DESIGNING SCIENTIFICALLY
FRESH EXPERIENCES

BY FRESH CONSULTING

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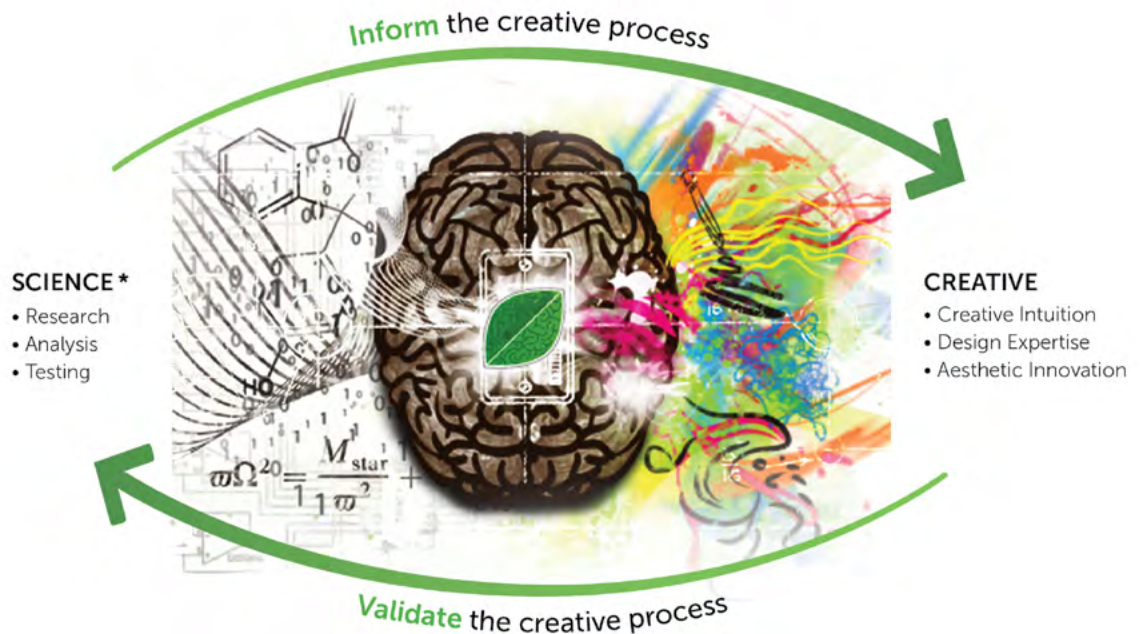
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INTRO

In the digital space, design challenges exist everywhere. A website might look beautiful, but the layout could be confusing and in need of revision. An application interface might be gorgeous, but the balance between interactivity and aesthetics could miss the mark and distract from the overall experience.

It's the enterprise of UX Designers to innovate, creating solutions that solve these types of problems. The reality is that innovation often stems from problem solving, and it can run a lot deeper than just giving something an aesthetic makeover. Scientific UX involves research, analysis, and testing to inform and validate your design, allowing you to create scientifically fresh experiences.

Inform the creative process

SCIENCE *
• Research
• Analysis
• Testing

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CREATIVE
• Creative Intuition
• Design Expertise
• Aesthetic Innovation

Validate the creative process

***** Ideally start here

DESIGN INTUITION & EXPERIENCE MATTER

There is an inherent aesthetic component of design. No matter how skilled the research, analysis, and testing is, if you lack the artistic skills necessary to create a high-end design – be it a website, web application, mobile app, or interactive video – then the experience won't be as emotionally or visually powerful. A Stanford study showed that aesthetics alone make users more patient and contribute to usability.[1] A carefully crafted interface might solve all of the layout problems in the world , but without the right blend of aesthetics to give it the breath of life, users are only provided with a fraction of the experience. Aesthetics matter and are always an integral part of the solution.

At Fresh Consulting, we have an amazing team of creative designers who have the "design eye." Couple that with years of experience and you have the basis for great design intuition.

Experienced team members can quickly reduce the number of design variables due to understanding what is conventional and what is not, what is modern and what is not, what is timeless and what is not. Generally, great designers understand what works and what doesn't, even without knowing the nuts and bolts of the scientific process.

However, even our experienced designers understand the value of informing the design process and testing their solutions to validate that their "hypothesis" solves a problem, accomplishes an objective, or delivers a result. Pairing amazing aesthetics with amazing science allows designers to come to the table with their colleagues and talk innovation.

[1] Fogg, B.J., Soohoo, C., Danielson, D.R., Marable, L., Stanford, J., & Tauber, E.R. (2003). "How do users evaluate the credibility of Web sites? A study with over 2,500 participants."

WHY SCIENCE IS NECESSARY

Aesthetic innovation and design intuition are essential. But great UX involves more than these, and that's where science comes into the picture. There are a variety of reasons why science is necessary.

First, designers have different intuitions and different feelings. They often design different solutions, even if they are on the same team. One designer may propose something too complex for a user's needs; another may design something too simple to solve for various business problems.

While intuition and experience matter, we can't always take our hypothesized solutions and reach consensus, especially if every designer relies solely on his or her own intuition and experience. Even if you're an experienced designer, simply designing from your gut, your feelings, or your intuition often isn't enough.

Second, many UX Designers have a background in one aspect of design, whether it's visual or graphic design, motion design, or content design. While they likely appreciate the importance of holistic UX theory, it's easy to be myopic and fall into the trap of thinking what has worked well will continue to work well. Acting on that overarching assumption is dangerous. For example, strong visuals, engaging video, and well-written copy may have impact but are only a few aspects of an efficient user experience.

As designers coming at UX from a variety of different angles, we all have good-natured assumptions. But in the end, we are not the end user and we cannot assume that what works for one type of user will work for another type of user.

Nevertheless, there's a tendency to want to feel one's way to a great design by relying solely on instinct or prior experience to build it. You can catch yourself resting on unstable ground when you try to persuade others on design decisions with justification that starts with "I feel that…" or "My feeling is…". To decide if your design is true to the problem or opportunity, the design process should be scientific.

Third, holistic UX often involves designers, developers, and business perspective to solve for solutions that are usable, scalable, and feasible. Even though opinions may vary about what approach should be taken, common ground can be found when aesthetics and science cooperate.

Fourth, without measurement and evaluation, it's hard to know if we have been successful. With time, human needs change. Design trends change. Devices and interfaces and technology evolves. We're not saying that the lessons you have learned over the years are wrong. Experience definitely matters. But without approaching design with a scientific lens, it's impossible to measure whether or not the lessons you've learned still apply.

It's important to inform our designs and validate our assumptions, and this can be done by approaching design scientifically. So how do you add science?

THE 3 ELEMENTS OF SCIENTIFIC UX

In order to inform and validate your designs, it's important to consistently include science in the process, and have a process to substantiate design decisions, especially big ones that impact your financial picture. Without consistently including science, it's impossible to accurately compare and contrast the efficacy of different designs or iterations of a product.

What is the science to add in? 1) Research, 2) Analysis, and 3) Testing. When integrated into the UX process (as shown in the graphic below) and followed from project to project, it allows one to

determine whether or not the designs we are creating actually serve the end user, based on whether or not our assumptions are tested to be valid.

Our process keeps strategists, designers, and developers on the same page as we focus on garnering key insights that lead to world-class UX.

The consistent process, with key components and deliverables, ensures the reliability of data and feedback used to inform the design. Although the process is strongest when implemented holistically,

it can be modified depending on financial, time, and technical constraints. In addition, it can be molded in response to the appropriateness of each stage, based on the context of the project as a whole. The focus and constraints pertaining to a specific project – as well as the business goals of the client – dictate what is feasible.

The ability of a designer to closely predict what might work as a solution – based on insights derived from a scientific approach – eventually fortifies intuition.

In UX, which is a combination of art and science, there should be both designer's intuition and experience and research, analysis, and testing.

And regardless of how much skill a designer has in predicting which solutions might work, it is always helpful to test a draft design (hypothesis) before calling it final for production. Just as our designs adapt to user behavior, we must also consider and appropriately adapt to feedback we receive.
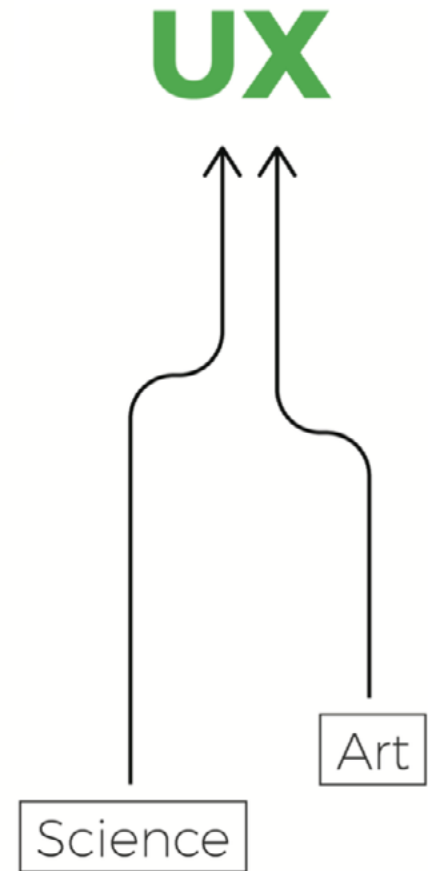
PHASE 1: RESEARCH

UX isn't always treated as a research field, but it should be. The later phases of the design process are equally important; yet, without research, you risk sacrificing a firm foundation of data that would allow you to to proceed with informed decisions later in the design process.

Supporting decision making and overall strategy with data is essential – otherwise, we're operating based on our own experiences, assumptions, and preferences.

The following research techniques are ingredients in our UI/UX Design Process:

BUSINESS PERSPECTIVE

• **Conduct Stakeholders Interviews** *to reveal background details and insights to better understand the project as a whole.*

• **Document Business Objectives** *to understand the central goals, problems, and metrics we're striving for.*

• **Functional Requirements** *to understand and prioritize the functionality that really matters.*

• **Technology Constraints** *to understand the infrastructure and integrations required to create a product that is powerful, secure, and reliable.*

CUSTOMER PERSPECTIVE

• **Conduct Ethnographic Research** *to develop a deep understanding of the user's environment and how to alleviate his or her pain points.*

• **Interviews and Observations** *to uncover problems, needs, goals, and constraints and work toward a holistic solution.*

• **Create Personas** *to translate our understanding of user groups and foster empathy from our interviews or affinity diagrams.*

• **Create User Stories** *to understand how personas are tied to tasks, efficient user flows, and functionality.*

PHASE 2: ANALYSIS

At Fresh Consulting, we spend time engaging in analysis because it's what leads to insights that feed the design process – wireframes, mockups, and prototypes. This process involves a detailed review of our research and an investigation of the quantitative figures that provide insights for design. Data can shape design decisions that can be tested to determine the final model.

A UX best practice is to assure that novelty is balanced with usability and convention and that the design considers established UX principles. In our UI/UX Design Process, some of our approaches to analysis include:

• **Metrics and Analytics** *to understand core metrics tied to objectives and look for usage patterns from analytics that further shape the solution. Discover issues, validate assumptions, and gain data in the process to feed improvements.*

• **Competitive Analysis** *to pull customer, competitor, and industry insights and get inspiration as we hone in on your position and highlight your unique differentiation.*

• **UX Benchmarking** *to set standards and best practices for evaluating designs*

    ◦ UX Principles Benchmarking: *Evaluation of the site or product against time*

tested UX principles and general UX myths to identify where there are opportunities for improvement.

    ◦ UX Checklist Benchmarking: *Evaluation of the site or product against 150+ items in a UX checklist.*

    ◦ UX Trends Evaluation: *Evaluation of the site or product against new UX trends to see if there are opportunities to do more cutting edge designs.*

• **Story Maps** *to create a design framework for grouping user stories, indentifying phases, and crafting personas in an overview of the holistic design work.*

• **Discovery, Ideation, and Strategy** *to review deliverables, generate ideas, and discuss solutions that can feed the design process.*

PHASE 3: TESTING

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Testing should also be conducted on any existing interfaces throughout the design process and when the new design is implemented. It's essential to watch users interact with a product and contrast their usage patterns against your user stories and design goals. Your research, information architecture, user flows, personas, wireframes, and high fidelity interfaces might seem amazing, but user tests early on help unearth problems that need to be fixed, validate issues perceived, and evaluate whether hypothesized solutions are truly improvements.
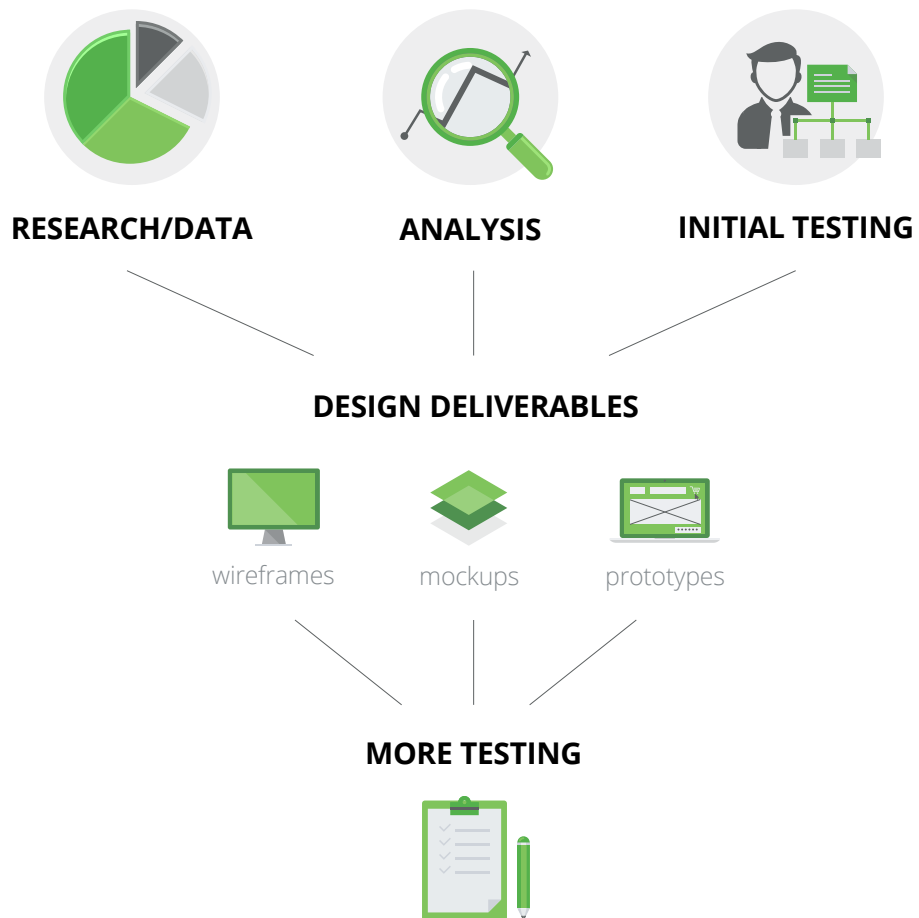
We argue that a little bit of usability testing goes a long way. While constraints will always dictate how much time and effort we can devote to testing, it's crucial to have some amount of testing in order to verify that the design is sound. Even watching and observing just a few users can be hugely beneficial. A design lives, breathes, and changes like a living organism, and testing feedback should be a key component in determining the trajectory of that evolution.

Our process involves a variety of different testing approaches, each developed with a different focus in mind. Our 8 Methods of UX Testing are:

1. **Trust Test** to measure the trust factor with a group of people based on a 5 second impression test.

2. **Comparison Test** to compare design options with a group of people with A/B tests.

3. **Impression Test** to measure gut reactions and show a keyword summary, pulling from a group of people.

4. **Blur Test** to see where key CTAs pop for users by adding a slight blur on top of the design.

5. **Automated Visitor Screen Recording** to record and monoitor the user's online experience for testing reviews.

6. **User Testing Time Based Tasks** to measure users' ability to accomplish user stories tasks, optionally with video recording or direct observation.

7. **User Observation with Tasks** to directly observe or record one or more users in accomplishing user story tasks.

8. **User Surveys** to pull qualitative and quantitative feedback with various questions about pain points and opportunities from a larger group of people.

Our user testing process has a cycle in and of itself so that testing, feedback, and insights are evaluated and utilized:

- User Testing is cyclical and is integrated throughout the design process. User testing helps us discover issues, validate assumptions, and then iterate on improvements throughout the design process.

- Feedback Evaluation looks at the data and feedback patterns to synthesize key issues and opportunities.

- Idea Generation is based on the findings from our testing. We use it to generate ideas on how to create solutions to the problems and opportunities identified.

- Design Updates are drawn from user testing to make changes that improve the user experience.

RESEARCH/DATA   **ANALYSIS**   **INITIAL TESTING**

DESIGN DELIVERABLES

wireframes   mockups   prototypes

MORE TESTING

CONCLUSION

We are not designing for ourselves – we are not the model. Rather, we're designing for the end user. The key benefit of science is that it allows designers to validate and inform design work for those users and take any personal bias out of the process. Intuition and experience play a role in this process in that it allows us to efficiently reduce variables. But, it should be made concrete through science – research, analytics, and testing. Science can seem intimidating; though, scientific UX practices, methods, and tools are not. Moreover, the work can be quick or in depth depending on constraints.

For most designers, their ability to intuit good design is likely what inspired them to join the creative field in the first place. Adding science helps them take their work to a new level. The point is that UX is a research and design field. It's both artistic and scientific, pulling on both the left and right brain.

To reiterate, Scientific UX is not a replacement for creative design/intuition; rather, the addition of research, analytics, and testing in the creative design process, resulting in a solid foundation for informing great design work and validating its success. This makes any designer more powerful and any design process more enlightened.