Web Design & Dev Process

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WHY INF221??

Reaching your audience

- Web products can target the biggest and broadest audience, thereby increasing product knowledge and popularity.

- Web products are readily available and can be viewed from anywhere in the world. Maintain communication between you and potential clients

Cost effective (saves time and money)

- It is arguably more manageable to deal with cross-browser accessibility than cross-platform interfaces and capabilities across different marketplaces, .
- HTML, CSS, and Javascript are utilized to create effective and captivating web products with relative ease. Compare that to native applications, in which code must be specifically written for each marketplace, as the language and processes are significantly different. This requires significant resources as additional development skills and hardware must be acquired.
- maintaining one codebase on a web product will cost less, as there is one common skillset to utilize and focus on.

The Web Development Process

Web Dev Process

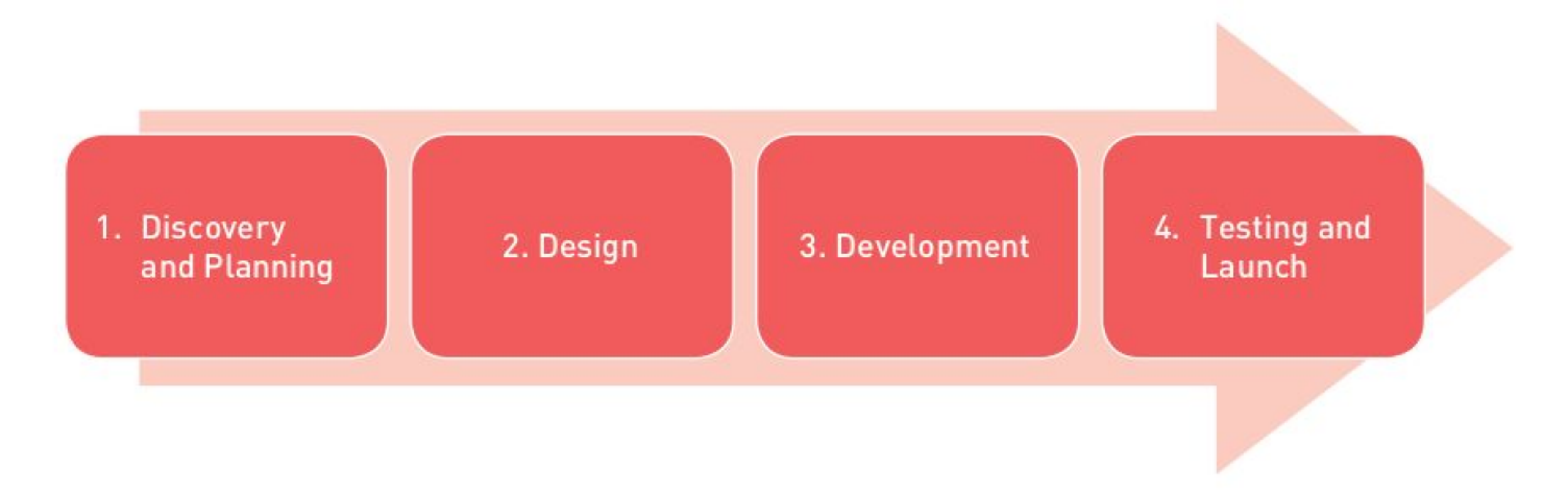
Involves three key processes: planning and design, which create the appearance, layout and style that users see; and development, which brings this imagery to life as a functioning web tool.

The fundamental principle of good development and design is to understand your users, they are the people who will actually be using and interacting with your website.

- What are they looking for?
- What are their objectives?

Your offering must have user experience central to the process.

The web development process



1. Discovery and Planning
2. Design
3. Development
4. Testing and Launch

Step 1: Discovery and planning

Input:

- Reports from clients and documentations from Business Analyst

Output:

- Complete final project documentation with requirement specifications and individual work define to the designers as well as developers.
- Wireframes

Step 1: Discovery and planning

Planning a website starts with research of your market, your users, your competitors and your business.

If you already have a website, you can use existing web analytics data to understand how well you are meeting your users' needs. It's also worth running some user labs to watch how users interact with your existing site.

Step 1: Discovery and planning

Key questions you need to ask.

Business: What are your business objectives? How should this digital property help you to achieve those objectives?

Users: Who are your users, your potential customers? What problem does your website need to help them solve?

You should also reach an understanding of what tasks or actions users need to do on your website

UX and content strategy

Gather, analyse and map out what content is needed on the website. This content is then structured in a process called information architecture.

Make a sitemap which reflects the hierarchy of content on the website and the navigation (how users make their way through a website).

Consider what content you want to include on your site. Will it be a relatively static site that doesn’t change often, or will you need an editable CMS to regularly add and update content, such as blog posts, images and products?

Step 1: Discovery and planning

Should the website be large enough to require it, a functional specification document should be created, using all the information compiled so far.

This document should detail the development requirements for the website and can be used to communicate any specific design constraints.

Step 2: Design

The designer will transform the wireframes and basic planning materials into beautifully designed layouts.

These are static images that show how the website will look once it’s coded.

Input: Wireframes

Output: Site design with layout templates, images and other assets

Visual identity and designing for persuasion

Good interface design involves many things, but here are a few basic considerations.

- Navigation: the signage of the site, indicating to users where they are and where they can go.
- Layout: how content is structured and displayed.
- Headers: the element with a fixed position at the top of every page. It usually includes all primary navigation items which need to be presented on every page such as main menu, login and search.
- Footers: the usually consistent bottom part of the page.
- Credibility: telling users that you are who you say you are

Visual identity and designing for persuasion

Collecting and collating design assets

The following elements (assets) represent your brand and form part of your brand expression.

- Brand guidelines or style guide
- Logo and other key brand elements
- Brand colours
- Image libraries

Step 3: Development

The developer uses the design templates to code the actual website, using the front-end language that you have chosen.

Server-side development and CMS considerations may also be part of this phase.

Input: Design templates and complete requirement specifications

Output: A complete product, with documentation

Assessing your development needs

It is important to identify what your development needs are as these fundamentally impact the options that are most appropriate to your site's development.

Will you use a CMS?

Will you need complex content management?

Is it for eCommerce, or is it simply a brochure site?

Content Management Systems (CMS)

Content management simply means a system for managing any forms of content.

A web CMS is a software application that assists in managing your digital assets and content for your website. It needs to facilitate the creating, collecting, managing and publishing of any material for your site.

eCommerce

eCommerce, or electronic commerce, refers to any trading of products or services on the Internet.

eCommerce sites are necessary across a range of businesses, from consumer based retail, through auction, music and video subscription sites, to inter-corporate trading.

Brochure site

A brochure site is a static site. It provides content that does not need to be updated regularly, and there is very little interaction with the visitor.

A brochure site is essentially a brochure of a company’s offering, providing relevant information and contact details to prospective customers.

Development options

When selecting how to proceed with your website development, you have a few options at your disposal.

1. Off-the-shelf solution
2. bespoke solution.

The choice between the two comes down to how flexible the off-the-shelf solution is.

If too much customisation is required, or it does not support the business' requirements, it may be better and cheaper to develop a bespoke solution.

Off-the-shelf solution

The CMS you choose can be pre-built by an external company or developer. Thiscan be bought like any other software on the market.

While this option may provide fewer custom features, it’s potentially a more cost-effective option than a bespoke CMS.

It is certainly quicker if little customisation is required

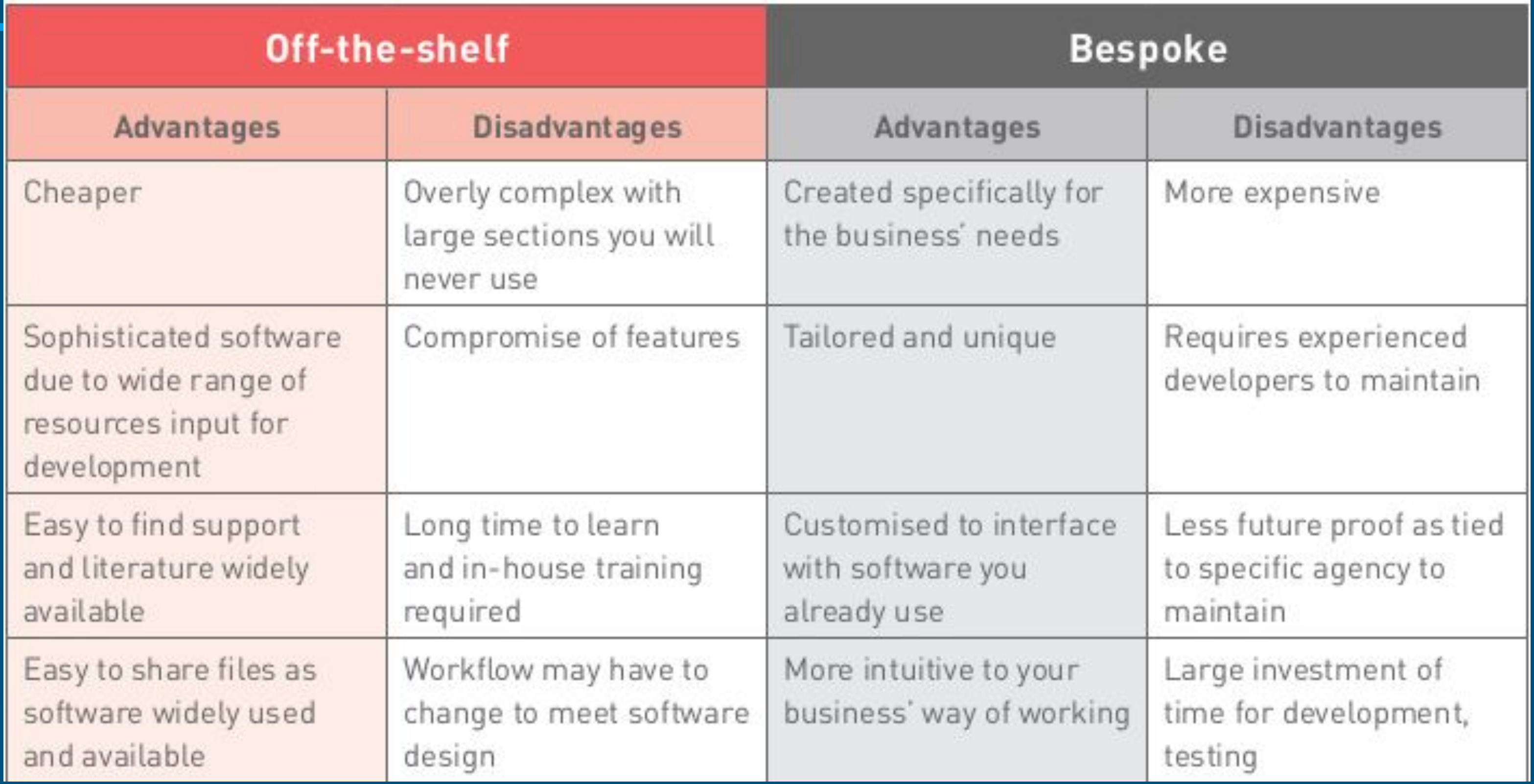
Bespoke development

This involves a CMS that is built specifically for a certain website.

This option is highly tailored and customised to your website, and can be more expensive than other options.

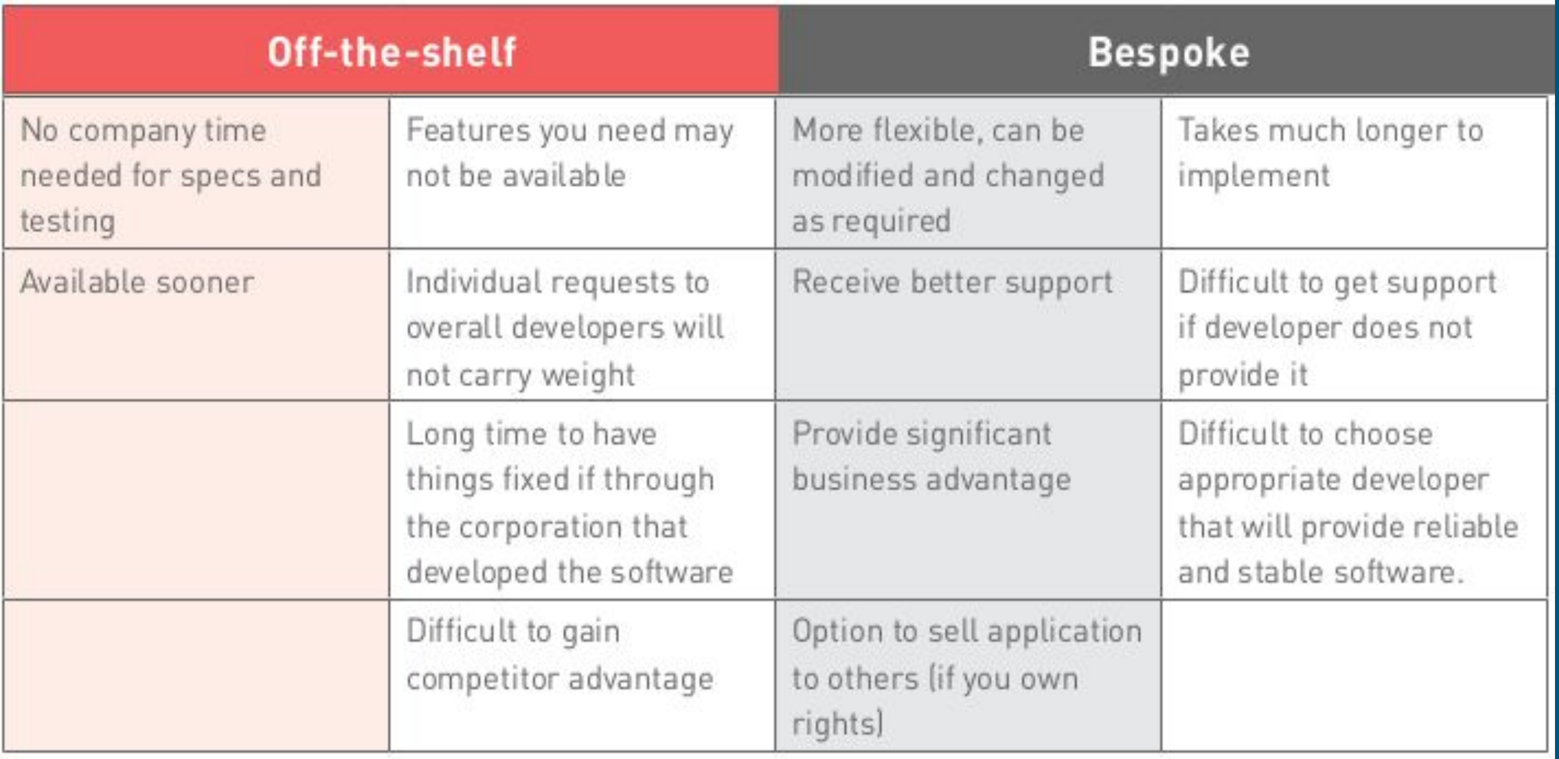
It is possibly less future proof, as finding alternative agencies to support custom-built code is challenging.

Off-the-shelf vs bespoke development



Off-the-shelf		Bespoke	
Advantages	Disadvantages	Advantages	Disadvantages
Cheaper	Overly complex with large sections you will never use	Created specifically for the business’ needs	More expensive
Sophisticated software due to wide range of resources input for development	Compromise of features	Tailored and unique	Requires experienced developers to maintain
Easy to find support and literature widely available	Long time to learn and in-house training required	Customised to interface with software you already use	Less future proof as tied to specific agency to maintain
Easy to share files as software widely used and available	Workflow may have to change to meet software design	More intuitive to your business’ way of working	Large investment of time for development, testing

Off-the-shelf vs bespoke development



Off-the-shelf		Bespoke	
No company time needed for specs and testing	Features you need may not be available	More flexible, can be modified and changed as required	Takes much longer to implement
Available sooner	Individual requests to overall developers will not carry weight	Receive better support	Difficult to get support if developer does not provide it
	Long time to have things fixed if through the corporation that developed the software	Provide significant business advantage	Difficult to choose appropriate developer that will provide reliable and stable software.
	Difficult to gain competitor advantage	Option to sell application to others (if you own rights)	

Step 4: Testing and launch

Input:

- The site, Requirement specifications, supporting documents, technical specifications, and technical documents.

Output:

- Complete website testing and error logs reports.

Step 4: Testing and launch

- Once you have planned an amazing site, designed it beautifully, built it skilfully and filled it with fantastic copy, it’s time to test it fully and then take it live!
- Should take place throughout the process of planning, designing and building, leaving just final quality assurance (QA) testing before the site goes live.
- Test subjects should be real potential users of the website, not just members of the development team
- The site needs to be tested in all common browsers and devices to make sure that it looks and works as it should across all of them

Development methodologies

There are different approaches to building a website. The one described above is the waterfall process, where one step follows the other.

We discuss:

1. Waterfall Process
2. Agile

Waterfall

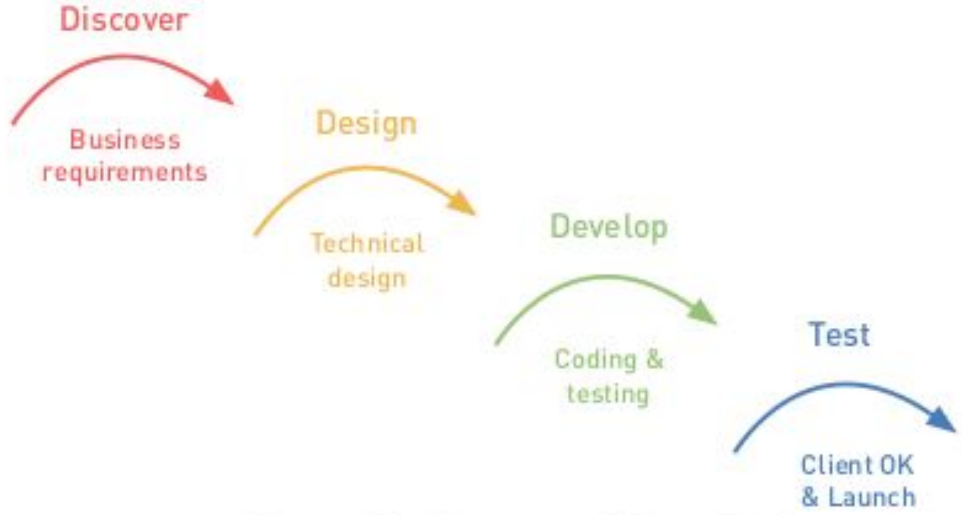


Figure 13. The waterfall method.

Agile

The Agile method is a series of sprints, and involves working through iterative, incremental cycles.

More collaborative, less rigid and requires incremental investments.

It often results in being able to release the final product to the market faster.

The collaborative approach means that instead of handing over the project to the next person in the chain, you work together catching any issues and working on each iteration as you move through each process

Agile

Each sprint produce something that has an increment of product functionality

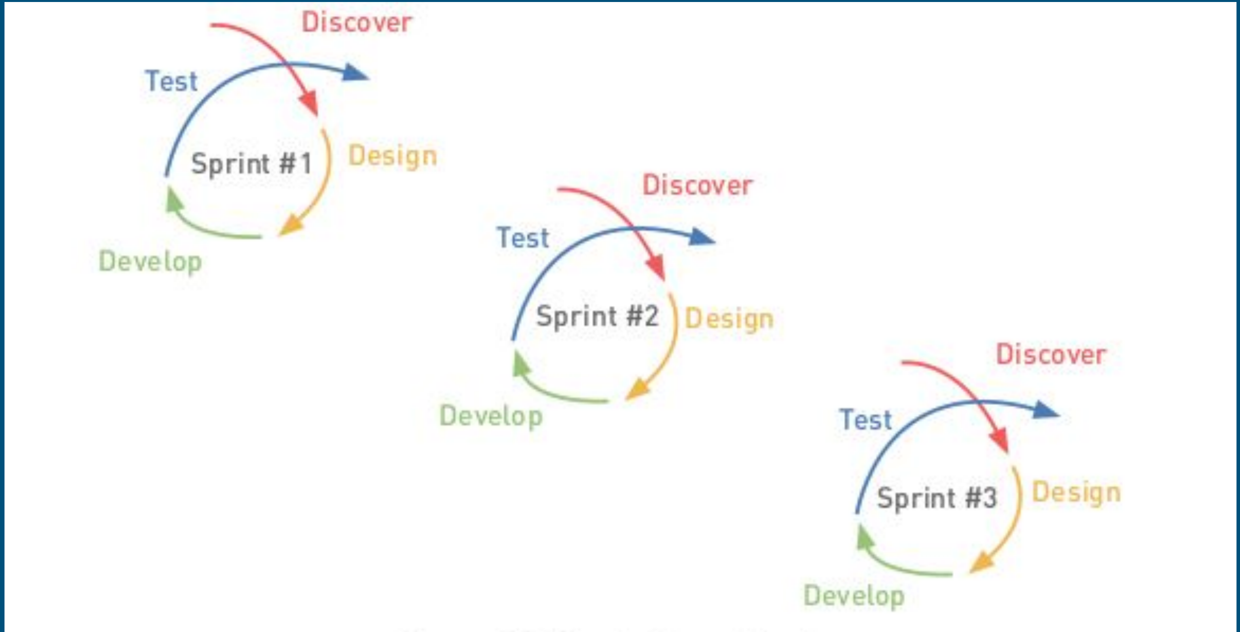


Figure 14. The Agile method.

Quality assurance

The software development cycle has one final step before the website goes live, quality assurance.

It is a crucial step to ensure that website delivery is of the highest standard and that the client expectation is in line with the agreed Statement of Work.

This step is independent of the design and development phases and involves various end-user test cases

Involves two steps: functional and user-interface testing (Thompson, 2015).

Functional testing

This involves testing the features of a website to ensure that they are functioning correctly.

Functional testing should be done early in the development cycle as it speeds up development, increases quality and reduces the risk of errors towards the end of the project.

Testing can take place either manually by a tester or be completely automated using an application (AppPerfect, 2016).

User interface testing

This is the process of testing whether users can engage with the site as envisioned during development.

It also includes testing all UI features

User interface testing

- Can users input the necessary information into the user fields?
- Does the feature execute the desired function when activated?
- • Are error messages displayed correctly and for the correct function?
- • Is the font appropriate?
- • Is the text aligned?
- • Are the colours and fonts, and even error messages, visually appealing?
- • Are the images clear and displaying correctly?
- • Are the images correctly aligned, and do they appear where they are supposed to?
- Are the GUI elements positioned correctly for different screen sizes and resolutions?

Cross browser and device testing

Developers need to ensure that their websites render acceptably across all of the browsers

To ensure compatibility, developers write cross-browser code. If a feature is not supported, a fallback must be in place to ensure that it degrades gracefully.

Check the GUI across a range of devices to test the responsiveness of the design and that all the elements work across the various devices and possible views.

Various tools are available to assist in this process, one being BrowserStack (http:///www.browserstack.com).