Comparing the Return on Investment of Search Engine Optimization and Pay-Per-Click marketing

Developing a model to forecast the ROI of SEO based on the SOSTAC Planning System

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Abstract

With the introduction of the Internet, new opportunities arose for companies and customers to interact in a more quick and efficient manner. With this introduction came search engines such as Google and Bing. When performing a search on a search engine the user will be presented with two different types of links; inorganic links, also called Pay-Per-Click ads which will be at the top of the page, followed by organic links which will be listed after. To improve the page rank of organic links, a company can use a method called Search Engine Optimization (SEO). This study seeks to get an understanding of the return on investment (ROI) for the two different methods based on different timelines. The study will include five different companies from five different industries to identify common trends and patterns. It seeks to develop a forecasting model for both PPC marketing (hereafter referred to as PPC) and SEO for the companies, and what a projected break-even point would be for the two strategies. The model used in this analysis is based on industry benchmarks, Google Ads Forecast and website analytics tools in order to get relevant data for each company and industry. Getting a better understanding of the ROI can be crucial for a company when planning for the future. For successful SEO campaigns, the projected break-even point of SEO and PPC was between 15 and 30 months and this occurred when the goal time for SEO was between 9 and 15 months. In general the projected break-even point for the two strategies depended on how fast a company successfully could implement their SEO combined with the estimated traffic increase. A faster implementation or a higher traffic increase potential from SEO would mean a faster break-even point. The authors note that the model used in this study is based on limitations and assumptions, which is why it needs to be developed in order to be considered an accurate forecast. However, it does give an insight of the factors affecting the ROI of SEO and what a company can do to improve it.

Keywords: Search Engine Optimization, Pay-Per-Click marketing, SOSTAC, Return on Investment

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Practical concepts

Crawling: Crawling is a method of data mining/analysis across different web pages [1, p. 403].

Spiders: Search engine spiders "crawls" between web pages to acquire data relevant to a search [1, p. 403].

Organic marketing: Organic marketing refers to marketing methods that are conducted without the use of paid ads [1, p. 401].

Ad impression: An ad impression is counted when an ad has been collected and shown to an individual. It does not count ad clicks [1, p. 437].

Conversion: A conversion is collected when an ad successfully triggers a pre-determined action such as a click or sale [1, p. 437].

Keywords: Keywords are words or phrases featured on a website that connects it to search phrases performed on a search engine such as Google [1, p. 407-409].

Meta-data: Metadata is data about data - in other words, lesser data that describes major data. For example, table rows and column headers in a spreadsheet are metadata as they offer context to the data [1, p. 410-411].

Meta-tag: Meta tags are invisible tags that provide data about a web page to search engines and website visitors [1, p. 410-411].

Backlink: Backlinks (also known as "inbound links", "incoming links" or "one-way links") are links from one website to a page on a different website [1, p. 405].

Search Engine Optimization: Method used to achieve a higher natural listing on a search engine [1, p. 403-404].

Indexing: Method for a search engine to more rapidly find the relevant pages [1, p. 403-404].

Keyphrase analysis: The ability to match the keywords typed in the search field with relevant and connected web pages [1, p. 407-409].

On-page optimization: Part of SEO where the keyphrase frequency and structure of a document is optimized [1, p. 407-409].

Acronyms

CPA: Cost-per-action
CPC: Cost-per-click
CPS: Cost-per-sale
CTR: Click-through-rate
CLV: Customer Lifetime Value
CVR: Conversion rate
KPI: Key Performance Indicator
PPA: Pay-per-action
PPC: Pay-per-click
PSA: Paid Search Advertising
ROI: Return on Investment
SEM: Search Engine Marketing
SEO: Search Engine Optimization
SERP: Search Engine Result Page

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1 Introduction

1.1 Background

When the Internet was introduced back in the 1990's many new possibilities and opportunities were presented for both companies and customers, allowing both parties to interact in a more quick and efficient manner [2]. Online marketing is mainly characterized by direct marketing methods (or direct response marketing), targeting customers based on their individual preferences and buying behavior through customized and carefully selected ads.

The Internet could be used as a new sales funnel, and the accelerating increase of online shopping until its current state is widely recognized. According to statistics by Statistiska centralbyrån, SCB, over 70% of Swedish people aged 16–85 years purchased or ordered products/services online during the first quarter of 2021 [3].

Along with this phenomenon came search engines such as Google and Bing. Customers use these engines to conduct research prior to shopping in a way that is much more efficient than before the internet thanks to the easy access of information and data. Google was the first website to hit 1 billion unique visitors during a month, a number that is predicted to continue to rise [4]. According to Murphy and Kielgast (2008), more than 85% of all purchases that occur on the Internet started with a search [5].

The authors of this study can relate to the wide use of search engines especially for product research, both when buying products online but also when conducting general research of physical products. Most of the time, they click on the top-three organic search results (non-paid), a phenomenon that has been proven as 60-86% of people click on the top three links [6] (this is illustrated in Figure 1 below). This reasoning woke the authors' interest in search engines, how they work, and how companies can utilize them (and especially organic searches) for marketing purposes and in the longer term, profit generation.

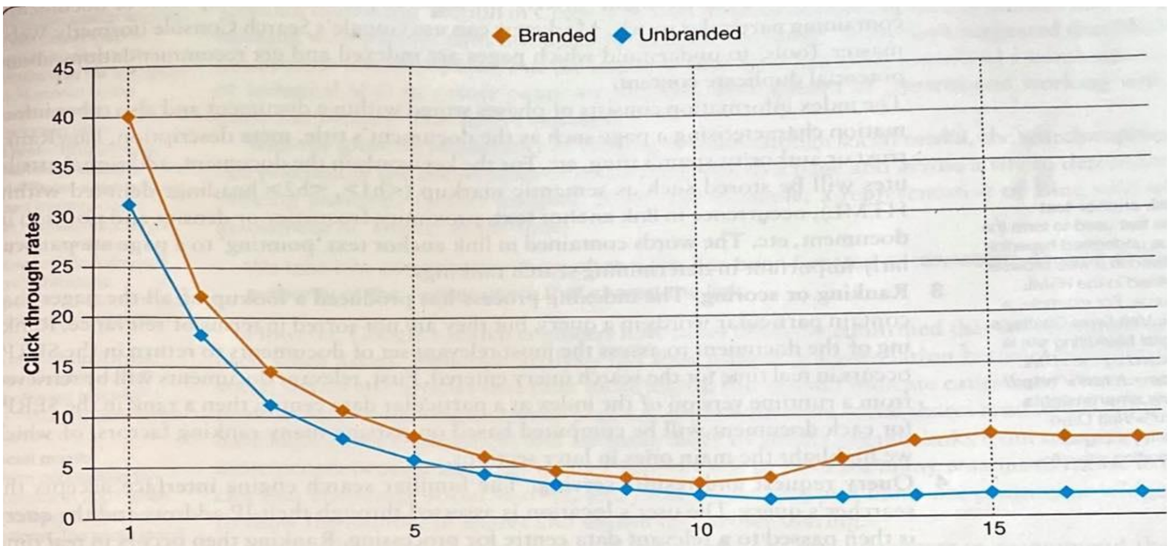

Figure 1. Click-through rates depending on the position in the natural search results [1, p. 403].

This new behavior of customers doing their product research on search engines (and using them for other purposes as well) speaks of the importance of having a high ranking, in other words for companies to have their product listed at the top of the Search Engine Results Page (SERP). This can either be done by buying a top position using pay-per-click (PPC) search marketing (hereafter referred to as PPC), or by manually improving the ranking of the website. Google uses a scoring algorithm called PageRank which takes hundreds of factors into consideration (some of the main factors will be discussed later on in Chapter *3. Technical background*). The methods and techniques used to improve the PageRank scoring are collectively referred to as Search Engine Optimization, SEO [7]. According to Google themselves, the purpose of using a page ranking system is to make sure that the search results are relevant and of a high quality [8]. Research from 2019 shows that 53% of all website traffic comes from organic searches backed by SEO (see Figure 2 below) [9].

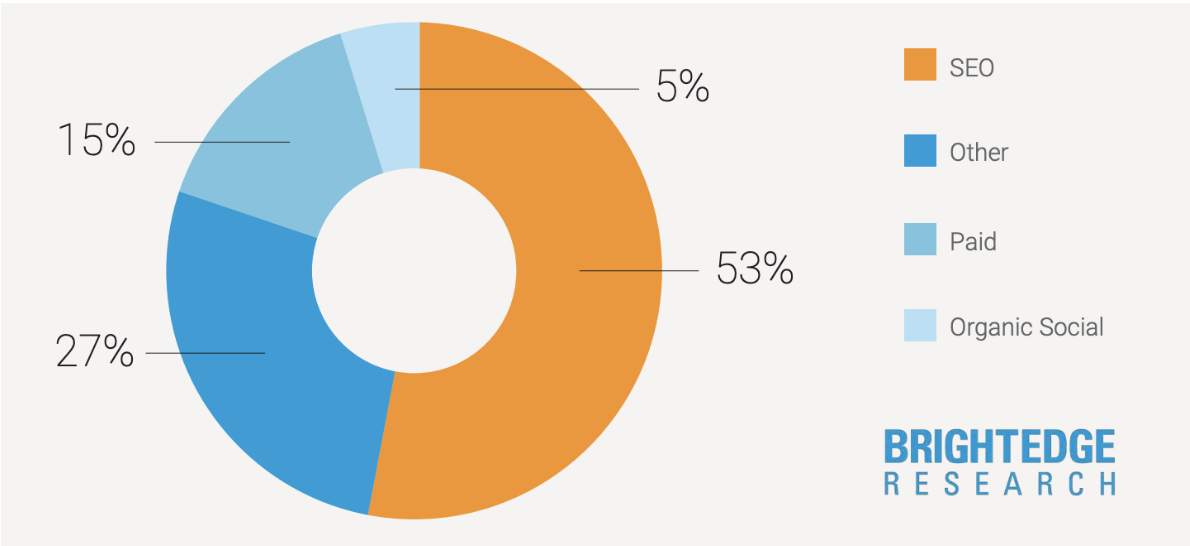

Figure 2. Figure showing the distribution of website traffic amongst several channels according to a research by BrightEdge Research [9].

Brand development and direct response are usually the two main objectives of an online advertising campaign, and selecting the appropriate channel of such campaigns depends on which strategies that yields the highest ROI. Companies selling products online clearly gain from Internet advertising as their potential customers are already online, while non web-based companies may use online advertising to increase the brand awareness. In any case, SEM allows companies to track their ROI from a customer acquisition standpoint (in contrast to traditional marketing methods). This allows realistic business models with visible rewards [10].

1.2 Literature review

1.2.1 Digital marketing

McCarthy (1998) determined the mix of marketing communications as a specific combination of elements: advertising, personal selling, sales promotion, public relations and direct marketing that companies use to implement their targets for advertising and marketing [11].

One of the fastest-growing sectors in the global economy is direct marketing, by which organizations communicate directly with their target customers to generate reactions and/or transactions. The development of technology and the Internet has made it possible to apply new and attractive forms of direct marketing that contain the potential for branding and generating sales [11]. Hence, direct marketing is widely connected to digital and online marketing. According to Sullivan M. G and Drennan J (2002), the evolution of digital marketing can be directly connected to technological development, especially during the past 50 years [12] since Ray Tomlinson sent the first email back in 1971 - the machine-to-machine communication breakthrough [13]. Now, digital marketing can be described as "marketing and promotions of goods or services utilizing digital technologies [14].

Comparing digital marketing with traditional marketing, Yasmin, A. et. al. (2015) present a number of comparisons of their characteristics. The biggest difference is in how they communicate their information. Traditional marketing is a non-digital way of showcasing a company's products or services while digital marketing uses digital channels to reach potential consumers. For example, while traditional marketing includes areas such as print, broadcast, direct mail and telephone, digital marketing includes areas such as online advertising, social media, search engine optimization and pay-per-click marketing. Furthermore, digital marketing is a more interactive way to communicate with the audience [15]. Within the framework of digital marketing is internet/online marketing. The main difference between digital marketing and internet/online marketing is that digital marketing also includes semi-traditional ways of marketing such as TV ads and digital billboards.

Banerjee (2016) presents five main areas in Internet marketing: Affiliate Marketing, Video Marketing, Corporate Video, Power of Blogging, and Online Advertising [16]. In Mineculete & Olar's (2018) newer study, seven branches of Internet marketing are presented: Web Site, Search Engine Marketing, Social Media Marketing, Content Marketing, Email Marketing, Mobile Marketing, and Banner Advertising [17]. These are displayed in Figure 3 on the next page.

Figure 3. The main areas of Internet (or Online) marketing [17].

Within the Internet marketing framework, this study relates to the activities of Search Engine Marketing (SEM), which is divided into two subcategories; Search Engine Optimization and Paid Search Advertising (PSA). SEO involves optimizing your website to obtain a higher ranking through search engines to gain more traffic, while PSA (which includes PPC) involves paying for ads to attract more potential customers. From a digital media channel framework standpoint, PPC and SEO are respectively within the categories of paid media and owned media [18].

According to Chaffey D (2019), direct exposure is considered to have a higher conversion rate than direct advertising. In contrast to the term direct marketing, such as online advertisements, a form of direct exposure is organic results on search engines. The author suggests that having a high ranking is "critical to driving traffic to the company's website, as only the highest-ranked options will be considered by consumers." Furthermore, Chaffey suggests that SEO is a valuable asset to increase website traffic [1, p. 397].

1.2.2 SEO and PPC

Similar to PPC studies, research has shown that SEO campaigns can generate a high Return on Investment (ROI) [19]. It has also indicated that more than 50% of Google search results are definitely or most definitely influenced by SEO [20]. According to Andrew Jacobs, digital marketing manager at mattress business Otty, their SEO based on the use of backlinks generates a 6:1 ROI, but they still use PPC for incremental profits *"to supplement instant gains with longer-term growth planning requires investment in both SEO and PPC"* [21]. In a study conducted by Kritzinger W.T and Weideman M (2013), the results show that both SEO and PPC are required for maximum website exposure [6]. Even though these points are evident, research shows that some companies only invest 13% of their marketing budget in SEO [6], which according to Kritzinger W.T and Weidman M (2013) makes sense as they identify some contradictions in terms of spending money on SEO or PPC. Some studies show that more users click on organic links than PPC results while other studies show that spending on SEO does not make financial sense [6]. This might be a result of inaccurate research regarding ROI.

Previous research has also shown that, when successfully implemented, SEM (PPC) can generate steady traffic levels and high ROI [10]. In the US, Google estimates that every $1 spent on Google ads will bring $2 in return on average [22]. These studies do not give an estimate of to what degree an investor can expect the ROI to be when investing in PPC and is thereby not sufficient for managers making strategic marketing decisions. This is also elaborated by Paraskevas et. al. (2011) who says that "*further research is certainly needed, notably on online searcher behavior and the development of an optimum strategy to manage paid placements, including keyword generation, bid management, and keyword performance measurement.*" [23].

It is important to note that the ROI of both SEO and PPC are highly different between different sectors. This is explained by the many factors that determine the key performance indicators (KPIs) such as the click-through rate (CTR), cost per click (CPC), cost per sale (CPS), and ad prices. For example, a study from 2005 showed that the finance and mortgage industry had a weighted average CPC of $3.17 because of the higher earnings for the sale of a mortgage or an investment account. Retail had a weighted average CPC of $0.32 and with the same reasoning, a lower earning. Hence, a higher bidding price is not justified [10]. Research done by BrightEdge in 2019 indicates the same phenomenon but for SEO marketing. The study shows that technology companies generate double the revenue from organic searches than other channels [9].

However, while it is notoriously difficult to measure the exact ROI of a SEO campaign, most previous studies only focus on SEO without including or comparing it with other marketing strategies (such as PPC), even though sources say that successful marketing management should work with them both to maximize short and long-term profits. Zilincan J (2015) elaborates on this and argues for the combination of a long-term strategy (SEO) together with a short-term strategy (PPC) to maximize and gain quicker results [24]. Hence, when comparing SEO and PPC, the study should be conducted for a specific industry or company to be able to compare. Such as the case of SEO, no previous research comparing the ROI of two strategies for a specific industry or company was found.

Most previous studies are older than 10 years and therefore outdated, especially considering the rapid development of search engines such as Google. A good example of this is the no longer use of keyword density (keyword recurrence) for website rankings [25], which a study from 2015 showed to be an important factor [26].

According to Dr. Bala M and Verma D (2018), the effectiveness of Internet marketing with respect to different businesses can be analyzed. The study can further be extended to compare the Internet marketing techniques among various businesses [27].

1.3 Problem statement

Online marketing can be conducted in many ways and through many channels. This is directly connected to the wide range of visitor sources that companies see when analyzing their website traffic. However, one of them stands out; organic searches. On average as of 2019, 53% of e-commerce visitors come from performing an organic search using a search engine such as Google [9]. Furthermore, 23% of website visitors come from a paid search result [9]. In other words, more than half of the website visitors (and customers) come from using a search engine.

Working with SEO takes time and effort. The system that Google uses to create website rankings is mainly based on a complex algorithm called PageRank that determines a website's importance [28][29], but the Google ranking also takes website coding and speed in consideration [29]. Because of this, a top search result ranking requires much time and a high degree of consistency, engineering, and website quality, which is why many companies instead choose to pay for a high ranking using paid ads (especially newer companies) [30]. In the long run, this is a costly strategy compared to SEO, which doesn't require any extra costs other than the time and resources used to improve the website. However, in today's business environment, it is common to hire an SEO expert to help deal with this area with the goal to get better results in a shorter period of time, which is why the payback time of SEO varies.

While the ROI of PPC can be determined beforehand because of customer acquisition bidding (the system will be presented in *3. Technical background*), it is notoriously difficult to measure the exact ROI of SEO. However, there are accurate ways to forecast the ROI of a SEO campaign, which is something that this study seeks to do. The method for this is presented in the next chapter, *3. Technical background*, and it is based on data connected to the factors that improve website ranking on the search engine results page.

There is a difference in payback time; PPC will deliver a result immediately (since the method allows the buyer to pay for a set goal) while traction from SEO will be seen at a later stage. SEO also requires frequent web code updates as Google's ranking algorithms change frequently [30].

Comparing the two strategies has shown to be difficult, and previous research has also shown contradictions between the two, at least from a company's point of view [6]. Furthermore, there are no previous studies comparing the two strategies for a specific company or industry. The importance of doing this partly comes from the fact that PPC prices vary a lot between industries, in some cases as much as hundreds of percent [31]. To summarize, both strategies have proved to be successful, especially when combined. However, due to the lack of concrete numbers and research comparing the two over time for a specific industry, some companies tend to favor PPC and thereby lose the opportunity of SEO which has been proven in many cases. An explanation could be that marketing managers need accurate forecasts before making larger investments.

1.4 Purpose of the study

The purposes of this study are to investigate which marketing method, inorganic marketing (PPC) or organic marketing (SEO), has the highest ROI over a certain period of time, and when an SEO strategy is expected to break-even. It seeks to compare the two strategies, SEO and PPC, for five companies within different industries. The result will be based on a ROI forecast calculated with SEO KPIs and statistics.

1.5 Research questions

The thesis seeks to answer the following questions:

- What is the forecasted ROI of PPC and SEO marketing for 5 companies within different industries with approximately the same online presence?
- When is the projected break-even point for an SEO and PPC investment of equal scale in these cases?

1.6 Limitations

This study will forecast and compare SEO and PPC strategies for 5 companies (study cases) selling products online, but operating within different industries. The companies have a SERP ranking between five and two for relevant keywords, and thereby have approximately the same online presence (and SEO difficulty) within their industry.

When calculating the forecasted ROI of SEO for these cases, the study will only include the main ranking factor; on-page keyword formatting and content. This and other main ranking factors will be presented more deeply in chapter *3. Technical background*.

2 Theoretical and conceptual framework

2.1 Value creation using digital marketing

According to Kannan P. K and Hongshuang Li, A (2017), digital marketing can be seen as *"an adaptive, technology-enabled process by which firms collaborate with customers and partners to jointly create, communicate, deliver, and sustain value for all stakeholders"*. They suggest that the concept of digital marketing can be described through a series of touchpoints and then propose a research framework based on the conventional Five Cs of strategic marketing; customers, collaborators, competitors, context, and company [32]. Their research framework is presented in Figure 4 below.

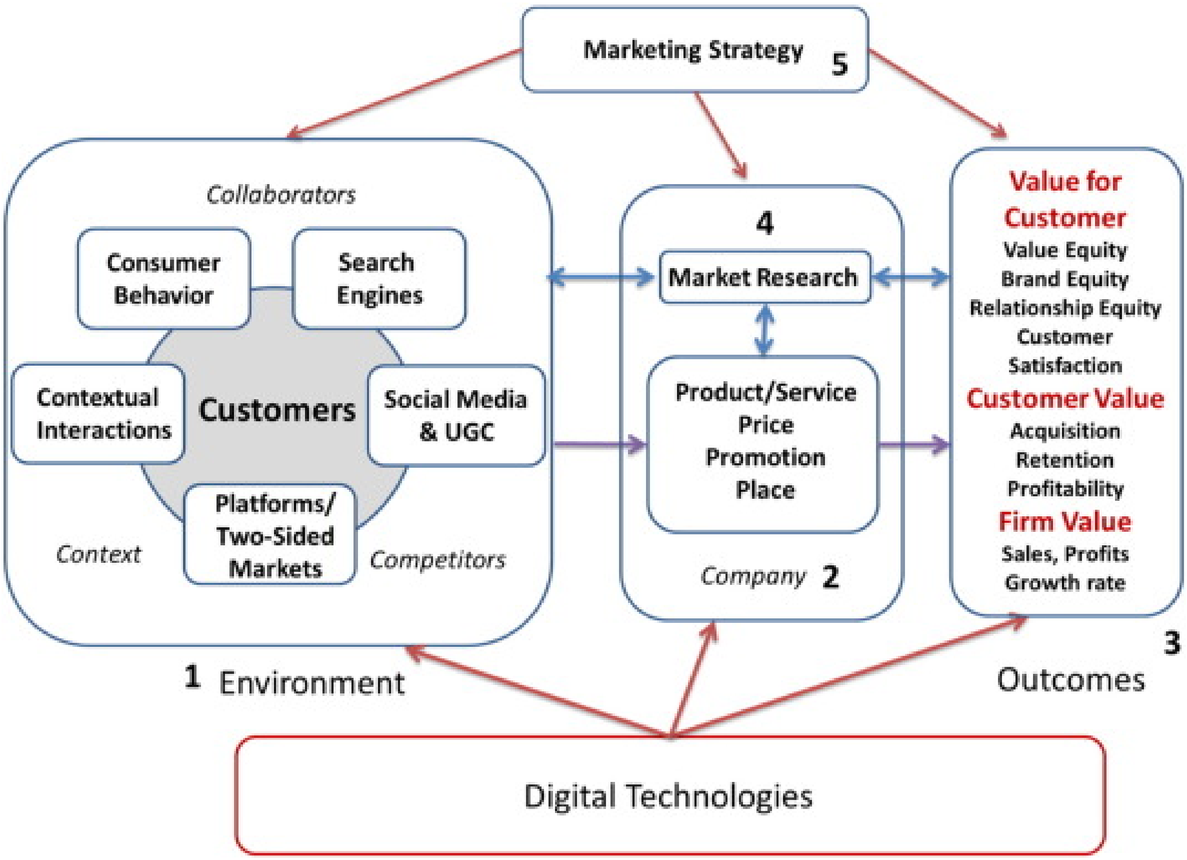

Figure 4. A value creation model based on the Five C's of strategic marketing [32]. The area of this study, *Search Engines*, can be seen as an sub-category within *Environment* - a category which is directly connected to the elements customers, collaborators, competitors and context.

Within this framework, the *environment* in which the companies operate is rapidly changing by digital technologies which reduce the information asymmetry between customers and sellers. Digital platforms utilize these two-sided markets (buyers and sellers) for revenue generation. In the same way, firms are contending with *search engines* as both collaborators and platforms on which they compete with other companies in acquiring customers [32]. In other words, the companies utilize such platforms to create customer and firm value in terms of acquisition and sales/profits. This can be seen in Box 3 *Outcomes*, where the outcomes are a reflection of how the firm has been able to benefit from the opportunity provided by digital technologies to create value for their customers and also create value for themselves. Customers also gain value as they utilize search engines to find the best deal [27].

The term *digital marketing* has evolved from being a specific term describing the practice of using digital channels to market products and services to a now broader “umbrella term” describing the practice of using digital technologies to acquire customers, promote products, and brands and increase sales [32]. Companies can leverage digital channels and tools such as search engines, social media, email marketing, and websites to connect with potential customers [33]. Thus, search engines help firms to provide significant value to customers as well as acquire the right customers and increase customer value [32]. Research has shown that SEO may improve the satisfaction of visitors as well as customer welfare [34].

When a customer does a search query, the information can both be used to connect them to the relevant websites and product, as well as for customer profiling by using the Five P’s of marketing; person (age and gender), place (geographical location), priority (time frame), product (desired product) and purchase (online or direct). Specific search terms yield valuable customer insights which can be used for value creation both for the company and customer [35].

2.2 SEO as a marketing strategy

The SOSTAC Planning System (see figure 5 below) was originally developed for creating marketing communications plans by Paul Smith in 1995. It considers six connected processes for a successful marketing strategy; situation analysis, objectives, strategy, tactics, actions and control [1, p. 147].

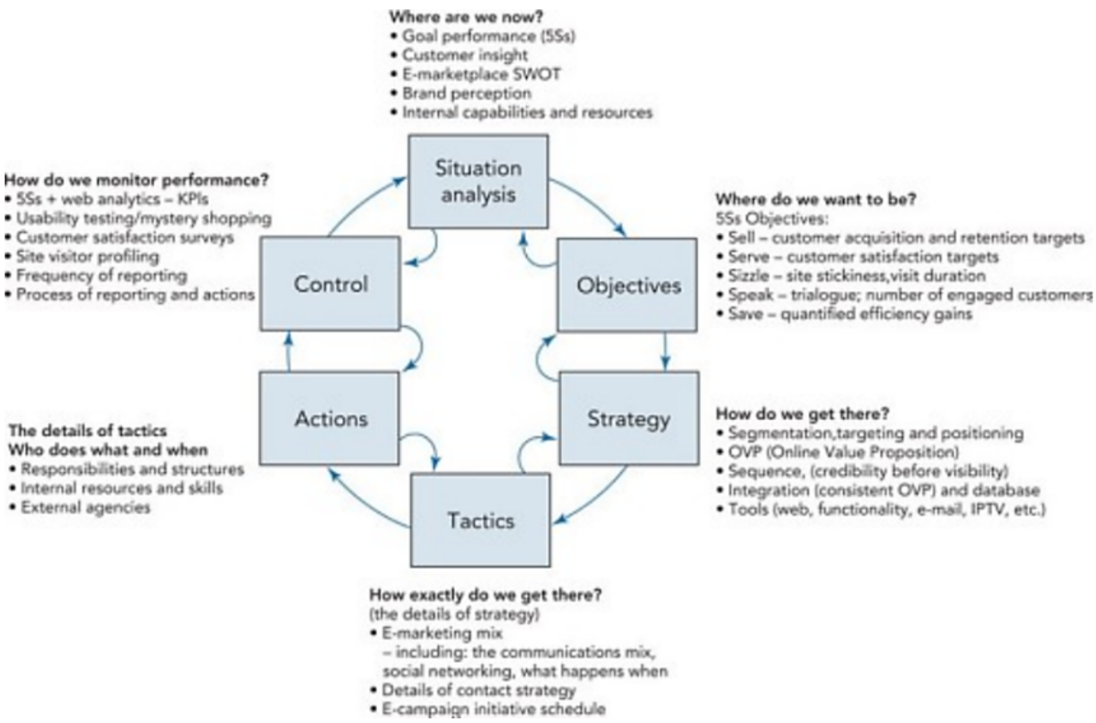

Figure 5. The SOSTAC Planning System [1, p. 147].

The primary use of the SOSTAC model is overall marketing planning but with some adaptation, it can be used to analyze the ROI from SEO and PPC campaigns. By considering SEO as a strategic marketing tool, it can be connected to all processes within the SOSTAC system. More concretely, within the framework of SOSTAC, SEO can be utilized for selling/customer acquisition (Objectives), targeting customers, and communicating an online value proposition/OVP (Strategy). Furthermore, it is used as a marketing tool (Tactics) often performed by external agencies (Actions) and deeply connected to website analytics and KPI's (Control) as well as customer insights (Situation analysis) [1, p. 147-148].

2.3 Summary of theoretical framework

The concept of digital marketing involves utilizing digital technologies to acquire customers, promote products, brands, and increase sales. The authors propose a research framework based on the conventional Five C's of strategic marketing; *customers*, *collaborators*, *competitors*, *context*, and *company*. Digital platforms use two-sided markets for revenue generation, where firms utilize such platforms to create customer and firm value in terms of acquisition and sales/profits. Search engines help firms provide significant value to customers as well as acquire the right customers and increase customer value, as search engines organically connect the customer with the sought-after content and products. Hence, it is a great tool for both value creation and marketing.

The SOSTAC Planning System is a strategic marketing tool that can be connected to all processes within a successful marketing strategy, including SEO. SEO includes activities such as website content, website design, optimization strategy, customer profiling, and conversion tracking. Thereby, SOSTAC can be used to create a digital marketing strategy including keyword analysis, competition analysis, website traffic analysis, SEO, PPC and customer data profiling. Based on these conclusions, this study seeks to develop a strategic model to forecast the ROI of SEO and PPC with the purpose to compare and potentially combine the two marketing methods. This model will be built on the SOSTAC framework and can potentially be used by marketing managers when developing a marketing strategy, see table 1 below.

Table 1. The framework that was developed and used in this study based on the SOSTAC model and value creation using the conventional Five Cs of marketing.

Situation analysis	**Objectives**	**Strategy**	**Tactics**	**Action**	**Control**
Competitors Products Customers Keywords	New customers More sales Product push	Search engine Targeting Personalization	SEO PPC	SEO department PPC department SEO agency	Traffic analysis Customer analysis Keyword analysis Budget follow-up KPI tracking
Value-add (company): Lower marketing costs, competitive advantage, specific product promotions, customer data, website improvement					
Value-add (customer): Relevant products, organic content, personalized content, no sales push					

3 Technical background

3.1 Search Engine Optimization

SEO involves the practice of achieving a high search engine result ranking on the SERP. There are four main stages involved in producing a search engine listing for the organic search results, which can be seen in Figure 6 below [1, p. 403-404]:

1. Crawling: Crawling is used to identify relevant pages for indexing and assess if they have changed. Crawling is performed by bots (software processes running on search engine's server) that access different web pages and retrieve their reference URL of the page for later analysis and indexing.
2. Indexing: Indexing is used so that the search engine more rapidly finds the most relevant pages containing the query (search request) typed by the searcher. A search engine inverts the index to create a lookup table of documents containing particular words. The index information consists of stored information such as the title of the document, meta-data description, trust, authority, etc.
3. Ranking or scoring: The index process has produced a non-sorted lookup of all the pages that contains relevant search words from the searcher in a query. Relevant documents will be retrieved from a runtime (active) version of the index and a rank for each document will be computed. The highest rated document will be placed on the top followed by the second highest rated document and so on.
4. Query requests and results serving: The search engine interface accepts the searcher's query and uses the location of the searcher to connect to a relevant data center for processing. Ranking then occurs and a sorted list of relevant documents are displayed on the searcher's browser.

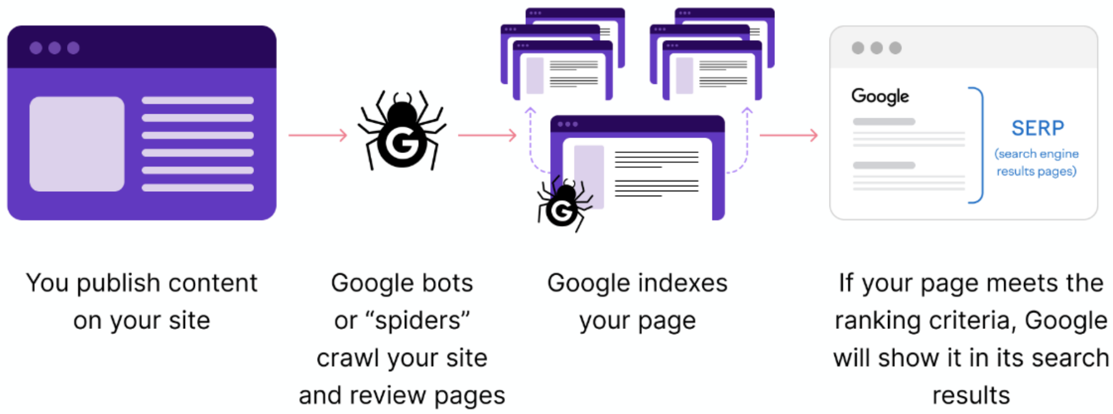

Figure 6. The four main stages of producing a search engine listing [36].

3.1.1 Ranking factors in search engines

Google has stated that they use more than 200 different factors in their search ranking algorithms. These include two types of factors; positive factors that help increase a position and negative ones that decrease a position. The three most important ranking factors for a good position in all of the main search engines are on-page SEO, off-page SEO, and technical SEO [1, p. 8][35] (see Figure 7 on the next page). One of the most prominent approaches used to improve the results from SEO is keyphrase analysis combined with on-page optimization [1, p. 407-411].

1. **Keyphrase analysis**: The most important factor in successful search engine marketing is high keyphrase relevance. The search engine matches the combination of keywords typed in the search field to the most relevant and connected pages, which is why it is important to identify which keyphrases potential customers are likely to type. This is done by market knowledge, competitors' sites, keyphrases from visitors who arrive at your site (web analytics), and the internal site search tool [36] [1, p. 407-409].

   Previous studies have found that using keywords with low competition and a high number of searches results in higher web traffic [26][37].

2. **On-page optimization:** On-page optimization can be categorized as *Occurrence of search term in body copy* and *Document meta-data*. Historically the number of times a keyphrase has been repeated on the web page would usually mean a higher ranking for search engines.

   The main factors of on-page optimization regard keyword formatting, keywords in anchor text (the visible text of a link), and the document's meta-data [36]. The process to improve these factors includes writing a copy and applying markup for different tags (such as title and heading) to highlight the relevant keyphrases in the document for the search engine.

This study will focus on key phrase analysis and on-page optimization as it has proven to be amongst the most important factors for the PageRank algorithm [26]. Including relevant substantive content early on pages has also been shown to increase ranking [36] [38].

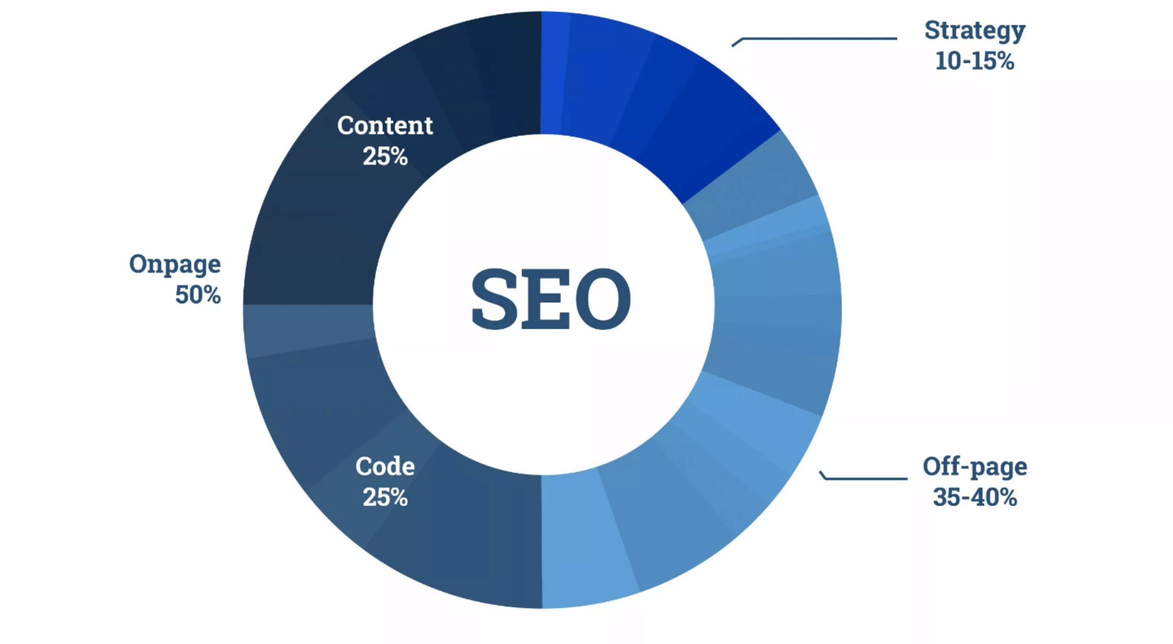

Figure 7. A graph visualizing the importance of SEO categories [39].

3.1.2 SEO Time Consumption and Pricing

The time consumption and pricing of a SEO campaign vary a lot. The time consumption of a SEO campaign is affected by [40]:

- The quality of the SEO campaign. This metric is determined by the amount of SEO factors that are being improved and to which extent. More comprehensive SEO campaigns may improve all SEO factors while some only focus on website content. Furthermore, keyword optimization can be conducted in many different ways and volumes - finding a large amount of highly targeted yet less competitive keywords will yield a better result, but also take longer time to research and implement.

- The current rank of the website. A website that already has a high rank prior to SEO optimization will yield results faster than a brand-new one.

- The competitiveness in the industry. It’s easier to rank higher in less competitive niches. A tiny niche that very few companies have attempted to rank within can see results the moment they publish a keyword-targeted page of content, while consumer industries like travel or loans are so dense with competition that ranking highly is at least a 24-month feat, but more likely to take 3-4 years. In an industry with average levels of competition (which is higher than you might think, as most industries are competitive online), you are likely to see the first results after 4-6 months.

In comparison to PPC which yields instant results, previous cases show that the result of SEO campaigns have exponential growth as it is being performed [41]. A website is also increasingly easier to optimize over time which is why the ROI is accelerating.

The pricing of hiring an SEO agency varies between countries, industries, amounts of optimization aspects, and optimization level. For on-page SEO optimization, a firm can expect to pay anywhere from $750-$2500 per month [42].

3.2 Pay-per-click marketing

3.2.1 Google PPC

PPC is used as a collective phrase of all methods that use bidding options, in other words, options that allow the ad buyer to pay only when an agreed action is performed [14]. Hence, it should not be mixed with the performance indicator cost-per-click (CPC).

Google offers companies to purchase a top spot on the SERP as a sponsored listing. Using previous search data from users combined with keywords, Google displays sponsored listings relevant to their current search and previous search history [43]. By doing this, Google seeks to increase the conversion rate of paid search listings (ads).

According to Google's know-how page, users of Google ads set a monthly budget limitation prior to launching the ads. Users are also able to choose when to pay, whether it is per ad click or lead such as a website visit or phone call, ensuring that users of Google ads only pay for “real results” [44], and allowing companies to measure the performance. More of this is presented in the next subchapter, *3.2.2 Bidding*.

3.2.2 Bidding

When buying Google ads there are several bidding options to choose from based on the ad goal, which could be sales, visits, brand awareness or view of ads. Furthermore, Google uses a number of “smart bidding options” which lets the user pay either for impressions (cost-per-million impressions, CPM), views (cost-per-view, CPV) clicks (cost-per-click, CPC), or conversions (cost-per-action, CPA) [45]. This ensures that the ad owner only pays for real results, and therefore it’s relatively easy to measure the ROI of PPC. Even though a company uses PPC as a budding strategy instead of pay-per-acquisition (PPA), the company can use previous statistics to calculate how many visitors that end up buying a product/become a customer. Furthermore, the company can estimate how many of the customers return the next month(s) on average, a number that then expresses the customer lifetime value (CLV). The key performance indicators will be presented in the next Chapter *3.3 Key performance indicators*.

3.3 Key performance indicators

The following KPIs are all sufficient for calculating and forecasting the ROI of search engine marketing campaigns.

3.3.1 Click-through-rate (CTR)

The CTR is equal to the number of *clicks* of an ad divided by the number of times the ad was shown (called *impressions*);

$$CTR = \frac{clicks}{impressions} \cdot 100 \tag{1}$$

When measuring CTR, data should be of the minimum volume of 3-6 months for it to be accurate [46]. The rank of the sponsored link has an impact on click-through and conversion rates [47] and research confirms that CTRs decay with ad rank [48] [49] [50].

3.3.2 Conversion rate (CVR)

The CVR is equal to the number of times a customer performed the specified task after clicking on a link, for example purchasing a product (making an *order*), divided by the number of *impressions*;

$$CVR = \frac{orders}{impressions} \cdot 100 \tag{2}$$

3.3.3 Conversion value (CV)

The CV measures the value of a conversion based on the average customer order value.

3.3.4 Return on investment (ROI)

By calculating the return on investment, companies can evaluate or compare investments. The ROI is equal to the profit (*revenue* minus *costs*) divided by the *costs*;

$$ROI = \frac{Revenue - Costs}{Costs} \tag{3}$$

Applying this to PPC and SEO, the formula will include the amount spent on marketing along with the revenue gained from it. Paid ads on Google use a bidding system that allows the buyer to only pay for results, normally the cost-per-click (CPC), while for SEO the costs will be based on the resources spent to achieve the SEO goal.

Calculating the ROI of PPC is relatively easy as the ad buyer is immediately aware of the costs connected to the results, whether it's website visits, leads, or sales. Hence, the ad owner can calculate the acquisition costs. Calculating the ROI of SEO is difficult because of a number of reasons. First of all, as stated previously in this paper, there are many factors influencing the search ranking, and each factor has its own optimizing difficulty. Secondly, it is difficult to estimate the time consumption to improve a given factor. Thirdly, the competition within industries, and specifically search keywords, are highly differentiated.

The monthly revenue for both strategies is equal to the number of *clicks* times the *CVR* times the *CV* minus the *costs*;

$$Revenue = clicks \cdot CVR \cdot CV - costs \tag{4}$$

Where *clicks* refers to the amount of search engine listing clicks, *CVR* refers to the average customer conversion rate and *CV* refers to average customer conversion value. As previously mentioned, studies have suggested that the return of SEO is exponential while the return of PPC is linear (see *Attachment A*).

4 Methodology

4.1 Research Design

To compare the ROI of SEO and PPC, we will use a comparative research design, which allows for the collection of both quantitative and qualitative data [51] [52]. This design is relevant for this study as it enables us to identify the strengths and weaknesses of SEO and PPC, and to investigate which method is more cost-effective in terms of ROI.

To increase the validity and reliability of our research, we will use a multiple-case study approach and analyze five different cases. By analyzing multiple cases of companies from different industries, we can identify common trends and patterns across different industries and contexts [53, p. 86-90]. This approach is relevant for this study as it enables us to gain a deeper understanding of the ROI of SEO and PPC in different business contexts and to identify the most cost-effective method for businesses to use.

Five companies within five different industries were chosen. As mentioned in chapter *1.6 Limitations*, they are all well established and already rank high on the SERP (top 5) and are thereby equally qualified for SEO. These are: Sambla Group AB (finance), Chilli/Home Furnishing Nordic AB (furniture/e-commerce), Media Markt Sweden AB (electronics/e-commerce), Willy:s AB (food), and Kvdbil AB (automotive). For each case, two campaign timelines are studied; 24 and 48 months. These timelines are sufficient in order to see the growth of the SEO ROI. For each campaign, different SEO goal times are analyzed based on previous industry benchmarks.

In this study, we will use existing theories and literature on SEO and PPC to generate hypotheses about the ROI of these marketing approaches, and then test these hypotheses through the analysis of qualitative data - hence the method is abductive [52]. An abductive research method is preferred as it allows researchers to generate plausible explanations or hypotheses based on observed data and existing knowledge, providing a flexible and exploratory approach to problem-solving. Additionally, abductive reasoning promotes innovation and creativity by encouraging thoughts beyond conventional theories and exploration of alternative perspectives to uncover new insights and potential solutions.

4.2 Data Collection

We will conduct a literature research and secondary data analysis approach to gather qualitative data for the study. This approach involves analyzing existing literature, reports, industry benchmarks, and other sources of secondary data through online databases such as Google Scholar related to SEO and PPC to gain insights into the research question [54, p. 329-330]. According to Fink (2019), a literature review is a systematic and rigorous method of identifying, evaluating, and synthesizing relevant literature to answer a research question [55, p. 148]. By conducting a literature review, this study aims to identify the various factors that contribute to the ROI of SEO vs PPC and to synthesize the findings into a coherent framework to develop a forecast model. This approach is relevant for this study as it allows us to identify common themes and patterns related to the ROI of SEO and PPC across different industries and contexts.

The study also collects primary data from Google Keyword Planner and Google Ads, as well as historical data and industry benchmarks of previous SEO cases performed by industry-leading agencies such as FirstSageSEO. Furthermore, it collects data through tools offered by SimilarWeb and Ahrefs, two industry-leading web traffic analytics companies.

4.3 Qualitative Data Analysis

For the qualitative component of our research, we will conduct a content analysis of the literature and other sources of secondary data to identify common themes and patterns related to the time consumption and pricing of SEO [56]. The choice of qualitative data analysis is justified as it allows for an in-depth exploration of this complex and multifaceted topic [51].

4.4 Research steps and limitations

1. Analyze the average SEO price, goal time, and CTR for different industries.
2. Input of case-relevant keywords and website in Google Keyword Planner
3. Selection of top 10 optimal keywords*
4. Use the keyword list to create a campaign forecast in Google Ads
5. Input keyword list in SimilarWeb Keyword Analysis tool to get total organic traffic per month
6. Use Ahref's SERP tool to calculate the mean SERP ranking of the keyword list
7. Use organic traffic CTR data to evaluate the current traffic share
8. Use standardized case (65% improvement) to estimate traffic gain from SEO
9. Compare the ROI of SEO and PPC based on clicks, conversion rate, and conversion value using the analytical model presented in the next chapter *4.5 Analytical model*

*Keyword sorting and filters:

- Keywords are filtered and reviewed from highest traffic to lowest traffic
- The output keywords are of medium or high difficulty
- Only Swedish keywords are included
- The keywords are non-branded and relevant to the company services
- The average SERP ranking of the 10 selected keywords should be higher than 12 in order to evaluate the current CTR
- The "Maximum clicks" bidding option is selected

4.5 Analytical model

The amount of clicks and CPC for PPC is instantly provided by Google Ads Forecast. The revenue and ROI is also calculated based on the budget and defined conversion rate and conversion value. The estimated ROI of SEO is calculated by subtracting the costs from the estimated total revenue (calculated with the formulas presented in chapter *3.3 Key* *performance indicators*). An example of the monthly forecasted revenue of PPC and SEO is illustrated in Figure 8 below.

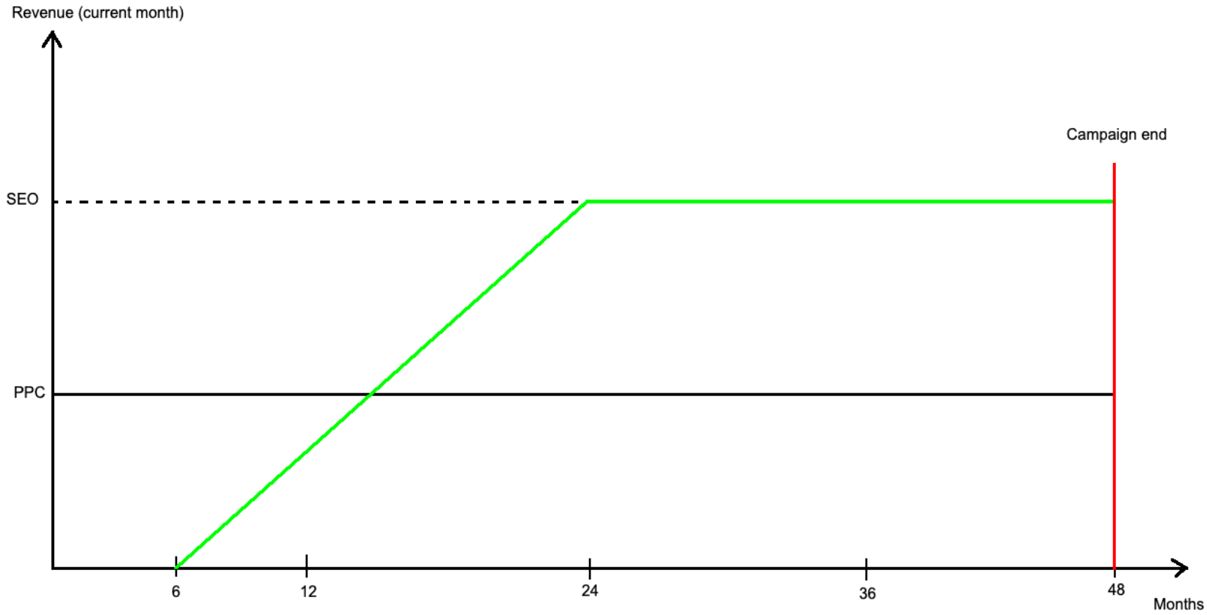

Figure 8. Example of a 48-month SEO and PPC campaign with a 24-month SEO goal time. The figure illustrates the forecasted monthly revenue for PPC (represented by the black horizontal line) and SEO (represented by the green line, showing that the monthly revenue increases between month six and 24, and remains constant afterwards) until the campaign end (red vertical line).

The break-even point (month) of SEO and PPC is calculated by dividing the revenue difference at SEO goal time with the monthly revenue delta after goal time using this formula:

$$\frac{SEOgoaltime \bullet PPCrevenue - SEOrevenue \bullet \frac{(SEOgoaltime - monthSEOstart)}{2}}{SEOrevenue - PPCrevenue} + SEOgoaltime \qquad (5)$$

After this, the critical traffic increase is set and the critical budget is calculated. These values represent the critical traffic or cost of an SEO campaign where, if all other parameters are fixed, the SEO campaign will never be able to reach a higher ROI than PPC (in other words, when the CPC is higher). The critical traffic is the same as the number of clicks from PPC, while the critical budget is calculated by multiplying the CPC of PPC with the traffic increase of SEO:

$$critical\,budget = CPC_{PPC} \cdot traffic\,increase_{SEO} \qquad (6)$$

The results from the forecasts and calculations are then summarized in tables which are presented in chapter *5. Results*.

4.6 Critical reviews

This study has limited access to company-specific data and time. To compensate for this, a multiple-case study approach is used to increase the validity and reliability of the findings. Additionally, using a combination of qualitative and quantitative data collection and analysis methods can provide a more comprehensive understanding of the research question. Furthermore, using data from industry standards might give somewhat of an incorrect view of the specific company, it will increase the reliability of future studies.

One potential weakness of this methodology is that the data collection methods rely heavily on secondary sources, such as literature reviews and reports. While these sources can provide valuable insights, they may not be as reliable or accurate as primary data sources. This could be avoided by conducting interviews with employers from different companies but a lot of the needed data was classified. Additionally, the study does not involve direct interaction with businesses or individuals, which may limit the depth of understanding and the ability to address potential biases.

Another potential weakness of this methodology is the limitation - the research does not include some of the relevant SEO factors such as technical and off-page SEO. This can affect the result as it is not clear which factors the price data for SEO involves, combined with the finding that content SEO (keyword/content optimization) represents around 25% of all SEO categories. Hence, more comprehensive SEO campaigns can potentially have a higher ROI. Furthermore, this study does not account for factors beyond the scope of SEO and PPC that could influence the ROI, such as market competition or external economic factors. This could limit the generalizability of the findings and make it difficult to apply the results to other business contexts.

5 Results

Five companies were chosen of approximately the same age and size with regards to the statements in the previous chapter *4.1 Research design*.

The five companies are:

- Sambla/Sambla Group AB (financial services)
- Media Markt/Media Markt Sweden AB (electronics/e-commerce)
- Willys/Willy:s AB (food)
- Kvdbil/Kvdbil AB (automotive)
- Chilli/Home Furnishing Nordic AB (furniture/e-commerce)

A recent study from 2023 came to the conclusion that the click-through-rate of the first organic search position is 39.8% followed by 18.7%, 10.2%, 7.4%, 5.1%, 4.5%, 3.4%, 2.6%, 2.4%, and 2.2% [57]. The average online conversion rate is 2-3% [58][59][60][61].

The time consumption of a SEO campaign is determined by three factors; the company age (and amount of backlinks), the keyword competition, and the industry. Previous studies indicate that mid-established companies of mid to high keyword competition typically don't see SEO results in the first 6-7 months [62][63], while close to full results can be seen within 9-48 months (with most cases being during the 9-12 months) [62][59][65][66]. The cost of SEO management is between $2000-4000 (approximately 20 000-40 000 SEK) per month depending on the scale [67].

The findings above lead to the following limitations and assumptions:

- According to Google, the CPC of PPC is decreasing with a lower budget per day
- The PPC and SEO marketing strategy is set to 24 months (41 667 SEK/month) and 48 months (20 833 SEK/month) with 1M SEK in budget per strategy
- It is assumed that SEO results starts to show after the 6th month
- It is assumed that the CVR and CV of paid and organic traffic is the same
- The cost of SEO is the same after the goal is reached in order to maintain the position
- The SEO ROI is analyzed for 9, 12, 15, 18, 21 and 24 month goal times

Fixed parameters:

- Conversion rate = 3%
- Conversion value = 1500 SEK
- 1M in budget for PPC and SEO respectively
- 24-month ad campaign => 41 667 SEK per month => 1370 SEK per day
- 48-month ad campaign => 20 833 SEK per month = 680 SEK per day
- SERP target rank is set to one-third of the current rank (66% improvement)

5.1 Case 1: Sambla Group AB

Sambla is a loan intermediary that strives to compare lenders' offers in order to give its customers the best possible bank loan, primarily through their online platform. Sambla have helped over 390 000 customers compare their loans. By offering the highest level of security with SSL-certified encrypted data, collaboration with UC and signing with BankID, they guarantee security for their customers. The customer receives offers from up to 40 different lenders and can choose the best option [68].

Doing a keyword analysis for Sambla Group AB following steps 2-8 in *4.4 Research steps and limitations* gives the results showcased in Table 2 below. For a detailed SERP ranking table see attachment B, and see attachment C for the organic traffic analysis.

Table 2. The results from Google Keyword Planner tool, Ahref's Keyword Ranking tool and SimilarWeb's Keyword Analysis tool.

Input keywords	**Input website**
låna pengar, ta ett lån, låna, samla lån, lån låg ränta	https://sambla.se
Output keywords	
låna pengar, privatlån, låna, privat lån, hur mycket kan jag låna, ta lån, låna pengar snabbt, låna pengar direkt, ta ett lån, slå ihop lån	
Output keyword list difficulty	
Medium	
Average SERP rank (see Attachment B)	12,6
Target SERP rank	4
Total organic traffic	236 574
Current traffic share (SERP rank: 12,6)	3549
Target traffic share (SERP rank: 4)	17 506
Traffic increase	13 957
Estimated revenue from SEO (SEK)	628 065 SEK/month

5.1.1 24 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 9250 per month, and the estimated revenue is 691 667 SEK per month (see Attachment D).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 3 below.

Table 3. The results from the 24-month Sambla marketing campaign.

SEO goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	18353759,31	22,23579125	9,363759313	8,99
12	17411599,38	26,68294949	8,421599375	8,99
15	16469439,44	31,13010774	7,479439438	8,99
18	15527279,5	35,57726599	6,5372795	8,99
21	14585119,56	40,02442424	5,595119563	8,99
24	13642959,63	44,47158249	4,652959625	8,99

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 9 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

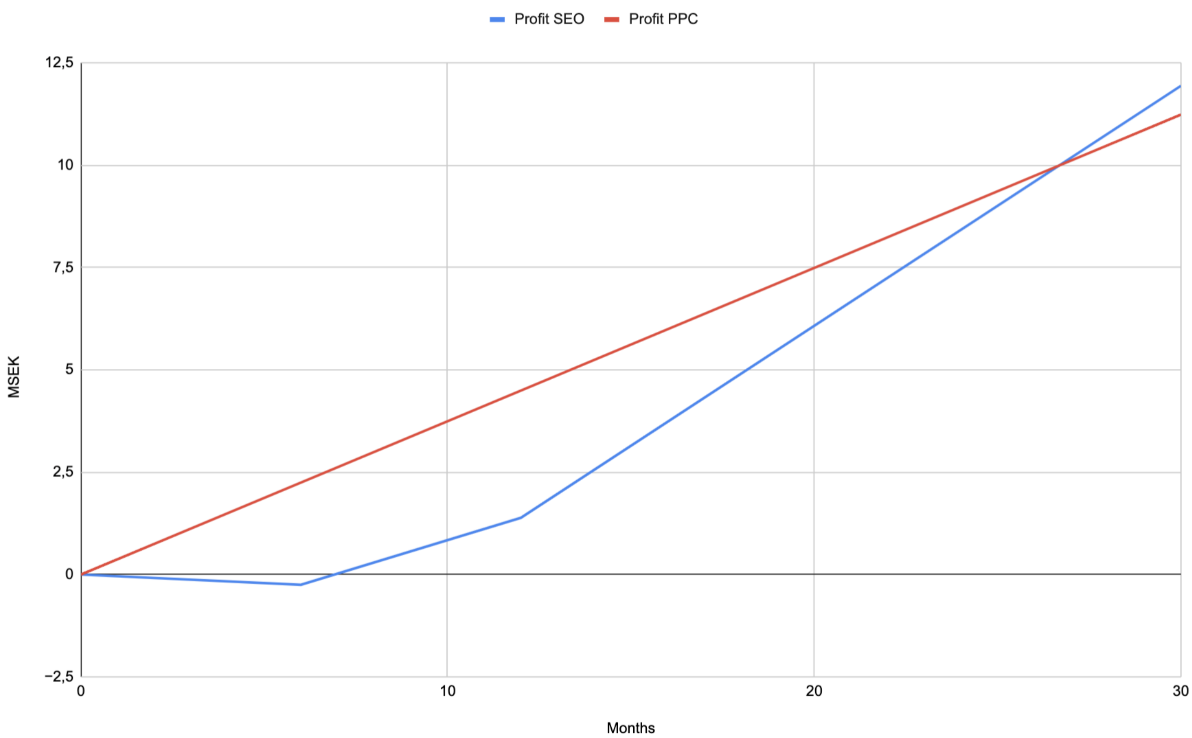

Figure 9. The results from the 24-month Sambla marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 26,7 months.

5.1.2 48 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 48-month campaign is 6750 per month, and the estimated revenue is 303 750 SEK per month (see Attachment E).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 4 below.

Table 4. The results from the 48-month Sambla marketing campaign

SEO Goal time	**Total profit (SEK)**	**Break-even (months)**	**ROI SEO**	**ROI PPC**
9	38018318,31	14,52351925	24,43831831	13,58
12	37076158,38	17,4282231	23,49615838	13,58
15	36133998,44	20,33292695	22,55399844	13,58
18	35191838,5	23,2376308	21,6118385	13,58
21	34249678,56	26,14233465	20,66967856	13,58
24	33307518,63	29,0470385	19,72751863	13,58

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 10 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

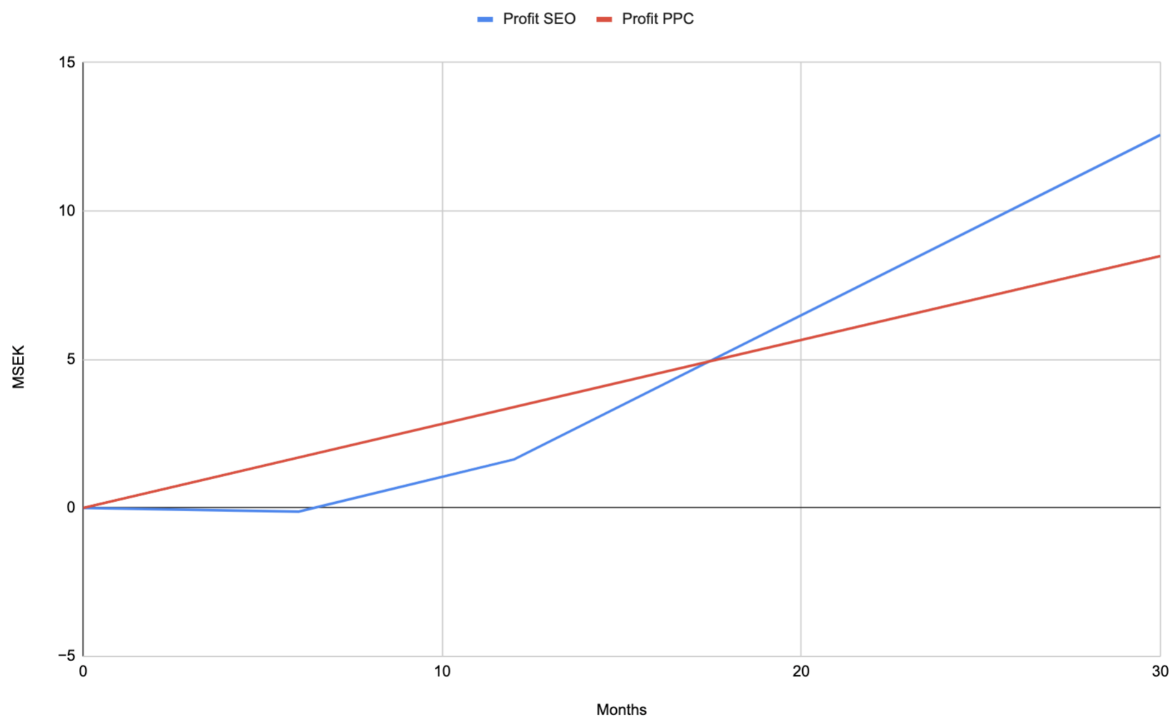

Figure 10. The results from the 48-month Sambla marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 26,8 months.

5.2 Case 2: Chilli (Home Furnishing Nordic AB)

Chilli is one of Sweden's leading players in furniture and home furnishings. They offer stylish furniture at affordable prices both online and in their nine physical stores around the country. Chilli strives to offer its customers a stylish, tasteful and personal interior design experience [69]. They have a robust online presence and conduct a significant portion of their sales through their e-commerce platform.

Doing a keyword analysis for Chilli following steps 2-8 in *4.4 Research steps and limitations* gives the results showcased in Table 5 below. For a detailed SERP ranking table see Attachment F, and see attachment G for the organic traffic analysis.

Table 5. The results from Google Keyword Planner tool, Ahref's Keyword Ranking tool and SimilarWeb's Keyword Analysis tool.

Input keywords	**Input website**
möbler online, soffa, soffa online, fåtölj, köpa fåtölj	https://chilli.se
Output keywords	
bäddsoffa, fåtölj, hörnsoffa, hörnsoffor, möbler online, schäslong, soffa, soffor, bäddsoffa, barnfåtölj	
Output keyword list difficulty	
High	
Average SERP rank (see Attachment F)	5,4
Target SERP rank	2
Total organic traffic	432 810
Current traffic share (SERP rank 5,4/CTR 5%)	21 641
Target traffic share (SERP rank 2/CTR 18,7%)	80 935
Traffic increase	59 295
Estimated revenue from SEO (SEK)	2,733 MSEK/month

5.2.1 24 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 23 000 per month, and the estimated revenue is 1,035 MSEK per month (see Attachment H).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 6 below.

Table 6. The results from the 24-month Chilli marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	66866515,23	12,25272469	43,02651523	23,84
12	62864104,75	14,70326963	39,02410475	23,84
15	58861694,28	17,15381456	35,02169428	23,84
18	54859283,8	19,6043595	31,0192838	23,84
21	50856873,33	22,05490444	27,01687333	23,84
24	46854462,85	24,50544938	23,01446285	23,84

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 11 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

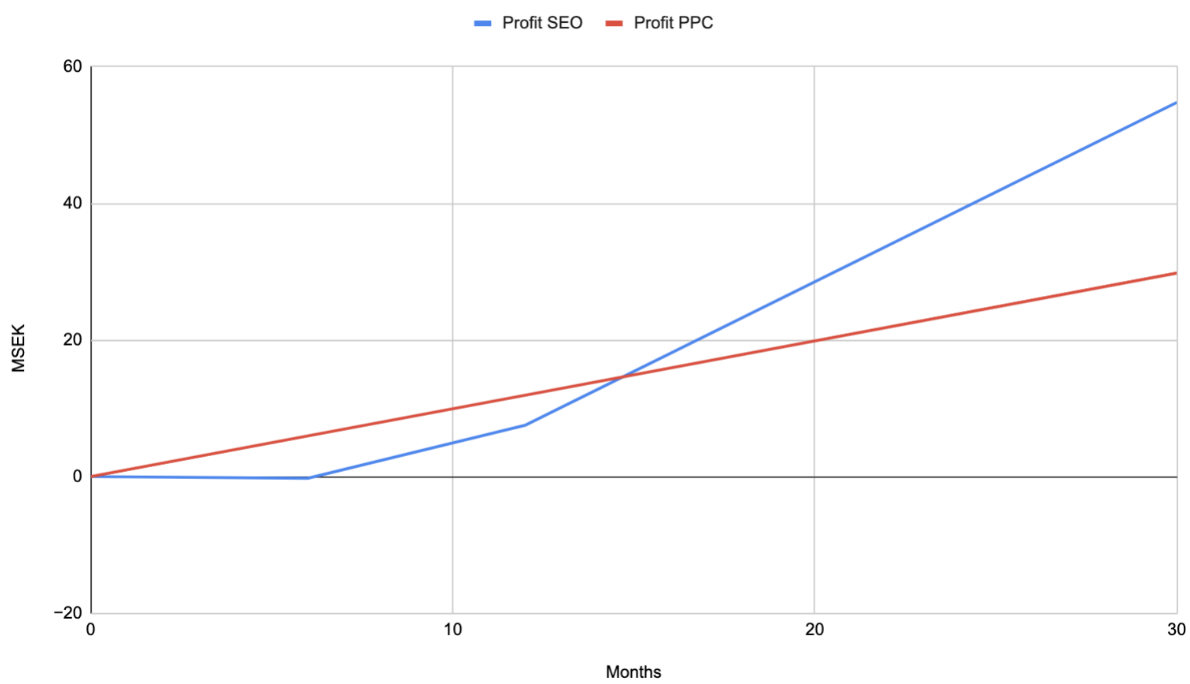

Figure 11. The results from the 24-month Chilli marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 14,7 months.

5.2.2 48 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 16 166 per month, and the estimated revenue is 727 470 SEK per month (see Attachment I).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 7 below.

Table 7. The results from the 48-month Chilli marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	140983642,8	10,31121947	107,0650828	33,91856
12	136981232,4	12,37346336	103,0626724	33,91856
15	132978821,9	14,43570725	99,06026188	33,91856
18	128976411,4	16,49795115	95,0578514	33,91856
21	124974000,9	18,56019504	91,05544093	33,91856
24	120971590,5	20,62243893	87,05303045	33,91856

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 12 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

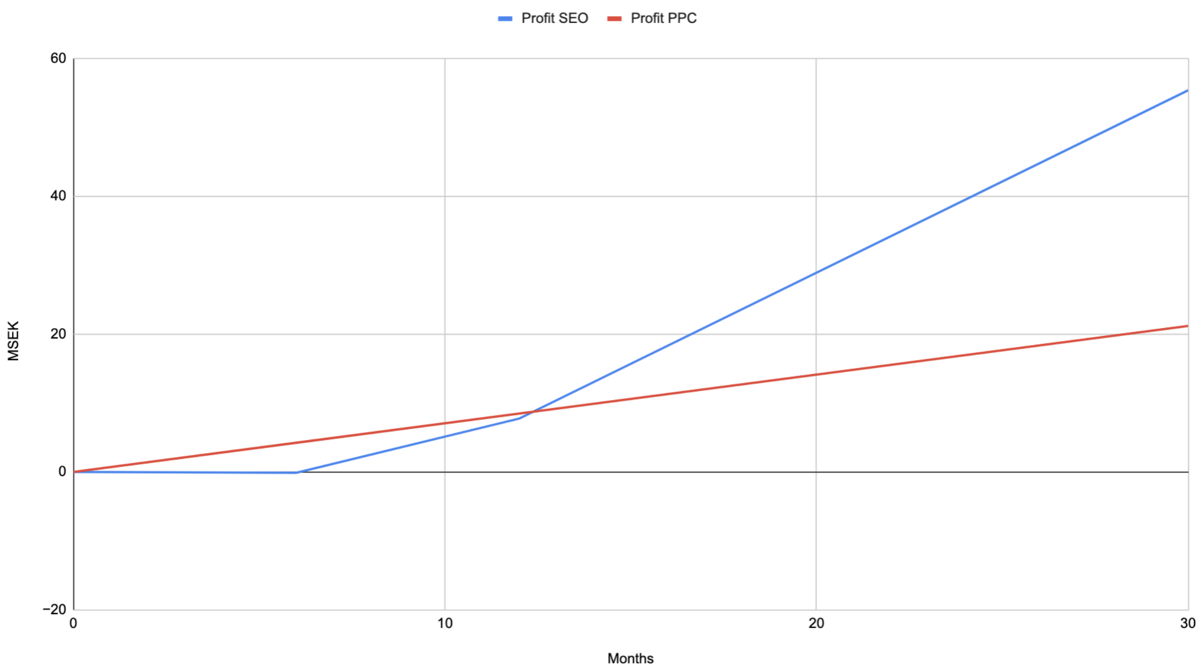

Figure 12. The results from the 48-month Chilli marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 12,4 months.

5.3 Case 3: Willy:s AB

Willy:s AB (marketed as Willys) is a Swedish low-price food chain that belongs to Axfood whose business concept is to offer Sweden's cheapest grocery bag regardless of preferences [70]. Willys provides online shopping and home delivery services for groceries, and their online sales have been growing steadily during the last years.

Doing a keyword analysis for Willy:s AB following steps 2-8 in *4.4 Research steps and limitations* gives the results showcased in Table 8 below. For a detailed SERP ranking table see Attachment J, and see Attachment K for the organic traffic analysis.

Table 8. The results from Google Keyword Planner tool, Ahref's Keyword Ranking tool and SimilarWeb's Keyword Analysis tool.

Input keywords	**Input website**
handla mat online, mat online, mat hemkörning	https://willys.se
Output keywords	
handla mat online, mat online, billig mat online, billigast mat online, mat på nätet, beställa mat på nätet, billig mat online kort datum, köpa mat online, handla mat på nätet, billig mat på nätet	
Output keyword list difficulty	
Medium/High	
Average SERP rank (see Attachment J)	8,5
Target SERP rank	2
Total organic traffic	46 181
Current traffic share (SERP rank 8,5/CTR 2,5%)	1155
Target traffic share (SERP rank 3/CTR 10,2%)	4710
Traffic increase	3555
Estimated revenue from SEO (SEK)	159 996 SEK/month

5.3.1 24 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 8750 per month, and the estimated revenue is 393 750 SEK per month (see Attachment L).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 9 below.

Table 9. The results from the 24-month Willys marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	10090283,22	−5,134617639	1,640283223	8,45
12	9850257,475	−6,161541167	1,400257475	8,45
15	9610231,728	−7,188464695	1,160231728	8,45
18	9370205,98	−8,215388223	0,92020598	8,45
21	9130180,233	−9,242311751	0,6801802325	8,45
24	8890154,485	−10,26923528	0,440154485	8,45

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 13 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

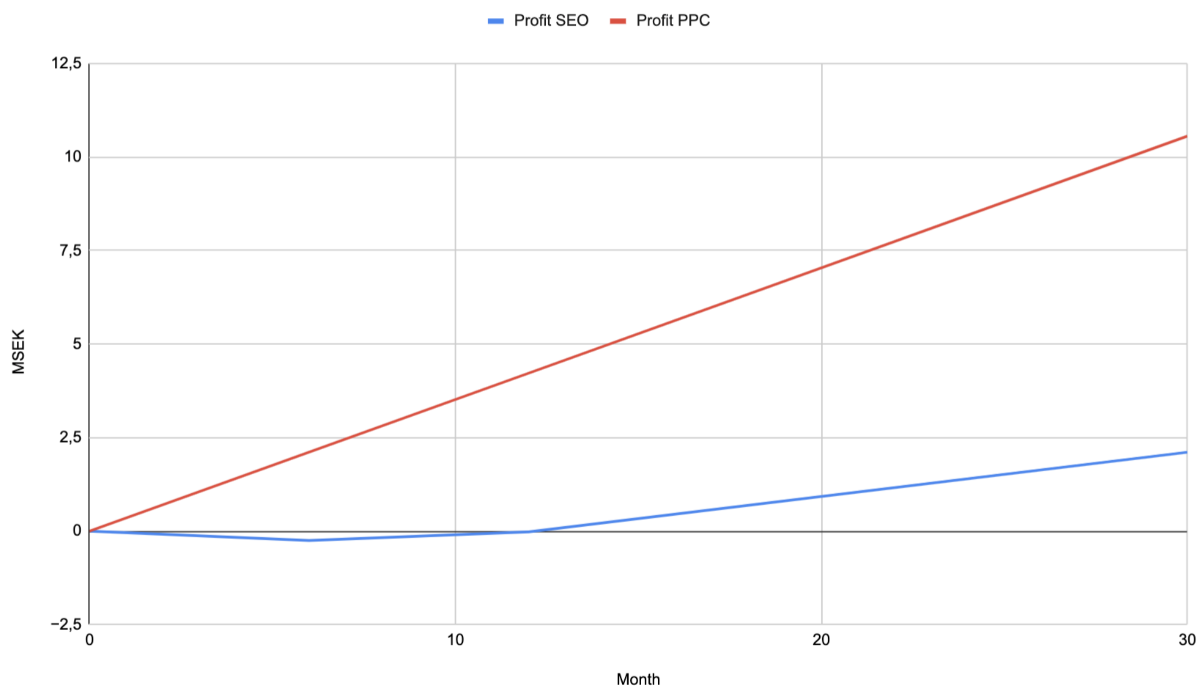

Figure 13. The results from the 24-month Willys marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. A break-even point never occurs as the profit of SEO never surpasses the profit of PPC.

5.3.2 48 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 7250 per month, and the estimated revenue is 326 250 SEK per month (see Attachment M).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 10 below.

Table 10. The results from the 48-month Willys marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	20140695,18	−7,21956488	5,480695183	14,66
12	19900669,44	−8,663477856	5,240669435	14,66
15	19660643,69	−10,10739083	5,000643688	14,66
18	19420617,94	−11,55130381	4,76061794	14,66
21	19180592,19	−12,99521678	4,520592193	14,66
24	18940566,45	−14,43912976	4,280566445	14,66

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 14 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

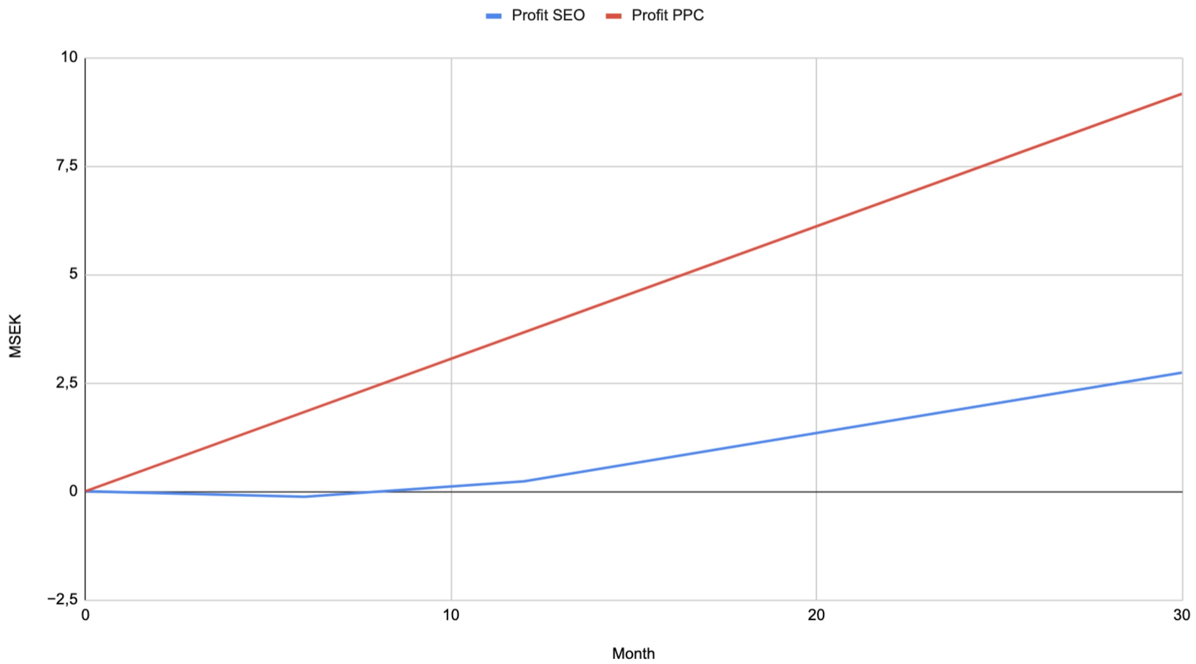

Figure 14. The results from the 48-month Willys marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. A break-even point never occurs as the profit of SEO never surpasses the profit of PPC.

5.4 Case 4: Media Markt Sweden AB

Media Markt expanded to Sweden in 2006 with the goal of offering a collection of home electronics in one place to make life easier for Swedish customers. Today, they are a prominent retailer of various brands in areas such as computers, telephony, TVs, white goods and games. With 29 department stores and 1,000 employees, they are one of Sweden's largest home electronics chains [71]. They operate with both physical stores and an online platform. While they have a strong offline presence, their online sales constitute a significant portion of their overall business, with a substantial number of customers purchasing electronic products through their website

Doing a keyword analysis for Media Markt Sweden AB following steps 2-8 in *4.4 Research steps and limitations* gives the results showcased in Table 11 below. For a detailed SERP ranking table see attachment N, and see Attachment O for the organic traffic analysis.

Table 11. The results from Google Keyword Planner tool, Ahref's Keyword Ranking tool and SimilarWeb's Keyword Analysis tool.

Input keywords	**Input website**
köpa tv, smart tv, dator, speldator, köpa laptop, tv	https://mediamarkt.se
Output keywords	
dator, gaming dator, datorskärm, datorer, datorskärmar, gamingdatorer, köpa tv, speldator, billig laptop, bärbar dator	
Output keyword list difficulty	
High	
Average SERP rank (see Attachment N)	4,5
Target SERP rank	1
Total organic traffic	81 445
Current traffic share (SERP rank 4,5/CTR 8%)	6516
Target traffic share (SERP rank 1/CTR 39,8%)	32 415
Traffic increase	25 899
Estimated revenue from SEO (SEK)	1,165 MSEK/month

5.4.1 24 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 15 916 per month, and the estimated revenue is 571 220 SEK per month (see Attachment P).

Using formula (3), (4) and (5) gets the following total profit, estimated ROI of SEO and PPC, break-even points and is presented in Table 12 below.

Table 12. The results from the 24-month Media Markt marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	34419666,18	19,45671663	18,23038618	16,18928
12	32671449,25	23,34805995	16,48216925	16,18928
15	30923232,33	27,23940328	14,73395233	16,18928
18	29175015,4	31,1307466	12,9857354	16,18928
21	27426798,48	35,02208993	11,23751848	16,18928
24	25678581,55	38,91343325	9,48930155	16,18928

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 15 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

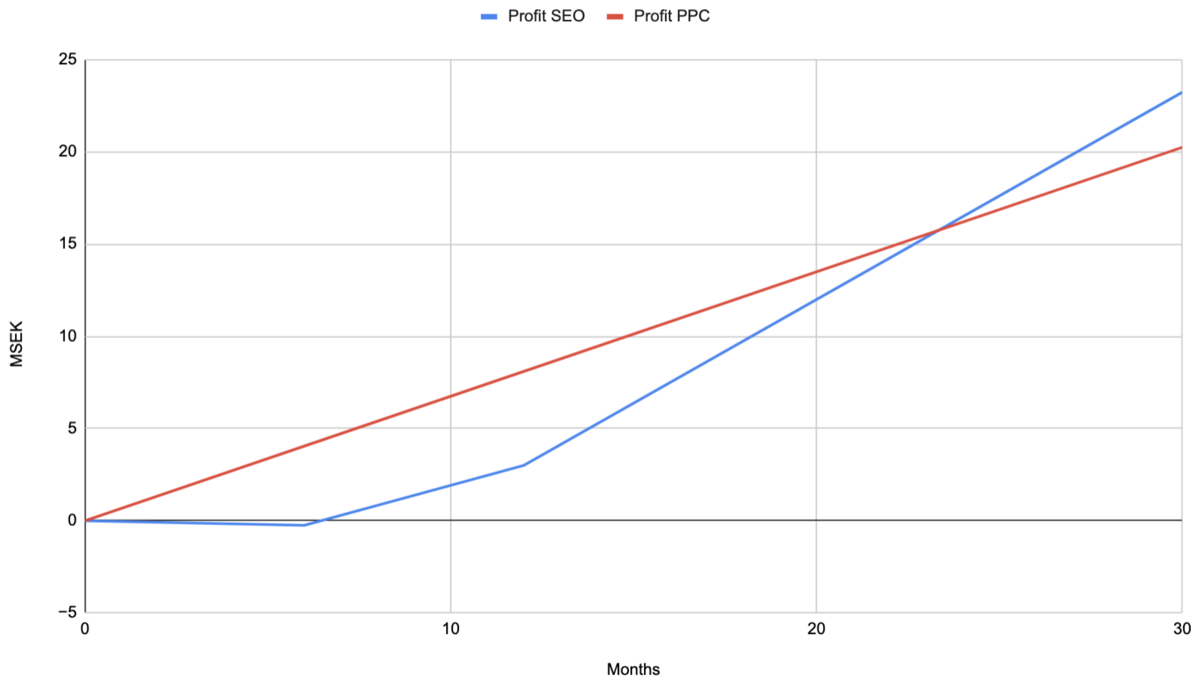

Figure 15. The results from the 24-month Media Markt marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 23,3 months.

5.4.2 48 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 11 750 per month, and the estimated revenue is 528 750 SEK per month (see Attachment Q).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points and presented in Table 13 below.

Table 13. The results from the 48-month Media Markt marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	70581856,98	13,72813087	46,20185698	24,38
12	68833640,05	16,47375704	44,45364005	24,38
15	67085423,13	19,21938322	42,70542313	24,38
18	65337206,2	21,96500939	40,9572062	24,38
21	63588989,28	24,71063556	39,20898928	24,38
24	61840772,35	27,45626174	37,46077235	24,38

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 16 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

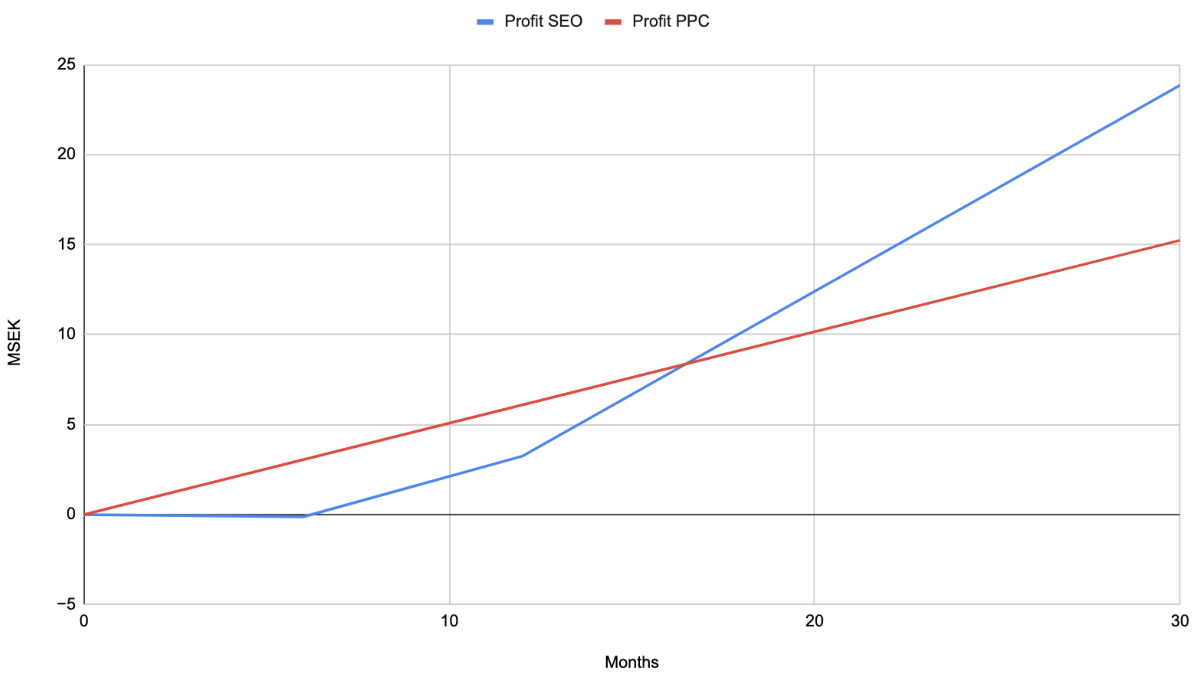

Figure 16. The results from the 48-month Media Markt marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 16,5 months.

5.5 Case 5: Kvdbil AB

Kvdbil is Sweden's leading digital player in used cars and sells approximately 26,000 vehicles annually. Their customers include private individuals, companies and authorities who both sell and buy cars through their platform. Before the cars are put up for sale by auction, they are tested, valued, photographed and described by Kvdbil. When it comes to selling a car, Kvdbil takes care of the whole deal. For buyers, they offer help with all paperwork as well as favorable car loans, guarantees and insurance [72].

Doing a keyword analysis for Kvdbil AB following steps 2-8 in *4.4 Research steps and limitations* gives the results showcased in Table 14 below. For a detailed SERP ranking table see Attachment R, and see attachment S for the organic traffic analysis.

Table 14. The results from Google Keyword Planner tool, Ahref's Keyword Ranking tool and SimilarWeb's Keyword Analysis tool.

Input keywords	**Input website**
köpa bil, begagnad bil, sälja bil, bil till salu	https://kvd.se
Output keywords	
köpa bil, begagnad bil, bilar, köpbil, köp bil, bil till salu, köpa begagnad bil, sälj din bil, beg bil, beg bilar	
Output keyword list difficulty	
High	
Average SERP rank (see Attachment R)	3,3
Target SERP rank	1
Total organic traffic	136 605
Current traffic share (SERP rank 3,3/CTR 10,2%)	13 873
Target traffic share (SERP rank 1/CTR 39,8%)	54 130
Traffic increase	40 257
Estimated revenue from SEO (SEK)	4,026 MSEK/month

5.5.1 24 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 36 167 per month, and the estimated revenue is 3,62 MSEK per month (see Attachment T).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 15 below.

Table 15. The results from the 24-month Kvdbil marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	66951538,9	73,81312218	28,8911789	38,06036
12	64234159	88,57574661	26,173799	38,06036
15	61516779,1	103,338371	23,4564191	38,06036
18	58799399,2	118,1009955	20,7390392	38,06036
21	56082019,3	132,8636199	18,0216593	38,06036
24	53364639,4	147,6262444	15,3042794	38,06036

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 17 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

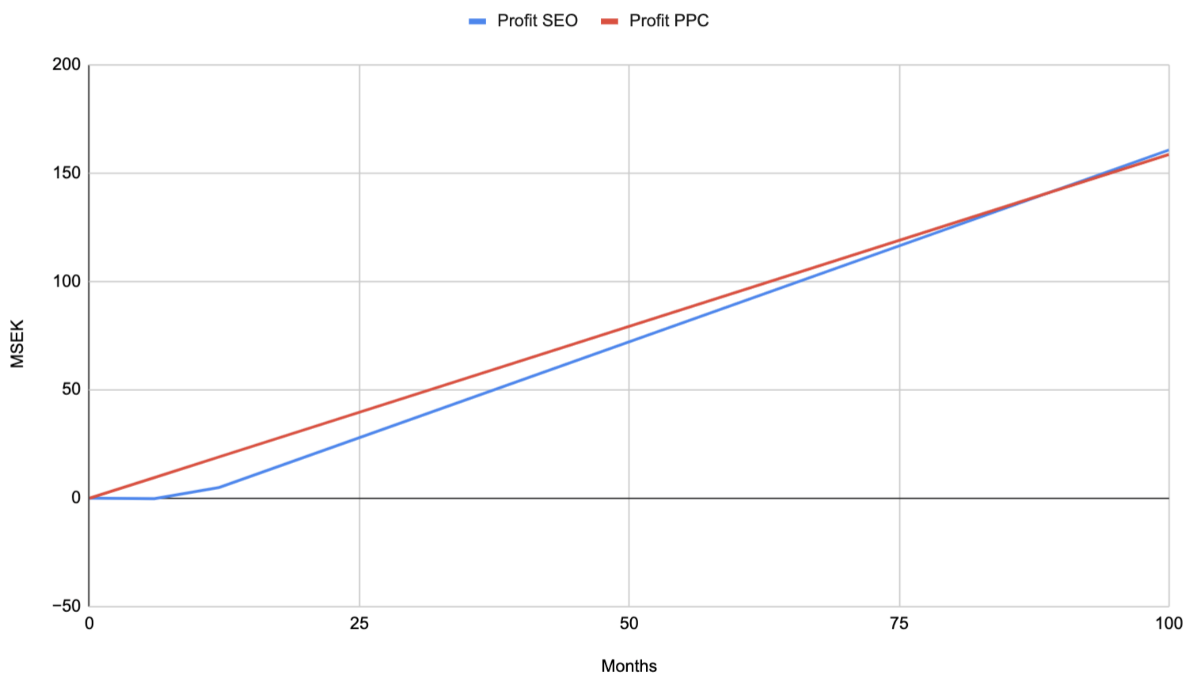

Figure 17. The results from the 24-month Kvdbil marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 88,7 months.

5.5.2 48 month campaign

According to Google Ads Forecast, the estimated amount of clicks from the 24-month campaign is 25 667 per month, and the estimated revenue is 2,57 MSEK per month (see Attachment U).

Using formula (3), (4) and (5) gets the total profit, estimated ROI of SEO and PPC, and break-even points presented in Table 16 below.

Table 16. The results from the 48-month Kvdbil marketing campaign.

SEO Goal time	Total profit (SEK)	Break-even (months)	ROI SEO	ROI PPC
9	126809977,3	20,69370576	72,3692573	54,44072
12	124092597,4	24,83244691	69,6518774	54,44072
15	121375217,5	28,97118806	66,9344975	54,44072
18	118657837,6	33,10992921	64,2171176	54,44072
21	115940457,7	37,24867037	61,4997377	54,44072
24	113223077,8	41,38741152	58,7823578	54,44072

The total profit of the two strategies for the case with a 12 month SEO goal time is presented in Figure 18 below. Note that the profit graph for SEO has three different slopes due to the fact that it does not have the same profit throughout the period (negative during implantation, positive during months 6-12 and the highest after month 12).

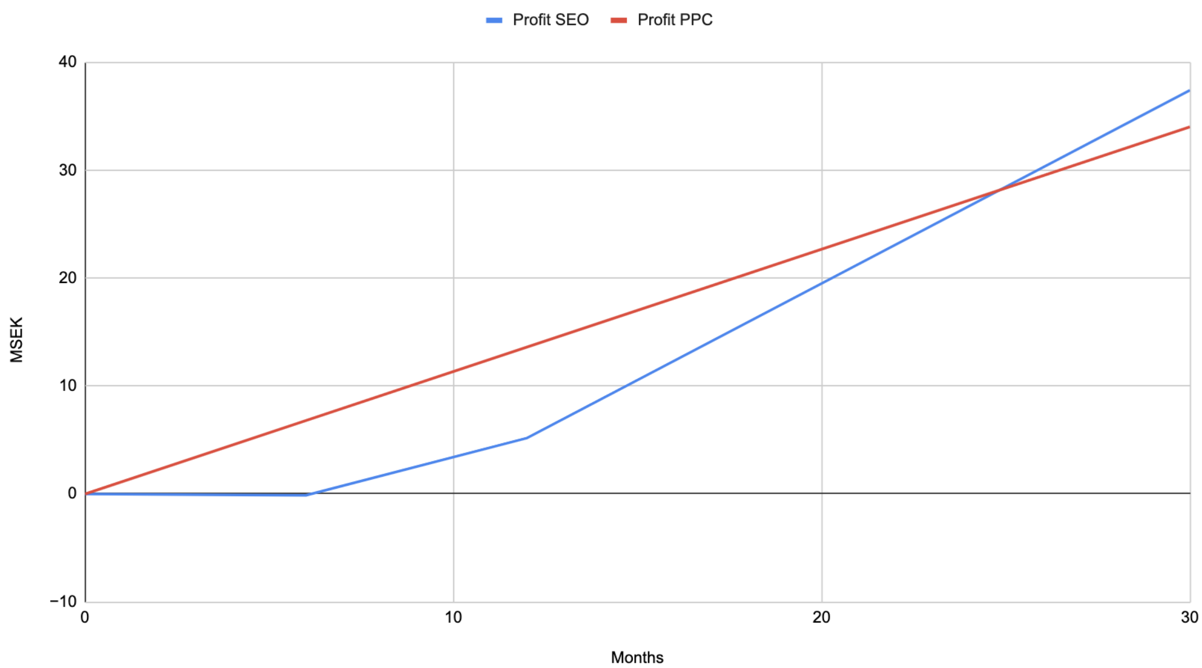

Figure 18. The results from the 48-month Kvdbil marketing campaign. The blue line represents the forecasted total profit of SEO in MSEK while the red line represents the forecasted profit of PPC. The intersection (break-even point) is at 24,8 months.

5.5 Summary

Table 17 below summarizes the different companies with a 12 month SEO goal time with a 24 and 48 month campaign for SEO and PPC. Noteworthy is that four out of the five companies (Sambla, Chilli, Media Markt and KVD) show a positive ROI for CEO while Willys have a negative one. By using formula (6), the critical budget is calculated.

Table 17. Showing the ROI of cases with a 12-month SEO goal and the critical month, traffic increase and budget if the other parameters are fixed.

Company	**Sambla**	**Chilli**	**Willys**	**Media Markt**	**KVD**
Industry	Finance	Furniture	Food	Electronics	Automotive
Difficulty	Medium	High	Med/High	High	High
Keyword traffic	236 575	432 810	46 181	81 445	136 005
Current SERP rank	12,6	5,4	8,5	4,5	3
Target SERP rank	4	2	2	1	1
SEO traffic increase	13 958	59 295	3 556	25 899	40 257
24-month campaign(s)					
ROI SEO (factor)	9,4	39	1,4	16,5	26,2
ROI PPC (factor)	9	23,8	8,5	16,2	38
Break-even month	22,2	14,7	-	23,3	88,5
Critical SEO traffic increase	9 250	23 000	8 750	15 916	36 167
Critical SEO budget (SEK)	1,51M	2,58M	406 400	1,63M	1,11M
48-month campaign(s)					
ROI SEO (factor)	23,5	103	5,2	44,5	69,6
ROI PPC (factor)	13,6	34	14,7	24,4	54,4
Break-even month	17,4	12,4	-	16,5	24,8
Critical SEO traffic increase	6 750	16 677	7 250	11 750	25 667
Critical SEO budget (SEK)	2,07M	3,56M	490 483	2,20M	1,57M

Table 18. Summary of mean values with a 12 month SEO goal time.

	24-month campaign	**48-month campaign**
Mean SEO ROI (factor)	18,22	48,2
Mean PPC ROI (factor)	19,1	28,2
Mean break-even month	30	14

6 Discussion

6.1 Result analysis

The results show that the projected ROI of SEO is affected by the keyword traffic volume, current SERP rank and SEO budget. When comparing SEO with PPC, the projected ROI resembles previous cases shown in Attachment A.

The ROI of PPC is not correlating with the keyword competition level, and the top keyword traffic volume between different sectors is notoriously different. However, previous research shows that it does affect the difficulty of SEO, which is why the ROI of SEO should be lower for higher competition levels.

As the ROI is determined by the revenue and costs, the ROI of SEO with a low traffic increase is compensated by higher conversion values. This can be the case for sectors with high price points and longer-term contracts such as the finance and automotive industries. However, when comparing the two strategies by calculating a break-even point, the CVR and CV does not affect the result.

While CTR is an important factor for a higher traffic share, it is evident that in some industries the brand impacts the traffic share even more (e.g. financial services where trust and recognition are more important). For example, analysis of the traffic volume for companies within the financial sector showed that the traffic share of SERP rank one was lower than for other sectors, which indicates that individuals value the brand higher than the SERP rank. However, previous analyses of the average CTR have repeatedly shown similar numbers, hence why the result of this study is considered an accurate forecast on a general basis. For specific companies operating within sectors where trust is an important factor, the ROI of SEO will be more difficult to project while the traffic increase (and ROI) should be lower in comparison to the general case.

The CPC of PPC is lower for higher budgets (see Attachment B). Hence, the larger the campaign (and higher budget per day), the more efficient is SEO in comparison. This should be taken into consideration when developing a comprehensive marketing strategy.

By gaining more organic traffic through SEO, a company can expect to create value not only by increased revenue but also by customer value, as the whole customer journey is without any sales pushes. This increases the satisfaction and welfare of customers.

6.2 Using this model in real cases

By using the SOSTAC model as a marketing strategy planner, the method and forecasting model developed in this study can be used to analyze, evaluate, forecast, and track SEO improvements. Within the SOSTAC framework, this specifically refers to the situation analysis (keyword, competition, and traffic analysis), objectives (which clients to target or products to sell), strategy (PPC and SEO marketing), tactics (forecast the ROI), and control (track the performance using analytical tools such as Google Analytics and Google Ads to adjust parameters such as budget, keywords and website implementation). It's important to monitor and adjust the PPC and SEO strategies based on historical data to optimize ROI. Data from such tools can also be used for customer profiling by using the Five Ps of marketing. Developing a marketing method based on customer insights will create value for both the company and the customer, as more relevant products and pages are displayed.

The critical SEO traffic and budget is directly connected to the estimated traffic increase. For the ROI of SEO to be higher than the ROI for PPC (and to reach a break-even point), it needs to have a lower CPC. In other words, the traffic increase needs to be higher for the same investment, otherwise the budget needs to be lower. This is with the assumption that the SEO traffic has a peak and that the company can continue to run the campaigns in eternity. By studying the critical traffic increase and budget, a company can re-evaluate the SEO strategy and potentially lower the budget or change their keywords to increase the ROI of SEO.

6.3 Future studies

This study does not consider an exponential return of SEO, as it probably affects the overall performance of the website and not only the improvement in regards to specific keywords. Neither does it take into account the lower costs of SEO-maintenance when the target is reached. Because of this, it is possible that the ROI of SEO is even better than the results in this study after the goal has been reached. Future studies should investigate how the optimization of specific keywords affects website SEO as a whole, and to which extent. It should also investigate how frequently the Google algorithm changes, and to which extent the company needs to perform SEO after a keyword optimization is completed.

Furthermore, with sources indicating that content SEO represents 25% of all SEO categories, it is possible that the price data used in this study is a high estimate if it in reality should include other optimization factors as well. This could mean even better SEO results (since the approximated costs would be lower in this study). Future studies should investigate the costs of improving a single SEO category, or involve them all when calculating a forecast. Since this study only investigates the ROI of content SEO, it is possible that a more comprehensive SEO campaign will perform better.

Another aspect to take into consideration is the combination of both SEO and PPC to increase the overall ROI. This study focuses on full commitment to both strategies at all times, but research says a combination of the two is the most common with a shift in focus to SEO at a later stage. This is obvious as SEO has a negative ROI during its early stages while PPC has a constant positive ROI. Therefore, it would be of interest to study a combination of the two strategies to investigate how a shift in focus (and budget) could give a higher overall ROI given the different budgets and timelines of the two.

In contrast to the ROI of PPC which is immediately provided by Google, the SEO ROI forecast developed in this study relies on limitations and assumptions. Because of this, it is highly speculative for specific cases without input data. However, as the model is built on previous statistics and widely acknowledged data, it can be used as a tool to forecast the ROI of SEO. To strengthen the reliability of the result, more companies and other industries should be included in future studies.

Further studies should also investigate the importance of brand awareness for different industries, and how it affects the CTR. By doing so, future researchers could use the same model with a weighing factor for different industries to get a more accurate result. This research has indicated that for industries such as the financing sector with a higher level of trust and lower level of price consideration, the brand plays a more important role. In other words, for industries with a higher price point and customer life impact, the brand is more important. However, even though this can affect the number one CTR negatively, a higher customer value could mean that SEO can still be equally or even more efficient than PPC.

7 Conclusions

In this study a model for evaluating the ROI of PPC and SEO marketing was constructed based on the SOSTAC Planning System and data taken from analytical tools and previous cases. The budget for both strategies was set to 1M SEK respectively over 24 or 48 months. For each case, the projected ROI of SEO was analyzed with a 9, 12, 15, 18, 21, and 24-month SEO goal time.

The research questions were:

- *What is the forecasted ROI of PPC and SEO marketing for 5 companies within different industries with approximately the same online presence?*
- *When is the projected break-even point for an SEO and PPC investment of equal scale in these cases?*

In all cases the ROI of SEO was positive, ranging from 3 to 54. For successful SEO campaigns, the projected break-even point between SEO and PPC was between 15 and 30 months. This happened when the SEO goal time was between 9 and 15 months. The critical month (where SEO has a lower total return than PPC) was between 50 and 70 months in the successful cases.

It is evident that SEO only performs better than PPC when the CPC is lower. This can be the case when:

- The current SERP rank is low (usually <4)
- The number one SERP rank has a high traffic share (usually 20%+)
- The CPC of PPC is high because of high bidding prices

In other cases PPC performs better because of a low PPC costs/already high SERP rank/low traffic increase - this has been shown to be the case for Willys where the estimated traffic increase didn't justify the SEO investment.

A company could improve the ROI of SEO by:

- Lowering the SEO cost per month
- Finding more relevant keywords with higher traffic
- Finding relevant keywords with a lower SERP rank
- Shortening the SEO goal time

The competition level does not have an impact on the ROI of PPC. Instead, the current SERP rank in comparison with the number one SERP rank has a higher impact/potential. If the traffic increase is low or the SEO cost is too high, this study has indicated that PPC is a better marketing strategy.

Built on the SOSTAC model, a company can use the forecast model developed in this study to evaluate the efficiency of SEO in comparison with PPC based on their current SERP ranking and estimated traffic increase. The model is best used for fixed budgets and timelines. Using the critical traffic increase and/or critical budget, a company can re-evaluate and adapt unsuccessful SEO campaigns.

Improving the search engine ranking and performing keyword optimization can not only increase revenue and company value, but also customer value as customers are exposed to more relevant content and products. A company can then track the customer search data to create customer profiles based on the Five Ps of marketing. These are insights that can be used for business development and even better customer targeting. This creates not only value for the company in terms of revenue, but also for the customer in terms of satisfaction and welfare.

Author's Declaration

The authors of this thesis have strived for a workload equality in terms of time and effort based on individual strengths. They used frequent digital and physical meetings to follow-up their work after the distribution of responsibilities throughout the study, which was made to increase the efficiency due to the limited amount of time. The authors have together reviewed, discussed and edited the full thesis together to remove any errors, and to ensure that all parts are fully aligned and complete.

Lastly, the authors wish to thank everyone that contributed to the success of this study, amongst those the opposing groups, supervisors and correcting teacher.

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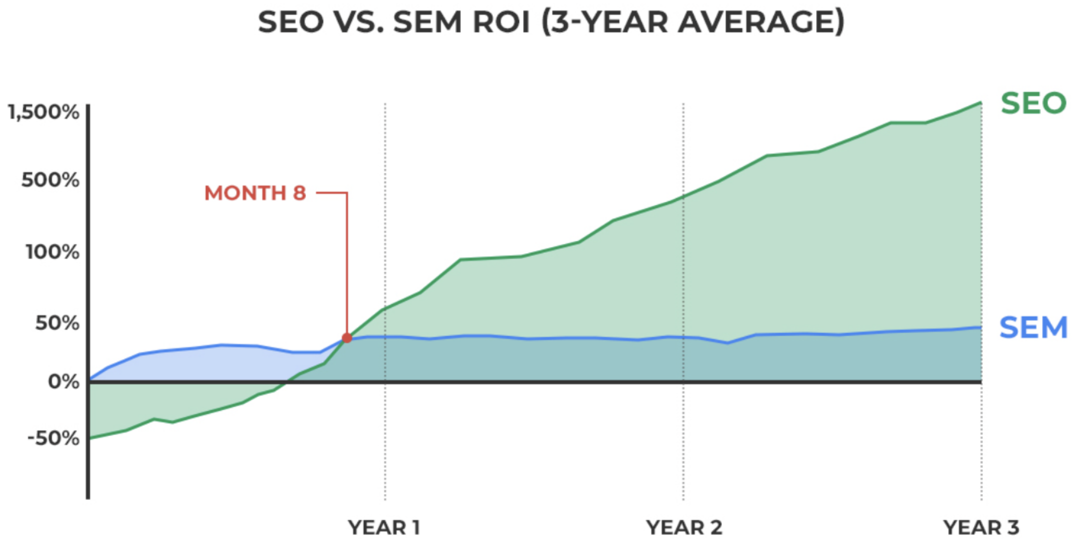
Attachments

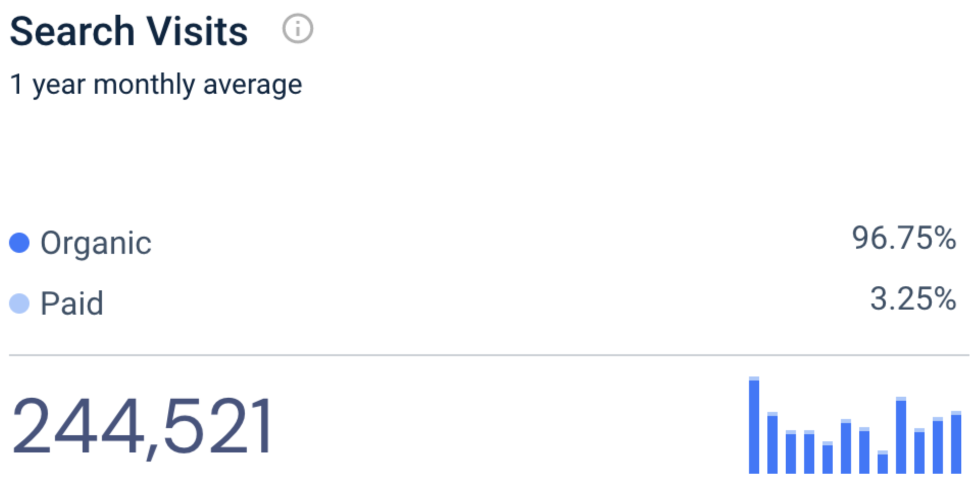
Attachment A. The average ROI of SEO and PPC [73].



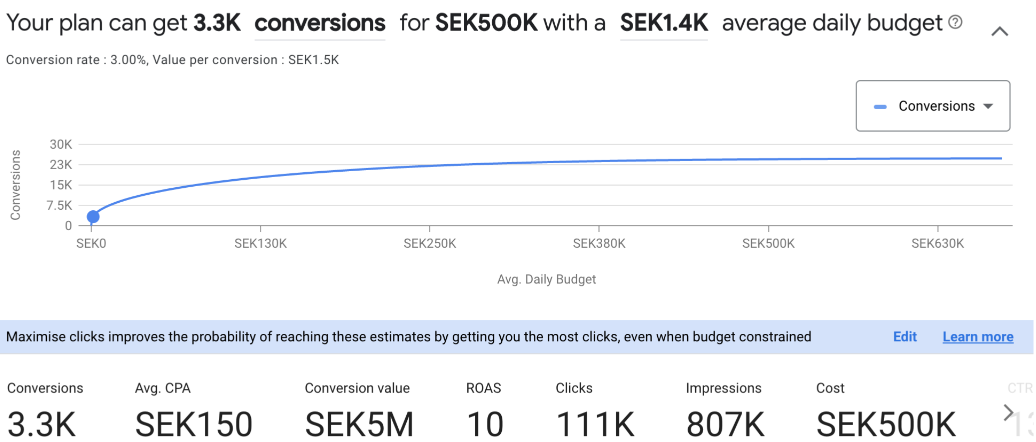
Attachment B. SERP ranking analysis for Sambla Group AB retrieved from Ahref's Keyword Rank Checker tool.

Keyword	**SERP rank**
lån pengar	6
lån utan uc	12
billån	10
blancolån	8
privatlån	2
låna pengar snabbt	22
låna pengar utan uc	17
privat lån	9
bil lån	11
snabblån	27
Average SERP rank	12,6
Target SERP rank	4

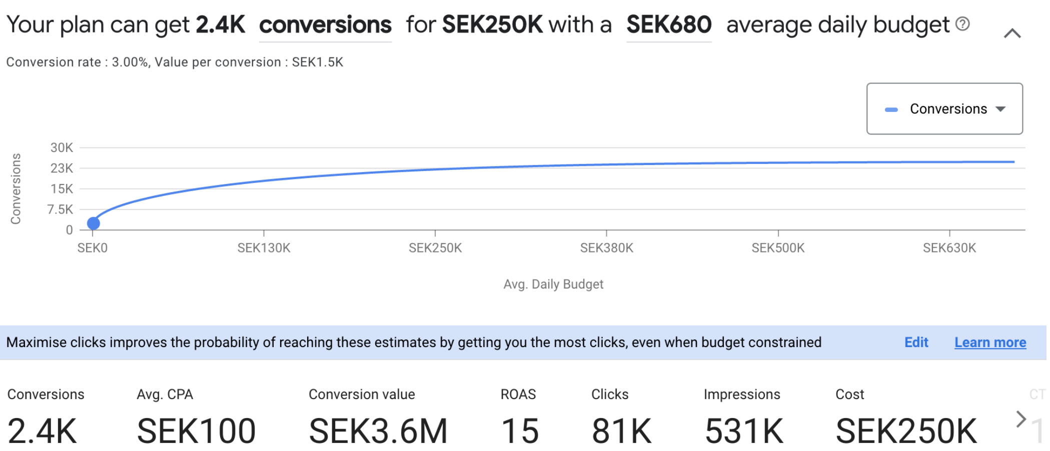
Attachment C. Keyword list traffic volume for Sambla Group AB retrieved from SimilarWeb's Keyword Analysis tool.



Attachment D. Google ads forecast (24-month campaign) for Sambla Group AB.



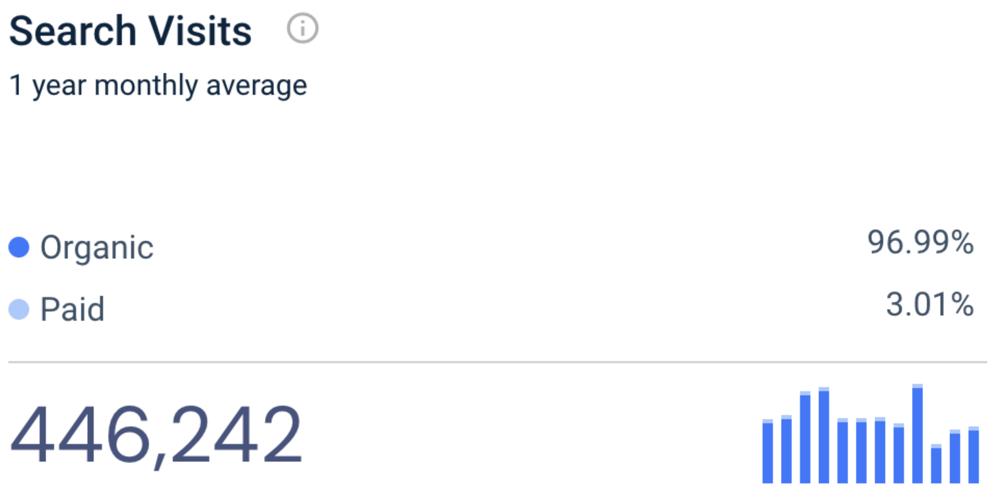
Attachment E. Google ads forecast (48-month campaign) for Sambla Group AB.



Attachment F: SERP ranking analysis for Chilli retrieved from Ahref's Keyword Rank Checker tool.

Keyword	**SERP rank**
bäddsoffa	6
fåtölj	6
hörnsoffa	3
hörnsoffor	7
möbler online	5
schäslong	3
soffa	3
soffor	8
bäddsoffa	6
barnfåtölj	7
Average rank SERP	5,4
Target rank SERP	2

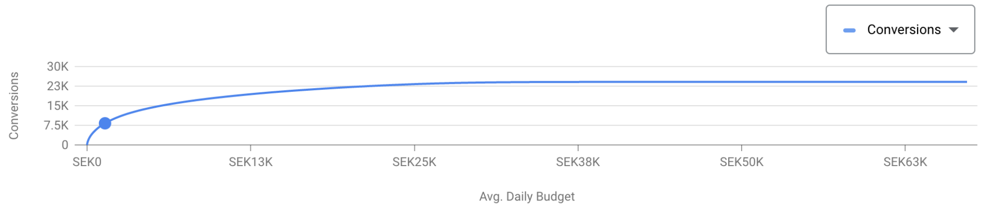
Attachment G: Keyword list traffic volume for Chilli retrieved from SimilarWeb's Keyword Analysis tool.



Attachment H Google ads forecast (24-month campaign) for Chilli.

Your plan can get **8.3K conversions** for **SEK500K** with a **SEK1.4K** average daily budget

Conversion rate : 3.00%, Value per conversion : SEK1.5K



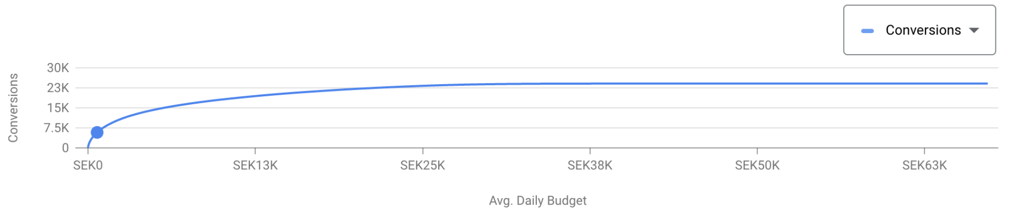
Maximise clicks improves the probability of reaching these estimates by getting you the most clicks, even when budget constrained Edit Learn more

Conversions	Avg. CPA	Conversion value	ROAS	Clicks	Impressions	Cost
8.3K	SEK61	SEK12M	25	276K	2M	SEK500K

Attachment I. Google ads forecast (48-month campaign) for Chilli.

Your plan can get **5.8K conversions** for **SEK250K** with a **SEK680** average daily budget

Conversion rate : 3.00%, Value per conversion : SEK1.5K



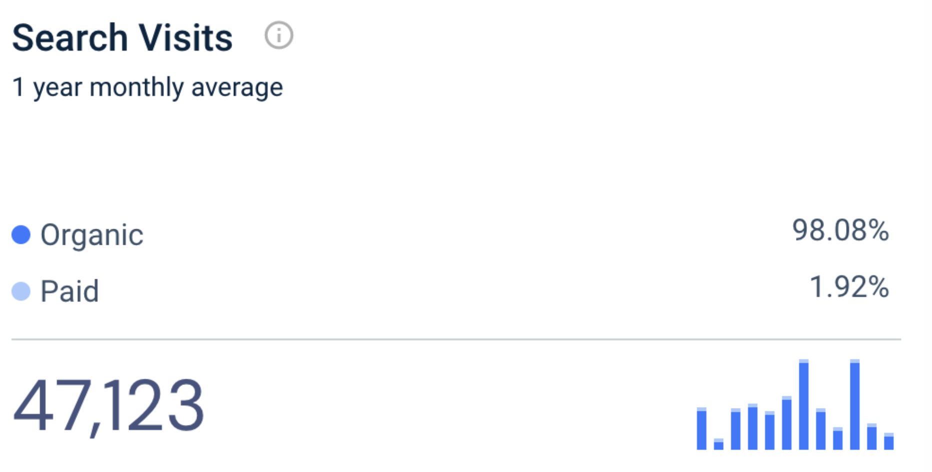
Maximise clicks improves the probability of reaching these estimates by getting you the most clicks, even when budget constrained Edit Learn more

Conversions	Avg. CPA	Conversion value	ROAS	Clicks	Impressions	Cost
5.8K	SEK43	SEK8.7M	35	194K	1.3M	SEK250K

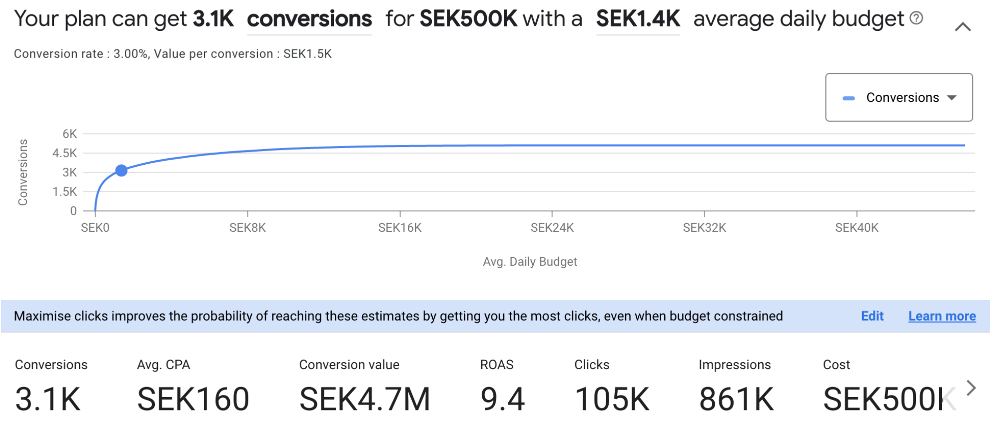
Attachment J. SERP rank analysis for Willy:s AB retrieved from Ahref's Keyword Rank Checker tool.

Keyword	**SERP rank**
handla mat online	8
mat online	7
billig mat online	9
billigast mat online	6
mat på nätet	9
beställa mat på nätet	14
billig mat online kort datum	5
köpa mat online	9
handla mat på nätet	9
billig mat på nätet	9
Average SERP rank:	8,5
Target SERP rank:	2

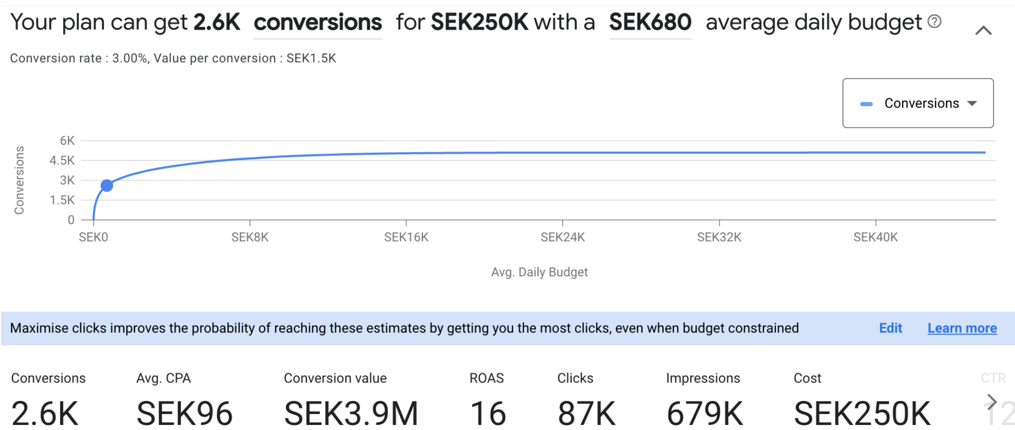
Attachment K. Keyword list traffic volume for Willy:s AB retrieved from SimilarWeb's Keyword Analysis tool.



Attachment L. Google Ads forecast (24-month campaign) for Willy:s AB.



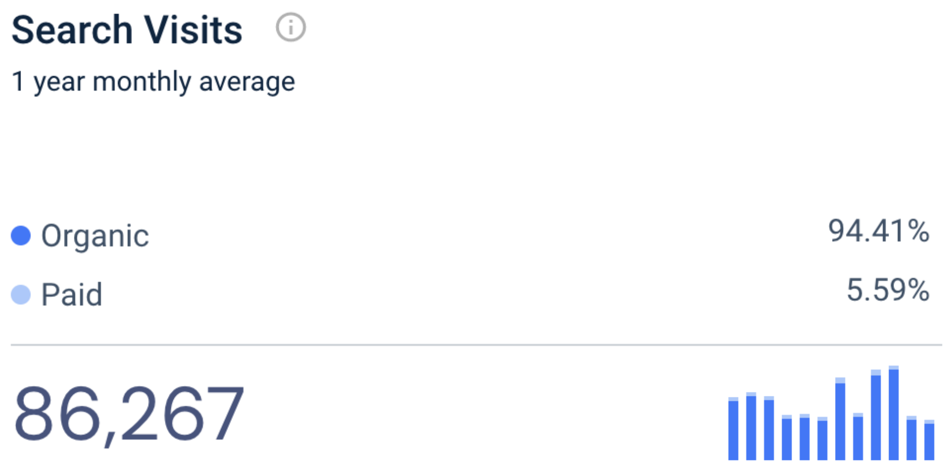
Attachment M. Google Ads forecast (48-month campaign) for Willy:s AB.



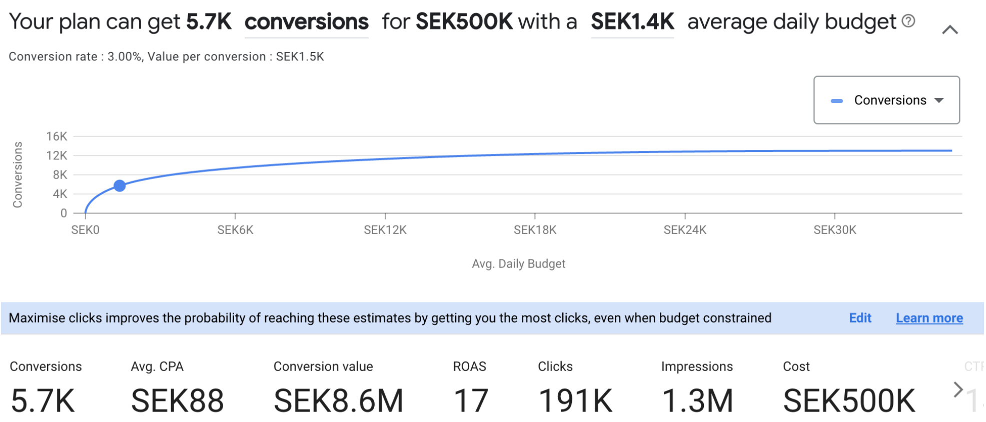
Attachment N. SERP rank analysis for Media Markt Sweden AB retrieved from Ahref's Keyword Rank Checker tool.

Keyword	**SERP rank**
dator	5
Gaming dator	4
datorskärm	4
datorer	3
datorskärmar	5
gamingdatorer	5
Köpa tv	5
speldator	7
Billig laptop	4
Bärbar dator	3
Average SERP rank:	4,5
Target SERP rank:	1

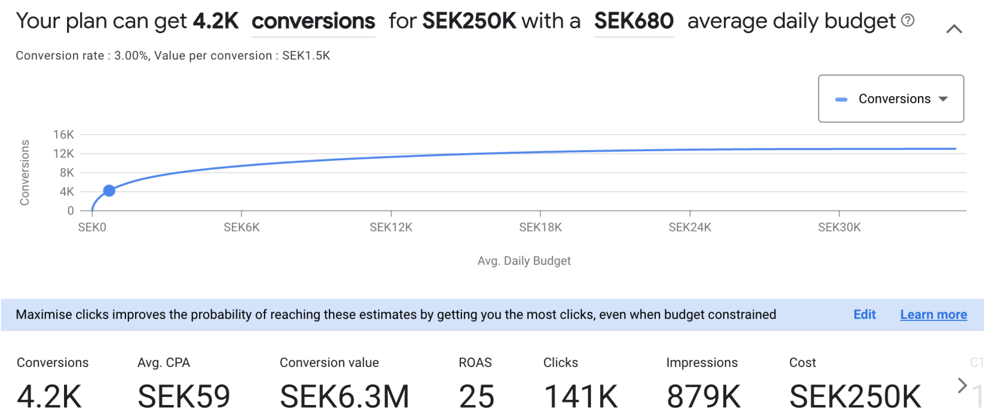
Attachment O. Keyword list traffic volume for Media Market Sweden AB retrieved from SimilarWeb's Keyword Analysis tool.



Attachment P. Google Ads forecast (24-month campaign) for Media Markt Sweden AB.



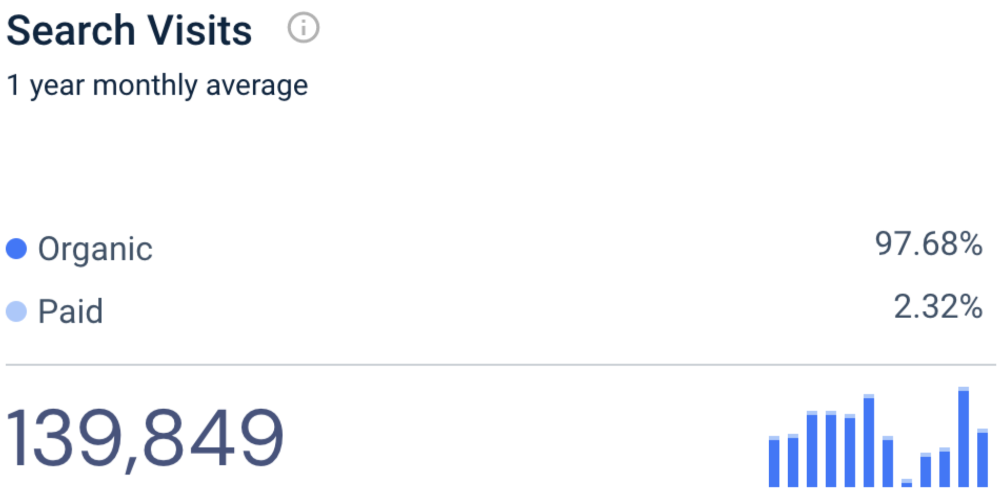
Attachment Q. Google Ads forecast (48-month campaign) for Media Markt Sweden AB.



Attachment R. SERP rank analysis for Kvdbil AB retrieved from Ahref's Keyword Rank Checker tool.

Keyword	**SERP rank**
köpa bil	2
begagnad bil	2
bilar	3
köpbil	4
köp bil	4
bil till salu	7
köpa begagnad bil	2
sälj din bil	2
beg bil	5
beg bilar	2
Average SERP rank:	3,3
Target SERP rank:	1

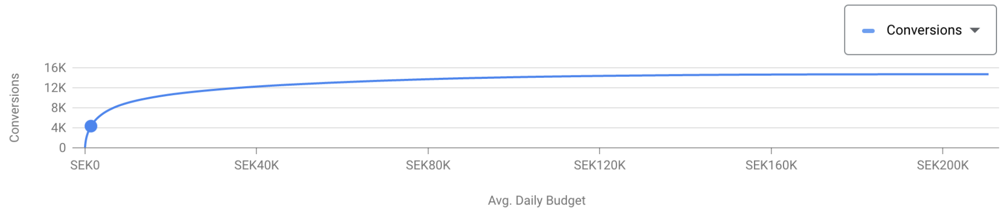
Attachment S: Keyword list traffic volume for Kvdbil AB retrieved from SimilarWeb's Keyword Analysis tool.



Attachment T. Google Ads forecast (24-month campaign) for Kvdbil AB.

Your plan can get **4.3K conversions** for **SEK500K** with a **SEK1.4K** average daily budget

Conversion rate : 1.00%, Value per conversion : SEK10K



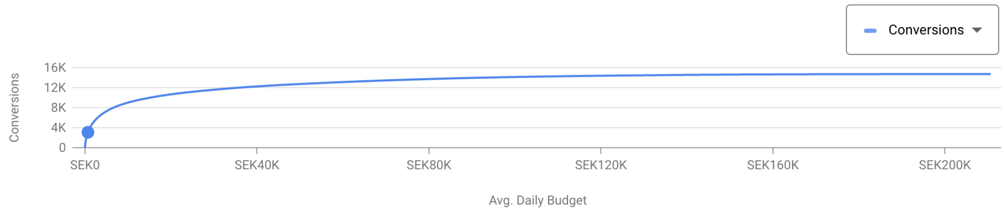
Maximise clicks improves the probability of reaching these estimates by getting you the most clicks, even when budget constrained Edit Learn more

Conversions	Avg. CPA	Conversion value	ROAS	Clicks	Impressions	Cost
4.3K	SEK120	SEK43M	86	434K	2.2M	SEK500K

Attachment U. Google Ads forecast (48-month campaign) for Kvdbil AB.

Your plan can get **3.1K conversions** for **SEK250K** with a **SEK680** average daily budget

Conversion rate : 1.00%, Value per conversion : SEK10K



Maximise clicks improves the probability of reaching these estimates by getting you the most clicks, even when budget constrained Edit Learn more

Conversions	Avg. CPA	Conversion value	ROAS	Clicks	Impressions	Cost
3.1K	SEK81	SEK31M	124	308K	1.5M	SEK250K