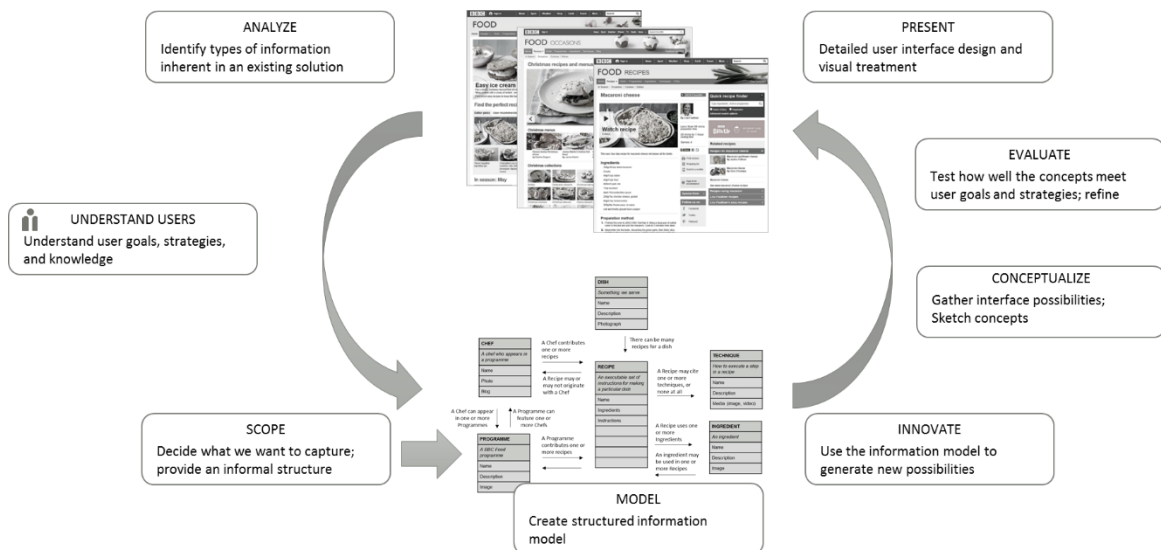# Understanding Users

A UNICORN BRIEFING NOTE

Martin Stares

June 2015

Series introduction

This Briefing Note is part of the series "Experiencing + Architecting Information". The series provides intermediate solutions designers with polished and practical insights into designing information rich systems.

It draws upon insights from information architecture and user centered design. As such, it will be useful to front end designers who need to know more about information, and information architects and analysts who need to know more about users.

The series is introduced in the Briefing Note entitled "Experiencing + Architecting Information", where we detail the approach and coverage. It might help to read this first. The remaining briefing notes drill more deeply into each topic, and for the most part can be read in any order.

We sincerely hope this series will help you gain in skill and confidence in our wonderful profession.

Martin Stares
The Information Artichoke

June 2015

Introduction

If you want solutions with a high degree of user acceptance, it helps to understand users in some detail, and tap into that knowledge throughout the design process. This sounds self-evident, but is often under exploited.

Understanding users is a huge topic. This Briefing Note is our sampling, based on value to our solution design process. Specifically, we have chosen aspects that relate directly to our themes of user and architect's views of information. We don't discuss how to persuade or delight users, or voice and tone, visual treatment, branding, or detailed layout of the pages we sketch.

That said, you will see many tools and approaches that are central to user centered design. Our presentation will sometimes favour examples and insight over rigour. You will see many ways that user considerations can inform your solutions design. And you will be able to look at existing solutions, yours and others, and assess how well their users have been considered.

Our scope

We structure our approach round three main considerations.

- Goals – what our users are hoping to accomplish with the solution
- Strategies – how our users approach the task of meeting their goals
- Knowledge – what our users already know (both conceptual and practical knowledge).

These are characteristics of the **user**. They are useful because inform different aspects of your **solution**.

- Goals inform functionality and core information requirements
- Strategies inform interaction, flow, work management, collaboration
- Knowledge informs the alignment between what you want to provide and what the user already knows, and how to bridge any gaps.

In an ideal world, you will conduct research to determine user goals, strategies, and knowledge. If this is not possible, you and your cohorts can imagine plausible user characteristics, just as we have done in the examples here. Not ideal, but definitely better than nothing.

The following sections will show how you can apply these considerations in a variety of design settings, and hopefully enable you to integrate them into your approach.

Goals

Our informal definition of "Goal" is "what the user is hoping to accomplish with our solution".

Here are some very high level goal statements.

- A member of the public wants to find a specific book on an on-line bookstore
- A call centre agent wants to handle service calls quickly and effectively
- A project manager wants to see if ABC consulting group has done similar projects to the one they want to do

These goals are completely different in nature.

- Online bookstore: information retrieval
- Call centre: task support
- Consulting group site: decision support.

A lot of work has been done on trying to categorize goals, especially in the world of search. We won't attempt a categorization, but we will recognize that, even though the goals are very high level, we can already infer something about the shape of the solution and our design tasks.

- For the bookstore, we are building a catalog. Our preoccupations will be indexing schemes, categorization, search
- For the call centre support, we are building a power tool. Our preoccupations will be "fit", power assistance, affordances, instructions, and training.
- For the consulting group, we are building a marketplace. Our preoccupations are organization, signposting, information scent, and search.

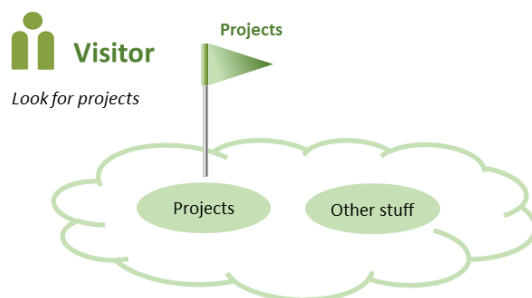For the consulting group, we might infer something like this.

Figure 1: Single user, one goal – user view

It shows the visitor using the solution (not very structured so we just use a cloud) to look for projects; it shows that the solution will have some projects, and that these will be flagged to be easy to find. Not much at the moment, but it will soon get elaborated.

As we are interested in both the user and the architect view of information, we might infer something about the information model too.
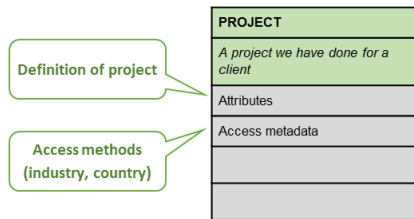

Figure 2: Single user, one goal – architect view

This shows that we will need to define precisely what we mean by project (Attributes). This will be determined through business analysis and written up as a set of requirements.

In addition, the solution might need access methods to help the user navigate the set of projects (Access metadata). We offer industry and country for illustration, but need user research to confirm this.

Strategies

Our informal definition of "Strategy" is "how the user approaches the task of meeting their goal".

The goal statements we looked at before were useful, but they didn't tell us how the user approaches the task of meeting the goal. That's the job of user strategies.   We often describe them using stories.

- To find a known book online, I type all or part of the title into the search bar. I look at the search results and find the title I am looking for. If there are multiple editions, I find the one that is best for me.

- After I have finished the call with the client, I write up the ticket and submit it into the pool. One of us will pick up the ticket and take responsibility for it. We will solve it ourselves if possible, with the help of online resources both internal and external. We may have to involve our supervisor or specialists. When the ticket has finally been handled, it is marked as complete.

- I browse the site looking for the projects they have done to see if they can meet my needs. I keep looking until I am certain one way or another.

Even though the strategies are very high level, we can add to our ideas about the shape of the solution and our design task (both the user view and architect view).

- For the bookstore, we want accurate retrieval based on partial titles, we want the search results to be presented with good priority and high information scent to that the user can quickly identify the title they are looking for, and we want clear and prioritized distinction between editions.

- For the call centre support, we need effective access to supportive information resources, we need to handle the multi-session nature of the call, we need a mechanism for collaborating with peers, and we need to let the agent manage multiple calls in progress.

- For the consulting group, we identify researched or plausible user flows through information and provide well-signposted forward paths through the site to handle these.

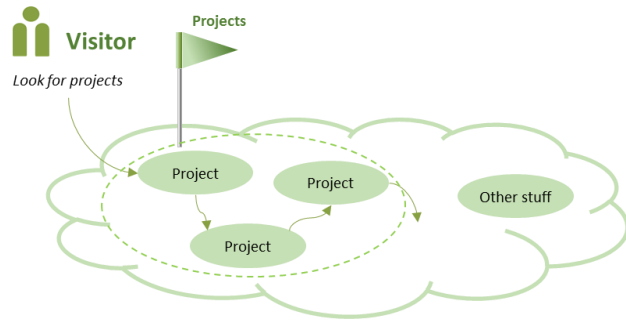For the consulting group, we may now be thinking something like this.

Figure 3: Single user, initial strategy - user view

There is no reason to change the information model.

Extending User Strategies

User goals don't exist in isolation, but form chains and networks. We can explore these by asking of a user story "What next?"

In the consulting group example, the user story might continue like this.

- I browse the site looking for the projects they have done to see if they could meet my needs. I keep looking until I am certain one way or another. **If I think the company can help, I will contact them**.

As designers, we immediately start a thought process about supporting this new goal. We think about phone numbers, email addresses, chat, web forms, or office locations.

Let's assume the main contact method will be a web form. This changes both the user view and the architect's view.
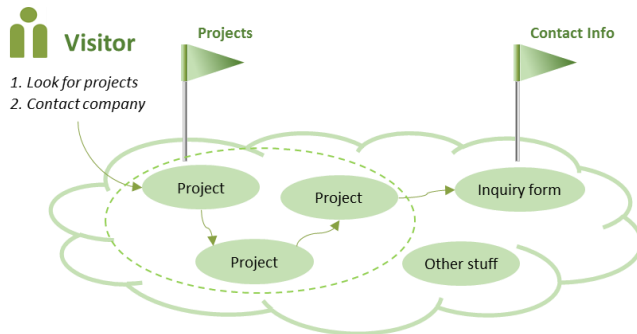
The user view changes to this.

Figure 4: Single user, extended strategy - user view

It now shows the user using the inquiry form, which the UX designer should flag prominently.
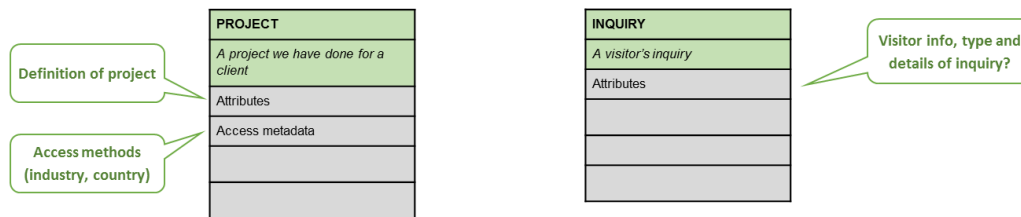
The architect view also changes.

Figure 5: Single user, extended strategy - architect view

It now shows the inquiry form, still to be designed in detail, but at least we know the information model has an additional component.

This process can be iterated.

- I browse the site looking for the projects they have done to see if they could meet my needs. I keep looking until I am certain one way or another; if I am in doubt, I bookmark the page for later. If I think the company can help, I will contact them. **I will need to understand various aspects of how we work together, pricing, quality, and availability.**

Again, we start a new thought process about supporting this goal. Some options are: providing additional "Working With Us" content on the site, providing boilerplate content to be sent in response to the web form enquiry (similar but filtered based on inquiry), or letting an agent create a custom response.

You should be able to extend both the user view and architect view for any of these cases.

Knowledge

Our informal definition of "Knowledge" is "pre-existing knowledge and skills that might affect a user's use of the system".

Users bring to their use of a system a diverse set of knowledge and competencies.

- Terminology
- Mental maps
- Technology literacy in general
- "General" knowledge
- Task literacy.

We have to decide how closely we should align our solution with users' knowledge and skill, and how and when to bridge any gaps. Every interaction and content piece can be considered from this perspective.

If you look at the diagrams and stories for the consulting group, you could imagine considerations like these.

- The visitor may never have visited our site before. How do we use navigation, terminology and information scent to orient them to our site content? Would a site map be helpful? Should we link to the Inquiry form from Project pages?
- What information does the user expect to find about projects? What additional information might we want to tell them (testimonials, awards?)
- We will be talking about where we have done projects. What level(s) of granularity for geographies do we use ("Africa", "East Africa", or "Burundi" for example). Would a map of the world help?
- Similarly, when accessing projects by industry, what terminology and values for industry would be most useful?
- We consider where the inquiry form might be problematical, for example explaining why we need certain fields, and what the rules are for password strength.

Sometimes we need to provide explicit help and training content too, and this should be reflected in the stories and visual representations.

Information Scent

In the world of richly connected information, we need to provide good signposts to other content.

Information scent is all about designing signposts so that the user reliably knows what to expect when they follow them, and can decide whether to follow them or not.

Here are some possible signposts to theinformationartichoke.com site with different information scent.
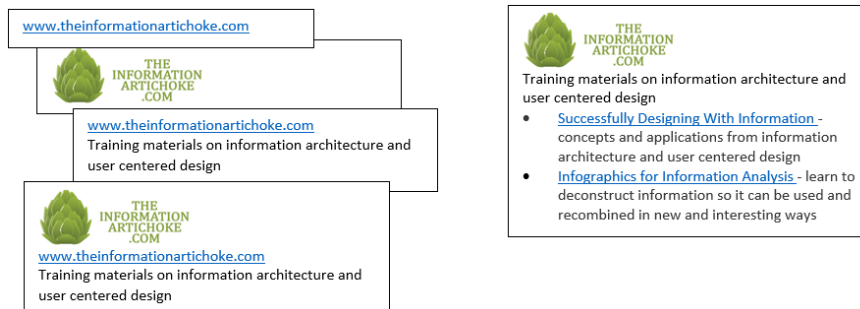

Figure 6: Signposts with different information scent

All are totally appropriate in certain circumstances, depending on the user's knowledge.

For the consulting group, we can likewise cue up individual Projects with different information scent. We can use various combinations of:

- Project name
- One or two sentence summary (especially for mobile)
- One or two paragraph summary (for use in featured projects)
- Client logo
- Photo of completed project work, or consultant team working with client team.

Although these are introduced to improve the user view, they change the architect view too. This is because we need to create and store the text and media assets listed above (other than the project name, which is an attribute of the project).
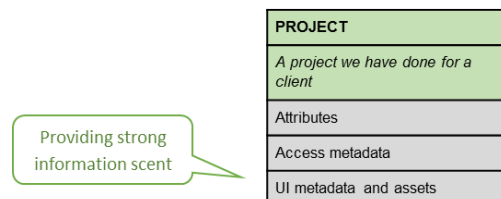

Figure 7: Information component with UI metadata

The box "UI metadata and assets" is a shorthand for those assets that are needed to provide extra information scent, and will be elaborated once the interface design choices have been made.

Multiple Participating Roles

Most solutions involve multiple roles who participate in the creation and consumption of information in different ways. For the consulting group solution, there are a minimum of two more roles.

- Someone to create content
- Someone to reply to inquiries.

We can change the user view to show these roles and the functions they will be performing.
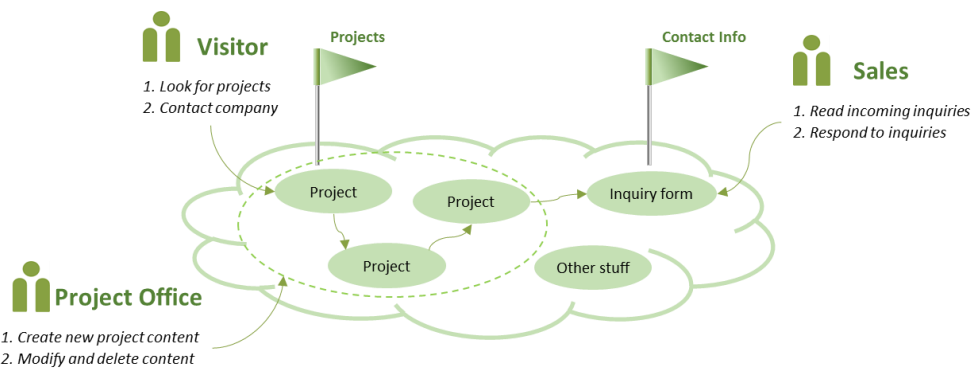

Figure 8: Consulting group user view showing multiple roles

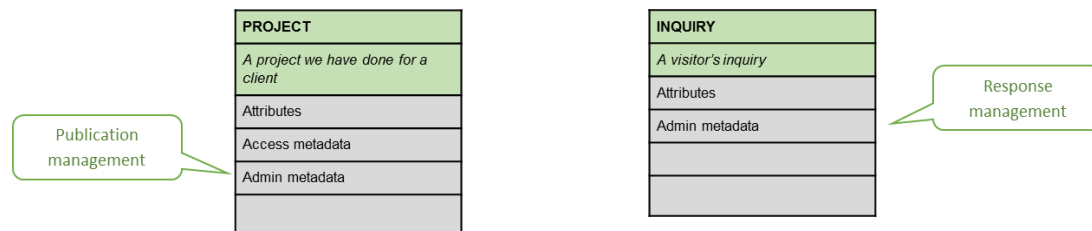The architect view also changes, but in subtler ways.

Figure 9: Architect view showing admin metadata

It shows that there will be administrative metadata for both Project and Inquiry.

- For Project, this means such things as review and publication dates, draft or published status, etc.
- For Inquiry, this means such things as a log of the response to the inquirer, active or closed status, etc.

These will be filled out in detail once the appropriate workflows and information lifecycles have been decided.

User variants

Sometimes the users of a solution will have different goals, strategies and knowledge, even within a single role.

Consider visitors to a mortgage lending site. User research might reveal the following variation.

- Main Goal
    - User wants to learn about mortgages
    - User wants to see if they qualify
    - User wants to see what the payments would be on a house they have in mind.
- Strategy
    - User selects the most popular product
    - User makes a detailed comparison themselves
    - User discusses options with their friends and family.
- Knowledge
    - User understands mortgage principles / does not understand mortgage principles
    - User is comfortable with contracts and legalese / is not
    - User likes slow support channels like documentation and email / likes fast support channels like phone and chat.

There are a lot of possible combinations. To what extent should we accommodate users who are confident/timid, solitary/collaborative, smart/not?

One approach is to look for clusters of variants. User research may show that some combinations are more frequent than others; perhaps there are large clusters of [Confident + Solitary + Smart] and [Timid + Collaborative + Not Smart] users.

There may be few who are [Confident + Solitary + Not Smart], but there is usually at least one.

Personas

It may be more effective to work with clusters of attributes rather than handling all possible combinations individually.

To help with this, it is common to use **personas**. These bring to life a distinctive cluster of user goals, strategies and knowledge, and are usually written up as a document also called a persona.

Here's a persona for the [Confident + Solitary + Smart] cluster.

SOLUTION: Mortgage Lending Site

PERSONA: John ("Razor") Sharpe

Razor is a late-career consultant looking for a mortgage on a home for him and his wife to move into in a few years, which he will rent out until then.

He will be doing the leg work, as he done for mortgages on their previous three houses. He is pretty hard-nosed, and can see through BS right away. He really likes a deal.

Razor's consulting business takes a lot of time, so he is looking for special responsive attention.

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Figure 10: Persona for consulting group visitor

Having seen the persona for "Razor" Sharpe, you should be able to imagine personas for other possible clusters.

The concrete nature of personas make them useful throughout the design process.

- Validate design alternatives ("How well are we meeting Razor's needs with this solution")
- Control scope creep ("So how exactly would this benefit Razor")
- Assess content ("Are we patronizing Razor").

You should know that there are many approaches to doing personas, not all in agreement. The approach here focuses on psychological and behavioral characteristics that affect the information we

capture and how we structure its presentation. Its scope is a single solution. Each persona contrasts with the others, as a tool to explore interface variants for that solution.

Other approaches focus on persuasion, delighting and otherwise catering to other aspects of the user's psychology that impact user experience design. Yet others focus on market segmentation. The scope of these might be the entirety of their engagement with the client.

Designing For Multiple Personas

How can you proceed when there are multiple personas? One distinction is whether you can determine which persona is using the solution at any time.

In situations where the user is anonymous, you don't know. The mortgage lending site is like this. The solution has to provide all the functionality needed by all personas, but the user is in charge of picking their own way through the site. Oversimplifying mortgage lending a bit, we might have.

Figure 11: Multiple visitor personas for mortgage lending site

Your challenge is to make it easy for each persona to find what they are looking for. Some ways are:

- Exceptional signposting of content areas ("Our Products", "Education Centre", …)
- Providing numerous forward paths through the solution to meet various users strategies
- Explicitly asking users to identify their goals ("Tell Us About Yourself", "So You Want To Understand Mortgages") and providing a custom experience.

It is a useful exercise to see how these approaches are taken in sites you visit.

In situations where the persona is known, for example based on user credentials, it becomes possible to provide customized user experiences over the same set of information.
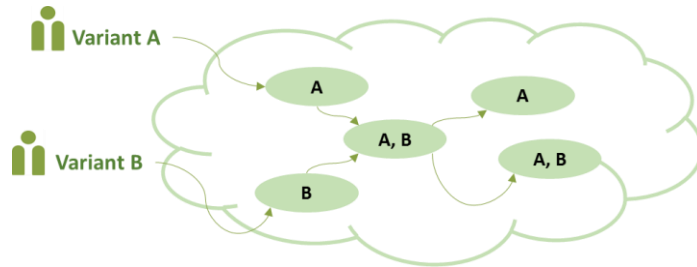

Figure 12: Solution variants when the persona is known

The customization can be done in a number of ways.

- Functionality can be switched in or out. For example, a content author who does not know HTML should have HTML editing disabled
- Overall flows and navigation might be different
- The user interface might be tailored to user capabilities, for example the oft touted expert-mode
- Educational content may be emphasized or deemphasized.

The experiences are all built over the same information model.

For completeness, we point out that this type of customization requires additional information design for the customization scheme (what capabilities can be switched in or out, possible groupings, and assigning them to users or roles). It will also require an interface to administer the customization. You should be able to see how these would appear on the user and architect views.

What's next?

This material has demonstrated how user considerations can factor into the solutions design process.

There is a large literature on these topics and more; rather than make specific recommendations, we would suggest watching for related posts in LinkedIn groups or searching online for some of the concepts we introduced in these Briefing notes.

The part of the "Experiencing + Architecting Information" series, this Briefing Note "Understanding Users" has many touchpoints to other documents in the series.

- Scoping and Information Modelling – shows how to shape informal and formal information models by considering user goals, strategies and knowledge
- Innovation – shows how to generate new possibilities for adding value to users
- Conceptualizing – takes the solutions represented here as clouds, and generates UI sketches in the form of wireframes
- Evaluation – explicitly checks that user strategies are met through the construction of scenarios.

This series does not deal with the final activity, Presentation, which is well represented elsewhere.

Good designing!