

Information System Architecture

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What is IS Architecture

Information architecture is the term used to describe the structure of a system, i.e the way information is grouped, the navigation methods and terminology used within the system.

An effective information architecture enables people to step logically through a system confident they are getting closer to the information they require.

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What is IS Architecture

Most people only notice information architecture when it is poor and stops them from finding the information they require.

Information architecture is most commonly associated with websites and intranets, but it can be used in the context of any information structures or computer systems.

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The evolution of information architecture

The term "information architecture" was first coined by Richard Saul Wurman in 1975. Wurman was trained as an architect, but became interested in the way information is gathered, organised and presented to convey meaning. Wurman's initial definition of information architecture was "organising the patterns in data, making the complex clear".

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The evolution of information architecture

The term was largely dormant until in 1996 it was seized upon by a couple of library scientists, Lou Rosenfeld and Peter Morville. They used the term to define the work they were doing structuring large-scale websites and intranets.

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The evolution of information architecture

In *Information Architecture for the World Wide Web: Designing Large-Scale Web Sites* they define information architecture as:

- 1. The combination of organisation, labelling, and navigation schemes within an information system.*
- 2. The structural design of an information space to facilitate task completion and intuitive access to content.*

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The evolution of information architecture

3. *The art and science of structuring and classifying web sites and intranets to help people find and manage information.*

4. *An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape.*

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The evolution of information architecture

Today Wurman's influence on information architecture is fairly minimal, but many of the metaphors used to describe the discipline echo the work done by architects. For example, information architecture is described as the blueprint developers and designers use to build the system.

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Common problems

The most common problem with information architectures is that they simply mimic a company's organisational structure.

Although this can often appear logical and an easy solution for those involved in defining the architecture, people using systems (even intranets) often don't know or think in terms of organisational structure when trying to find information.

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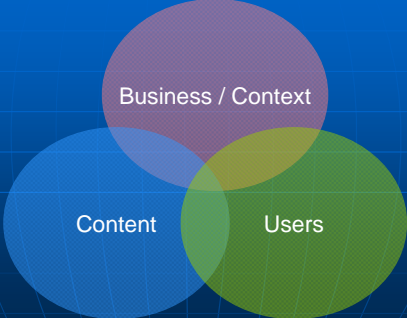
How to create an effective Information Architecture

An effective information architecture comes from understanding business objectives and constraints, the content, and the requirements of the people that will use the site.

Information architecture is often described using the following diagram:

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How to create an effective Information Architecture



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Business Context

Understanding an organisations' business objectives, politics, culture, technology, resources and constraints is essential before considering development of the information architecture.

Techniques for understanding context include:

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Business Context

Techniques for understanding context include:

- Reading existing documentation Mission statements, organization charts, previous research and vision documents are a quick way of building up an understanding of the context in which the system must work.
- Stakeholder interviews Speaking to stakeholders provides valuable insight into business context and can unearth previously unknown objectives and issues.

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Content

The most effective method for understanding the quantity and quality of content (i.e. functionality and information) proposed for a system is to conduct a content inventory.

Content inventories identify all of the proposed content for a system, where the content currently resides, who owns it and any existing relationships between content.

Content inventories are also commonly used to aid the process of migrating content between the old and new systems.

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Users

An effective information architecture must reflect the way people think about the subject matter. Techniques for getting users involved in the creation of an information architecture include:

- Card sorting
Card sorting involves representative users sorting a series of cards, each labelled with a piece of content or functionality, into groups that make sense to them. Card sorting generates ideas for how information could be grouped and labelled.

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Users

An effective information architecture must reflect the way people think about the subject matter. Techniques for getting users involved in the creation of an information architecture include:

Card-based classification evaluation is a technique for testing an information architecture before it has been implemented.

The technique involves writing each level of an information architecture on a large card, and developing a set of information-seeking tasks for people to perform using the architecture.

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Styles of Information Architecture

There are two main approaches to defining an information architecture. These are:

- Top-down information architecture This involves developing a broad understanding of the business strategies and user needs, before defining the high level structure of site, and finally the detailed relationships between content.

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Styles of Information Architecture

There are two main approaches to defining an information architecture. These are:

- Bottom-up information architecture This involves understanding the detailed relationships between content, creating walkthroughs (or storyboards) to show how the system could support specific user requirements and then considering the higher level structure that will be required to support these requirements.

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Styles of Information Architecture

Both of these techniques are important in a project.

A project that ignores top-down approaches may result in well-organised, findable content that does not meet the needs of users or the business.

A project that ignores bottom-up approaches may result in a site that allows people to find information but does not allow them the opportunity to explore related content.

Creating an effective IA in 9 steps

The following steps define a process for creating an effective information architecture.

1. Understand the business/contextual requirements and the proposed content for the system. Read all existing documentation, interview stakeholders and conduct a content inventory.
2. Conduct cards sorting exercises with a number of representative users.
3. Evaluate the output of the card sorting exercises. Look for trends in grouping and labelling.
4. Develop a draft information architecture (i.e. information groupings and hierarchy).

Creating an effective IA in 9 steps

5. Evaluate the draft information architecture using the card-based classification evaluation technique. Don't expect to get the information architecture right first time. Capturing the right terminology and hierarchy may take several iterations.
6. Document the information architecture in a site map. This is not the final site map, the site map will only be finalized after page layouts have been defined.
7. Define a number of common user tasks, such as finding out about how to request holiday leave. On paper sketch page layouts to define how the user will step through the site. This technique is known as storyboarding.

Creating an effective IA in 9 steps

8. Walk other members of the project team through the storyboards and leave them in shared workspaces for comments.

If possible within the constraints of the project, it is good to conduct task-based usability tests on paper prototypes as it provides valuable feedback without going to the expense of creating higher quality designs.

9. Create detailed page layouts to support key user tasks. Page layouts should be annotated with guidance for visual designers and developers.

Developing an information architecture in this way enables you to design and build a system confident that it will be successful.

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Products from the IA process

Various methods are used to capture and define an information architecture. Some of the most common methods are:

1. Site maps
2. Annotated page layouts
3. Content matrices
4. Page templates

There are also a number of other possible by-products from the process. Such as:

5. Prototypes
6. Storyboards

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Products from the IA process

1. Site maps

Site maps are perhaps the most widely known and understood deliverable from the process of defining an information architecture.

A site map is a high level diagram showing the hierarchy of a system. Site maps reflect the information structure, but are not necessarily indicative of the navigation structure.

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Products from the IA process

2. Annotated page layouts

Page layouts define page level navigation, content types and functional elements. Annotations are used to provide guidance for the visual designers and developers who will use the page layouts to build the site. Page layouts are alternatively known as wireframes, blue prints or screen details.

Products from the IA process

3. Content matrix

A content matrix lists each page in the system and identifies the content that will appear on that page.

Products from the IA process

4. Page templates

Page templates may be required when defining large-scale websites and intranets. Page templates define the layout of common page elements, such as global navigation, content and local navigation. Page templates are commonly used when developing content management systems.

Products from the IA process

5. Prototypes

Prototypes are models of the system. Prototypes can be as simple as paper-based sketches, or as complex as fully interactive systems. Research shows that paper-based prototypes are just as effective for identifying issues as fully interactive systems.

Prototypes are often developed to bring the information architecture to life. Thus enabling users and other members of the project team to comment on the architecture before the system is built.

Products from the IA process

6. Storyboards

Storyboards are another technique for bringing the information architecture to life without building it. Storyboards are sketches showing how a user would interact with a system to complete a common task.

Storyboards enable other members of the project team to understand the proposed information architecture before the system is built.

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IA and usability

Some people find the relationship and distinction between information architecture and usability unclear. Information architecture is not the same as usability, but the two are closely related. Usability encompasses two related concepts:

1. Usability is an attribute of the quality of a system: "we need to create a usable intranet"
2. Usability is a process or set of techniques used during a design and development project: "we need to include usability activities in this project"

In both cases usability is a broader concept, whereas information architecture is far more specific.

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IA and usability

1. IA as an attribute of the quality of a system

An effective information architecture is one of a number of attributes of a usable system. Other factors involving the usability of a system, include:

- visual design
- interaction design
- functionality
- content writing.

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IA and usability

2. IA as a process during Design & Develop

The process for creating an effective information architecture is a sub-set of the usability activities involved in a project.

Although weighted to the beginning of the project, usability activities should continue throughout a project and evaluate issues beyond simply the information architecture.

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Who creates the IA?

Increasingly companies are realizing the importance of information architecture and are employing specialist 'information architects' to perform this role.

But information architecture is also defined by:

- intranet designers and managers
- website designers and managers
- visual designers
- other people designing information systems
- programmers
- librarians
- technical writers

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Conclusion

It simply isn't good enough for organizations to build functionality or write content, put it on their computer systems and expect people to be able to find it.

Developing an effective information architecture is an essential step in the development of all computer systems.

Effective information architectures enable people to quickly, easily and intuitively find content. This avoids frustration and increases the chance that the user will return to the system the next time they require similar information.

Remember: people can only appreciate what they can actually find.

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