

# 6

# Website Experimentation and Testing

## Syllabus

Website experimentation and Testing  
Preparation and A/B testing, Test Important pages and calls to action, Focus on search traffic, Test content and creatives, Test price and Promotions, Test direct marketing campaigns.

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## 6.1 Website Experimentation

### 6.1.1 Website Experimentation Concept

To maximize the performance of your website, your team will need to embark on running experiments to help gain a better understanding of your users and drive better results.

The challenge is where you should start with your experimentation efforts. With limited time and resources, it's important that you invest your team's time in the highest leverage places possible to drive results.

To ensure you maximize your experimentation efforts and move efficiently, it is critical to have a step-by-step process your team can follow. Before jumping in and experimenting for the sake of experimenting, first lay the groundwork by building out the process and template your team can use.

The goal of running experiments, especially in the beginning, is simply to learn about your users and how the business can interact with them. It's common for experiments to not go as planned, especially when you're starting out or trying bold, new ideas. Even if these experiments fail, if you walk away with key user learnings that can be incorporated in the next sprint cycle, it's a win!

Testing the website on low traffic is not sufficient but then at the beginning website will be running on low traffic only. Overall, running experiments to improve the user experience, boost business impact, and move the website in the right direction is always a good idea. You'll need to get a bit more creative on how to test and report on those experiments, because they won't be as clean cut as when you hit statistical significance in a split test.

### 6.1.2 Places to Start Website Experimentation

#### 1. Start by testing your "fundamental assumptions"

The 'Fundamental Assumptions' worksheet is completed during the strategy stage. The "Fundamental Assumptions" are the core, underlying foundation that make up your users, your business, and your website.

#### 2. Start with experimenting at the end of the funnel

Starting with the bottom of the funnel, or the place closest to your overall KPI goal (likely qualified leads or revenue) will help speed up the time to value on your experimentation efforts. You can show direct business impact from your efforts which

keeps stakeholders happy (and funding your team) and also build momentum and confidence.

Spend time to map out both the overall user journey, and the specific conversion funnels the user takes while on the website. Then start your experimentation efforts as close to the "sale" as possible, starting with the last step in the conversion funnel.

You can then work your way up that funnel, and once it's working well, move to another step in the user journey. If there is a step in your conversion funnel already working well, consider skipping that step for the time being and moving to review the previous funnel step.

#### 3. Start with the highest impact pages to your bottom line goals

Think like an investor, but instead of money, invest your time thinking about the pages, sections, or user flows that are the highest impact to your bottom line goals your trying to achieve.

This requires you first to have a rock solid understanding of the goals your team is trying to achieve and how they relate back to the growth of the business. Once your goals are clear, review the existing site to determine how it's impacting those goals today and which pages are high, medium, and low impact in relations to those goals. The best place to start your experimentation efforts is focusing on those high impact pages.

#### 4. Start with big, radical, and remarkable ideas

Start testing with big, radical, and remarkable ideas. Try to reinvent the entire experience and level up how things are being done. These big ideas will not only yield bigger improvements, it will also be easier to measure on lower traffic web pages (by using multivariate testing vs A/B testing which requires high sample size).

### 6.1.3 Web Testing Process

**Web testing**, or website testing is checking web application or website for potential bugs before its made live and is accessible to general public. Web testing checks for functionality, usability, security, compatibility, performance of the web application or website.

During this stage issues such as that of web application security, the functioning of the site, its access to handicapped as well as regular users and its ability to handle traffic is checked.

**Web application testing methodology**

In Software Engineering, the following testing types/technique may be performed depending on your web testing requirements.

**i. Functionality testing of a website**

i. Functionality testing of a website is a process that includes several testing parameters like user interface, APIs, database testing, security testing, client and server testing and basic website functionalities. Functional testing is very convenient and it allows users to perform both manual and automated testing. It is performed to test the functionalities of each feature on the website.

**ii. Web based testing activities includes,**

- (a) Test all links in webpages are working correctly and make sure there are no broken links. Links to be checked will include,
  - Outgoing links
  - Internal links
  - Anchor Links
  - Mail to Links
- (b) Test forms are working as expected. This will include,
  - Scripting checks on the form are working as expected. For example - if a user does not fill a mandatory field in a form an error message is shown.
  - Check default values are being populated.
  - Once submitted, the data in the forms is submitted to a live database or is linked to a working email address.
  - Forms are optimally formatted for better readability.

- (c) Test cookies are working as expected. Cookies are small files used by websites to primarily remember active user sessions so you do not need to log in every time you visit a website. Cookie Testing will include,
  - Testing cookies (sessions) are deleted either when cache is cleared or when they reach their expiry.
  - Delete cookies (sessions) and test that login credentials are asked for when you next visit the site.
- (d) Test HTML and CSS to ensure that search engines can crawl your site easily. This will include,
  - Checking for syntax errors

- Readable color schemas
- Standard compliance. Ensure standards such W3C, OASIS, IETF, ISO, ECMA, or WS-I are followed.

**(e) Test business workflow** - This will include,

- Testing your end - to - end workflow/ business scenarios which takes the user through a series of webpages to complete.
- Test negative scenarios as well, such that when a user executes an unexpected step, appropriate error message or help is shown in your web application.

iii. Tools that can be used : QTP , IBM Rational , Selenium

**2. Usability testing**

- i. Usability testing has now become a vital part of any web based project. It can be carried out by testers like you or a small focus group similar to the target audience of the web application.

**ii. Test the site navigation,**

- Menus, buttons or links to different pages on your site should be easily visible and consistent on all webpages.

**iii. Test the content,**

- Content should be legible with no spelling or grammatical errors.
- Images if present should contain an 'alt' text.

iv. Tools that can be used : Chalkmark, Clicktale, Clixpy and Feedback Army

**3. Interface Testing****i. Three areas to be tested here are - Application, Web and Database Server.**

- **Application** - Test requests are sent correctly to the Database and output at the client side is displayed correctly. Errors if any must be caught by the application and must be only shown to the administrator and not the end user.
- **Web server** - Test Web server is handling all application requests without any service denial.

- **Database server** - Make sure queries sent to the database give expected results.

ii. **Test system response when connection between the three layers (Application, Web and Database) cannot be established** and appropriate message is shown to the end user.

iii. Tools that can be used - AlertFox, Ranorex

**4. Database testing**

- Database is one critical component of web application and stress must be laid to test it thoroughly. Testing activities will include,
  - Test if any errors are shown while executing queries.
  - Data integrity is maintained while creating, updating or deleting data in database.
  - Check response time of queries and fine tune them if necessary.
  - Test data retrieved from your database is shown accurately in your web application.
- Tools that can be used : QTP, Selenium

**5. Compatibility testing**

- Compatibility test ensures that your web application displays correctly across different devices. This would include,  
**Browser compatibility test :** Same website in different browsers will display differently. You need to test if your web application is being displayed correctly across browsers, JavaScript, AJAX and authentication is working fine. You may also check for **Mobile Browser Compatibility**.
- The rendering of web elements like buttons, text fields etc. changes with change in **Operating System**. Make sure your website works fine for various combination of Operating systems such as Windows, Linux, Mac and Browsers such as Firefox, Internet Explorer, Safari etc.
- Tools that can be used - NetMechanic

**6. Performance testing**

- This will test web site for its working under all loads. A web site performance should be at least tested for activities,
  - Website application response times at different connection speeds.
  - Load test your web application to determine its behavior under normal and peak loads.
  - Stress test your web site to determine its break point when pushed to beyond normal loads at peak time.
  - Test if a crash occurs due to peak load, how does the site recover from such an event.

- Make sure optimization techniques like gzip compression, browser and server side cache enabled to reduce load times.
- Tools that can be used - Loadrunner, JMeter

**7. Security testing**

- Security Testing** is vital for e-commerce website that store sensitive customer information like credit cards. Testing Activities will include,
  - Test unauthorized access to secure pages should not be permitted.
  - Restricted files should not be downloadable without appropriate access.
  - Check sessions are automatically killed after prolonged user inactivity.
  - On use of SSL certificates, website should re-direct to encrypted SSL pages.
- Tools that can be used - Babel Enterprise, BFBTester and CROSS

**8. Crowd testing**

- One should select a large number of people (crowd) to execute tests which otherwise would have been executed a select group of people in the organization. Crowdsourced testing is an interesting and upcoming concept and helps unravel many unnoticed defects.
- Tools that can be used - People around us including self.

**6.2 A/B Testing****6.2.1 A/B Testing Technique**

A/B testing is the act of running a simultaneous experiment between two or more variants of a page to **see which one performs the best**.

A/B tests, also known as split tests, allow you to compare 2 versions of something to learn which is more effective. Simply put, do your users like version A or version B ?

The concept is similar to the scientific method. If you want to find out what happens when you change one thing, you have to create a situation where only that one thing changes.

For instance, that you want to test your hypothesis that one headline will generate more leads than another. Sure, you could just make the change and cross your fingers. But what if you're wrong ? Mistakes can get costly.

By sending half your traffic to one version of the page and half to another, you can first **gather evidence about which one works best** before you commit to the change.

Essentially, A/B testing lets you play scientist - and **make decisions based on data** about how people actually behave when they hit your page.

A/B is creating 2 versions of a digital asset to see which one users respond to better. Examples of assets include a **landing page**, **display ad**, **marketing email**, and social post. In an A/B test, half of your audience automatically receives "version A" and half receives "version B." The performance of each version is based on **conversion rate** goals such as the percentage of people who click on a link, complete a form, or make a purchase. A/B testing isn't a new idea with the advent of **digital marketing**. At one time, **direct mail** was the master of "splitting" or "bucketing" offers to see which one worked best. Digital capabilities build on the same idea but enable more specific, reliable, and faster test results.

## 6.2.2 Brief History of A/B Testing

In the 1960s, marketers started to see how this kind of testing could help them understand the impact of their advertising. Would a television ad or radio spot draw more business? Are letters or postcards better for direct marketing?

When the internet started to become an integral part of the business world in the '90s, A/B testing went digital. Once **digital marketing** teams had technical resources, they began to test their strategies in real time - and on a much larger scale.

### A/B testing in the digital age

At its core, A/B testing is the same as it's always been. You pick the factor that you want to check, such a blog post with images versus that same post without images. Then you randomly display one style of blog post to visitors, controlling for other factors. You'd also record as much data as possible - **bounce rates**, time spent on the page, and so on.

You can even test more than 1 variable at once. For example, if you want to evaluate the font as well as the presence of images, you could create 4 pages, each displaying the blog post with:

1. Arial with images
2. Arial without images
3. Times New Roman with images
4. Times New Roman without images

A/B testing software returns the data from experiments like this. Then someone from your company interprets the results to decide whether it makes sense for the company to act on them - and if so, how.

## 6.2.3 A/B Testing Terminology

### 1. Variant

**Variant** is the term for any new versions of a landing page you include in your A/B test. Though you'll have at least two variants in your A/B test, you can conduct these experiments with as many pages as desired.

### 2. Champion

You can think about A/B testing like gladiatorial combat. Two (or more) variants enter, but only one page leaves. This winner (the page with the best conversion performance, typically) is crowned the **champion** variant.

### 3. Challenger

When starting a test, you create new versions (variants) to challenge your existing champion page. These are called **challengers**. If a challenger outperforms all other variants, it becomes the new champion.

### 4. Assigning traffic weight in an A/B test

In a typical A/B test, traffic is randomly assigned to each page variant based upon a predetermined weighting. For example, if you are running a test with two page variants, you might split the traffic 50/50 or 60/40. To maintain the integrity of the test, visitors will always see the same variant, even if they return later.

The main factor that decides how much weight you would ascribe to your page variants during a test is timing: whether you're starting the test with multiple variants at the same time or testing new ideas against an established page.

## 6.2.4 A/B Tests Procedure

### 1. Identify a problem

Make sure you identify a specific problem. "Not enough conversions," for instance, is too general. There are too many factors that go into whether or not a website visitor becomes a customer or whether an email recipient clicks through to your site. You need to know why your material isn't converting.

**Example** - You work for a kid's clothing retailer that has plenty of online sales, but very few of those sales come from its email campaigns. You go to your analytics data and find that a high percentage of users are opening your emails with special offers and reading them, but few are actually converting.

## 2. Analyze user data

Technically you could conduct A/B testing on everything that your customers see when they open your emails, but that would take a lot of time. There are lots of design and content elements that they encounter that probably aren't relevant, so you need to figure out which element to target.

**Example** - People are opening your emails, so there's nothing wrong with how you're writing your subject lines. They're also spending time reading them, so there's nothing that's making them instantly click away. Because plenty of the users who find your website from elsewhere end up becoming customers, you can tell there's nothing wrong with how you're **presenting your products**, either. This suggests that although people find your emails compelling, they're getting lost somehow when they go to actually click through to your site.

## 3. Develop a hypothesis to test

Next step is to decide exactly what you want to test and how you want to test it. Narrow your unknowns down to 1 or 2, at least to start. Then you can determine how changing that element or elements might fix the problem you're facing.

**Example** - You notice that the button that takes people to your online store is tucked away at the bottom of the email, below the fold. You suspect that if you bring it up to the top of the screen, you can more effectively encourage people to visit your site.

## 4. Conduct the hypothesis testing

Develop a new version of the test item that implements your idea. Then run an A/B test between that version and your current page with your target audience.

**Example** - You create a version of the email with the button positioned above the fold. You don't change its design - just its positioning. You decide to run the test for 24 hours, so you set that as your time parameter and start the test.

## 5. Analyze the data

Once the test is over, look at the results and see if the new version of your item resulted in any noticeable changes. If not, try testing a new element.

**Example** - Your new email increased conversions slightly, but you want to know if something else could do better. Since your variable was the positioning of the button, you decide to try placing it in 2 other locations.

## 6. Find new challengers for your champion

The A/B testing world many times uses "champion" and "challenger" to refer to the current best option and new possibilities. When 2 or more options compete and one is significantly more successful, it's called the champion. You can then test that winner against other options, which are called challengers. That test might give you a new champion, or it might reveal that the original champion really was the best.

**Example** - You've A/B tested 2 versions of a landing page and found the champion between them, but there's also a 3rd version of the page that you'd like to compare to the champion from your 1st test. The 3rd version becomes the new challenger to test against the previous champion.

Once you've run through all 6 steps, you can decide whether the improvement was significant enough that you can end the test and make the necessary changes. Or you can choose to run another A/B test to evaluate the impact of another element, such as the size of the button or its color scheme.

## 6.2.5 Areas to Evaluate using A/B testing

1. When it comes to customer-facing content, there is so much you can evaluate with A/B testing. Common targets include,

- Email campaigns
- Individual emails
- Multimedia marketing strategies
- Paid internet advertising
- Newsletters
- Website design

In each of the above category, you can conduct A/B tests on any number of variables. If you're testing your site's design, for example, you can try different options like,

- Color scheme
- Layout
- Number and type of images
- Headings and subheadings

- Product pricing
- Special offers
- Call-to-action button design

## 2. Testing existing landing pages

If you have already have a page that you want to try some new ideas out on, it's usually best to give your new variants a smaller percentage of traffic than the existing champion to mitigate the risk inherent with introducing new ideas.

This will be slower. It's not recommended that you try to accelerate an A/B test by favoring new variants though, as they're not guaranteed to perform well.

Most marketing departments rely on a mixture of experience, gut instinct, and personal opinion when it comes to deciding what will work better for their customers. It sometimes works out, but often doesn't. When you start A/B testing, you should be prepared to throw all the boardroom conjecture out the window: the data (properly interpreted, anyway) doesn't lie.

## 4. Landing page elements to be considered for testing

### i. Headlines

Your main headline is usually a succinct rendering of your core value proposition. In other words, it sums up why anyone would want your product or service. There are many approaches you can try when testing your headline :

- Try a longer versus shorter headline
- Express negative or positive emotions
- Ask a question in your headline
- Make a testimonial part of your headline
- Try different unique selling points

### ii. Call To Action (CTA)

The call to action is a button that represents your page's conversion goal. You can test the CTA copy, the design of the button, and its color to see what works best. Try making the button bigger, for example, or make it green for go, blue for link color, orange or red for an emotional reaction.

### iii. Hero shot

A hero shot is the main photo or image that appears above the fold. Ideally, it shows your product or service being used in a real-life context, but how do you know what hero shot will convert for which landing page ? Do you go with the smiling couple ? Or maybe a close up of the product itself ? Experiment and find out.

### iv. Forms

Depending on your business, you might need more than just a first name and an email. If you have a particularly strong need for data, try running a test with many variations of your form at different lengths. This way you can make an informed decision about what abandonment rate is acceptable when weighed against the extra data produced.

### v. Copy

Often the biggest factor is long copy versus short copy. Shorter is usually better, but for certain products and markets, detail is important in the decision-making process. You can also try reordering features and benefits, or making your language more or less literal.

### vi. Layout

Will a CTA on the left outperform one placed on the right ? And does that testimonial video do better if you put it at the bottom of the page or the top ? Such questions will be answered through efficient A/B testing result. Sometimes changing the layout of a page can have major effects on your conversions.

### 6.2.6 Tips for A/B Testers

#### 1. Use representative samples of your users.

Any scientist will tell you that if you're running an experiment, you have to make sure that your participant groups are as similar as possible. If you're testing a website, you can use a number of automated testing tools to make sure that a random selection of people sees each version.

If you're sending material directly to your clients or potential customers, you need to manually create comparable lists. Make the groups as equal in size as you can and - if you have access to the data - evenly distribute recipients according to gender, age, and geography. That way, variations in these factors will have minimal impact on your results.

**2. Maximize your sample size.**

The more people you test, the more reliable your results will be. This 100 % agrees to a concept that statisticians refer to as "statistical significance."

Briefly, if the result is statistically significant, that means it's unlikely to have occurred by chance. For example, if you send a new version of an email to 50 people and a control version to 50 more, a 5 % increase in the click-through rate only means that 5 people responded better to your new version. The difference is so small that it could be explainable by chance - and if you perform the same test again, there's a good chance you'll get different results. In other words, your results were not statistically significant.

If you're able to send the same set of emails to groups of 500, a 5 % increase means that 50 people responded better to your new style, which is much more likely to be significant.

**3. Avoid common mistakes.**

It's tempting to create a pop-up button with a new font, a new text size, new button sizes, and new button colors. But the more new elements you add, the more muddled your results will be.

Sticking with the above example, if your new pop-up is completely different in design than the original, you're likely to see correlations that are completely coincidental. Maybe it looks like the large purple "check out" button with the dollar sign image is doing better than the small blue button it replaced, but it's possible that only 1 of those design elements was significant, such as the size, for instance.

One can always run a new test with different elements later. Looking at that follow-up test will be easier than trying to analyze a test with 18 different variables.

**4. Let the test end before making changes.**

Because A/B tests let you see the effects of a change in real time, it's tempting to end the test as soon as you see results so you can implement a new version right away. However, doing so means your results are likely to be incomplete and are less likely to be statistically significant. Time-sensitive factors can impact your results, so you need to wait for the end of the testing period to benefit from randomization.

**5. Run tests more than once.**

Even the best A/B testing software returns false positives because user behavior is so variable. The only way to make sure your results are accurate is to run the same test again with the same parameters.

Retesting is particularly important if your new version shows a small margin of improvement. A single false positive result matters more when there aren't as many positive results.

Also, if you run many A/B tests, it's more likely that you'll encounter a false positive once in a while. You might not be able to afford to rerun every test, but if you retest once in a while, you have a better chance of catching errors.

**6. See what works best.**

A/B testing is an efficient and effective way to gauge your audience's response to a design or content idea because it doesn't disturb your users' experience or send out disruptive feedback surveys. Just try something new and let the results speak for themselves.

**6.2.7 Important Aspects Related to Creating A/B Tests**

Some elements of a marketing asset contribute to conversions more than others. Changing one word in the body copy of an email, for instance, probably won't make much of a difference in conversion or click-through rates. Test content is important for SEO and educating clients.

Test content is great for establishing brand's thought leadership and crucial aspect for sharing on social media. Competitive test content is required for getting prospects into the sales funnel. This is typically done by collecting an email address to begin the conversation. Below are the important aspects to keep in mind while creating the test contents.

**1. Headlines and copywriting**

Headline is the first thing people see when they arrive on a web page. If it doesn't grab visitors' attention, they won't stick around.

**2. CTAs**

Call to action tells readers what one wants them to do now. It should entice the reader to act on one's offer because it offers too much value to resist. The CTA needs to stand out and be obvious in order for it to be effective. That's why the color of this button is also important. Sure, one wants the color scheme of website to be visually appealing, but that doesn't mean the CTA button should blend in with everything else. A blue CTA button on a blue background will get lost in the shuffle. And a color like bright yellow will be difficult to read.

**3. Images, audio, and video**

Omnichannel marketing is very important. It can reach to every single member of target audience through SEO-optimized text.

**4. Subject lines**

Email subject lines directly impact open rates. If a subscriber doesn't see anything he or she likes, the email will likely wind up in the trash bin.

**5. Content depth**

Some consumers prefer high-level information that provides a basic overview of a topic, while others want a deep dive that explores every nook and cranny of the topic. In which category do one's target customers reside? Test content depth by creating two pieces of content. One will be significantly longer than the other and provide deeper insight. This impacts SEO.

**6. Product descriptions**

In e-commerce, short product descriptions tend to work best. Consumers want simple, easy-to-digest content that gives them the highlights about a product. Product page layout on an ecommerce website, the design of one's product pages will have a major impact on conversions. Since these conversions will ultimately translate to dollars, one needs to prioritize these A/B tests because a mistake here could be costing money to self.

**7. Social proof**

70 percent of consumers rely on opinions they read in online reviews to make purchase decisions. Displaying social proof on the landing pages, product pages, and other marketing assets can increase conversions, but only if one presents it in an appealing way.

**8. Email marketing**

It's easy to A/B test marketing emails. One just needs to send version A to 50 percent of one's subscribers and version B to the rest.

**9. Media mentions**

It's a great feeling when one's business, product, or service appears in a major publication, whether online or off. One wants people to know about it, but one also has to present the information clearly and effectively.

**10. Landing pages**

The landing pages need to convert users on whatever offer is being presented to them. If they don't it means one losing a potential sale.

**11. Free shipping information**

This one is more specific to ecommerce sites. But it's an important feature that shouldn't be overlooked. First of all, one shouldn't be charging customers for shipping. If this expense is coming out of own pocket, just include it in the base cost of each item as opposed to charging separately for it.

**12. Pricing display**

Some websites don't display their prices on their landing pages. Depending on the type of business one has, the branding strategy, and the business industry, one may not think this is necessary.

**13. Promotional content**

Promotional content on the landing pages gives website visitors an incentive to buy whatever is on for sale.

**14. Credit card vs. No credit card**

All free trials are not equal. Some people require a credit card upfront to start the free trial while others do not. One online interesting study showed the difference between asking for a credit card upfront versus asking for it later.

**15. Trust symbols**

One can take them for granted, but trust symbols can help increase sales. The risk of testing a trust symbol on the site is small as it's very rare that such symbols decrease conversion rates.

**16. Adding a live chat**

For every customer that buys, one would have at least 30 others who won't. Their reasoning for not purchasing will vary a lot, and in most cases one won't be able to find out unless asked them.

**17. Signup button should scroll with the visitor**

Many times it is noticed that people on webpage were reading their content while scrolling down, but they weren't clicking on the signup button. So, at first they tested changing the color of the signup button from grey to green.

### 18. Add a dollar value to free offers on website

Not everyone is ready to buy right away. Some people want to learn more and get to know about the company. Once they have trust, they are open to buying whatever one may be selling. That is why it is important to collect the email address of each individual who is interested in buying one's product or service, but isn't ready to pull the trigger yet.

### 19. A/B testing and direct marketing campaign

All companies who run direct mail campaigns should be A/B testing their message, audience, and timing. Without insight into these variances, it is incredibly difficult to increase the ROI and one could make the argument that any improvements were the result of pure luck or coincidence. A/B testing can uncover significant opportunities to enhance future campaigns. It is not a one-and-done activity. It is an ongoing test that continues to evolve as one's campaigns evolve. However, many people avoid doing these tests for fear they'll be complicated or they simply don't know where to start.

#### Review Questions

1. Explain the process of website testing. (Refer section 6.1.3)
2. What is A/B testing ? (Refer section 6.2.1)
3. Discuss various key terms used in A/B testing. (Refer section 6.2.3)
4. Which areas can be evaluated using A/B testing ? (Refer section 6.2.5)
5. Brief about A/B test procedure. (Refer section 6.2.4)

