines to get the job done right.

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*Building a software application is like shooting a movie. I do as much as possible in preproduction (planning the software) so that fewer changes will be required after shooting begins (development kicks off). I help write the script (help make initial design choices) and I draw up storyboards (wireframes of the user interface) that the crew (development team) will use to shoot the script (write the software). After shooting starts, I provide support when and where it’s needed to make the process go smoothly. I resolve unexpected problems and sometimes draw up more storyboards (wireframes) if new scenes (features) are added to the film (software).*

- Ryan Feeley
UX Designer
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References


