



DATA SCIENCE AND SEO

Volume One - Why Data is Important and Where to get it



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INTRODUCTION

When it comes to [SEO](#) there are numerous tactics that businesses and brands can adopt in order to make sure that they rank as high as possible on search engine results pages (SERPs).

Over the years, we have covered [this topic](#) in great detail and by implementing the tactics and strategies that we discuss we've seen great results for our clients. We know that there is not a one size fits all strategy and that we have to make bespoke plans to get the best and for different businesses depending on their market, and their audience.

One thing that we haven't touched on in great detail is data science. This practice relies on using the brands' hard data as well as an array of tools and metrics to get the best performance based on the hard facts.

This eBook will look in detail at how you can implement data science into your SEO strategy in order to generate the largest returns and to see the highest gains in terms of search position.

Let's begin...

WHAT IS DATA SCIENCE?

Data science is a multidisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data. One of the terms that we often hear about is 'big data' and this is something that we will reference throughout this resource.

An emerging trend is that brands and businesses are showing a deeper understanding of data science and can visualise the benefits of implementing it in their strategy. By working with a variety of tools and programs to unleash the potential of their SEO they are seeing real-time results and far greater performance than those who are not using this element of digital and search marketing.

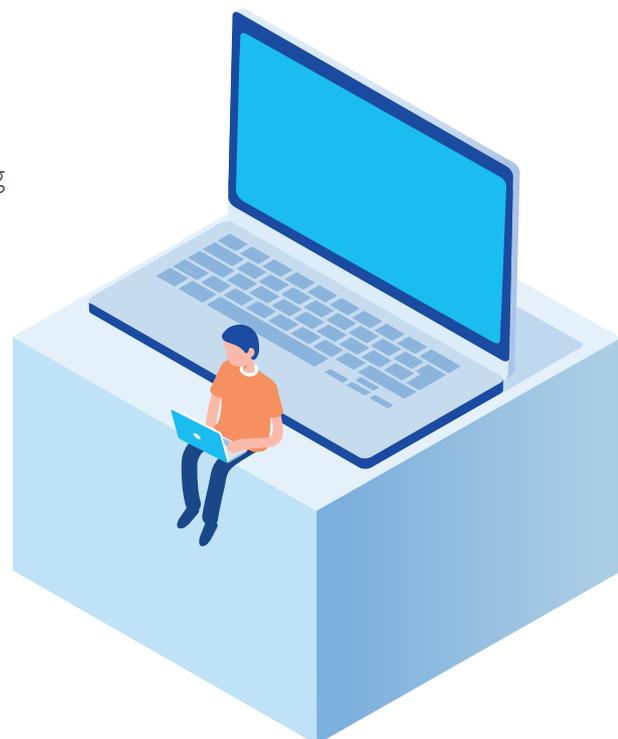
There are two reasons however that may put businesses off, they are:

- A failure to understand the importance of data science and the impact that it may have on their digital performance
- They do not understand where the data comes from or how to interpret it once they have access to it

We all know the importance of analytics when it comes to your search marketing strategy. If you are able to identify areas of improvement, based on previous results, then you will be in a far stronger position than your competitors who might not conduct such testing. Where data science comes in, is that this methodology allows you to see otherwise hidden patterns or trends using your raw data.

In order to get the most from your data there are a number of tools and platforms that you can use and you should be mindful that things such as artificial intelligence (AI) and machine learning have an increasing role.

Data science is a concept that unifies both statistical



analysis and machine learning in order to understand the data that businesses have, or need, to fulfil their potential online.

We know, from our experience, that optimising a website with search marketing in mind is not a simple task. It can involve a huge amount of guesswork, in terms of the types of things we test and the types of things we look for, and we know that the testing involved as part of a strategy harnesses the greatest results. With data there is a proven theory that the more you use to form your strategy the better the results in the long term . If you can use data science to gain valuable insight into website performance, and to answer the questions around your future SEO strategy, you will be in a better position to make the right decisions and improve your online performance.

There are two key channels that you need to think about when it comes to data science; first where you will get the data from and secondly how you will present and analyse this data and more specifically which tools you will use to undertake this task. It goes without saying that there are many out there who seem daunted by the thought of endless Excel documents with row upon row, line upon line of seemingly unfathomable data.

It seems to be a widely adopted chain of thought, that most people in this industry who want to achieve results in Google will use the Google tools for this particular task. Google analytics is one of the most popular tools for measuring SEO success and there are many effective strategies for measuring optimisation. also have access to the Google search console, this free service helps users monitor and maintain the website presents in the results and helps you, or your agency, to understand exactly how Google crawls and sees your site in terms of relevancy to the answer submitted by the user.

So the first thing to do is to decide on your data sources. Data insights will only ever be as good as the source and it's important you know where to look. Some of the tools highlighted above as well as a huge array of platforms such as SEMRush, Ahrefs and Screaming Frog for example are all good places to start and they all have different benefits depending out how complex your strategy needs to be and which metrics you are trying to improve.

The total number of data sources that are necessary to get the insights you want will depends wholly on the set up you currently have and the areas in which you want to improve. You need to be able to consider areas where visibility is currently limited.

This includes competitor research or general market research areas where visibility could be improved. By collecting a range of data from multiple sources you will be far better position to collect the answers that you need. One of the things that is often discussed is data harvesting, this gives you a pipeline to work from and highlights the exact data required to implement into your strategy just giving you better results.



In order to get a competitive advantage you need to be able to answer questions and fix problems based on your data. One thing that you mustn't fall into however is the trap that both data science and data analytics are the same thing. The main aim of data science and the leads that you generate online from the insight stage is to nurture them to the conversion stage.

We know that there are many patterns of seemingly random data that are actually connected and can drive the business forward. If you are offering legal service as part of your business model for example then your main aim will be to generate leads in the form of legal claims that you can then turn into a profit on by settling the case in a satisfactory way for the customer.

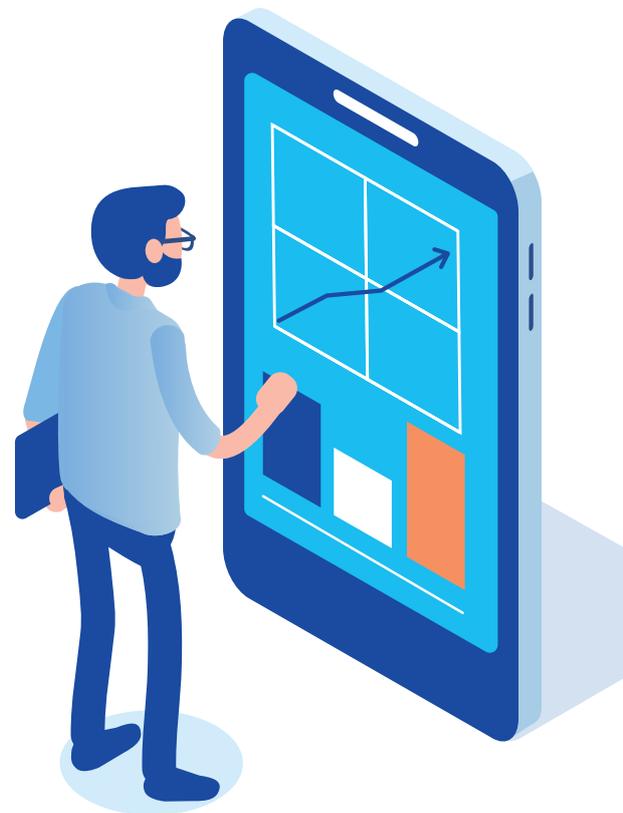
Some people use data science in parallel with their social media and it may be the case that they decide or determine that, based on the data, nearly 50% of all their customers are discussing things such as 'how do I claim for a car accident?'.

The social posts may also be seeking advice from people who have gone through something similar in the past ie recommendations or reviews. The relationship and trust that is built by actual users is vital and it could be that the data you have here, that relates directly to the fact that people are looking for your services, means that you could go down the user focused content (UFC) route.

We have discussed and implemented strategies for clients [relating directly to UFC](#) and know that implementing user focused content marketing strategies allows the user to ask a specific question and for you as the service provider to appear in the search results for that question.

A great example of this would be somebody searching 'car accident legal claim'. The content on your site should therefore include keywords that surround this query and it is a direct result of the data that you have collected and the data you collect from keyword research in terms of search volume the help you rank for the terms the end user is actually looking for.

Instead of simply knowing that customers are worried about making claims you can develop specific topics and have the foresight to send email campaigns or social posts to those who are in groups affected by the topic in question. This will lead to higher conversions and higher revenue. Data science also helps to extract new knowledge worth exploring further and allows you to position your content not with hindsight but with the ability to get ahead of the search.



WHY IS DATA SCIENCE IMPORTANT?

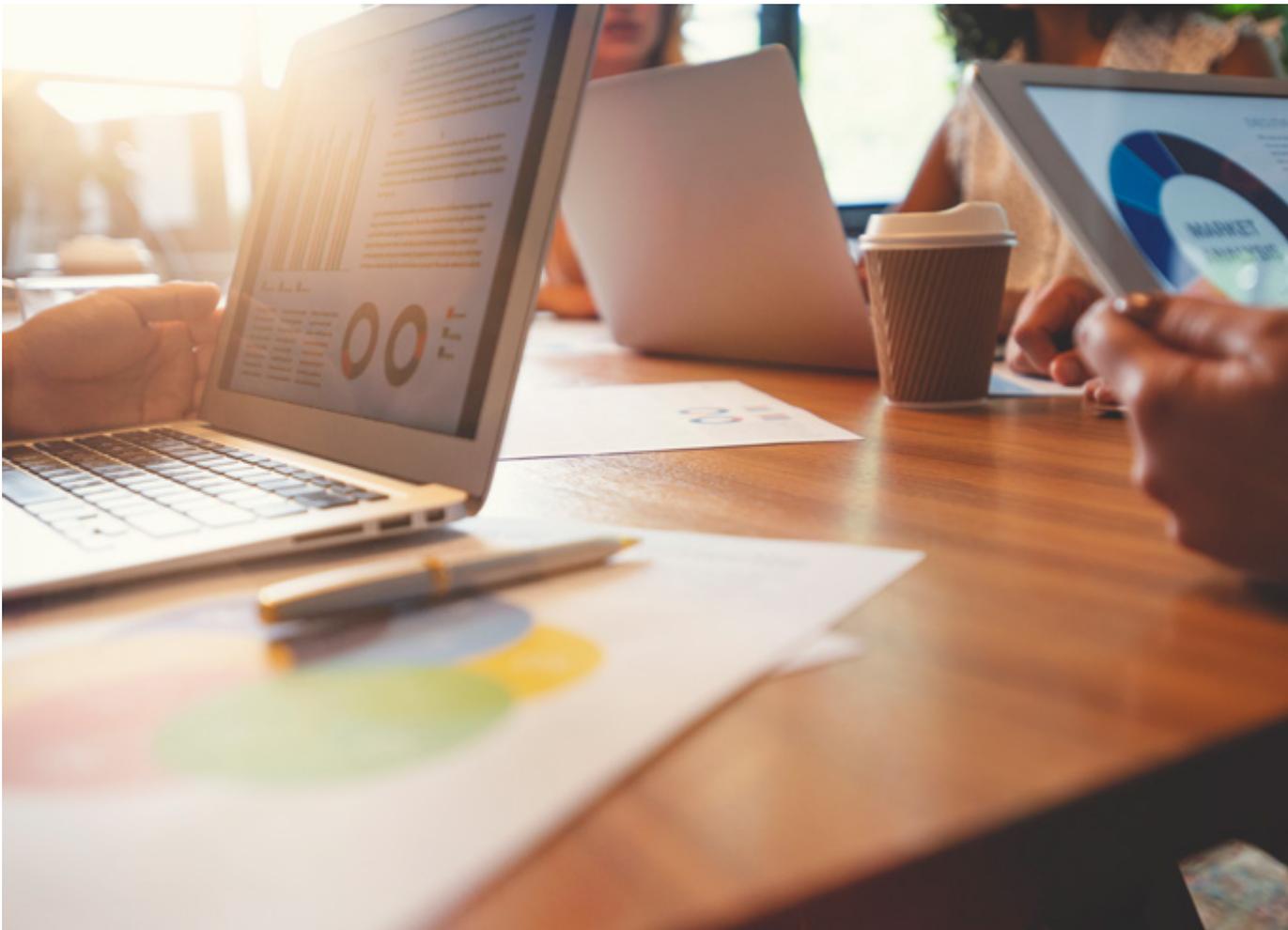
Data science provides valuable insights about a website's performance and these insights can help you improve your SEO campaigns.

Data science is used to make predictions about upcoming trends and customer behaviour using analytics and machine learning.

Apart from identifying opportunities, data science also handles high voluminous data and helps in making better decisions. Businesses can easily gauge the effectiveness of a marketing campaign with the help of data science.

As we mentioned earlier the role of machine learning is vital and one of the best examples of this is streaming giant, Netflix.

Netflix uses insights from data science to produce its original series that drives user interest and to recommend other titles based on previous searches – much like Amazon does with past purchases.





SO, HOW DO WE GO ABOUT DATA-DRIVEN SEO?

The term 'data-driven' refers to the practice of accumulating and analysing qualitative and quantitative data for use in the development of strategy.

Data-driven SEO, therefore, is the process of using this data as a central part of strategy development – from keyword strategies to demographic targeting.

Though data has always been a part of strategy development, it has often been a sub-section, or an afterthought in the process – a method of reviewing a campaign, for example. Letting the data drive, however, makes the results of research central to the development of strategy – whether this is in keyword selection, content creation, platform use and presence, or any other part of a brand's marketing strategy.

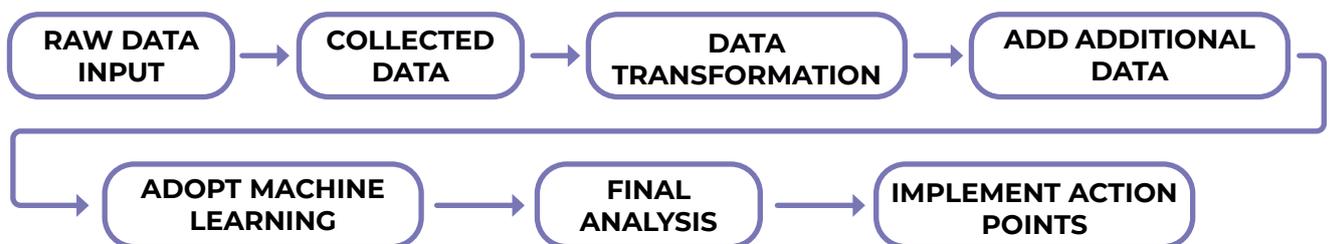
This process allows brands to remove many of the elements of chance from their marketing process, allowing them to act proactively rather than retroactively when judging the success of campaigns and amending practices.

We feel that there is a seven step process to making sure that your data works for you. The first step is raw analytics and data this data comes from, as we have mentioned Google Analytics, social media and website forms feed into this for example. You then get a complete view in terms of collected data.

After collecting the data, the next stage is data transformation where should run advanced analysis and this leads nicely into cross contact data sets where you can almost pair up the user with the channel from which they arrive at your website.

Using algorithms you can then identify hidden insights and use things such as machine learning and AI to give you predictive analytics.

Once you have all of this the next stage is to generate actionable insights to focus on actions that will directly improve performance. You're then in the perfect position to start marketing to different audiences, different segments and different target groups with an array of content. If you sell products on your website you can direct the customer directly to the product that will satisfy their search query. If you have something that may be of interest or that you can see that previous sales have been to men aged between 20 and 30 then creating a subset of your data to that group could generate further sales.



Google has rolled out a data-driven attribution model with the potential to offer a greater level of insight into the conversion path of consumers, and a tremendous opportunity for increasing ROI and optimising campaigns to ensure the best performance possible. Available to advertisers with at least 15,000 clicks and 600 conversions within 30 days - but insights at this level are still vital.

There is no single solution to attribution – it's not yet a perfect science. But it is a way for advertisers to get better answers on the value of media investments than their current strategy allows.

To those outside of the search marketing industry, or those that are new to it, content marketing can appear a little woolly – a practice big on ideas, but short of facts – but proof of concept is there for those who look for it, and there should be an immediate distrust of anyone who simply answers 'it's hard to measure' when asked for results.

Though there are certainly more metrics and methods of monitoring your content marketing progress than will be shown here, but the following should provide the basics to track the success of your brand's content, allowing you to build on the data gathered for future campaigns.

Here we're going to take a look at sessions that take place on-site, though we've dealt with UTM tracking elsewhere, and look at what analytics can tell us about content performance at a glance.

Landing page analytics

Sessions ? ↓	% New Sessions ?	New Users ?	Bounce Rate ?	Pages/Session ?	Avg. Session Duration ?	Goal Conversion Rate ?	Goal Completions ?
16,000 % of Total: 17.20% (92,612)	84.06% Avg for View: 79.01% (5.33%)	13,449 % of Total: 10.20% (73,910)	65.52% Avg for View: 61.50% (6.55%)	1.57 Avg for View: 1.90 (-17.11%)	00:00:53 Avg for View: 00:01:07 (-21.22%)	0.15% Avg for View: 0.47% (-67.84%)	24 % of Total: 5.56% (432)

The above, for example, shows some of the best metrics for measuring the success of your content (and included in the standard view if you follow Reporting>Behaviour>Landing Pages) and is an average of all pieces in the selected area of the site for the selected duration of time.

- **Sessions:** Sessions is total number of visits to the specified subsection of the site (here reached by searching ‘/blog’ to give a view of blog traffic). It details the overall number of visits, including returning visitors. It has the obvious benefit of indicating your overall traffic – and if tracked in the graph commonly found above this table, it can show how much your traffic improves alongside a content strategy.
- **% New Sessions:** As above, but this metric excludes returning visitors and so is able to give you an indication as to the new consumers your content is attracting. Clearly it is desirable to retain some repeat traffic as it indicates that your content is developing a following, but this metric can offer a fantastic insight into how your content is developing your traffic.
- **New Users:** This is the number of new visitors, rather than as a percentage. Easier to parse at a glance as a simple figure, this metric shows how attractive to new audiences your content is – perhaps revealing how well a piece of ‘How to’ or instructional content is answering the search query it is aimed at for example.
- **Bounce rate:** This is a great metric for measuring how well your content feeds in to other pieces – showing the percentage of users that visit only one page of your site before exiting. It can also show you how well your ‘similar content’ lists or CTAs are working, as these are the main tools you will use to draw consumers on through the site as part of your path to conversion.
- **Pages per session (PPS):** This offers an insight into what consumers are doing on your site and potentially how well you’re capturing their attention. PPS will generally be much higher for eCommerce sites, but equally a site looking to measure the success of a content strategy will want a high average as it indicates that they are continuing to read/watch/listen past the point of finishing what originally drew them to your site.

- Avg Session Duration: The ideal length of this will depend upon how long your individual pieces of content are and how many pages per visit your consumers are visiting, but again the best result is always longer. If a piece of long form content is only receiving a minute of attention, for example, it may be worth revisiting the page to see if you address any issues with the content or layout.
- Goal Conversion Rate & Goal Conversions: Again, these will depend on what goals you have in place, how you're using CTAs in your blog and other things, but essentially these metrics allow you to assess at a glance how well your content is performing against specific goals – which can, again, be tracked over time to measure progress and identify areas for improvement.

Attribution

Though we would recommend a more thorough method of attribution modelling, as a quick overview the standard first and last interaction attribution can give you a good idea of how your content is performing across various platforms.

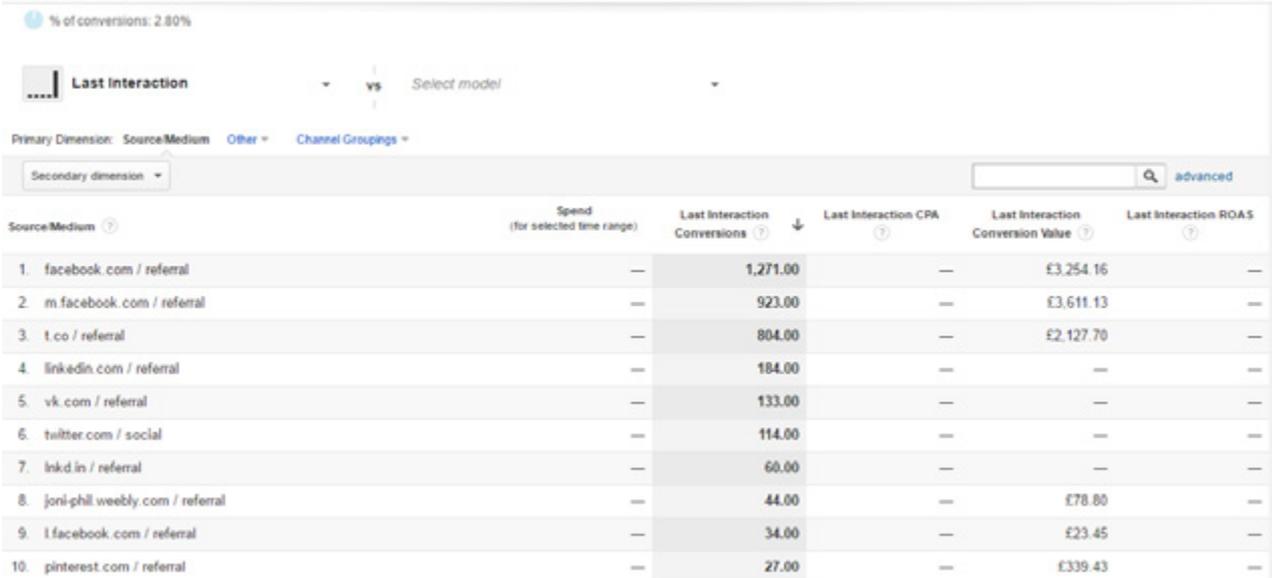
Sessions ? ↓	% New Sessions ?	New Users ?	Bounce Rate ?	Pages/Session ?	Avg. Session Duration ?	Goal Conversion Rate ?	Goal Completions ?
16,164 % of Total: 17.35% (93,140)	84.13% Avg for View: 79.82% (5.40%)	13,598 % of Total: 18.29% (74,340)	64.87% Avg for View: 61.19% (6.02%)	1.58 Avg for View: 1.90 (-16.99%)	00:00:53 Avg for View: 00:01:08 (-21.17%)	0.15% Avg for View: 0.46% (-67.99%)	24 % of Total: 5.56% (432)
7,652 (47.34%)	94.05%	7,197 (52.93%)	67.24%	1.39	00:00:29	0.04%	3 (12.50%)
404 (2.50%)	92.08%	372 (2.74%)	87.62%	1.30	00:00:27	0.00%	0 (0.00%)
365 (2.26%)	89.59%	327 (2.40%)	73.15%	1.42	00:00:53	0.00%	0 (0.00%)
278 (1.72%)	68.71%	191 (1.40%)	80.22%	1.53	00:01:00	1.44%	4 (16.67%)
242 (1.50%)	77.27%	187 (1.38%)	85.12%	1.41	00:00:41	0.00%	0 (0.00%)
228 (1.41%)	77.19%	176 (1.29%)	78.07%	1.66	00:01:40	0.00%	0 (0.00%)
216 (1.34%)	68.06%	147 (1.08%)	76.85%	1.57	00:01:09	0.46%	1 (4.17%)
210 (1.30%)	76.67%	161 (1.18%)	56.67%	1.85	00:01:16	0.00%	0 (0.00%)
210 (1.30%)	75.24%	158 (1.16%)	72.86%	1.75	00:01:40	1.90%	4 (16.67%)
183 (1.13%)	68.31%	125 (0.92%)	53.01%	2.02	00:01:19	0.00%	0 (0.00%)

First Interaction

First interaction is indicative of a conversion which began with a specific referral from (in this case) a social referral and, though there may have been many interactions since, the cookie was placed during this particular visit and the conversion took place within a range of time which can be personalised to the brand – so ensure you calculate the standard lifecycle of a conversion to ensure accurate reporting).

Last interaction

Similarly, last interaction shows the number of conversions and their value from visits with a last interaction before conversion that have (again we use the social channels here) come from various platforms. Though the value of these conversions is obviously important, the main use of this section of Analytics is to monitor the performance of and assist with the furtherance of your content strategy. You can draw inference from various performances, and look to capitalise on success and improve on underperforming channels.



The screenshot shows the Google Analytics 'Last Interaction' report. At the top, it indicates '% of conversions: 2.80%'. Below this, there are navigation options for 'Last Interaction' and 'Select model'. The primary dimension is set to 'Source/Medium' and the secondary dimension is also 'Source/Medium'. A search bar with the word 'advanced' is visible. The main table displays the following data:

Source/Medium	Spend (for selected time range)	Last Interaction Conversions	Last Interaction CPA	Last Interaction Conversion Value	Last Interaction ROAS
1. facebook.com / referral	—	1,271.00	—	£3,254.16	—
2. m.facebook.com / referral	—	923.00	—	£3,611.13	—
3. t.co / referral	—	804.00	—	£2,127.70	—
4. linkedin.com / referral	—	184.00	—	—	—
5. vk.com / referral	—	133.00	—	—	—
6. twitter.com / social	—	114.00	—	—	—
7. lnkd.in / referral	—	60.00	—	—	—
8. jori-phil.weebly.com / referral	—	44.00	—	£78.80	—
9. i.facebook.com / referral	—	34.00	—	£23.45	—
10. pinterest.com / referral	—	27.00	—	£339.43	—

There are, of course, many other ways to monitor the performance of a content marketing strategy not just on Google Analytics, but with several other third party tools (and some of the platform specific analytics offerings), but with just these few Analytics views (and a record of where content is being shared and when) you can learn a lot about the progress of your strategy.

There is, therefore, never a need to take 'it's hard to measure' as an answer from your agency or content team, if done well and monitored regularly, there is a lot to learn even at a glance that will instruct and inform.

HOW DOES DATA SCIENCE HELP WITH SEO?

Data science can help you make a number of concrete decisions by letting you do some or all of the following:

- Visualise which combinations have the potential to make the biggest impact
- Create marketing campaigns aligned with the needs of their audience
- Understand buyer's preferences and identify pain points
- Identify referral sources of converting traffic
- Verify loading time, indexing, bounce rate, response errors, and redirects
- Verify the most and least crawled URLs
- Identify pages that crawlers aren't supposed to index
- Identify sources of unusual traffic

DATA AND PPC

We often talk about a multi-faceted approach and it seems we also only touch on the relationship between data and PPC (paid search).

The level of data available to marketers has transformed beyond the wildest dreams of most 20th century marketers, particularly since the introduction of Google Ads in 2000.

The other side of the coin is that the customer journey much more complex and fragmented than ever before, with 90% of consumers moving across devices and 38% across digital channels, according to Google.

With your marketing spread out across so many channels (like organic search, paid search, display, social and email), it can be difficult to evaluate what is and isn't working – what's influencing people to take the action you want them to, and what's turning them off.

DO YOU KNOW WHERE YOUR SALES ARE COMING FROM?

To optimise any paid search (PPC) campaign, you need to know what's driving sales (or converting in other ways, such as filling in a form, signing up for a newsletter, or downloading a brochure). Google Analytics has a range of models to help you to do this. Each has pros and cons, and so the onus is on the advertiser to decide which one most adequately meets their business objectives.

Marketers are beginning to wake up to the limitations of the traditional 'last click' model, which attributes the value of a keyword to the last interaction before conversion. This can be misleading as it can be misleading since our path to purchase usually starts long before the last click and undermines the value of any keyword that assists a user by moving them down a purchase funnel without actually getting them to convert yet.

Our data guru John Warner uses this metaphor to demonstrate the flaw with the last click model:

You own a shop at which consumers will potentially arrive in many ways – they may take a taxi, then a bus, then a train followed by a short walk.

Another consumer, however, may arrive solely following a journey via any one of these methods, while still another may use any other combination of them before they eventually arrive at the shop and make a purchase.

In this situation, it would be natural (and it is common) to see the final mode of transport as the most important and, therefore, miss the importance of all the others. While this may not cause trouble for some, if you don't see the bus delivering any visits to the store it can seem reasonable to assume that the bus journey is not important to your business.

What if, however – and unknown to you – the bus plays an integral role in three out of every five visits to the shop? While you may see no direct results, visits from the passengers on the buses could theoretically reduce sales by 60%. It is this that is the potential downfall of last click attribution (and, to lesser extents, other standard attribution varieties which suffer the same oversight to greater or lesser degrees).

There are several other attribution models to consider when managing your paid search campaigns. Each has pros and cons, and so the onus is on an advertiser to decide which one most adequately meets their business objectives.



FINAL THOUGHTS

Whilst it is true that businesses and brands may not exactly know what it takes to get to the top of the search engine results pages they will know the target audience they wish to reach and will have an idea of the key performance metrics that they wish to track, and ultimately improve on.

The topics and themes in this eBook represent a rough guideline which, if implemented correctly, can form your future search marketing strategy.

We know, as we have said in the past, that there is no quick fix to SEO, and with that in mind it is vital that you implement a balanced strategy in order to see the best possible results.

Making decisions and implementing critical thinking in addition to working with the resources you have available, are just some of the things that you could put into your future online marketing plan. Where you must not miss out however is the area of your strategy that relies on big data. It is imperative that you collect as much information as possible from a wide number of sources and that you segment it, select that which is actionable, implemented as part of the forward-thinking workload.

GET IN TOUCH WITH US TODAY

ABOUT US

Click Consult is a multi award-winning digital and search marketing agency with a focus on organic (SEO) and paid search (PPC). Part of global consumer brand business Ceuta Group, we have a team of 70-plus specialists and a portfolio of more than 60 clients worldwide.

Our complementary services include content marketing, outreach, social media, conversion rate optimisation (CRO) and international/multilingual search marketing. We can also offer training and consultation to support your teams or existing strategy.

Click was named SEO Agency of the Year 2019, adding to our long list of other awards and accolades, and also ranks within Econsultancy's 'Top 100 Digital Agencies', and Prolific North's 'Top 50 Digital Agencies'. We're also a Google Premier Partner, a Bing Select Partner and feature in The Drum Recommends.

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OUR TECHNOLOGIES

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