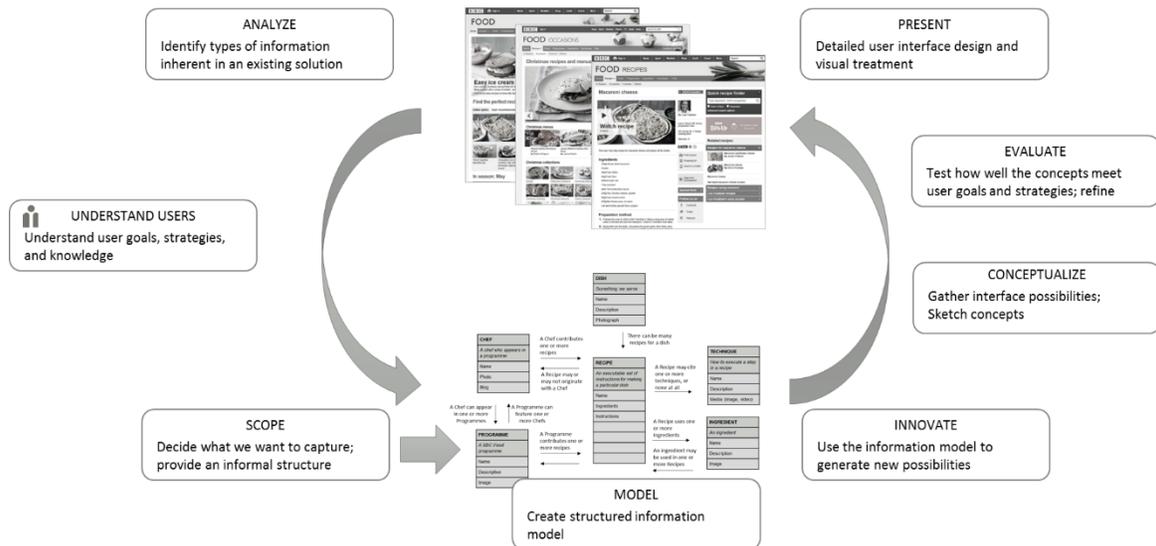




Information Places

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

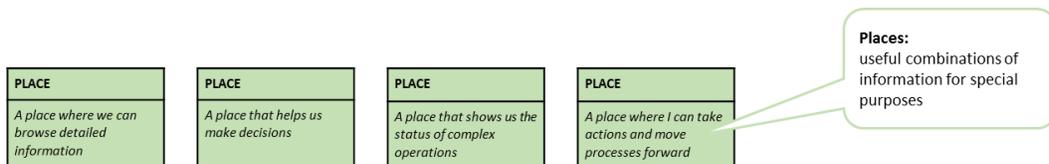
June 2015



Introduction

The series introduction “[Experiencing + Architecting Information](#)” presented two views of a user-facing solution: the user view, which is what the user sees, and its underlying information structure, which is represented diagrammatically in an information model.

For a given information structure, there are many possible user experiences, some good and some not so good. To help build quality user experiences, it is useful to introduce a level between user view and information model, which we call an Information Place.



Many-to-many relationship

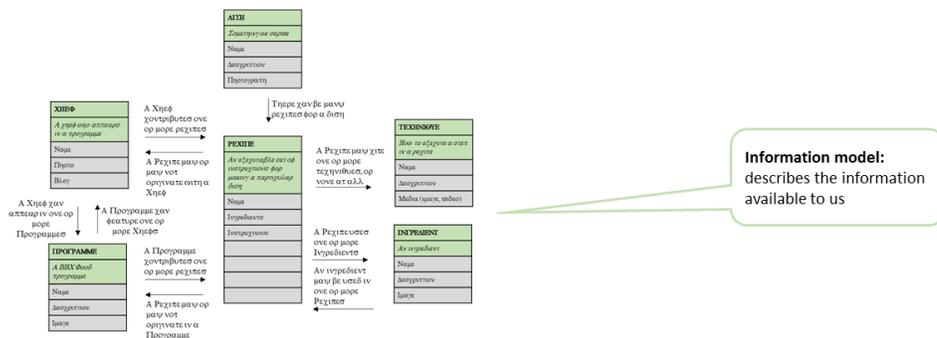


Figure 1: Relationship between information and information places

An information place is a useful combination of the information available, created for a specific purpose.

We already have lots of familiarity with information places. For example, my online banking site is designed to let me see account balances, make payments, learn about new products and services, etc.; my blog allows me to make new posts, categorize them how I want, and look at readers’ comments.

Blogs and banking sites look and feel radically different as information places. Conversely, all blogs have similar functionality and underlying information structures, but may differ from each other in realization and user experience to some extent.

An information place is still an abstraction. Actually, we will see that there are many levels of abstraction, ranging from a box with a place name and description (as above) to progressively more elaborated sketches and wireframes.

Working with these abstractions encourages us to focus initially on functionality and flow, and lets us defer interaction design and visual treatment until we know we have the right set of pages in the right relationships.



Definition of an Information Place

We will take the following as our working definition.

An INFORMATION PLACE is an **information** environment that allows **users** to meet their goals effectively and efficiently

It infers that well-designed places arise from the interplay of both user and information considerations, and the following sections will show how this is the case.

User considerations

In the Briefing Note "[Understanding Users](#)", we found it useful to consider users in terms of their goals, strategies and knowledge, and demonstrated how these considerations inform the high level shape of solutions. That document might be considered a prequel to this.

In the context of designing information places, we can say, roughly speaking.

- User **goals** inform what information we provide
- User **strategies** inform how we package the information and ensure flow through the solution
- User **knowledge** informs the user guidance we provide.

At the end of the design process, they can be rephrased as questions for evaluating the quality of the design.

- Can the use meet their goals with this solution?
- Does the page flow align with the way the user thinks about meeting their goal?
- Have we provided appropriate guidance to users?
- Are we stating the obvious?

Information considerations

An important consideration is how information gets aggregated into a solution. There are two main approaches.

- **Automated:** we exploit regularities and structure in information as the basis for creating information places; for example, a banking site pulls together account and transaction information for a user based on the underlying information model
- **Curated:** we manually assemble the information required for an information place; for example, an editor may recommend ten mystery novels guaranteed to leave the reader guessing.



We can refine the previous diagram to show this.

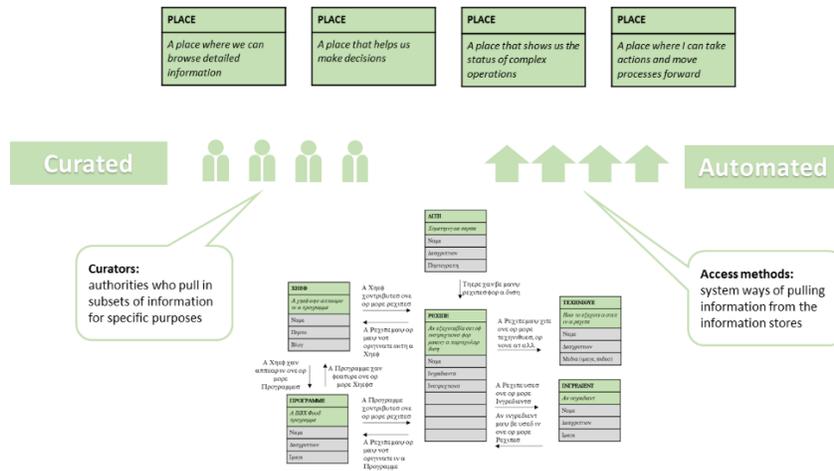


Figure 2: Automated and curated aggregation

The left hand side shows curators responsible for manually selecting information; on the right hand side, the arrows indicate an access method designed to select information from the content stores described by the information model (see the Briefing Note “[Information Access](#)” for details).

Automated aggregation is the basis for a large number of interaction patterns such as information views, parent-child relationships, finding items related to the current one, search refinement, and some types of navigation. The Briefing Note “[Mapping Information to Experience](#)” systematically explores the relationships between the elements of an information model and elements of user experience.

Curation is the deliberate act of selecting and collocating content for a special purpose or audience, or to reveal certain types of significance or meaning. It is the thought process behind what to include in a portfolio, or recommending favourite books for a junior colleague, or expert advice on wine pairings.

An information place often involves both automatic aggregation and curation. Consider for example how we might present news in a corporate intranet:

- Automatically aggregated news: the system automatically pulls news from internal sources (departments, projects) into a central searchable place; it could also pull from external news feeds.
- Curated news: various stakeholders choose a subset of news articles for various purposes; “Our Top Stories of the Week”, “From the Field”.



Example of automated aggregation

Suppose we have this body of content and are looking for possible aggregations.

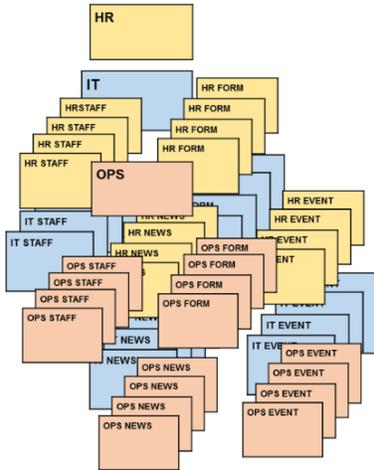


Figure 3: Sample body of content

Possibilities become clearer when we do content and/or information modelling.

Looking for content types, we find four of them (Department, Staff, Form, Event), and can refactor the sample body of content like this.

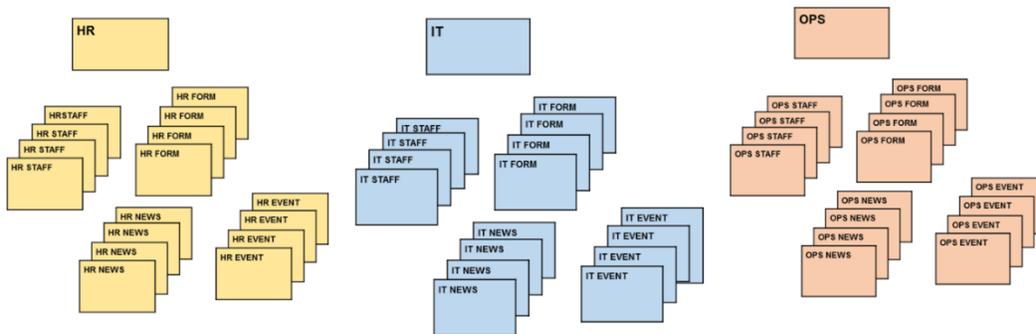


Figure 4: Content structure

Refactoring is not always this simple, and usually involves a balance of quick wins and hard labour.

- If our starting point is the content audit of a well-structured site, we can often read off parts of the content structure in a straightforward manner.
- On the other hand, if we start with a poorly organized jumble of content, we may need to use card sorting and other methods to determine possible organizing principles.
- If there are a lot of unstructured documents, we will need to look at their internal structure and usage in order to identify different content types, e.g. policies, procedures, instructions, meeting minutes.



Each type of content has its own internal structure which we can show in an information model. The information model for the previous content might look like this.

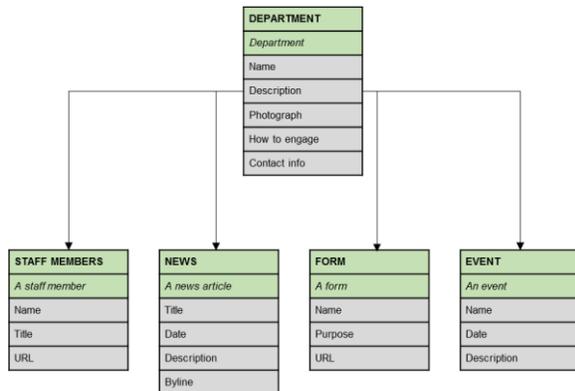


Figure 5: Information model

Given this, we can envisage a number of possible aggregations.

(a) Department

The information model suggests an information place called department, with structure mirroring the information model and content.

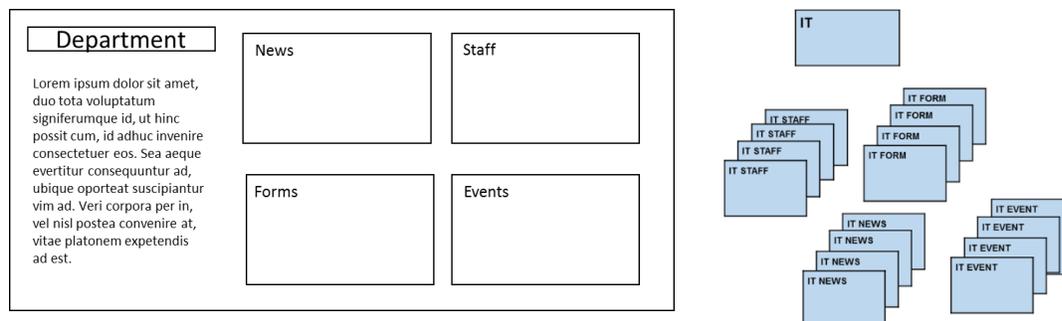


Figure 6: Departmental information place

This is still a high level abstraction of the final solution, but definitely more detailed than just a box named “Department”. It specifies what we will include in the place, allowing us to ask validation questions such as:

- Who would use this place? (remember this was proposed based purely on information considerations, everything related to department)
- Does the information meet their needs?

These questions can be asked very early in a design process, and can catch major gotchas, including “[The Worst Intranet Mistake](#)”, which you really should avoid.



This level of abstraction completely ignores visual treatment, branding and interaction controls. Even the placement of elements is an illustration for discussion purposes, not a specification until discussed.

If the preliminary sketch is approved, we can create progressively more detailed representations that allow us to discuss other characteristics of the solution, for example its usability and flow.

(b) News

When we have instances of the same type of content residing in different places in a site, we can consider pulling them together into one place.

For example, the content includes IT News, HR News, and Operations News¹. All types of news could be pulled together into a place that we think of as Aggregated News, or a News Hub.

Here is a somewhat realistic abstraction of Aggregated News, in the form of a wireframe. It takes time to create wireframes, so an initial validation should have taken place prior to this.

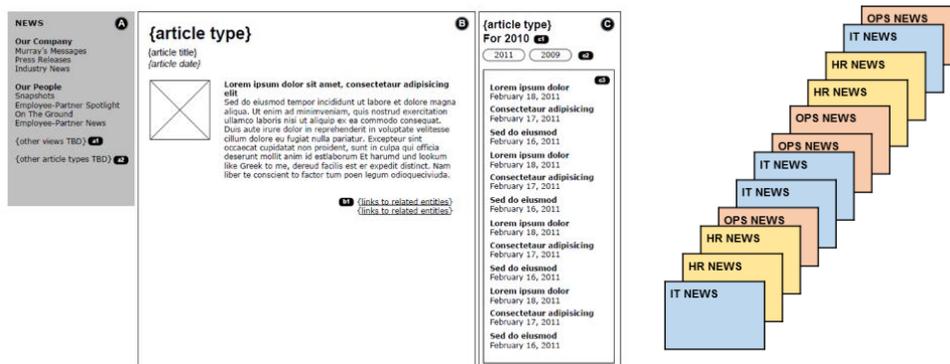


Figure 7: A place for aggregated news

The wireframe shows a solution concept and how the user might interact with it. This level of detail lets us ask questions about functionality and interaction.

- Should we have a “What’s New” view?
- Should we allow user personalization?
- What should the body content be when the user first enters this place?

The wireframe is still an abstraction, and will go through various iterations to pin down placement of UI elements, content for labels, what UI controls to use, and to incorporate applicable standards.

(c) Events

We can do the same thing with the recurring content type Events. The place could be thought of as Aggregated Events, or an Events Hub. The user interface might be a corporate events calendar, in

¹ The information model shows just a single component called News, which highlights the commonality. We could implement News as one central repository, already aggregated, which we subset by department for example. Alternatively, we could develop a separate News repository, which we aggregate in software. The development team will make this choice.



calendar or text formats, with selection by department, date, and any other useful attributes of event that are present in the information model.

Benefits of automated aggregation

(a) Automation

By exploiting regularities and structure in information, automated aggregation allows us to programmatically assemble information and present it in user interfaces. With sufficiently fine information granularity, we can combine the information in a number of different ways, as seen above.

(b) Reusability

There is also the possibility of building reusable data-driven software templates. A template for departments is a case in point.

Achieving these benefits is the motivation for content strategy, content management systems, and portal platforms.

Limitations of automated aggregation

(a) Value

Naïve aggregation does not always yield something of value. For example, let's consider whether it would be useful to aggregate Forms from the various departments in the same way we did with News and Events. Perhaps not. News and Events are very homogenous structurally, and lend themselves to native organization such as by date. On the other hand, Forms are structurally and functionally diverse, often with no common attributes for organizing them.

(b) Flexibility

There are often situations where an information model just cannot answer all useful questions. For example, visitors to an online bookstore might want a list of good summer reads, or mystery novels guaranteed to leave the reader guessing. This type of thing is hard to accomplish by adding metadata, with prohibitive development and content publishing costs, especially if a few months later the visitor wants cheery books to read by the fireside.

Both of these limitations can be addressed by curation.



Curation

Curation involves manually assembling whatever information is required to meet the needs of an information place.

A good example of curation comes from the world of corporate intranets, where we often find an area called “For New Employees”, pulling together and organizing a useful set of resources for new employees. This can use content from anywhere in the intranet, and in fact can link to external references.

A bad example of curation is the table of books inside the entrance of a big box bookstore labelled “Manager’s Picks”. Without knowing who the manager is, or their intentions and expertise, we have no reason beyond mild curiosity for looking at the table.

There are three useful assessment criteria for curations.

- Is there a well-communicated intent for the curation?
- Is the curator credible?
- Is the intent executed well?

They show that “For New Employees” could be a good curation, if executed well.

- Is there a well-defined intent for the curation? Yes, to provide support for new employees as they settle into the organization.
- Is the curator credible? Let’s assume that a competent web steering committee was charged with doing the job.
- Is the curation executed well? We cannot tell without seeing the design for the place; when we do see the design, we will evaluate it in terms of how well it aligns with the user’s goals, strategies, and knowledge.

On the other hand, they show that “Manager’s Picks” is more questionable.

- Is there a well-defined intent for the curation? Maybe in the Manager’s mind, but it is not conveyed through the title Manager’s Picks
- Is the curator credible? Unclear in most cases, as the shopper knows nothing about the manager. A manager’s bio might help.
- Is the curation executed well? It depends on how the books are arranged on the table. Sometimes we see notes attached to the books, explaining why it was selected.

We often see questionable curations on LinkedIn, where strangers proffer their 10 favourite UX books, for example.



Building a New Employee place²

Let us build a New Employee place from the same content and information model that we used when discussing automatic aggregation.

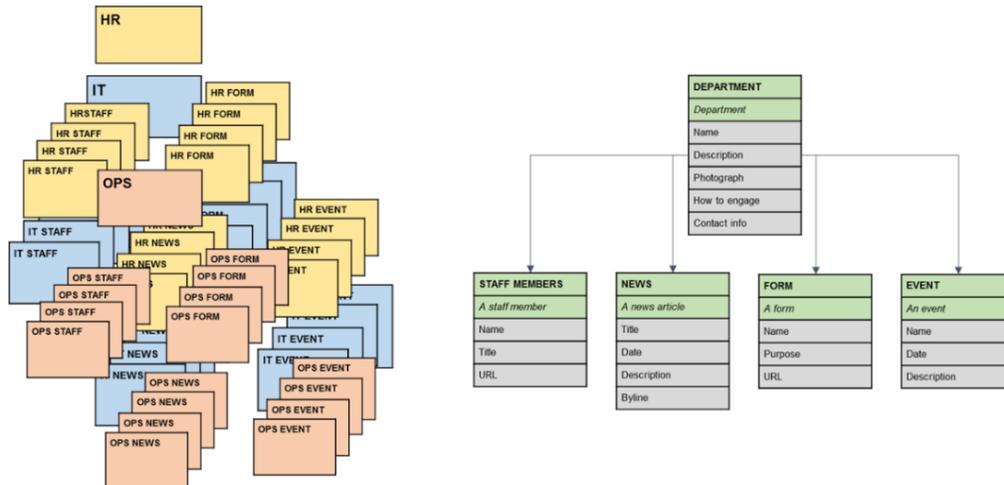


Figure 8: Content and associated information model

The New Employee place will contain a selection of content useful to new employees. This selection cannot happen programmatically. Why? Looking at the information model, there is no suitable attribute such as an audience tag or New Employee tag that could automate the selection.

At this point in design discussions, there is a natural tendency to propose adding a New Employee tag to all content.

There are some serious problems with this proposal.

- It puts an additional burden on the various content publishers; for example, the creator of an IT Form will have to know whether it should be tagged for New Employee's usage
- It is not easily extensible; for example, if we wanted to create a New Manager's micro-site, and later a New Consultant's micro-site, we would have to make changes to the information model, the database structures, and the content publication processes for all affected content.
- Creating a functional information place is not just a matter of selecting content, but also organizing it.

So let's abandon the pursuit of automatic aggregation and see how to build a curated New Employee place.

² The terminology "New Employee place" is sometimes a bit awkward or abstract in team discussion; names like "New Employee Resources" are more workable and approachable, having functional overtones. Names like "New Employee Micro-site" have implementation rather than functional overtones, which may create design bias, especially in a multi-channel world where we may also have a "New Employee Reference Card".



Information considerations for the New Employee place

The Web Steering Committee has decided that the following content is valuable for New Employees.

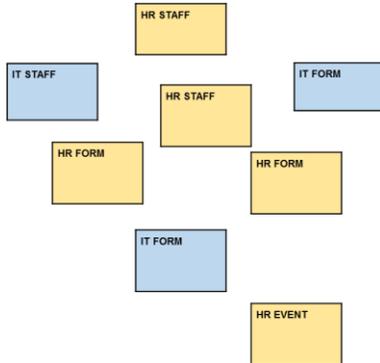


Figure 9: Selection of content for New Employee place

Their decision was based on considerations such as:

- What do we as an organization require new employees to know or do?
- Where do new employees stumble when getting settled in?
- What can we do to make their experience self-serve to reduce administrative overhead?

The selection is asymmetrical with respect to department. It contains a subset of content from HR and IT only; there is no content from Operations. There are forms and staff information from HR and IT. There is an event from HR but not from IT.

User considerations for the New Employee place

Creating a functional information space is not just a matter of selecting content.

A PLACE is an **information** environment that allows **users** to meet their goals effectively and efficiently

What do we have to do with the content so that users can meet their goals effectively and efficiently?

We can get some insights by thinking about users in terms of their goals, strategies and knowledge. For the New Employee place, these may seem straightforward and generic, but they will bear fruit, as we shall see. If they are ignored, the user experience of the place you build will be compromised.



(a) User goals

Although the web steering committee was responsible for selecting the content, the new employee nevertheless has high-level goals relative to the New Employee place:

- To understand the information contained in the New Employee place.
- To perform all required activities as efficiently and effectively as possible.

(b) User strategies

Imagining yourself in the place of a new employee, you will recognize the following types of strategies.

- Understand the significance of each piece of information
 - its meaning
 - the implications for me
 - any time-limitations
- Take all necessary actions
 - check pre-conditions such as applicability or information that will be needed
 - understand whether an action is required or optional
 - more generally, choose from a set of options
 - take the action
- Get help when needed.

(c) User knowledge

We will assume that a new employee will bring certain knowledge with them:

- Retirement plans applicable to the country of employment (401(k), RRSP, ...)
- Statutory holidays
- How to use common business applications such as email clients and word processing

and will not have knowledge of

- Company specific terminology
- Company specific conventions, such as signature file formats
- Company specific benefits
- Company specific applications such as timesheets.

We will see how these considerations can be used to shape and evaluate our design.



Organizing the content

Content organization must help the user understand the information and actions to be taken.

Information (content) based possibilities are always a possibility. The content shown in Figure 9 could be organized by information attributes such as department (HR, IT), by type of resource (Staff, Form, Event), or name. Here is an organization by department.

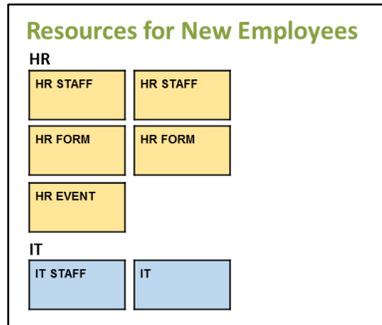


Figure 10: Information based organization

Purely information based arrangements do not perform well when assessed against user goals, strategies and knowledge. For example, this organization:

- Does not help the user understand priorities
- Imposes a structure (department) which does not necessarily align with user expectations of a New User site.

A user-centered point of view explicitly considers user goals, strategies and knowledge and can lead to a more understandable solution. If we analyse or model or card-sort the activities that a new user has to perform, we might come up with a chronological organization or a process-centric one.

Here is a possible organization based on time-line.



Figure 4: Time-line based organization



The time-based content categorization helps a new user “perform all required activities as efficiently and effectively as possible” by letting them focus on the information needed at a particular point in time. *Consider it an illustration rather than a recommendation.*

From an information architecture perspective, this categorization is a new level of information architecture specific to this context. Using the notation introduced in the Briefing Note “[Information Access](#)”, we can represent this as

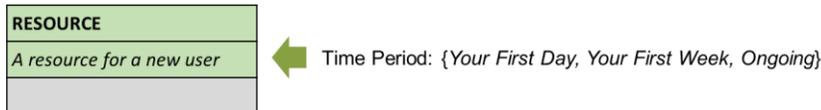


Figure 5: Access model for New Employee content

There is an information component called Resource, and an access method called Time Period.

This example illustrates common characteristics of re-using information in information-rich environments.

- Information may end up in contexts quite unknown to the original designer
- The information architecture of the original context might be useless for the new context
- A completely new information architecture might be designed for the new context.

We will see other examples of emergent information architecture in the next section.

Explaining the content

Let us consider the content from the point of view of user **knowledge**. New employees will have incomplete knowledge of the content presented to them, or its significance; to mitigate this, we can provide guidance. The New Employee place, enhanced with guidance, looks something like this.

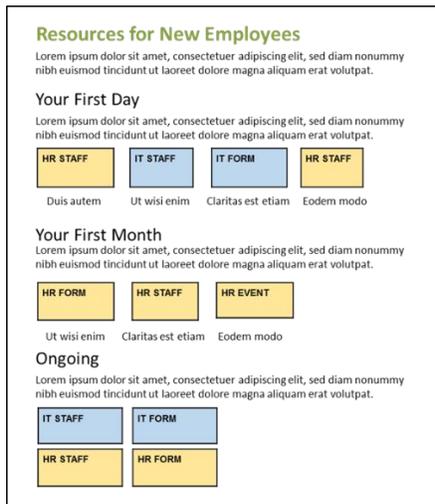


Figure 6: New Employee place with guidance



It provides guidance at different levels:

- Curation (Resources for New Employees): describes the purpose of the curation and its target audiences. For example, “Welcome to Information Artichoke Consulting! This site will provide you, our new employees, with a convenient place to understand your onboarding requirements. Don’t hesitate to contact the staff resources included here if you have problems”.
- Category (e.g. Your First Month): explains the purpose, expectations, or significance of a content category. For example, “You must complete all of the forms in the section in order to be paid at the end of the month”.
- Resource (e.g. HR Form): explains the purpose, expectations, or significance of a resource. For example, “You must follow this procedure to get a building pass, otherwise you will not be able to get on site this week”.

It is important to provide guidance where it is most needed. The Resource and Category examples convey solid information to the user; the Curation example is welcoming, not quite crossing the line to motherhood, and plays a social rather than informational role.

It is not valuable, and perhaps irritating, to provide “guidance” text that does not really provide additional information. For example, a link entitled “Staff Directory” does not need explanatory text “this link takes you to the staff directory”.

From an information architecture point of view, the guidance text requires new attributes of Curation, Category and Resource respectively.

Sidebar: Reference information architecture for a curation

The previous sections introduced new information architecture elements (organization and descriptions) specific to the curated context. We can represent the information architecture of curations in our formal notations for information model and access model.

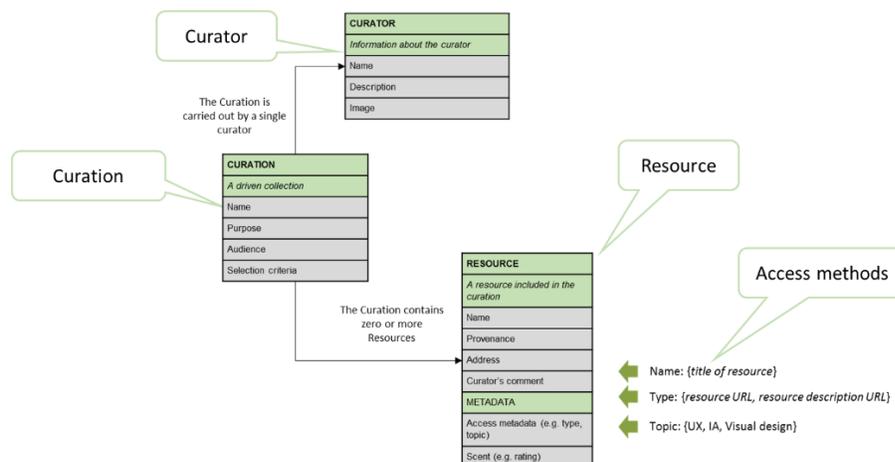


Figure 7: Information and access model for a curation



This is quite generic. Consider it a tool for discussing design; for a specific curation, not all elements need to be presented in the UX.

For example, the New Employee Resource place does not describe the Curator, which we assumed was the Web Steering Committee, and chose not to call out explicitly.

On other occasions, we may want to make curator and audience explicit.

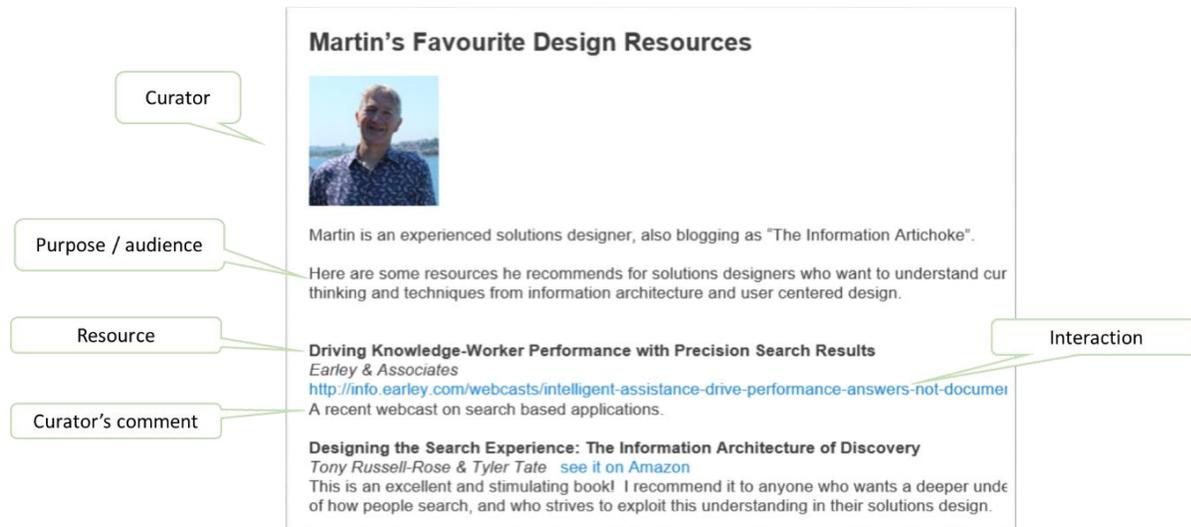


Figure 8: Curation with explicit curator and curation information

User strategies and flow

An information place provides an environment where a user can try to meet their goals by following a strategy that they have in mind. If the elements of the information place are arranged or linked in good alignment with this strategy, the user will experience good solution flow. Otherwise, the user will have to create and execute a workaround, which may or may not be successful.

We will illustrate this with the example of an on-line recipe.

The information model contains recipes and ingredients.

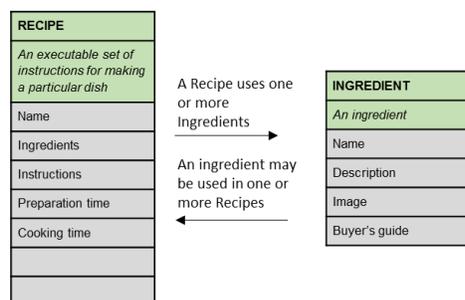


Figure 9: Recipes and ingredients information model



Here is a possible user interaction based on this model (simplified from BBC Food).

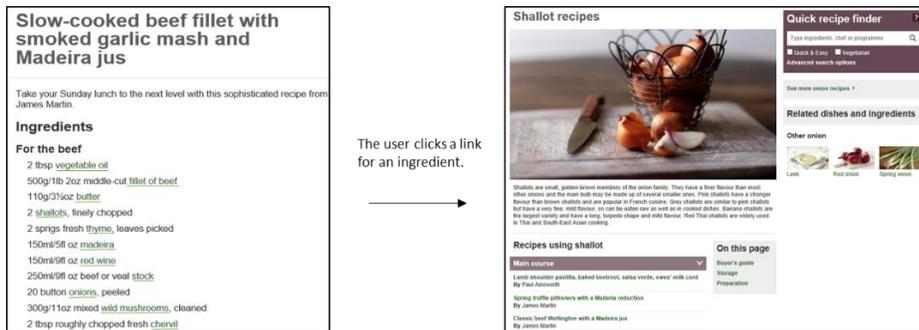


Figure 10: Possible user interaction

The key characteristics of the interaction are:

- Each ingredient in the recipe is clickable.
- Clicking an ingredient link opens an ingredient page in a new window
- The ingredient page illustrates and describes the ingredient and optionally provides buyers' notes
- The ingredient "page" lists other recipes using the ingredient, and lists related ingredients, fully exploiting the rich interconnectedness of the full information model.

We can critique this from a user standpoint, considering goals, strategies and knowledge.

Even when looking at recipes, people have certain goals in mind. Based on personal experience, the following might be realistic.

"I want to make a beef fillet as a special treat for my partner and I, and am looking for a sophisticated recipe that I am capable of making"

The user strategy might start with:

1. Find a beef fillet recipe
2. See if it looks special enough
3. Check any unfamiliar ingredients
4. Check how difficult it is to make
5. Be alert for any other red flags.

Here is our assessment of how well the user interaction aligns with the user strategy.

1. "Find a beef fillet recipe"
Good alignment- we assume that there is search or navigation that leads to this recipe.
2. "See if it looks special enough"
Good alignment- there is good information scent in the image and in the word "sophisticated" (provided the word "sophisticated" is not used indiscriminately)



3. "Check any unfamiliar ingredients"
Poor alignment – the user is taken to another (Ingredients) page, with no inbuilt return path; there are many distractors that can take them further away from the recipe they are evaluating.
4. "Check how difficult it is to make"
Good – there is a good set of written techniques; there is no overall indication of skill level; there are links to Techniques pages
5. "Be alert for any other red flags"
Medium – there is a section in Ingredients called Buyer's Guide that provides excellent information such as product selection and seasonality; it is helpfully broken out into a separate section called Buyer's Guide. However, the user does not know that it exists unless they look at the ingredient.

Based on these observations, we can suggest some improvements.

1. Present only that ingredient information needed for the user to evaluate whether they want to cook with it. Do not provide paths for them to leave their process of "Evaluating a recipe".

One implementation is to present core ingredient information in a popup when the user hovers over the recipe link. Using a popup lets the user check multiple ingredients without page loads.



Figure 11: Popup of ingredient when user hovers over ingredient link

2. Make it clear when there is buyer information that could affect the user's ability to make the recipe.



One implementation is to flag ingredients that have buyer's notes, with the notes themselves revealed when the user hovers over the flag.

Slow-cooked beef fillet with smoked garlic mash and Madeira jus

Take your Sunday lunch to the next level with this sophisticated recipe from James Martin.

Ingredients

For the beef

- 2 tsp vegetable oil
- 500g/1lb 2oz middle-cut fillet of beef
- 110g/3½oz butter
- 2 shallots, finely chopped
- 2 sprigs fresh thyme, leaves picked
- 150ml/5fl oz madeira
- 150ml/9fl oz red wine
- 250ml/9fl oz beef or veal stock
- 20 button onions, peeled
- 300g/11oz mixed wild mushrooms, cleaned
- 2 tsp roughly chopped fresh chervil

Buyer's guide

Shallots can be found all year but are at their best in the UK from December through March

Figure 12: Pop up of Buyer's Guide when user hovers over flag

In this example, two ingredients have buyer's guides; the example shows what happens when the user hovers over the flag beside shallots.

This recipe example has dealt with the start of a user process to find and prepare a suitable meal. The full user strategy will have cases where the recipe is suitable, and where it is not. It is instructive to write out the complete user strategy covering all cases, how they would proceed in the suitable case, and how they would backtrack through Plan B, Plan C.

With this in hand, you should be able to evaluate a typical recipe page in BBC Food and suggest improvements.

Places within places

Places themselves can be aggregated into larger places, up to the level of an entire web site or intranet.

Sometimes we can continue to maintain an audience focus, for example by building constructs such as Engineering Workspaces, which are a curation of engineering resources assembled in one place. Some of these resources might be smaller places in their own right.

Beyond a certain point, however, as we build larger places from smaller ones, we dilute the specificity of purpose and audience. When this happens, we must provide signposting to help distinguish various function or purposes; this type of signposting is often provided by landing pages.

Finally, when we reach the level of the entire site, all functionality is available to everyone (ignoring security to make a point). The main function of the home page is to show users what is available, in a



broadly chunked manner. This is what happens with the global navigation and mega menus in large corporate sites; they are signposts for users to find the areas that interest them, and those that do not.

Not everything is an information place, of course. At the lowest level, we have individual pages of information, or forms, or images, which can be combined into places but are not places themselves.

The concept of information place is very powerful, and studies of physical spaces (urban planning, architecture, and home improvement shows) may provide stimulus for thinking about them more deeply.

What's next?

This Briefing Note has introduced the practice of building information places. It completes the series of Briefing Notes, which should have given you a set of good tools and thought processes for designing information rich solutions.

This is a subset of our full training program on Designing Information Rich Solutions, a systematic learning experience for the acquisition and development of solutions design skills.

Please contact us at theinformationartichoke@gmail.com if you would like to receive this training.

We will be providing extension materials and sample instructor questions on our blog theinformationartichoke.com, so please check back often.

Good designing!