

Search engine marketing has become a very important aspect in marketing. This paper aims help small business owners with making quality decisions on their online marketing strategies.

Search Engine Marketing

An introduction for small
business owners

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2. Summary

With the rise of the internet in the past two decades new possibilities for marketing strategies became available. Online marketing already is an important part of the marketing strategy for 82% of registered businesses in The Netherlands (Centraal Bureau voor de Statistiek, 2009). This paper aims help small business owners with making decisions on their online marketing strategies.

First off, the paper will describe conventional marketing strategies. Then, the basics of building and maintaining a website are explained in a literature study. At some point these two topics will submerge up to the point where business to consumer marketing (B2C) theories are applicable to online marketing. This results in an amended marketing model suitable for online marketing. This proposed model will be accompanied by business case examples.

It's explained that the clickthrough-rate is an important variable on the price of a search engine advertisement campaign. This paper proves two additional relationships between the clickthrough rate and its influencing factors, which have not been proven before in earlier researches. Next to the already known factors, also the correlation between *the search words* and *the text of the ad* and the *amount of search results* influence the clickthrough rate.

3. Introduction

In 2009, 82 percent of all businesses in The Netherlands owned a website (Centraal Bureau voor de Statistiek, 2009). An organization can easily reach customers to provide them with not only general information about its products or services, but also the opportunity for online sales (Aladwani & Palvia, 2002). Even though the primary purpose of a business's website isn't always transactional (i.e. making online sales), websites are still important for informational purposes to businesses (i.e. to inform potential customers about the services and products), location and contact information (Broder, 2002). The performance of their websites in terms of the extent, to which they can attract and retain traffic, strongly influences the volume of business transacted on them (Tarafdar & Zhang, 2008).

This paper will first describe the basics and theories of business to consumer marketing (B2C). Then an explanation about the basics of web design, search engines and search engine marketing will be given. At a certain point these two topics will meet, so that they can be combined by applying a modified pre-internet marketing model. After some basic knowledge about building websites, maintaining websites and online advertisement campaigns is supplied, the paper will aim to answer and draw conclusions to the research questions below by literature and empirical analysis. By gathering empirical data gathered from Google AdWords campaigns, this paper tries to prove a connection between settings in the campaign, the search query and the clickthrough rate. The clickthrough rate is an important outcome of an online marketing campaign, as it reduces the cost of the campaign and increases the amount of views in a situation where the amount of clicks isn't limited by a budget. Especially in niches the amount of clicks is usually not limited by the budget.

The research questions start fairly general and superficial. To sharpen the focus to the empirical research, the research questions related to paid-advertising are more specific. The methodology chapter will describe exactly how the data will be collected. Although search engine advertising is the primary field of research some adjacent fields of online advertising, like law and social media will be touched as well.

1. What is business to consumer marketing?
 - 1.1. How does business to consumer marketing differ from business to business marketing?
2. What can a small business owner do with a website to increase sales?
 - 2.1. What is search engine optimization?
 - 2.1.1. Which basic strategies can be applied to search engine optimization and how do they correlate to the common marketing strategies?
 - 2.2. What is search engine advertising?
 - 2.2.1. How and when can search engine advertising be useful to a business?
 - 2.2.2. What are the differences between online marketing and conventional marketing?
 - 2.2.3. What factors influence the cost of an online advertising campaign?
 - 2.2.3.1. Which factors influence the clickthrough rate?

When an ad is clicked, the visitor will be lead to the target website. This is called a *clickthrough*. The percentage of clickthrough's from the total amount of impressions (or displays) is called the *clickthrough rate* (CTR). If the clickthrough rate increases, the cost for an ad declines (Kim, 2011). Therefore it's important to maximize this rate. The clickthrough rate is an important topic where the empirical part of this research will focus on.

Some research has been done on the clickthrough rate and what influences the clickthrough rate. According to other researches the clickthrough rate is heavily dependent on the position of the ad on the search results page (Richardson, Dominowska, & Ragno, 2007). Other researchers claim that it's not possible to predict the clickthrough rate (Dembczynski, Kotłowski, & Weiss, 2008). Ashkan, Clarke, Agichtein & Guo (2009) concluded that the intention of the search query (navigational, informational and transactional) are influencing the clickthrough rate.

However there is no research which tries to prove a correlation between the content of the advertisement and the content of the search query. *Is there a relationship between the percentage of matching keywords in the ad and the clickthrough rate?*

Another aspect which has not yet been researched is the correlation between the availability of information on a topic and the clickthrough rate. The empirical research aims to prove *a relationship between the availability of information and the clickthrough rate.*

The answers to the research questions should help (small) business owners to assess their online marketing strategies and make adjustments themselves, or should help having better understanding who to hire and who not to hire for making adjustments to the marketing strategies.

4. Theory

The general marketing strategies will be described in this section, with a focus on consumers. Whereas business-2-business (B2B) marketers try to sell their products or services to other businesses, business-2-consumer (B2C) marketers try to sell their products to consumers. Other smaller differences lie in the fact that contracts to the consumers are stricter regulated by (European) governments. Most online marketing by small businesses is aimed directly at consumers. Since this paper is aimed at small business owners, the theories explained will be business-to-consumer strategies.

4.1. B2C marketing strategy

The first theory that comes to mind when trying to sell a product or service is the traditional marketing mix model by McCarthy (1960), which later has been extended to the 7 P's. The four P's in this mix consist of *Product, Price, Promotion* and *Place* and are viewed up on from the producer's or seller's orientation. This point of view is useful because this paper aims to help small business owners to assess their (online) marketing strategy. Where possible, the dimensions in the marketing mix will be discussed by Porters five forces framework.

4.1.1. Product

From an advertising viewpoint, the product usually already has been developed. Yet it's still an important ingredient in the marketing mix. This can be argued by using Porter's five forces model (1980). According to Porter's five forces model, there are four forces influencing the industry's rivalry, which in its turn influences the four forces. The most direct force on the product's requirements is the bargaining power of the customer.

The bargaining power of customers, in the perspective of advertising, is directly related to the availability of products with exactly the same features. If a competitor offers almost exactly the same product, there should be thought of a way to make the businesses product preferable over the

competitor's product. Properties which could make a product more preferable is converging sales by offering related products for a lower combined price e.g. triple play contracts for telephony, internet and television.

Another way to make the businesses' product more preferable, is by having a preferred production process. This could be a significantly greener production method, or a production method which is fairer to the laborers. Especially with the recent clothing factory collapse in Bangladesh, which killed 1127 people, this is a hot topic. Gap Inc. refused to sign an agreement to improve safety conditions in Bangladesh's garment factories has been condemned by politicians, charities, and trade unions (Morrison, 2013).

4.1.2. Price

Businesses always seek to maximize profits (Gordon, 1948). Simply put, the change in profit can be calculated by this simple formula: $number\ of\ sales \times (price\ per\ product - cost\ per\ product)$. There is a correlation between the *number of sales* and the *price per product*. This relationship is called the *price elasticity of demand*. Raising the *price per product* to infinity would reduce the *number of sales* to zero.

The price elasticity of demand is different per product and is defined by multiple factors which will be discussed by using Porters five forces model. Starting off with the bargaining power of the consumers. Of course a very important factor is the price for the same product or service set by competitors, assuming the supply is limitless.

The profit made per product (marginal profit) is a lot more important than the total profit for online marketing. Payment is made per click, not per campaign. Therefore a campaign can run as long as the marginal profit is high enough.

4.1.3. Place

Place refers to the method the product or service is being distributed. These methods are called distribution channels and are not necessarily limited to one channel. Multichannel strategies allow firms to reach customers in multiple ways, increasing the firms' reach. In addition, multiple channels allow customers to reach businesses by using their preferred channel (e.g., Internet, physical store, or value-added reseller) (Sharma & Mehrotra, 2007). Channels can take away market share from each other, which could result in channel conflict. Therefore it's important to do proper research on whether it's worth investing in a new distribution channel.

4.1.4. Promotion

The promotion section of the marketing mix consists of the following elements: advertising, public relations, personal selling and sales promotion. The promotion section can be broken down to multiple advertising strategies, for different distribution channels.

Abler & Vakratas (1996) propose a simplified model of the process of advertising. The seller expresses the need for advertising and usually hires an agency. The agency spreads the advertisement via the media after receiving the advertiser's consent. The ad is supposed to influence the mind of the consumer, which results in a change in behavior: Buying the sellers product.

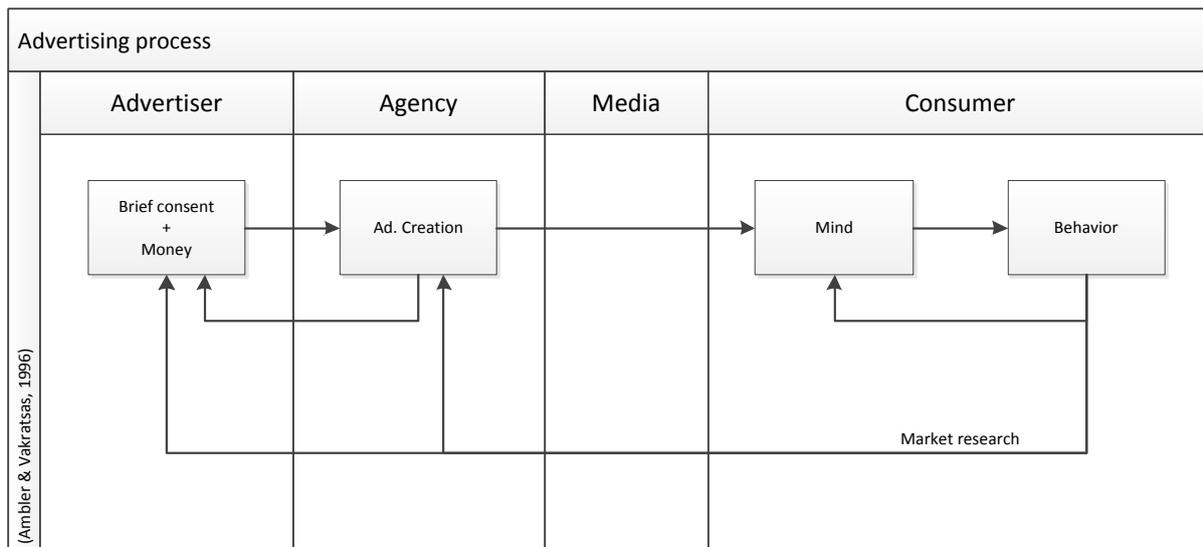


Figure 1: Advertising process (Ambler & Vakratsas, 1996)

In 1996 Abler & Vakratas claimed that the relationship between advertising expenditure and consumer behavior has remained stubbornly elusive through over a century of research. And that this costs the advertising industry over \$100 billion per year.

The attentive reader wonders why a marketing model created in 1996 was brought up. Before online advertisement services became publicly available. This model was developed right before the dot-com bubble where internet marketing exploded. Therefore it makes an interesting view what has changed and what remained the same. After the search engine marketing (SEM) paragraphs in the theory section have been discussed, a modified model based on Alber & Vakratas' model (1996) will be proposed.

4.1.4.1. Hierarchy of effects analysis

A very commonly used promotion theory is the hierarchy of effects analysis, by Lavidge and Steiner (1961). This analysis divides promotion into six hierarchical steps in a sequence of effects, resulting from perception of an advertisement, which moves the consumer ever closer to purchase (Palda, 1966). The steps are categorized in three behavioral groups: Cognitive, affective and conative. The theory is called the hierarchy of effects because at every step in the sequence possible customers will drop out.

Cognitive – the realm of thoughts

The first step should make the consumer **aware** of the existence of the product or service. However this is not as easy as it seems. Having an advertisement up, does not mean that the consumer will notice it, or decides to look at it.

Once the consumer is aware of the existence of the product, service or brand, the consumer should get **knowledge** about the item. What does this item do, what are its benefits, how does it compare to other brands? A website would be perfect to fit this purpose.

These first two steps can be achieved by advertising and having the required information easy accessible and publicly available.

Affective – the realm of emotions

In this stage the consumer knows about the product, but doesn't necessarily **like** the product yet. Via all possible channels should be found out for what reason a consumer like or dislike the product, service or brand.

Even though the consumer now likes the product, he or she may not **prefer** it yet over products sold by competitors. This can be done by differentiating the product on fields like price, production method, after-sales services or creating an experience that comes with the product or service.

Conative – the realm of motives

A consumer might prefer a product, but is not convinced yet that he or she needs the product. This is called the **conviction**. This can be done by increasing exposure to the target market to "refresh" the memory of a potential client. Also it's important that the consumer sees how the product is required, for example for an easier lifestyle. Another method would be taking away negative stimuli.

At last the consumer must decide to **purchase** the product. A business could reduce the barriers preventing customers from purchasing the product. Examples of how this can be done is by having the product available at plenty of shops and offering a payment plan for the more expensive goods and services.

4.1.4.2. Long-tail markets

In statistics, a long tail of some distributions of numbers is the portion of the distribution having a large number of occurrences far from the "head" or central part of the distribution. The distribution could involve popularities, random numbers of occurrences of events with various probabilities (Bingham & Spradlin, 2011). This distribution also goes for target markets. If we take bicycles in The Netherlands for example, there is the main market, people who are in need of transportation. However cycling can also be recreational. In this case the recreationists would be a niche market for a manufacturer. Those recreationists could have been browsing around for a fun outdoor activity, not thinking at all about cycling. This is where niche marketing and the first step of the Hierarchy of Effects model combine.

4.2. Search engine optimization

So far business to consumer marketing in general has been discussed, leaving out the possibilities of online marketing. The next sections will discuss the possibilities of online marketing. This section will describe the basics of search engine optimization. It's important have a high ranking site in search engines because a huge share of visitors comes in via search engines, as Figure 2 shows.

70.461 mensen hebben deze site bezocht

■ Zoekverkeer ■ Verwijzingsverkeer ■ Direct verkeer

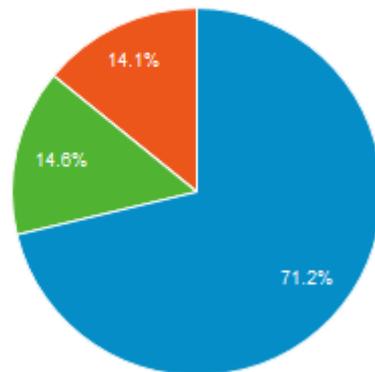


Figure 2: Sources of incoming traffic to debruidssuite.nl (DeBruidssuite B.V., 2012)

Because the most common used search engines all use the same method of building indexes, this can be described in a general method. A visitor entering the site via the results of a search engine is called an *organic visitor* which is opposite to a visitor who came in via an advertisement which is called a *paid visitor*.

The ranking of a website can be increased by improving three properties: *semantics*, *content* and *backlinks*. These three properties are interdependent on each other. Without proper semantics, the content is useless. Without content, it's impossible to build backlinks. And without backlinks proper semantics have little influence on the amount of traffic entering the site.

4.2.1. Semantics

All websites have some sort of markup language to shape the contents of the pages. The most common way to shape the contents is by using HTML code. HTML code can be viewed by clicking *view source* in the context menu of a page.

While a certain website looks very neat, the source can be extremely messy. This often happens with automatically generated websites. All search engines can see is the source. So cleaner is better. Also as much appropriate attributes should be used. For example: search engines can't view images, therefore they have to be described with the proper tags for proper indexing.

It's no problem to cover multiple topics on a page. However each set of paragraphs covering a topic, should have a heading with the same keywords in it. See the exaggerated example below.

Heading for a topic containing a list of amazing cars

RIGHT	This are some amazing <i>cars</i>
WRONG	Amazing machines with four wheels

Table 1: Example heading for text covering amazing cars

The last important subject regarding semantics is the way the items in the main menu and titles/url's of pages should be matching. Eventually this will lead to "sitemaps" within the search results. Having a sitemap attached to a site is a huge advantage. A lot more space is dedicated to the site and also a lot more information is shown about this specific site, including information on other things the site has to offer.

4.2.2. Content

The philosophy of search engines is that if their searchers receive quality information on what they are looking for, the searchers will be more satisfied, resulting in the searchers coming back to the search engine for more searches.

Therefore it's important to have unique content on your website, which has not been copied from somewhere else. This makes sense because the place the information was copied from, still has a higher pagerank (see 4.2.3).

The content should also match the target of the page. For instance, if a page is informing readers about pizza, it should contain the words "information on pizza", or if the target of the page is having people place orders online, the words "order pizza online" would do good.

4.2.3. Backlinks

Most small business owners think a website is finished when it has been designed and the content has been added. However this is just the beginning. Websites require other sites to link to them in order to rank higher in the most common search engines. This principle is called PageRank (Google) or PageScore (Bing). Links from one website to another are called *backlinks* for the receiving party. A backlink results in a higher rank/score. Receiving a backlink from a site with a high ranking results in more points than receiving a link from a site with a low ranking. A PageRank/PageScore is very important, because this is the only factor which can be significantly improved over time.

Having unique content on your website also adds value for other website to place a link to your site. When it's actually useful to place link to your site from another site owner's point of view, backlinks will come without having to go through extra trouble. This is why it's extra important to have useful and unique content on your site.

A page with a lot of outgoing links share less of its ranking with the receiving sites than pages with just a few outgoing links on them. Therefore a link placed on a so called "link partners" page will have a lot less effect on the ranking. Ideally a backlink would be placed in a paragraph of text describing a topic in relation to the target page. It takes a while for search engines to pick up on new backlinks.



Figure 3: Example of a sitemap in search

Because acquiring quality backlinks requires communication, and the search engines take their sweet time, increasing the PageRank/PageScore is a very time consuming process. *It can take weeks before the work pays off.*

4.3. Search engine advertising

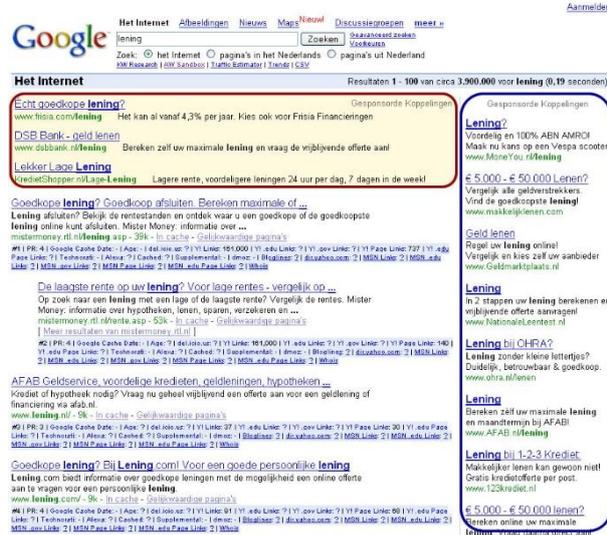


Figure 4: Example search Google results page

As stated in previous paragraph, it can take a while before a search engine picks up on changes that influence the ranking. Search engines also offer advertisement programs, which take effect immediately after the campaign has been set up and the money has been paid. Figure 4 on the left shows a search result page at Google.com. The areas with a red and blue rectangle around them, are paid advertisements. The area without a rectangle are the organic search results.

In the red rectangle the first three ads are shown. In the blue rectangle ads 4 to 12 are shown. By having a higher “quality score” combined with the maximum bid per click, the position of the advertisement increases upwards. The quality score is combined of the relatedness of the advertisement to the search results, the *clickthrough rate* and the bounce rate.

The bounce rate is the amount of clicks which immediately return back to the search engine. In short, this rate could be reduced by having a *landing page* especially designed for the ad and an attractive layout without distracting elements. Decreasing the bounce rate is an entirely different kind of study. This study focusses on the clickthrough rate.

When setting up online ad campaigns lots of settings can be changed. The settings influence the performance in their own way. The performance, the dependent variables combined, is the result of some of the independent variables. The graph on the next page should place some of the variables in a better perspective.

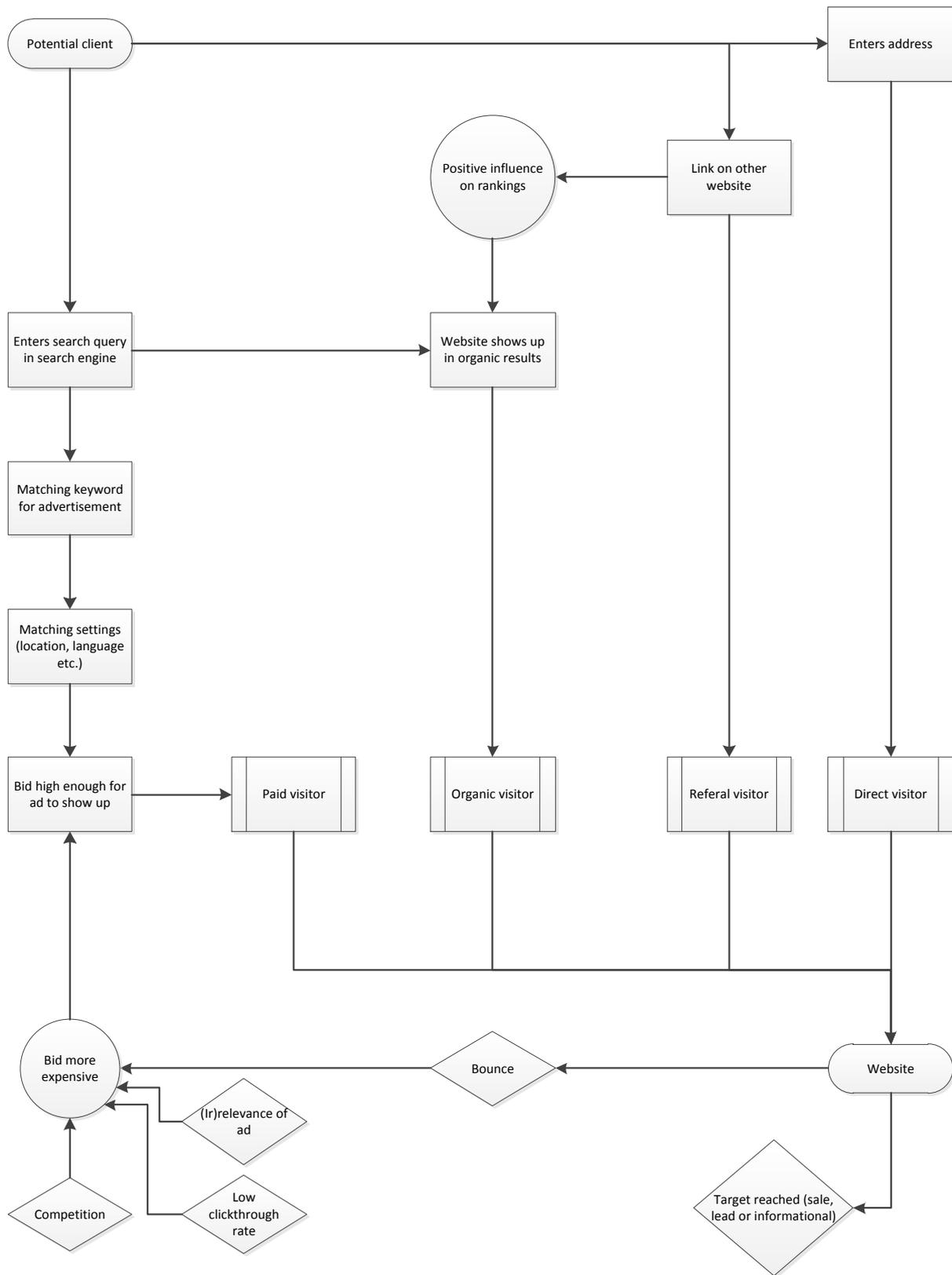


Figure 5: Variables of search engine marketing put into perspective

As the diagram shows, a potential client can come to the site in four ways: Organic visitors (unpaid, via the search engine), Paid visitors (paid, via the search engine), referral (via a link) or directly typing the address into the address bar.

Because this research mainly focusses on the clickthrough rate, the path via the search engine will be analyzed. A search engine user will enter a search phrase or a keyword. If the words on the website contain the same keywords and the pagerank is as high as the top 10 other sites with the same keywords, the link will be displayed on the first page of the search engine results page (SERP), as an organic link.

If the traffic flow through organic sources isn't big enough, the site owner can resort to search engine advertising. One of the big differences between search engine advertising and regular advertising on television or in magazines is the method of payment. On the traditional methods of advertising an amount of money is paid, with only an estimation of the results. With search engine advertising, money isn't paid per view of the advertisement, but per click on the advertisement. Due to this fact money is being paid continuously, instead of per campaign. Therefore if the profit margin is high enough to cover the advertisement costs, theoretically the daily budget limit can be increased to unlimited.

The second big difference between traditional advertising strategies and search engine advertising is the target market. With search engine marketing advertisements are only triggered when the pre-set keywords have been entered into the search engine. If the advertiser chose the right keywords, the searcher only will see ads for something he is actively searching for, in contrary to television, where the ads are an interruption to the activity the viewer was conducting.

There are lots of variables which can be modified to make small changes to optimize the campaign, but most of them have little influence on the clickthrough rate. The most important variables are the ad itself and the bid. The bid is defined as the maximum the advertiser is willing to pay for a click. The bid is set per keyword, not per advertisement. If the bid is high enough, the advertisement will be shown on the front page. If the bid is higher than the competitor's bids, or if the other variables like clickthrough, bounce and relevance score a lot higher than the competitors', the position of the ad will increase towards the first position (the red block in Figure 4).

[Geld lenen met lage rente
www.postkrediet.nl/
Betrouwbaar lenen met lage rente.
Let op! Geld lenen kost geld.](http://www.postkrediet.nl/)

Figure 6: Example Ad

Another very important variable is the advertisement itself. The ads have a length requirement defined in characters. The title, which is the blue part of the example image, has a maximum of 25 characters. The three lines below have a maximum length of 35 characters. The green line has to contain an URL, matching the domain name of the target. However the address may be fictional.

In this ad you see that the word "lenen" is shown in bold. This is because the word "lenen" was used in the search query. This raises a question. Would searching people more click on an advertisement with words shown in bold? This leads to the following proposition.

Proposition 1: A relationship between the percentage of characters in the advertisement that matches the search query and the clickthrough rate.

4.4. Psychology of searching

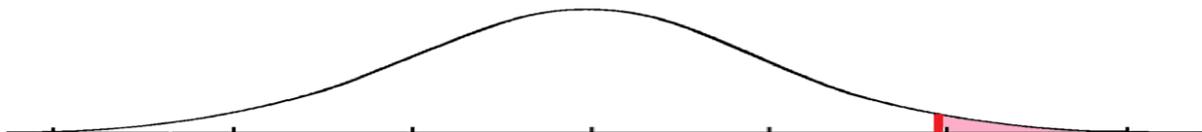
According to Geddes (2007), the thought process of a user searching via a search engine is a linear process, which originates from a question to be answered. This linear process can be shortened to the following X steps:

1. A need for information
2. A search query is formulated and expectancies of the results are formed
3. The search results page should connect with these expectancies
4. The searcher builds an expectation from the website he/she is going to visit.

But what happens if the search engine results page does not match the expectancies that the searcher formulated? Will the searcher be more inclined to click consciously on an advertisement because the searcher expects that the organic results won't supply the information he or she is looking for? This leads to the following proposition:

Proposition 2: The clickthrough rate is higher for ads on pages with fewer organic search results.

The long tail refers to the far right side of a Bell curve. The body of the Bell Curve contains the most common used keywords in advertising. Because online advertisement costs money per click and not per campaign, it's possible to make campaigns for the rarest keywords.



A long-tail keyword has very much to do with keyword specificity, however there is a slight difference. The long-tail keyword is scarcer from an advertising point of view. Less competition on a keyword leads to fewer people clicking on other ads. Therefore they might have a positive influence on the clickthrough rate.

Since it's possible to have unlimited keywords to be set, online advertising is a really useful channel to reach long-tail markets, as described in paragraph 4.1.4.2: Long-tail marketing. All small niche markets can be reached, no matter how small or geographically diffused a market is.

4.5. Influences of online advertising

With the rise of the internet, a lot more options became available for marketers. But how much has actually changed compared to pre-internet marketing? An owner of a website can monitor who visits their website into great detail. In fact all discussed dependent variables can be monitored in real time. Unfortunately for marketers, the European government decided that websites require permission from their visitors to use third party tracking software (Dutch telecom law, 2013).

The discussed possibilities have influences on the advertising model suggested by Abler & Vakratas in Figure 1. They stated that the relationship between advertising expenditure and consumer behavior has remained stubbornly elusive through over a century of research. And that this costs the advertising industry over \$100 billion per year. When shifting the businesses' marketing budget from offline marketing to online marketing, less money will be wasted due to continuous feedback.

Because the new possibilities online marketing has to offer, a modified marketing model can be formed. The model is based on Abler & Vakratas’s advertising theory and contains elements of Lavidge and Steiners’ hierarchy of effects model.

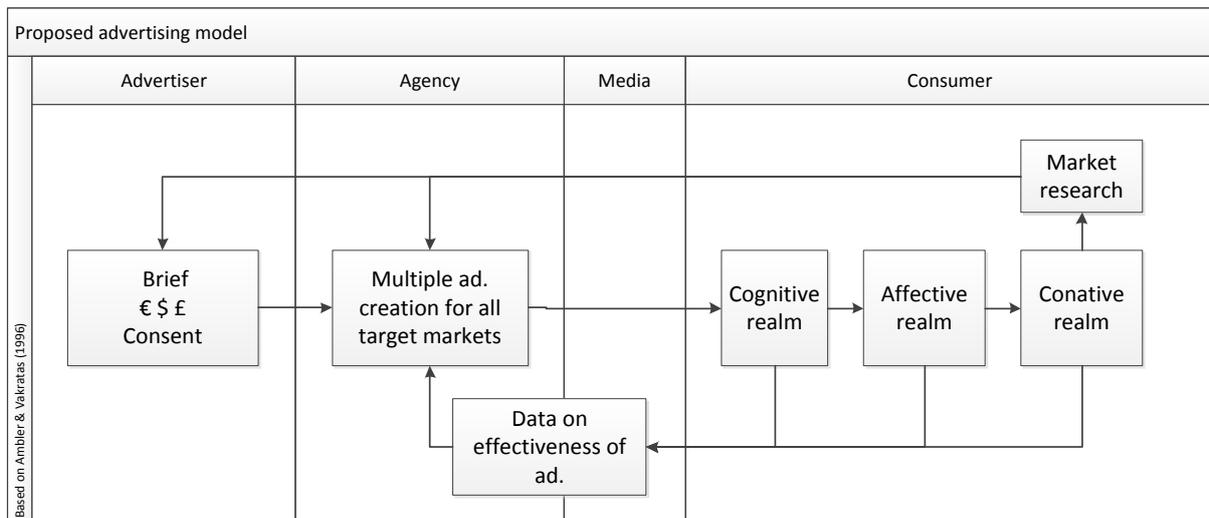


Figure 7: Proposed marketing model

The main difference compared to the original model from Abler & Vakratas is where the used to have a mysterious mind which influenced certain behavior, have been split up into *the three realms from the hierarchy of effects model* (cognitive: awareness & knowledge, affective: liking & preference, conative: conviction & purchase). In the past it wasn’t possible to notice changes in the earlier stages of advertising. Therefore it was just written off as “mind”.

With online marketing, ads for all stages in the sequence of the hierarchy of effects analysis can be tracked with a certain precision by the marketer. The different stages require different approaches, which can lead to both positive and negative influences. The results chapter will highlight the usage of the proposed model with case examples.

5. Methodology

This chapter will describe how empirical data for the study is collected. Starting off with explaining how the qualitative data will be gathered for the first proposition. Then the chapter will proceed defining the two propositions for the quantitative part of the research. They both require their own approach and will be described as accurate as possible. It will be clear why certain decisions have been made in the research setup, because of the way they influence the validity.

5.1. Qualitative research

In the theory chapter the first proposition is proposed: an advertising model (See Figure 7). To describe and explain the model, real life business cases will be used to demonstrate the do’s and don’ts while applying the model. A few different fields of business with different target markets will be used to increase the validity of the research.

5.2. Quantitative research

The research question on which empirical data will be gathered is: *Which factors influence the clickthrough rate?*

In the theory chapter, where the definition of clickthrough-rate has been described, it was also explained that this has been researched before. Some researchers claim that there is no way of predicting the clickthrough-rate (Dembczynski, Kotłowski, & Weiss, 2008). Other researches tell us that it is possible to predict the clickthrough-rate, because it depends on variables. These dependant variables are: Position of ad on search engine's results page (SERP), total number of ads on the SERP, the intention of the visitor's search query (Ashkan, Clarke, Agichtein, & Guo, 2009).

Strangely enough all researchers left the contents of the ad out of the equation. Dembczynski et al. (2008) admit that unfortunately the data set they had access to did not contain elements such as the title and body of an ad. But what if there are two advertisements, triggered on the same *keywords* with the same *average position on the SERP*? Would they have exactly the same clickthrough-rate, no matter the contents? This research tries to prove a relationship between the percentage of characters in the advertisement that matches the search query and the clickthrough rate.

To make sure that it's clear what is exactly meant with this proposition an image with actual search results is supplied below. Unfortunately this had to be a Dutch example, because most advertisements are geographicly aimed at Dutch speaking people.



Figure 8: Example search results page with advertisements (Google Inc., 2013)

In this example the search query entered by the searcher is marked red: "tweedehands autos enschede", which comes down to "used cars in the city of Enschede". The advertisements are marked green. Below those advertisements the actual *organic* search results show up, but are left out from this screenshot.

The search query contains three words consisting of twenty-four characters. The percentage of matching characters from the search query in the title of the ad weigh for 40% (blue text). The

percentage of matching characters in the body also weighs for 40% (black text). The percentage of matching characters in the URL weigh for 20% (green text). In this research this is called *the matching text score*.

	% matching characters in title	% matching characters in body	% of matching characters in URL	Matching text score (= sum)
Ad 1	$8/39 * 0,40 = 8.2\%$	$0/31 * 0,40 = 0\%$	$0/40 * 0,20 = 0\%$	8,21%
Ad 2	$5/18 * 0,40 = 11.1\%$	$5/58 * 0,40 = 3.3\%$	$4/24 * 0,20 = 3.3\%$	17.89%
Ad 3	$16/17 * 0,40 = 37.6\%$	$0/71 * 0,40 = 0\%$	$0/24 * 0,20 = 0\%$	37.65%

Table 2: Example of matching text score calculation for “Tweedehands auto enschede” key phrase.

So the first proposition would state that the *third* advertisement would be clicked most, granted that all other factors which influence the clickthrough-rate, according to the results given by other researchers, stay the same. In this example this is not the case: the three ads are ranked at a different position on the page. This conflicts with the factors Dembczynski et al. (2008) proposed and thus causes confounding. Not just independent variable X has an effect on dependent variable Y, but also independent variable Z has a proven effect on Y. This is a conflict with the internal validity.

Therefore, to test this proposition a different method has to be used in this research. There will be multiple keywords triggering the same ad. The *intent* for both the ad and keywords has to stay the same. This is important, so that the *query intent* factor, as proposed by Ashkan et al. (2009) will stay the same. Not being able to keep the query intent the same ruins both the internal and external validity: the proposed causal relationship will be interfered by the treatment’s variation.

To protect the internal validity and prevent selection from happening, all other independent variables such as the bid, location, language, timeframe and frequency, which are discussed in the theory, have to stay the same as well.

Unfortunately to this method of measurement, there is one downside. The two ads for the same key phrase cannot be displayed at exactly the same. They have to be enabled one after another. Therefore it’s not possible to attract exactly the same audience. This is a threat to the external validity, as it limits the ability to generalize the results.

To make the results to empirical data gathered for this proposition as generalizable as possible, it would be ideal to run multiple ads in different market sectors.

The second proposition originates from the idea that people prefer to click on organic search results. This is based on the fact that the clickthrough rate for organic search results is much higher than for paid clicks. However what happens if the quality of the organic results goes down, caused by a lack of available organic results? Will the clickthrough rate increase? In the theory this proposition was formed: “*The clickthrough rate is higher for ads on pages with fewer organic search results*”

Most likely the competition on keywords with fewer organic results is lower because there is simply less interest in the topic. This results in two outcomes: (1) The price per click for a certain keyword decreases, which results in a higher ranking of the ad for the same price, and (2) less competition, which results in less ads on the same page. This also increases the position on the page.

Because of the second outcome: less ads on the same page, this proposition is unmeasurable by the setup for measuring the first proposition, because previous researches have shown that the amount of ads on a page influences the clickthrough rate for the specific ad. The only way of measuring without any biases would be buying all ad slots for a specific search result. This has to be done for all key phrases, the ones that have very few results, but also for the key phrases that are very popular. Especially the key phrases which are popular are very expensive.

The proposition states a difference in clickthrough rate, in favor of ads on search results pages with few results. So the users of a search engine should show an increment in clicks on ads when they search for a topic with less results than when they are searching for a topic with more search results.

This is exactly how the test will go down. The participant is served a laptop or a tablet. The screen is filled with a web browser. The participant is asked to search for specific information, by entering a given key phrase. This key phrase may not be modified. The searcher will click on one link before the test is finished. The click defines the *dependent variable* in this setup. If the participant clicks on an organic link, the percentage of clicks through goes down. And if the participant clicks on an ad, the clickthrough rate goes up.

This test is repeated four times, with four different key phrases. Two of the key phrases will have practically unlimited results, while the other two have just one page of results. This means 10+ pages with results for the first key phrase, and just one page of results for the other two searches. The amount of search results (high or low) defines the *independent variable*. The page with a high amount of search results is the benchmark. The SERP with few results will be compared against the benchmark. To determine a difference between the two groups with a 5% significance factor, at least 97 test results for each group have to be gathered according to the inverse error level formula (WolframAlpha, 2013).

The big advantage of using this simple approach is that all other variables which influence the clickthrough rate remain the same, while no money has to be spent. The downside of this testing method, as opposed to the method used for proposition 1, is that the risk of a lowered external validity is much higher. Whereas for the test in proposition 1 the participants show up all by themselves and therefore giving the perfect representation of searchers on the internet, for the second test participants have to be manually selected. This makes it harder to get a perfect representation for the users of the internet. A less perfect representation of participants leads to less generalizable results.

To conduct this test, the search results page has to be recreated, so that it can't change in the meantime. Changes can be caused by advertisers settings in rotation frequency, time frame on which an ad is displayed or the daily budget limit has been reached. Also the geographical settings can prevent ads from being displayed. A copied search engine results page keeps all these factors the same and therefore prevents a change in the settings.

6. Results and discussion

This chapter describes the results gathered from the empirical research that has been conducted.

6.1. Modified marketing model

The first proposition merged an advertising and a marketing model, suited for online marketing.

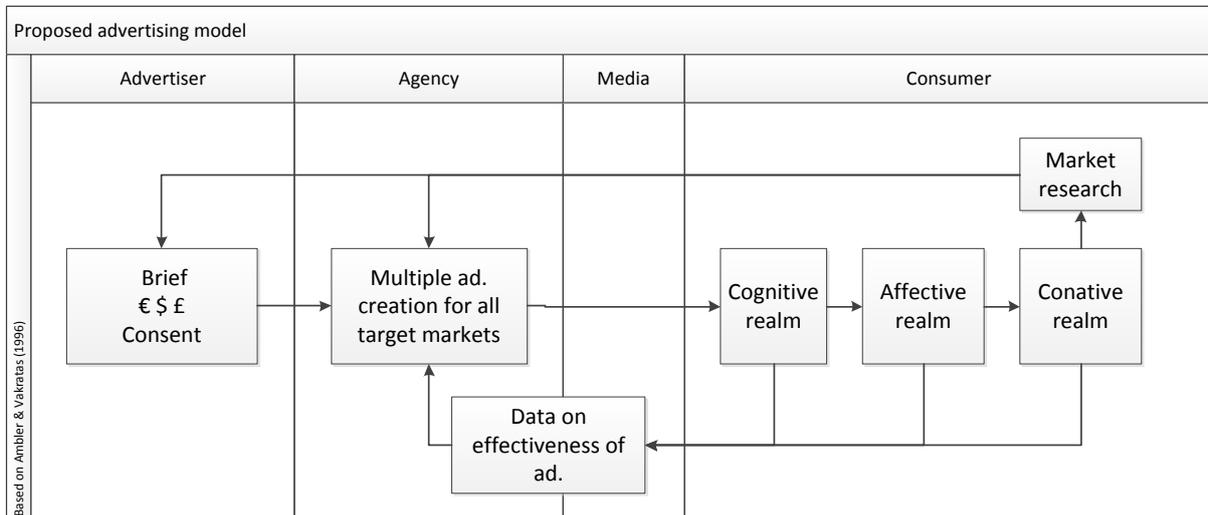


Figure 9: Proposed marketing model

This marketing model will be explained with real life examples of bridal clothing shops and a tennis gravel manufacturer. The first case is a physical shop with stores which people can enter. They have a small share of the market with countless competitors. They try to differentiate by only selling the most exclusive and luxurious brands of wedding dresses. Customers do not tend to come back to the store often, since marrying is an event that hopefully only happens once a lifetime.

The gravel manufacturer sells gravel for tennis courts. They compete in an opposite market: There is only one main competitor. Owners of tennis courts have to come back every few years to replace the gravel on their fields.

Creation of ads for all target markets

The model starts off with the business asking an agency to create advertisements to their target markets. In the days of pre-internet marketing, this consisted often of targeting the biggest markets, neglecting the niches. With online advertising the displaying of an ad is free. Therefore as many niches as possible can be advertised for.

The bridal store expanded their market to party dresses, which are often worn to exclusive parties and weddings. Party dresses can be used for multiple occasions and therefore this market creates a customer base that returns. Also they advertise for the various accessories they sell.

Because the gravel business only has one main competitor, this business is already in somewhat of a niche. However there are still different markets to be served: tennis clubs and private owners of tennis courts. They mainly differ in the amount of gravel they buy, on which advertisements can react.

Awareness (Cognitive realm)

To gain initial awareness of the existence of a product, online advertising campaigns can be very useful. Displaying an ad is free. Therefore a large audience can be reached. If a consumer clicks on an ad, it costs the advertiser money. However if the other steps in the sequence work out fine, this is actually a good thing.

As explained in the theory, it takes a while for search engine to pick up on changes. Especially for new websites it's hard to get a share. An ad campaign, however, shows direct results. When a new store is opened, geographically specific ads can be created to inform people about the new store.

Knowledge (Cognitive realm)

Websites are a great method to transfer knowledge from the advertiser to the consumer. A website has almost unlimited space to store all information in an organized manner. Therefore it's important that the structure of the site is clear to both the consumer and search engines. So that if a consumer is looking for specifics, they will be found immediately. This could be enhanced by advertisements about the specifics. Unfortunately it's hardly possible to inform consumers via the advertisement itself, which would be possible in commercials or ads in magazines, due to its restricted size.

The website for bridal clothing should contain photos of all dresses being sold. It should contain information on the sizes, price ranges, warranty information, contact details and business hours. The gravel website should contain all information on the gravel, pricing, delivery methods and contact details.

Liking (Affective realm)

Getting to know for what reasons consumers like or dislike the product, brand or service is harder to do via search engine marketing. Although websites can be interactive, they information flow usually is limited from seller to consumer. For gaining feedback via the website, a feedback form or a survey could be added to the site. Social media sites, like Twitter, Facebook or review websites are more powerful tools for gathering feedback.

With social media it's easy for other users to contact the manufacturer or shop publicly. Sometimes this leads to embarrassing situations for the business, but sometimes it leads to happy consumers showing off how amazing a brand is.

The gravel business has an opportunity in the liking stage. To its clients it could send out a survey after a year to ask how satisfied they currently are with their gravel. This is also a friendly way of reminding the tennis court owner that it's time to replace the gravel.

Also for bridal clothing stores this phase has great opportunities. Their Facebook page should contain photos of happy brides, from the day they got married. That photo has to be tagged, so the brides' friends and family immediately see the shop where the dress was bought. Photos can be replied on. The replies itself are of little value. But information on the amount of replies to a particular dress can be of value. The tag in the photo also gains a lot of attention for the shop. Also it gives a signal from the bride to her friends: I trusted this shop for the most important day of my life.

It should be noted that the advertising campaign itself could lead to a difference in the liking of the brand. Exposing the consumer to too many repetitive ads could lead to annoyances linked to the brand name. The website should fit the target market, for example a website with repelling graphic

content to certain segments of the market could also lead to negative influences on the liking of the brand.

Preference (Affective realm)

The target audience might like the product but not prefer it to others. In this case, the marketer should try to build preference by promoting quality, value, performance, the personal service, warranty and other features. When there is no real preference established yet, the exposure to the products information page can be extended, by increasing or moving the budget towards an informational campaign.

It's allowed by law to advertise why your business is better than the competition. However this is risky and may result in unfortunate lawsuits. So if you're a small business owner, unable to afford lawsuits, it might be a better idea to refrain from strategies like this.

Conviction (Conative realm)

A target audience might prefer a particular product but not develop a conviction about buying it. The marketer's job is to build conviction among the target audience. This, again, can be done by increasing exposure to the target market to "refresh" the memory of a potential client. Another method would be taking away negative stimuli, for example through a FAQ page on the website. By making the FAQ a prominent item on the website, this will also show up in the *sitemap* and therefore pull more attention to facts which take away the negative stimuli (see Figure 3: Example of a sitemap in search).

Once the consumer reached the conviction stage, the consumer most likely has visited the website a few times before. Cookies keep track of this. For these people ads on the website can be shown with a temporary offer for a discount, only for people who have seen the website before in for example the past week.

Purchase (Conative realm)

When the consumer decided that the product or service is required, the marketer should make the purchase as easy as possible. The website could offer a method for ordering online, a locator for the nearest physical store. Contacting the business should be as easy as possible. Every contact is a lead.

To pull consumers over the edge, a 30 day money back guarantee or a temporary discount could be offered. The business could also complementary products at a discount. For example a tennis net, or gear to draw lines on the field.

6.2. Proposition 1

The first proposition proposes a correlation between the amount of correlating words in the key phrase and the text in the ad: *A relationship between the percentage of characters in the advertisement that matches the search query.*

As explained in the methodology chapter, the percentage of matching characters in the title and content weigh heavier than the percentage of matching characters in the displayed URL.

To increase external validity, multiple market sectors have been used: International dentistry, the bridal clothing sector and linguistics education. The campaigns for the first two sectors were aimed at The Netherlands. The campaigns for the linguistics education sector were aimed worldwide.

When a person enters a search query, he or she can decide to click on an organic link, or to click on a paid advertisement. By this reasoning each search query has its own binomial distribution. Therefore, to stick to the 5% significance factor, a minimum of 97 results per search query has been set. All other search queries have been omitted.

An important factor determining the clickthrough rate is the position of the advertisement on the search results page. In this research the search queries have been divided into four groups with an average position of: 1-2, 2-3, 3-4 and 4+. The group with an average position of 4+ has been excluded from this research. The lower the position on the page, the lower the clickthrough-rate. Therefore it would be harder to prove a significant difference for an ad with a really low position.

Another important factor in the clickthrough rate is the query's intention. Only search phrases with the intention of gaining information have been included.

The analyzed search queries (key phrases/keywords) have been shown 13.944.343 times to a target audience. On these ads a total of 211.940 clickthroughs have been issued for €67.233,68. All analyzed keywords with their data can be found in Appendix 1.

First the matching text score is calculated using the following formula, where Q is the number of matching characters and X the total amount of characters in the text-string:

$Matching\ text\ score = 0,4 * (Q / X_{title}) + 0,4 * (Q / X_{body}) + 0,2 * (Q / X_{url})$. Then this score put into a scatterplot, comparing the *matching text score* against the *clickthrough-rate*.

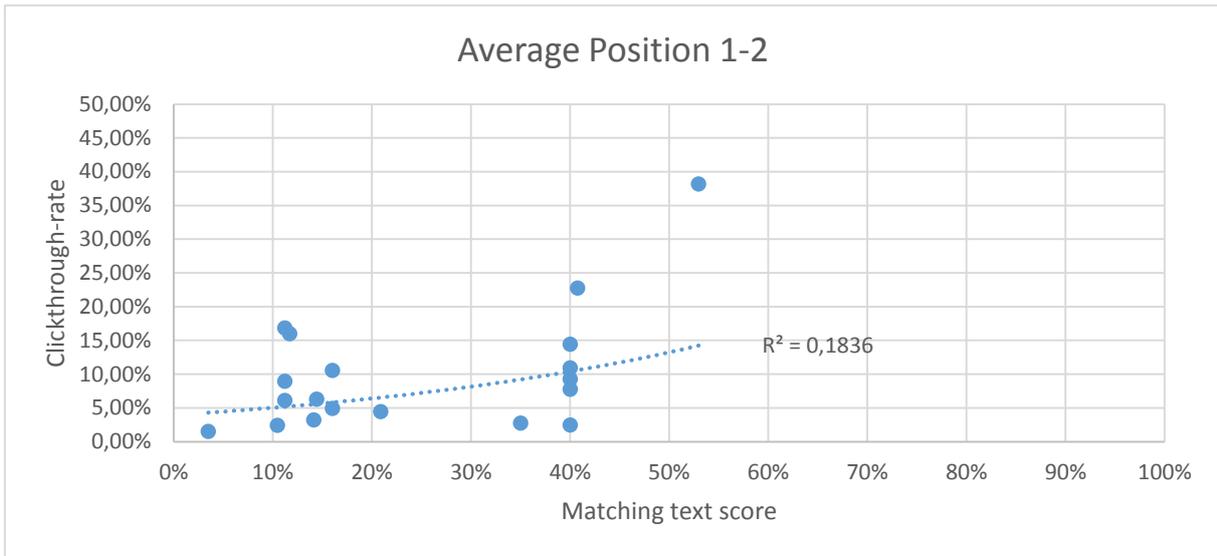


Figure 10: Scatterplot clickthrough-rate for average ad position 1-2

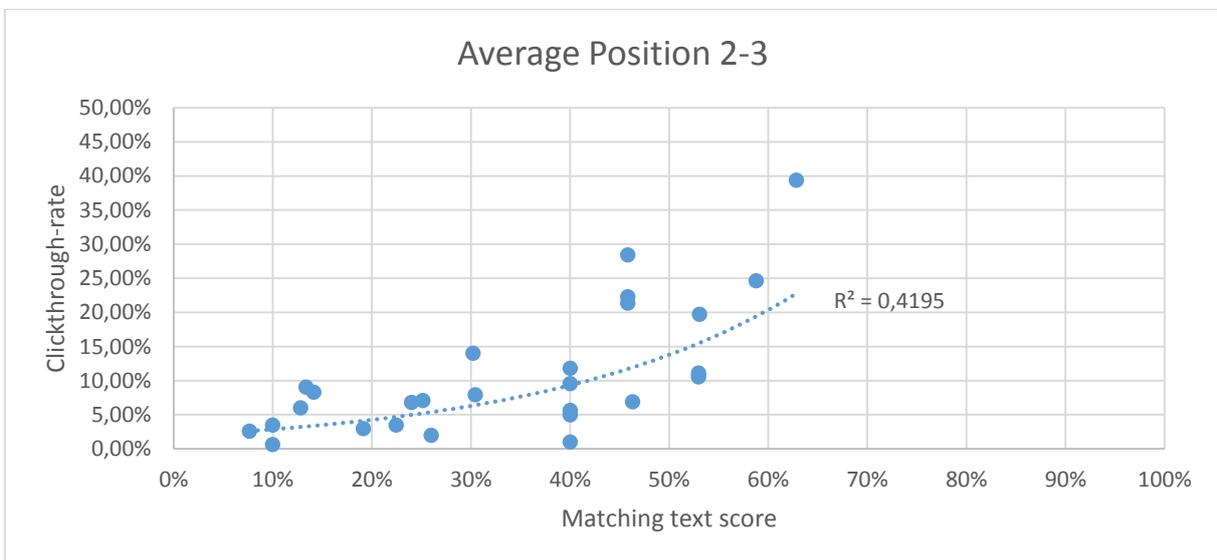


Figure 11: Scatterplot clickthrough-rate for average ad position 2-3

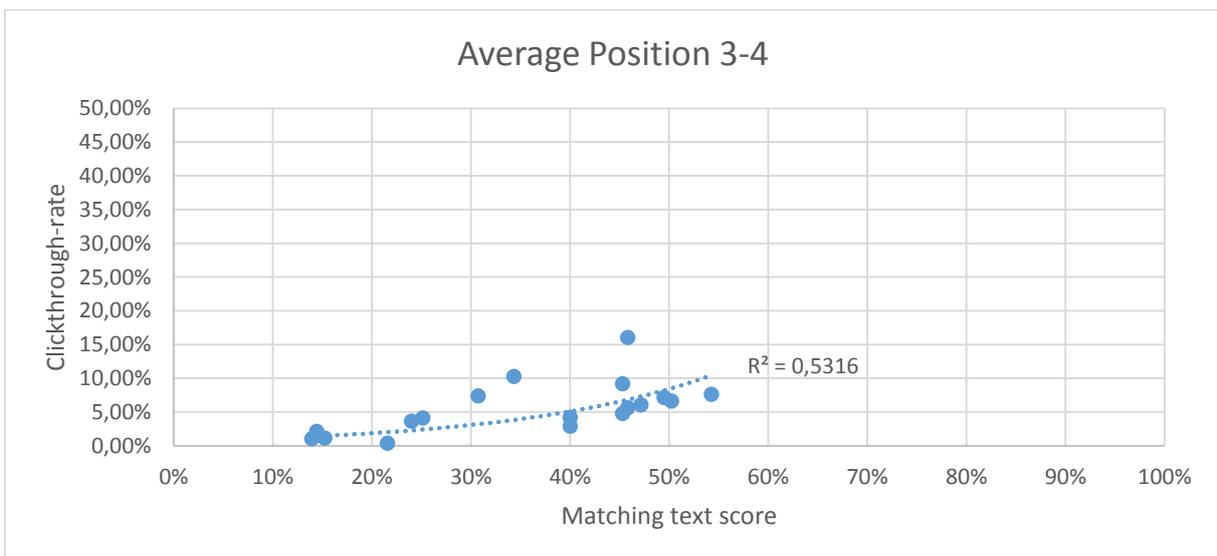


Figure 12: Scatterplot clickthrough-rate for average ad position 3-4

The plots all show a higher clickthrough-rate when the average position of the ad is higher on the page. This confirms other researches that state that the position of the ad is an important factor.

The plots also show a correlation between the matching text score and the clickthrough rate. To measure the correlation, Pearson's R^2 value has been used. An $R^2 = 1$ or $R^2 = -1$ shows a 100% correlation. $R^2 = 0$ means no correlation at all. According to the data the correlation becomes stronger when the average ad position is lower.

Another interesting phenomenon is a "straight line of dots". In Figure 10 and Figure 11, around the 40% percent matching text score, some very variable clickthrough rates emerge. This indicates that there is another factor which also influences the clickthrough rate that is present in this research, but not accounted for. It could also indicate that the formula used to calculate the matching text score isn't complete.

It can be concluded that there is a slight correlation between the search phrase and the text of the ad.

6.2.1. Discussion and further research

The data gathered for this proposition has shown some interesting results. Although it has a huge statistical power, the results still show spikes. This indicates that there is more to the formula for calculating the *matching text score*. Influencing factors could be:

- The length of the title, combined with the percentage of matching keywords
- The length of the used keywords for the search

Also it turns out there is a minor flaw in the methodology. The data was gathered over a period of time. Let's say that in this time the ad was displayed three times. The position of the ad could have been 1, 3 and 5. This results in an average position of 3. The assumption that the increase in clickthrough rate is not linear but exponentially correlated to the position of the ad, decreases the validity of the results, because that means there were also other factors influencing the clickthrough-rate. Unfortunately the only way to solve this would be by buying all available ad slots, however this is almost unachievable.

Further research should try to improve the formula used to calculate the matching ad text score. A better matching formula will result in a stronger correlation. By looking at this data, it seems nearly impossible to actually predict the clickthrough rate.

6.3. Proposition 2

To test the second proposition: *The clickthrough rate is higher for ads on pages with fewer organic search results*, a simple copy of Google Search was created, for two reasons: (1) the search results and ads stay the same over time, and thus keeping the testing environment the same and (2) so that the results could be tracked easier. For easy surveying, the copy is optimized for small laptops and iPads.

All searches are introduced to the participant with a very short story, to make the query's intent clear: buying a product online – a transactional query. Below is a small translated summary. To make the results clear some extreme search queries have been used. A total of 74 search engine result pages were shown for both the benchmark and for the test.

Introduction	Search phrase	Pages of results	Clicks on links	Clicks on ads
You'd like to enhance your English language skills and decide to search for a course in South Africa.	Engelse les Zuid Afrika	10+	32	5
You've illegally imported a bird from Africa. But now you need food for your African Bosdrongo bird. To avoid questions you decide to order online.	Bosdrongo vogel voer	1	18	19
You are dying for some Gelsemiaceae tea, and you're trying to buy some online.	Gelsemiaceae thee bestellen	1	14	23
You're ordering a bible online	Bijbel kopen	10+	30	7

Table 3: Amount of clicks on ads out of 37 searches per key phrase (<http://survey.scholten.co.uk>)

The outcome for each test variable is binomial distributed: either the participant clicks on an organic result, or on a paid result. To test the validity of the proposition, the sum of the paid clicks on SERP's with 10+ pages will be compared to the paid clicks on SERP's with just one page.

Distribution

The amount of paid clicks on the SERP's with just 1 page is called stochastic variable X . X is binomial distributed $B(74, p)$, with unknown parameter p .

Statistical hypothesis

The hypothesis are defined below

$$H_0: p = 12/74 = 6/37$$

$$H_1: p > 6/37$$

Test statistic

We use the statistic $T = X$

Expected value and standard deviation

For the baseline we set $n = 74$ and $p = 6/37$. This results in expected value of $E = 12$ with a standard deviation of $\sqrt{np(1-p)} \approx 3.17$.

Sample result

The amount of paid clicks on the SERP's with just one page of results totals at 42. Therefore: $t = x = 42$.

Significance level

In most researches a significance level of 5% is selected. Unfortunately a 5% significance level would require 97 test results, according to the inverse error level (WolframAlpha, 2013). With 74 results, an 8% significance level is the highest allowable level.

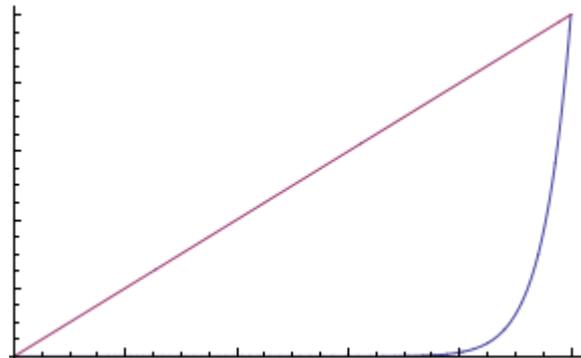
Conclusion

Although the significance level is off, it does not matter at all. The $Z\text{-score} = (42 - 12) / 3.17 = 9.5$. This Z-score is far higher than all tables for significance reach. Therefore it's sure that H_0 can be disregarded. The proposition is true according to the gathered empirical evidence. *The amount of search results on a search engine results page influences the clickthrough rate.*

6.3.1. Discussion and further research

On average a clickthrough rate of about 1% per ad is a normal expectation. This combined with the fact that on average there are about five ads per search result page, I expected a much lower amount of paid clicks than the test returned. Therefore I took the key phrases to an extreme: No one in the world would ever like to buy special bird food for some random African bird whom is illegally imported. However it is an example of an extreme case of long tail marketing.

For a follow up research, the same test should be repeated, but with less ridiculous search phrases. Because now we know there is a connection, but we do not know the relationship. As the image below illustrates, it could be a linear relationship, but also something random. For example a relationship with almost no effect, until it comes down to just a few search results, which is the only thing tested.



To prove a relationship which is less strong, a larger group of participants has to be tested, to be able to prove the proposition with a lower significance level.

The fact that there is a relationship proves that it's very promising to find small niches for effective ad campaigns. This is a time consuming job. The marketer would have to judge for himself whether it's worth the time.

7. Conclusions and recommendations

This chapter will draw conclusions to the research questions and their sub-questions raised in the introduction.

7.1. What is B2C marketing and how does it differ from B2B marketing?

Business to consumer marketing (B2C) is a marketer trying to sell products or goods to an individual consumer. A business to business marketer (B2B) is selling its products and goods to other businesses. A B2C marketer is not mutually excluded from a B2B marketer. But it's important for target markets to know that they are actually a part of the target market. Therefore they often have their own sales channels.

7.2. What can a small business owner do with search engine marketing to increase sales?

Marketers can use a website as a form of communication with consumers. Consumers can use websites to learn about the existence of the product (awareness, cognitive realm), can learn about the specifications of a product (knowledge, cognitive realm), use the website to express likes and dislikes about the product (liking, affective realm), list reasons to prefer marketers product over a competitors' (preference, affective), help the consumer to decide to buy the product (conviction, conative realm) and eventually lead to the purchase (purchase, conative realm).

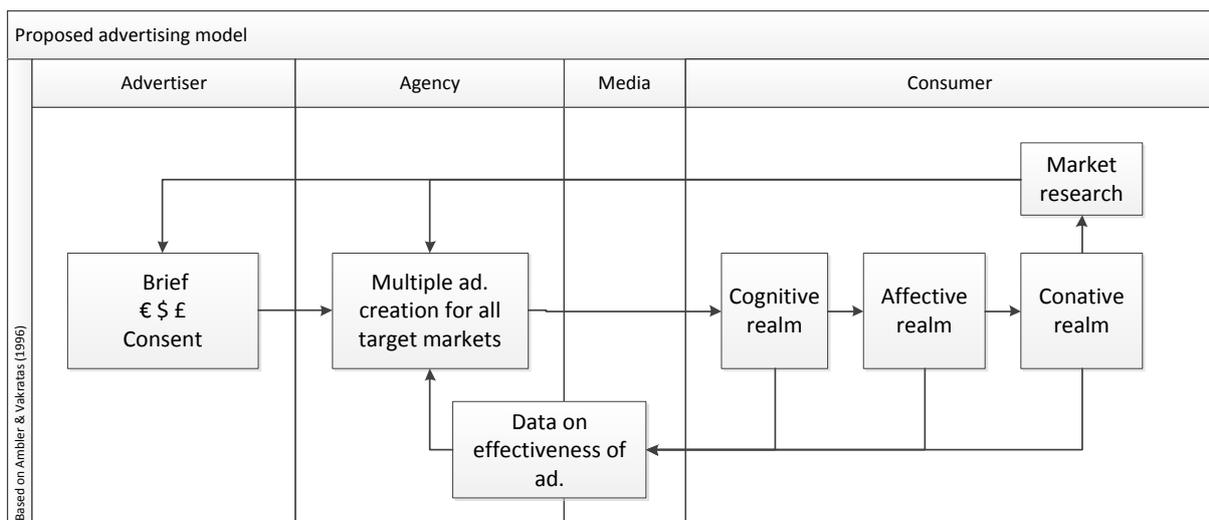


Figure 13: Proposed advertising model.

As the proposed model shows, thanks to online marketing, these steps can be monitored in greater detail than before, and therefore wasting less money.

The model also aims to run multiple ad campaigns for different niches.

The larger share of visitors enters the website via a search engine. Search engine optimization (SEO) optimizes websites to perform better in search engines, so that they will show up in the search results more often.

Search engine optimization is built upon three components. First of all, the website should consist of the proper html-tags, so that the source is readable by search engines. Better semantics also result in search engines understanding better what topics on the page are most important.

The second element of search engine optimization is the content. The contents of the site should be unique and contain quality information on the topics which are important to the business.

The last important component of search engine optimization is having other sites placing a link to the marketer's website. This will get the site known on the web. A site better known on the web is considered more important to search engines and will increase the ranking. Backlinks work in two ways: More referral visitors and more organic visitors.

All major search engines offer a program for having advertisements showing up with specific search words. The advertisements look a lot like actual search results. See Figure 8 for a detailed overview.

Search engine optimization and search engine advertising together is often referred to as search engine marketing.

How and when can search engine advertising be useful to a business?

Changes applied to the website in order to optimize for search engines react slow. It can take weeks before they are noticed. Search engine advertising, on the other hand, starts working from the second that billing information is supplied. Search engine advertising sends additional potential customers to your site, therefore a lot of businesses keep their advertisements running, as part of their regular marketing strategy.

To conclude: search engine advertising can be especially useful for sudden changes, such as a new store, for new products, or products that are on sale for a limited amount of time.

What are the differences between online marketing and conventional marketing?

Advertising on search engines is different from regular advertising. Instead of paying to have people view the advertisement, a payment only has to be made when a searcher actually clicks on the advertisement (CPC). This results in paid visitors.

7.3. Factors influencing the cost of an online advertising campaign

The largest influence of the cost of a click is determined by the price the competition is willing to pay for a click. Every campaign is allowed to have unlimited keywords. Therefore searching for niches with little competition could be paying of very well.

The second influence is the usefulness of the ad. If a searcher clicks on an ad and the ad turns out to be totally useless, the searchers positive experience with the search engine reduces. This is why quality ads are rewarded.

The price will be positively influenced by:

- Fewer competition
- Higher clickthrough rate
- Lower bounce rate

According to some researchers the clickthrough rate can be predicted via advanced formulas however according to other researchers it's not possible to predict the clickthrough rate.

According to this research it's impossible to accurately predict the amount of clicks that can be expected.

Through a literature study and empirical evidence, four factors have been discovered influencing the clickthrough rate:

1. The intention of the search query
2. The position of the advertisement on the page
3. The relatedness of the search query to the advertisement's text
4. The amount of search results on the page

7.4. Recommendations

Cabinets of books can be filled about the topic online marketing. However most companies won't survive with just online/search engine marketing. However most businesses are heavily dependent on their online marketing strategies as well.

For a small business that's about to upgrade their online marketing strategy it's in their first order of business to get the website up to par first. It should look at least as good as their competitors' sites, it should have unique content and the HTML code should be well structured.

Then in the meantime the first phase of the model commences: the cognitive realm (awareness & knowledge), where the consumers get to know about the brand and start to get known with the specifics of the product or service.

During this time backlinks – links from other websites towards the businesses' website – should be setup as well. Because this takes a long time, a paid advertisement campaign can be setup. Often the budget is low for startups, so considering small niches to market in could be very valuable. During this phase statistics on the website could give valuable insights on which products seem appealing, which information is read most and what information scares visitors away? This information, for consumers still being in the cognitive realm, can be filtered out by selecting only the new visitors in the statistics pages.

If the building of backlinks is successful, the traffic entering the site via organic and referral sources should increase. During this phase the paid campaign can be toned down a bit, but if business is going well, the campaigns may keep running just as well. There is no real time limit to this step, as backlinks can be built as long as the business exists.

To excel in the second realm: generating affection, it's highly advisable to create more online channels than just the website for receiving feedback on the brand, product or service. Social media like Facebook and review sites are common places for this practice.

To accommodate consumers which are currently in the conative phase, where they decide to make the purchase, the website should make it as easy as possible to point out the most convenient distribution channels and point out the reasons why it's better to purchase now instead of later.

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9. Appendix 1: Keyword data