

18

Data Analytics

What's inside: You will learn about the different types of **web analytics packages**, and the benefits and challenges of each. The **metrics for data analytics** are introduced, as well as an approach to **understanding and analysing web data**. **Single page analysis packages** and **approaches** are also explained.

18.1 Introduction

Picture the scene: you've opened up a new fashion retail outlet in the trendiest shopping centre in town. You've spent a small fortune on advertising and branding. You've gone to great lengths to ensure that you're stocking all of the prestigious brands. Come opening day, your store is inundated with visitors and potential customers.

And yet, you are hardly making any sales. Could it be because you have one cashier for every hundred customers? Or possibly it's the fact that the smell of your freshly painted walls chases customers away before they complete a purchase?

NOTE

Analytics data can be found in many places, not just your website: consider data from email, social media, mobile and more.

While it can be difficult to isolate and track the factors affecting your revenue in this fictional store, move it online and you have a wealth of resources available to assist you with **tracking**, **analysing** and **optimising** your performance.

To a marketer, the Internet offers more than just new avenues of creativity. By its very nature, it allows you to track each click to your site and through your site. It takes the guesswork out of pinpointing the successful elements of a campaign, and can show you very quickly what's not working. It all comes down to knowing where to look, what to look for, and what to do with the information you find.

In this chapter, you will learn:

- How to set solid objectives, goals and measurements for your digital marketing campaigns
- How to capture web analytics data, and what data you can find
- Techniques and guidelines for analysing data to better understand your web visitors

18.2 Key terms and concepts

Term	Definition
A/B test	Also known as a split test, it involves testing two versions of the same page or site to see which performs better.
Click path	The journey a user takes through a website.
Conversion	Completing an action that the website wants the user to take. Usually a conversion results in revenue for the brand in some way. Conversions include signing up to a newsletter or purchasing a product.

Conversion funnel	A defined path that visitors should take to reach the final objective.
Cookie	A small text file that is used to transfer information between browsers and web servers. They help web servers to provide the right content when it is requested.
Count	Raw figures captured for data analysis.
Event	A step a visitor takes in the conversion process.
Goal	The defined action that visitors should perform on a website, or the purpose of the website.
Heat map	A data visualisation tool that shows levels of activity on a web page in different colours.
JavaScript	A popular scripting language. Also used in web analytics for page tagging.
Key performance indicator (KPI)	A metric that shows whether an objective is being achieved.
Log file	A text file created on the server each time a click takes place, capturing all activity on the website.
Metric	A defined unit of measurement.
Multivariate test	Testing combinations of versions of the website to see which combination performs better.
Objective	A desired outcome of a digital marketing campaign.
Page tag	A piece of JavaScript code embedded on a web page and executed by the browser.
Ratio	An interpretation of data captured, usually one metric divided by another.
Referrer	The URL that originally generated the request for the current page.
Segmentation	Filtering visitors into distinct groups based on characteristics to analyse visits.
Target	A specific numeric benchmark.
Visitor	An individual visiting a website that is not a search engine spider or a script.

18.3 Working with data

In the days of traditional media, actionable data was a highly desired but scarce commodity. While it was possible to broadly understand consumer responses to marketing messages, it was often hard to pinpoint exactly what was happening, and why.

In the digital age, information is absolutely everywhere. Every single action taken online is recorded, which means there is an incredible wealth of data available to marketers to help them understand when, where, how and even why people react to their marketing campaigns.

This also means there is a responsibility on marketers to make data-driven decisions. Assumptions and gut feel are not enough – you need to back these up with solid facts and clear results.

Don't worry if you're not a 'numbers' person – working with data is very little about number crunching (the technology usually takes care of this for you) and a lot about analysing, experimenting, testing and questioning. All you need is a curious mind and an understanding of the key principles and tools.

Here are some data concepts you should be aware of.

18.3.1 Performance monitoring and trends

Data analytics is all about monitoring user behaviour and marketing campaign performance over time. The last part is crucial. There is little value in looking at a single point of data – you want to look at trends and changes over a set period.

NOTE

Pay close attention to any changes in the expected data, good or bad, and investigate any anomalies.

For example, it is quite meaningless to say that 10% of this month's web traffic converted – is that good or bad, high or low? But saying that 10% *more* people converted this month, as opposed to last month, shows a positive change or trend. While it can be tempting to focus on single 'hero' numbers and exciting-looking figures ('Look, we have 5 000 Facebook fans!'), these really don't give a full picture if they are not presented in context.

18.3.2 Big data

'Big data' is the term used to describe truly massive data sets – the ones that are so big and unwieldy that they require specialised software and massive computers to process. Companies like Google, Facebook and YouTube generate and collect so much data every day that they have entire warehouses full of hard drives to store it all.

Understanding how it works and how to think about data on this scale provides some valuable lessons for all analysts.

- **Measure trends, not absolute figures.** The more data you have, the more meaningful it is to look at how things change over time.
- **Focus on patterns.** With enough data, patterns over time should become apparent – consider looking at weekly, monthly or even seasonal flows.
- **Investigate anomalies.** If your expected pattern suddenly changes, try to find out why – and use this information to inform your actions going forward.

18.3.3 Data mining

Data mining is the process of finding patterns that are hidden in large numbers and databases. Rather than having a human analyst process the information, an automated computer program pulls apart the data and matches it to known patterns to deliver insights. Often, this can reveal surprising and unexpected results, and tends to break assumptions.

Data mining in action: Target

US retail chain Target uses data mining to market specific products to consumers based on their personal contexts. Target gathers a range of personal, psychographic and demographic data from customers and then analyses this against their shopping habits. They analyse their data and predict the products customers might be interested in, based on their lifestyle needs and choices (Duhigg, 2012).

Each customer is given a unique code called the Guest ID number. This is linked to all interactions the customer has with the brand, from using a credit card or calling in to the help line, to opening an email. They then gather data, including the following:

- Age
- Marital status
- Whether the customer has children, and how many
- Estimated salary
- Location
- Whether they've moved house recently
- Which credit cards they use
- Which websites they visit

Target is also able to buy data on their customers from other companies to supplement this, like:

- Ethnicity
- Employment history
- Favourite magazines
- Financial status
- Whether they've been divorced
- Which college they attended
- Their online interests
- Their favourite coffee brands
- Political leanings

For example, Target markets baby and pregnancy-related products to expectant moms and dads, from as early as the second trimester. How do they know to do this? Using this data, combined with customer shopping habits, Target has created a pregnancy-predictor model, determining whether a woman was pregnant (sometimes even before she knew it herself).

One father of a teenage girl complained to the store about sending his daughter marketing materials of this nature – but apologised to the retailer a short while later, after discovering that his teenage daughter was in fact pregnant, indicating that the predictor model did actually work [Duhigg, 2012].

However, Target has decided to be a bit subtler in how they use their valuable insights!

NOTE

Do you think Target's behaviour was ethical and appropriate? Is this an invasion of customer privacy?

18.3.4 A world of data

Another consideration to keep in mind is that data can be found and gathered from a variety of sources – you don't need to restrict yourself simply to website-based analytics. To get a full picture of audience insights, try to gather as wide a variety of information as you can. Some places to look:

- **Online data** – aside from your website, look at other places your audience interacts with you online, such as social media, email, forums and more. Most of these will have their own data-gathering tools (for example, look at Facebook Insights or your email service provider's send logs).
- **Databases** – look at any databases that store relevant customer information, like your contact database, CRM information or loyalty programs. These can often supplement anonymous data with some tangible demographic insights.

- **Software data** – data might also be gathered by certain kinds of software (for example, some web browsers gather information on user habits, crashes, problems and so on). If you produce software, consider adding a data-gathering feature (with the user's permission, of course) that captures usage information that you can use for future updates.
- **App store data** – app store analytics allows companies to monitor and analyse the way people download, pay for and use their apps. Marketplaces like the Google and Apple app stores should provide some useful data here.
- **Offline data** – and don't forget all the information available off the web – such as point-of-sale records, customer service logs, in-person surveys, in-store foot traffic, and much more.

18.4 Setting objectives, goals and KPIs

The key to success for any website or online campaign is designing it with specific, unique, clearly defined objectives in mind. These are used to measure the success of the website or campaign, and are crucial to maintaining focus within online activities. Sometimes, words such as 'objective' or 'goal' can be used in different situations with slightly different meanings. For the sake of clarity, this chapter will use them as described below.

The **objective** of a website or online campaign is aligned with the strategic outcomes of the business. The objective answers the question, "What do we want to achieve with this marketing campaign?" For example, an objective might be to increase sales of a product, grow brand awareness or increase website traffic.

The **goal** of a website or campaign in web analytics refers to an action that a user takes on a website or a type of user behaviour. This action could be making a purchase, signing up for a newsletter, or viewing a certain number of pages in a visit. A completed goal is called a conversion. Goals are derived from objectives, and answer the question, "What do we need users to do in order to achieve our objective?"

Key performance indicators or **KPIs** are metrics that are used to indicate whether objectives are being met. There are many metrics to be analysed, and determining which are important will help to focus on what really matters to a particular campaign. KPIs relate closely to goals, and answer the question, "What data do we need to look at to see if goals are being completed?" For example, if your objective is to increase website traffic, you may look at the number of website visitors, the percentage of new visitors, and how long users stay on the site.

NOTE

Goals related to visitor behaviour, such as time spent on site or pageviews per visit, are referred to as engagement goals.

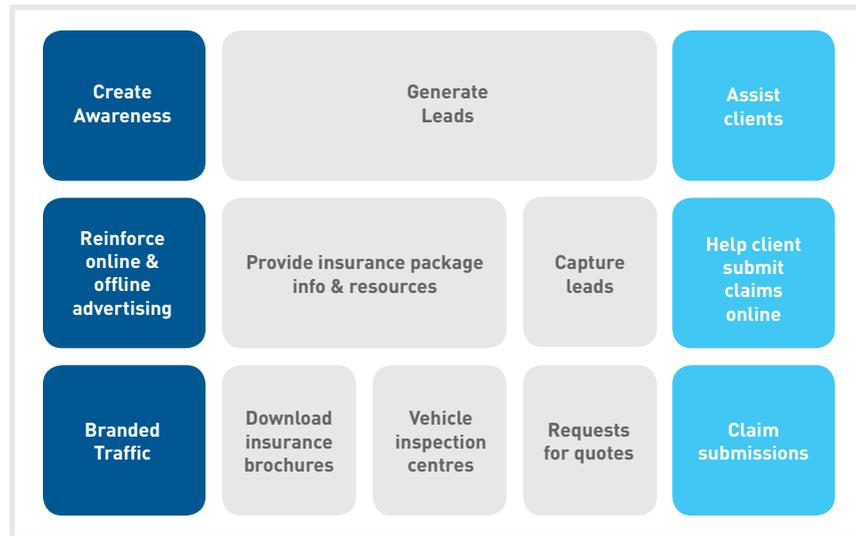


Figure 1. Objectives, goals and KPIs. (Adapted from Kaushik, 2010)

Targets are the actual target values that KPIs need to meet in order for the campaign to be declared a success. If one KPI is 'newsletter subscriptions', then a target might be '100 subscriptions every month' – if one month falls short at 70, this will quickly reveal that a fix is required.

Although a website has an ultimate goal, the process of achieving that goal can be broken down into several steps. These are called **events** or micro-conversions. Analysing each step in the process is called **funnel analysis** or path analysis and is critical to understanding where problems in the conversion process may lie.

For example, on a hotel website, the ultimate goal is that visitors to the site make a booking on the website with a credit card.

Each step in the process is an event that can be analysed as a conversion point.

Event 1: Perform a search for available dates for hotels in the desired area.

Event 2: Check prices and amenities for available hotels.

Event 3: Select a hotel and go to checkout.

Event 4: Enter personal and payment details and confirm booking (conversion).

One naturally expects fewer users at each step. Increasing the number of visitors who progress from one step to the next will go a long way to improving the overall conversion rate of the site.

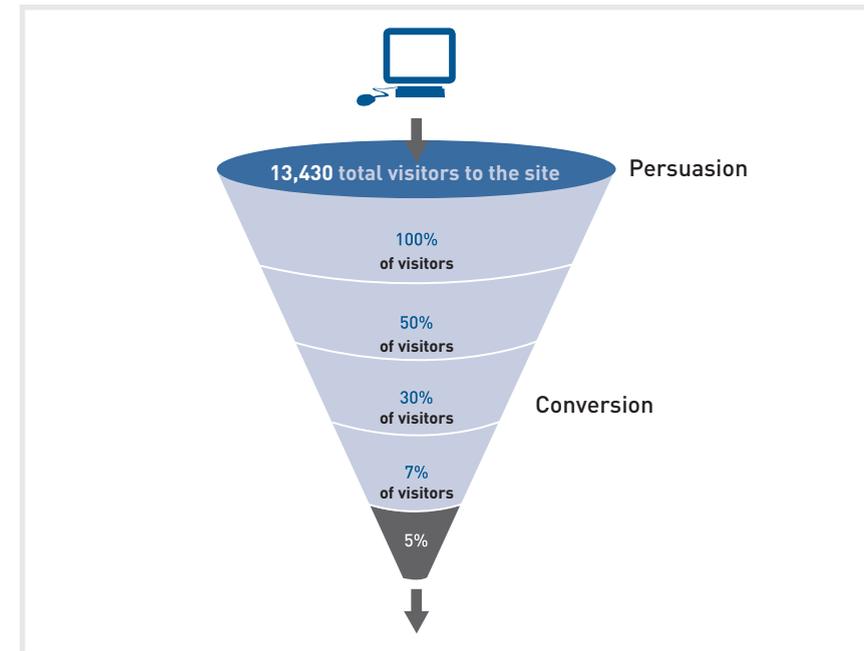


Figure 2. A conversion funnel.

Here are some examples of objectives, goals and KPIs for different websites.

Hospitality eCommerce site, such as www.expedia.com

Objective: increase bookings

Objective: decrease marketing expenses

Goal: make a reservation online

KPIs:

Conversion rate

Cost per visitor

Average order value

News and content sites, such as www.news24.com

Objective: increase readership and level of interest

Objective: increase time visitors spend on website

Goal: a minimum time on site

KPIs:

Length of visit

Average time spent on website

Percentage of returning visitors

NOTE

Remember to make your objectives SMART. For a refresher on what this means, have a look at the Digital Marketing Strategy chapter.

KPIs help you to look at the factors you can influence in the conversion process. For example, if your objective is to increase revenue, you could look at ways of increasing your conversion rate (that is, the number of visitors who purchase something). One way of increasing your conversion rate could be to offer a discount. So, you would have more sales, but probably a lower average order value. Or, you could look at ways of increasing the average order value, so that the conversion rate would stay the same, but you would increase the revenue from each conversion.

Once you have established your objectives, goals and KPIs, you need to track the data that will help you to analyse how you are performing, and will indicate how you can optimise your website or campaign.

18.5 Tracking and collecting data

Currently, there are two main approaches for collecting web analytics data: cookie-based tracking, and server-based tracking. A third option, called universal analytics, is set to dramatically change how data is gathered and analysed. Universal analytics is one of the most exciting examples of non-cookie-based server tracking.

18.5.1 How information is captured

Cookie-based tracking

The most common method of capturing web analytics is to use cookie-based tracking. Here's how it works:

1. The analyst adds a page tag (a piece of JavaScript code) to every page of the website.
2. A user accesses the page using their browser.
3. When the browser loads the page, it runs the page tag code.
4. This tag sends an array of information to a third-party server (like Google Analytics), a service that stores and collates the data.
5. The analyst accesses this data by logging in to the third-party server.

The data gathered this way can capture a wide array of factors about each visitor, from their device, operating system and screen resolution, to their long-term behaviour on your website. This is currently the most common option for most website tracking.

Server-based tracking

Web servers are the computers that websites are stored on so that they can be accessed online. Server-based tracking involves looking at log files – documents that are automatically created by servers and that record all clicks that take place on the server. A new line is written in a log file every time a new request is made – for example, clicking on a link or submitting a form.

Server-based tracking is very useful for tracking mobile visitors (since many phones cannot execute the cookie-based JavaScript tags) and is also essential for universal analytics, discussed below.

Comparing the options

Cookie-based tracking	Server-based tracking
Page tagging requires changes to the website and can be used by companies that do not run their own web servers.	Log files are produced by web servers, so the raw data is readily available, but the company must have access to the server.
Cookie-based tracking can be less accurate than server-based tracking. If a user's browser does not support JavaScript, for example, no information will be captured.	Log files are very accurate – they record every click. Log files also record visits from search engine spiders – useful for search engine optimisation.
Page tags are proprietary to each vendor, so switching can mean losing historical data.	Log files are in a standard format, so it is possible to switch vendors and still be able to analyse historical data.
Page tagging shows only successful page requests.	Log files record failed page requests.
JavaScript makes it easier to capture more information (e.g. products purchased, or the version of a user's browser).	Server-based tracking can capture some detailed information, but this involves modifying the URLs.
JavaScript tracking can report on events such as interactions with a Flash movie.	Server-based tracking cannot report on events.
Third-party page tagging service providers usually offer a good level of support.	Log file analysis software is often managed in-house.

Because these two options use different methods of collecting data, the raw figures produced will differ. For example, caching occurs when a browser stores some of the information for a web page, so that it can retrieve it more quickly when you return. Opening this cached page will not send a request to the server. This means that the visit won't show up in the log files, but would be captured by page tags.

NOTE

Pixel tracking can be used to track email campaigns. Here, a tiny 1 x 1 pixel is placed in the email. When you load the images in the email, you will also load the tiny image that tracks your activity.

Website analytics packages can be used to measure most, if not all, digital marketing campaigns. Website analysis should always account for the various campaigns being run. For example, generating high traffic volumes by employing various digital marketing tactics such as SEO, PPC and email marketing can prove to be a pointless and costly exercise if visitors are leaving your site without achieving one (or more) of your website's goals. Conversion optimisation aims to convert as many of a website's visitors as possible into active customers.

NOTE

Read more about this in the *Conversion Optimisation* chapter.

Universal analytics

Google recently announced a new feature in its analytics suite called universal analytics. The biggest problem web analysts have faced up until now is that they can't actually track individual people – only individual browsers (or devices), since this is done through cookies. So, if Joe visits the website from Chrome on his home computer, and Safari on his work laptop, the website will think he's two different people. And if Susan visits the site from the home computer, also using Chrome, the website will think she's the same user as Joe.

An additional concern is that cookies are on the decline. Most modern browsers allow users to block them, and many mobile devices simply can't access or execute them. With growing consumer privacy concerns, and new laws like the EU Privacy Directive (which requires all European websites to disclose their cookie usage), cookies are falling out of favour.

Universal analytics allows you to track visitors (that means real people) rather than simply sessions. By creating a unique identifier for each customer, universal analytics means you can track the user's full journey with the brand, regardless of the device or browser they use. So, that means you can track Joe on his home computer, work laptop, mobile phone during his lunch break, and even when he swipes his loyalty card at the point of sale.

Crucially, however, tracking Joe across devices requires both universal analytics and authentication on the site across devices – in other words, Joe has to be logged in to your website or online tool on his desktop, work laptop and mobile phone in order to be tracked this way. If he doesn't log in, we won't know it's the same person.

You can see:

- How visitors behave depending on the device they use (browsing for quick ideas on their smartphone, but checking out through the eCommerce portal on their desktop)
- How visitor behaviour changes the longer they are a fan of the brand – do they come back more often, for longer, or less often but with a clearer purpose?
- How often they're really interacting with your brand
- What their lifetime value and engagement is

Another useful feature of universal analytics is that it allows you to import data from other sources into Google Analytics – for example, CRM information or data from a point-of-sale cash register. This gives a much broader view of the customers and lets you see a more direct link between your online efforts and real-world behaviour.

18.5.2 The type of information captured

KPIs are the metrics that help you understand how well you are meeting your objectives. A metric is a defined unit of measurement. Definitions can vary between various web analytics vendors depending on their approach to gathering data, but the standard definitions are provided here.

Web analytics metrics are divided into:

- **Counts** – these are the raw figures that will be used for analysis.
- **Ratios** – these are interpretations of the data that is counted.

Metrics can be applied to three different groupings:

- **Aggregate** – all traffic to the website for a defined period of time.
- **Segmented** – a subset of all traffic according to a specific filter, such as by campaign (PPC) or visitor type (new visitor vs. returning visitor).
- **Individual** – the activity of a single visitor for a defined period of time.

Here are some of the key metrics you will need to get started on with website analytics.

Building-block terms

These are the most basic web metrics. They tell you how much traffic your website is receiving. For example, looking at returning visitors can tell you how well your website creates loyalty; a website needs to grow the number of visitors who come back. An exception may be a support website – repeat visitors could indicate that the website has not been successful in solving the visitor's problem. Each website needs to be analysed based on its purpose.

- **Hit** – one page load (though this is an outdated terms that we recommend you avoid using).
- **Page** – unit of content (so downloads and Flash files can be defined as pages).
- **Page views** – the number of times a page was successfully requested.

NOTE

Universal analytics is a powerful leap forward in data analytics. How might this affect how brands understand their customers? And what privacy concerns may users have?

- **Visit or session** – an interaction by an individual with a website consisting of one or more page views within a specified period of time.
- **Unique visitors** – the number of individual people visiting the website one or more times within a set period of time. Each individual is counted only once.
 - *New visitor* – a unique visitor who visits the website for the first time ever in the period of time being analysed.
 - *Returning visitor* – a unique visitor who makes two or more visits (on the same device and browser) within the time period being analysed.

NOTE

New visitors show that you are reaching new audiences and markets, while returning visitors are an indicator of brand loyalty. Most websites should aim for a healthy balance between the two.



Figure 3. A breakdown of new versus returning visitors in Google Analytics.

Visit characteristics

These are some of the metrics that tell you how visitors reach your website, and how they move through the website. The way that a visitor navigates a website is called a click path. Looking at the referrers, both external and internal, allows you to gauge the click path that visitors take.

- **Entry page** – the first page of a visit.
- **Landing page** – the page intended to identify the beginning of the user experience resulting from a defined marketing effort.
- **Exit page** – the last page of a visit.
- **Visit duration** – the length of time in a session.

Landing Page	Visits	Pages / Visit	Avg. Visit Duration	% New Visits	Bounce Rate
	5,381	1.48	00:00:59	81.06%	79.91%
	% of Total: 100.00% (5,381)	Site Avg: 1.48 (8.00%)	Site Avg: 00:00:59 (8.00%)	Site Avg: 83.54% (27.58%)	Site Avg: 79.91% (8.00%)
1. /	568	2.15	00:02:19	61.62%	62.85%
2. 2019/02/10/Free tips to help you better manage stakeholder relationships	502	1.18	00:00:40	94.42%	88.25%
3. 2017/06/22/real video game turns play all together than a card on website	285	1.33	00:00:33	90.53%	83.16%

Figure 4. Visitor behaviour in Google Analytics.

- **Referrer** – the URL that originally generated the request for the current page.
 - *Internal referrer* – a URL that is part of the same website.
 - *External referrer* – a URL that is outside of the website.
 - *Search referrer* – a URL that is generated by a search function.
 - *Visit referrer* – a URL that originated from a particular visit.
 - *Original referrer* – a URL that sent a new visitor to the website.
- **Clickthrough** – the number of times a link was clicked by a visitor.
- **Clickthrough rate** – the number of times a link was clicked divided by the number of times it was seen (impressions).
- **Page views per visit** – the number of page views in a reporting period divided by the number of visits in that same period to get an average of how many pages are being viewed per visit.

Content characteristics

When a visitor views a page, they have two options: leave the website, or view another page on the website. These metrics tell you how visitors react to your content. Bounce rate can be one of the most important metrics that you measure. There are a few exceptions, but a high bounce rate usually means high dissatisfaction with a web page.

- **Page exit ratio** – number of exits from a page divided by total number of page views of that page.
- **Single page visits** – visits that consist of one page, even if that page was viewed a number of times.
- **Bounces (or single page view visits)** – visits consisting of a single page view.
- **Bounce rate** – single page view visits divided by entry pages.

NOTE

A high bounce rate is not always bad. On a blog, for example, most people click through from a search to read one article and, having satisfied their curiosity, leave without visiting any other pages.

Conversion metrics

These metrics give insight into whether you are achieving your analytics goals (and through those, you overall website objectives).

- **Event** – a recorded action that has a specific time assigned to it by the browser or the server.
- **Conversion** – a visitor completing a target action.

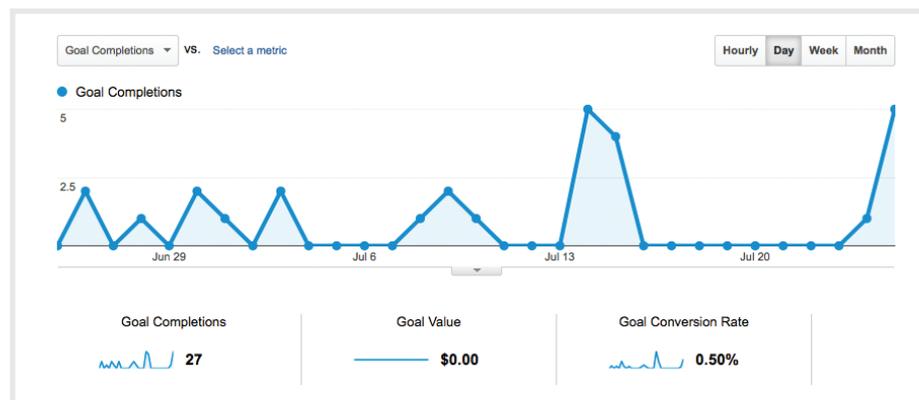


Figure 5. Goal conversions in Google Analytics.

Mobile metrics

When it comes to mobile data, there are no special, new or different metrics to use. However, you will probably be focusing your attention on some key aspects that are particularly relevant here – namely technologies and the user experience.

NOTE

Why do you think Google Analytics has a separate category for tablets, rather than including them under mobile devices?

- **Device category** – whether the visit came from a desktop, mobile or tablet device.
- **Mobile device info** – the specific brand and make of the mobile device.
- **Mobile input selector** – the main input method for the device (e.g. touchscreen, clickwheel, stylus).
- **Operating system** – the OS that the device runs (some popular ones include iOS, Android and BlackBerry).

Device Category	Visits	Pages / Visit	Avg. Visit Duration	% New Visits	Bounce Rate
	8,379 % of Total: 100.00% (8,378)	1.46 Site Avg: 1.46 (0.00%)	00:01:06 Site Avg: 00:01:06 (0.00%)	79.46% Site Avg: 61.92% (28.33%)	79.20% Site Avg: 79.20% (0.00%)
1. desktop	8,107	1.46	00:01:07	79.22%	79.12%
2. tablet	259	1.32	00:00:58	86.10%	81.47%
3. mobile	13	1.15	00:00:05	100.00%	84.62%

Figure 6. Mobile device categories in Google Analytics.

Now that you know what tracking is, you can use your objectives and KPIs to define what metrics you'll be tracking. You'll then need to analyse these results, and take appropriate actions. Then the testing begins again!

18.6 Analysing data

In order to test the success of your website, you need to remember the TAO of conversion optimisation:

Track – Analyse – Optimise

A number is just a number until you can interpret it. Typically, it is not the raw figures that you will be looking at, but what they tell you about how your users are interacting with your website. Because your web analytics package will never be able to provide you with 100% accurate results, you need to analyse **trends and changes over time** to understand your brand's performance.

18.6.1 Key elements to analyse

Avinash Kaushik, author of *Web Analytics: An Hour a Day*, recommends a three-pronged approach to web analytics:

1. Analysing **behaviour** data infers the intent of a website's visitors. Why are people visiting the website?
2. Analysing **outcomes** metrics shows how many visitors performed the goal actions on a website. Are visitors completing the goals we want them to?
3. A wide range of data tells us about the **user experience**. What are the patterns of user behaviour? How can we influence them so that we achieve our objectives?

NOTE

Google Analytics can send you email alerts whenever something unusual happens on your website. Simply set a triggering condition and decide what sort of report you want to receive. For example, you may want to know if more than a certain number of people have accessed your site in one day – this could mean an opportunity to capitalise on high traffic.

NOTE

Read more about this in the *User Experience Design* chapter.

Behaviour

Web users' behaviour can indicate a lot about their intent. Looking at referral URLs and search terms used to find the website can tell you a great deal about what problems visitors are expecting your site to solve.

NOTE

Analytics data cannot give you a definitive answer to why people behave a certain way. It does provide plenty of clues about intent - it's up to you to put the pieces together.

Some methods to gauge the intent of your visitors include:

- Click density analysis – looking at a heatmap to see where people are clicking on the site and if there are any noteworthy “clumps” of clicks (such as many people clicking on a page element that is not actually a button or link).
- Segmentation – selecting a smaller group of visitors to analyse, based on a shared characteristic (for example, only new visitors, only visitors from France, or only visitors who arrived on the site by clicking on a display advert). This lets you see if particular types of visitors behave differently.
- Behaviour and content metrics – analysing data around user behaviours (e.g. time spent on site, number of pages viewed) can give a lot of insight into how engaging and valuable your website is. Looking at content metrics will show you which pages are the most popular, which pages users leave from most often and more – providing excellent insight for your content marketing strategy, as well as discovering what your audience is really interested in.

A crucial, often-overlooked part of this analysis is internal search. Internal search refers to the searches of the website's content that users perform on the website. While a great deal of time is spent analysing and optimising external search – using search engines to reach the website in question – analysing internal search goes a long way to exposing weaknesses in site navigation, determining how effectively a website is delivering solutions to visitors, and finding gaps in inventory on which a website can capitalise.

For example, consider the keywords a user may use when searching for a hotel website, and keywords they may use when on the website.

Keywords to search for a hotel website may be:

- Cape Town hotel
- Bed and breakfast Cape Town

Once on the website, the user may use the site search function to find out more. Keywords they may use include:

- Table Mountain
- Pets
- Babysitting service

Analytics tools can show what keywords users search for, what pages they visit after searching, and, of course, whether they search again or convert.

Outcomes

At the end of the day, you want people who visit your website to perform an action that increases your revenue. Analysing goals and KPIs indicates where there is room for improvement. Look at user intent to establish if your website meets the users' goals, and if these match with the website goals. Look at user experience to determine how outcomes can be influenced.

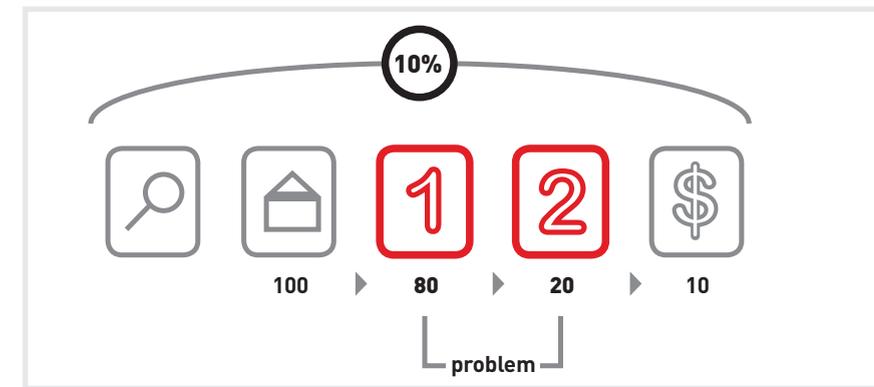


Figure 7. Reviewing conversion paths can give you insight into improving your website.

After performing a search, 100 visitors land on the home page of a website. From there, 80 visitors visit the first page towards the goal. This event has an 80% conversion rate. 20 visitors take the next step. This event has a 25% conversion rate. 10 visitors convert into paying customers. This event has a 50% conversion rate. The conversion rate of all visitors who performed the search is 10%, but breaking this up into events lets us analyse and improve the conversion rate of each event.

User experience

In order to determine the factors that influence user experience, you must test and determine the patterns of user behaviour. Understanding why users behave in a certain way on your website will show you how that behaviour can be influenced to improve your outcomes. This is covered in the next chapter on *Conversion Optimisation*.

NOTE

Read more about this in the *Conversion Optimisation* chapter.

18.6.2 Segmentation

Every visitor to a website is different, but there are some ways in which we can characterise groups of users, and analyse metrics for each group. This is called segmentation.

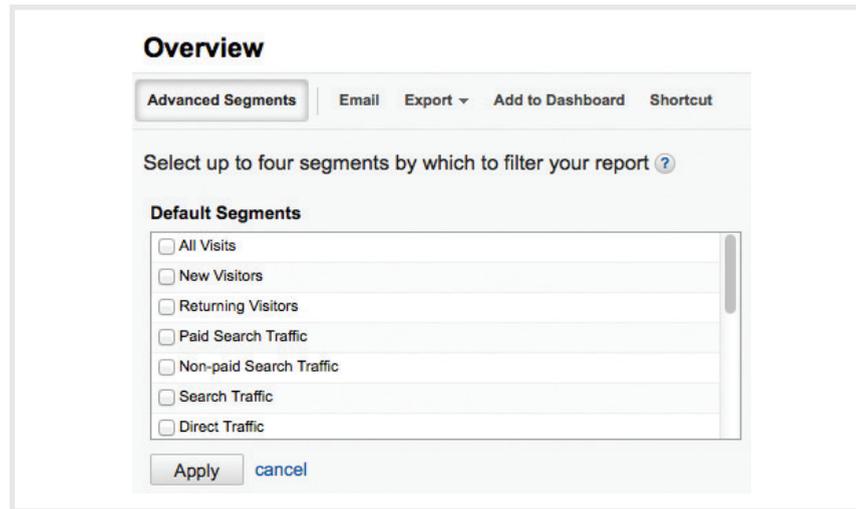


Figure 8. Default segments in Google Analytics.

Some segments include:

Referral source

Users who arrive at your site via search engines, those who type in the URL directly, and those who come from a link in an online news article are all likely to behave differently. As well as conversion rates, click path and exit pages are important metrics to consider. Consider the page that these visitors enter your website from – can anything be done to improve their experience?

NOTE

Landing pages

Users who enter your website through different pages can behave very differently. What can you do to affect the page on which they are landing, or what elements of the landing page can be changed to influence outcomes?

Connection speed, operating system, browser

Consider the effects of technology on the behaviour of your users. A high bounce rate for low-bandwidth users, for example, could indicate that your site is taking too long to load. Visitors who use open source technology may expect different things from your website to other visitors. Different browsers may show your website differently – how does this affect these visitors?

If you are running a campaign, are visitors arriving on your designated landing page? Are they converting?

Geographical location

Do users from different countries, provinces or towns behave differently on your website? How can you optimise the experience for these different groups?

First-time visitors

How is the click path of a first-time visitor different from that of a returning visitor? What parts of the website are more important to first-time visitors?

18.6.3 In-page heat maps

Software such as Crazy Egg (www.crazyegg.com) can show you exactly where users click on a web page, regardless of whether they are clicking on links or not.

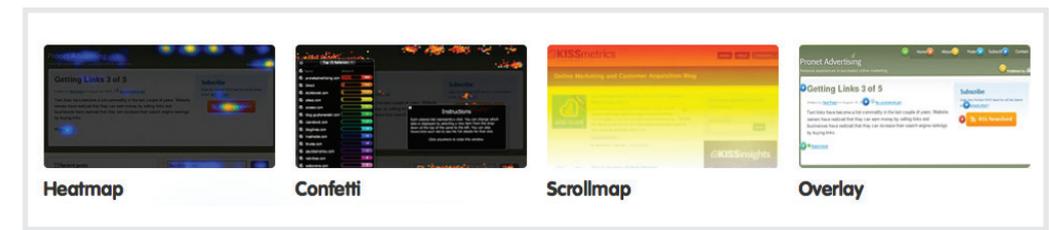


Figure 9. Heat map options offered by CrazyEgg.

It produces information that helps you to know which areas of a website are clickable, but attract few or no clicks, and which areas are not clickable but have users attempting to click there. This can show you what visual clues on your web page influence where your visitors click, and this can be used to optimise the click path of your visitors.

There are many factors that could be preventing your visitors from achieving specific end goals. From the tone of the copy to the colour of the page, everything on your website may affect conversions. Possible factors are often so glaringly obvious that one tends to miss them, or so small that they are dismissed as trivial. Changing one factor may result in other unforeseen consequences and it is vital to ensure that you don't jump to the wrong conclusions.

18.7 Tools of the trade

The first thing you need is a web analytics tool for gathering data. Some are free and some need to be paid for. You will need to determine which package best serves your needs. Bear in mind that it is possible to switch vendors with server-based analysis software without losing historical data, but it is not as easy to do so with cookie-based tracking.

Below are some leading providers:

- Google Analytics (cookie-based tracking) – www.google.com/analytics
- ClickTracks (server-based and cookie-based tracking) – www.clicktracks.com
- AWStats (server-based tracking) – awstats.sourceforge.net
- Webalizer (server-based tracking) – www.mrunix.net/webalizer
- SiteCatalyst – sitecatalyst.omniture.com/login

NOTE

Read more about this in the *Conversion Optimisation* chapter.

When it comes to running split tests, if you don't have the technical capacity to run these in-house, there are some third-party services that can host them for you. Content Experiments is a built-in feature of Google Analytics that lets you run split tests quickly and easily, and even helps you to figure out whether your results are statistically significant.

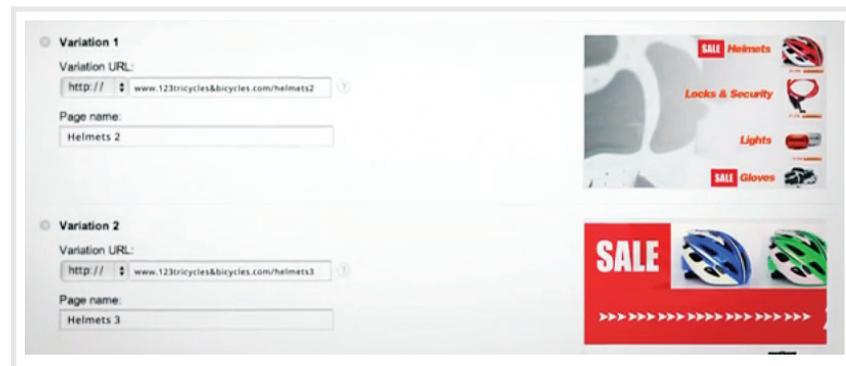


Figure 10. Content Experiments allows you to test different versions of key web pages.

A basic split test calculator is available at www.usereffect.com/split-test-calculator.

When you use cookie-based tracking, you need to add code tags to your web pages – and these need to be maintained, updated and changed occasionally. Google Tag Manager (www.google.com/tagmanager) makes it easy to add and work with these tags without requiring any coding knowledge. Other professional tag management tools include TagMan (www.tagman.com), Ensignten (www.ensighten.com) and Tealium (www.tealium.com).

18.8 Advantages and challenges

Tracking, analysing and optimising is vital to the success of all marketing efforts. Digital marketing allows easy and fast tracking, and the ability to optimise frequently. And when you use real data to make decisions, you're likely to make the best choices for your business and website.

However, it can be easy to become fixated on figures and metrics, instead of looking at broader trends and using them to optimise campaigns. Generally, macro or global metrics should be looked at before analysing micro elements of a website.

Testing variables is vital to success. Results always need to be statistically analysed, and marketers should let these numbers make the decisions. Never assume the outcome – wait for the numbers to inform you. The next chapter covers this in much more detail.

NOTE

Read more about this in the *Conversion Optimisation* chapter.

18.9 Case study: Motoreasy

18.9.1 One-line summary

Motoreasy puts their broad marketing activities to good use by improving the conversion rate on their website and increasing business four-fold.

18.9.2 The problem

Motoreasy offers extended warranties for cars, and sells these online and through their sales team. They identified two main objectives for their website. They needed prospective customers either to purchase a warranty online or to fill in a contact form so that the sales team could contact them. Motoreasy already had a comprehensive marketing strategy consisting of SEO, search advertising, an affiliate programme, content marketing, TV and print advertising, direct mail and PR. They did not want to change their marketing strategy, but rather wanted help to improve the performance of their website. They felt that more of the traffic being brought in by their marketing activities could be converted to a successful sale.

The conversion process involved two steps:

1. The first part involved website visitors getting a quote for an extended car warranty. The user needed to fill out three short forms to get a quote (this level of information is required as the product is financially regulated and has strict legal guidelines). For every three users who began the process, only one completed it.
2. After that, if the visitor was happy with the quotes, there were another three short forms to complete in order to sign up and pay for the product.

18.9.3 The solution

The best way to get more visitors to complete website objectives is to look at where in the conversion funnel people are dropping off and abandoning the process – and then fix this.

When the analysts looked at the conversion funnel, the trend they discovered was that visitors were lost at each point. A close inspection of the forms themselves revealed that the language was quite formal. While the benefits of the product were mentioned up front, these were not reinforced further along in this information gathering process.

In the second part of the process, visitors needed to sign up and enter credit card information to complete the process. As with the quote process, marketing messages outlining the benefits of the product were also absent along this part of the conversion funnel. And once they had completed the first part of the process successfully, the same marketing messages were used to motivate them to complete the second part.

The design was reworked so that the marketing message, crafted to motivate visitors to complete the process, was consistently communicated. The most important information was placed in the top-right position on the page, where most of the visitor's attention is focused. The benefits were clearly laid out on the form, and the terms and conditions were placed at the bottom of the page.

For visitors who had started the process, but had become frustrated, the company's phone number was placed clearly at the top of the page, and a short contact form was also provided to save any information that had already been entered.

18.9.4 The results

Once these changes were implemented, the dropout rate for the first part of the process fell from 65% to 29%. This is impressive, since the average dropout rate online is 40%. Of those who left the page while completing a request for a quote, more than half phoned in to complete the process or completed the shorter version of the contact form.

Before the changes, 31% of visitors completed the second process; after the changes, this number rose to 69% – the number of people submitting their credit card information had doubled. With minimal spend and no change to their marketing strategy, Motoreasy managed to grow their business four-fold.

The business benefited from key marketing insights gained from looking at Motoreasy's conversion funnel. These were:

- Looking at the drop-off rate at each stage in the conversion funnel was important to identify problems.
- A high drop-off rate across the conversion funnel could highlight a general problem with the process itself, in this case the content of the forms themselves (the benefits were not being reinforced at each stage and key information was not being placed where the visitor was most likely to see it).
- It was important to direct visitors by spelling out the action they should complete while clearly and consistently communicating the benefits of doing so. This would motivate them to complete the conversion funnel (Dainow, n.d.).

18.10 The bigger picture

Tracking, analysing and optimising are fundamental to any digital marketing activity, and it is possible to track almost every detail of any campaign.

Most analytics packages can be used across all digital marketing activities, allowing for an integrated approach to determining the success of campaigns. While it is important to analyse each campaign on its own merits, the Internet allows for a holistic approach to these activities. The savvy marketer will be able to see how campaigns affect and enhance each other.

The data gathered and analysed can provide insights into the following fields, among others:

- **SEO** – what keywords are people using to search for your site, and how do they behave once they find it?
- **Email** – when is the best time to send an email newsletter? Are people clicking on the links in the newsletter and converting on your website?
- **Paid media** – how successful are your paid advertising campaigns? How does paid traffic compare to organic search traffic?
- **Social media** – is social media driving traffic to the website? How do fans of the brand behave compared to those who do not engage socially?
- **Mobile** – how much of your traffic comes from mobile devices? Is it worth optimising your site for these?

18.11 Summary

The ability to track user behaviour on the Internet allows you to analyse every level of a digital campaign, which should lead to improved results over time.

The foundation of successful web analytics is to determine campaign and business objectives upfront and use these to choose goals and KPIs (grounded in solid targets).

Web analytic packages come in two flavours – server-based and cookie-based tracking – although some packages combine both methods.

Data can be analysed to discover how users behave, whether outcomes have been achieved, and how appealing the user experience is. Testing to optimise user experience can demonstrate ways in which to influence user behaviour so that more successful outcomes can be achieved.

Segmenting the audience allows specific groups of users to be analysed.

18.12 Case study questions

1. What is a conversion funnel?
2. Describe what was done here to ensure that more site visitors did what Motoreasy wanted them to do.
3. How did language play a role in this case study?

18.13 Chapter questions

1. Why is it so important to use data to inform business decisions?
2. What would you learn from a single-page heat map?
3. What is the difference between a goal and a KPI?

18.14 Further reading

www.kaushik.net/avinash – Avinash Kaushik is an analytics evangelist, and his regular insight is essential reading for any digital marketer.

Web Analytics 2.0 by Avinash Kaushik – if you are looking to get started in web analytics, you can't go wrong with this book by the web analytics legend.

www.google.com/analytics/ig.html – Google Analytics Conversion University is an excellent starting point for anyone who wants to get to grips with this free, excellent web analytics service.

18.15 References

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