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## Article

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## International Journal of Technology for Business (IJTB)



### How Amazon's E-Commerce Works?

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#### Abstract

The following article will cover the phenomenon of Amazon and one of the keys to its success: the simplicity with which users can access to what they are interested in. The paper discusses the function of the algorithm now used by Amazon (A9). On the basis of the operation of the Amazon algorithm, the elements to focus on to increase sales on an e-commerce site are addressed. Through research and assessing material and consultation with multiple sources the paper analyses one of the biggest companies of our times, as well as a successful example of e-commerce: Amazon. In summary the paper examines how Amazon's platform manages to organize its vast marketing network with a click of a button. Furthermore, the paper focuses on the process that allows Amazon to understand what and how to sell, through an algorithm, giving tips and providing support to help both the seller who uses Amazon as an intermediary and customers.

*Keywords:* Amazon, Algorithm, Ranking, E-commerce, SEO

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#### 1. Introduction

Amazon was founded on 5 July 1994 by Jeff Bezos who, after quitting his job, wanted to set up his own business based on the Internet phenomenon. Initially Amazon had a list of 20 types of products potentially suitable for this type of activity, and then restricted the field to 5 and finally decided to focus on the sale of books, guaranteeing the availability of delivery wherever the customer wants. Although Bezos had understood the potential of the internet. He chose Seattle as an area for Amazon.com headquarter by taking advantage of its proximity to a large Oregon book distribution centre. It focused on raising funds to better launch the company and worked with developers to build a website and e-commerce with simple interfaces that are suitable for every possible type of customer.

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Amazon.com launched on the web, obtained the first major loans, after 2 months of activity. The concept was that one can order books with just a few clicks, pay them by credit card and receive them in a few days. Amazon soon became a very popular site and started selling other product categories: in addition to books, i.e., music, video, electronics, video games, software, housewares, toys, clothing and much more. In 1997 Amazon entered the stock market, the website was improved and further simplified and a distribution centres were created on the east coast in order to better manage the large volume of orders and shipments in those areas (Brandt, 2011)

In 1998 Amazon.com acquired Bookpages and Telebook both were among the largest online book retailers in the United Kingdom and Germany; and in 1999 launched the new online auction service "Amazon Auctions". In the same year Jeff Bezos was named "character of the year" by Time magazine for the success he achieved. In 2000, he started a new service that allowed everyone (small businesses and individuals included) to use the portal to sell their products (Business Insider, 2020).

### *1.1 Algorithm in general and computer science*

An algorithm is nothing more than a simple procedure that attempts to solve a certain problem by applying a certain number of elementary steps, i.e., applying a finite sequence of precise instructions which, in turn, must be interpreted and executed up to their conclusion following a very specific order (Ledford, 2015).

### *1.2 Keywords*

Algorithm requires keywords. These are the secret weapon by which all the best methods of SEO (Search Engine Optimization) works. These so-called keywords are the online communication glue and allows a website to be tracked by search engines and graded in relation to their potential user analysis usefulness. The key words, in addition, are not just the words that the end user searches for a product or service types on search engine such as Google but they are the central component of a company's entire interaction that needs to be showcased to its market. A keyword consists of one or more words to which a particular meaning is associated. The more general a keyword is, or the closest it gets to a given and restricted requirement, the more it will be dependent on the possible traffic that can be accessed. Following are some simple examples of keywords, very generic keyword: cake; generic keyword: birthday cake; specific keyword: chocolate birthday cake with strawberries.

Keywords can also be used to geolocate to increase a search's effect. The keyword's aim is to put the operation into touch with the search engine's algorithms in order to achieve a specific place in its performance. Therefore, the keyword helps to announce to the world that the site offers a certain product. The key words that define the website plays an essential role. Using keywords involves integrating these terms (and their variants) into a myriad of websites, reports and content, providing end-customer information and also placing incentives within the results of the search engine. Therefore, the keywords are a bridge of communication between the webpage and end user, whose vehicle is the search engine that uses these keywords to present them. Keywords are one of the main factors that Amazon uses to assess the importance of search queries and thus set rankings on its results pages. Therefore, it is crucial to choose the right keywords for a listing to succeed on Amazon.

## **2. Materials and Methods**

The article is based on analysis of secondary data sources and the author's own experience of working in the industry sector; consultation; attending numerous conferences and seminars. The data has been analyzed to interpret the results.

### 3. Results and Discussion

#### 3.1 Introduction to the Amazon algorithm

Up to 50% of online transactions in the U.S. take place on Amazon. The ecommerce company keeps growing its market share across a multitude of product categories. Nonetheless, both label makers and retailers struggle to understand the factors that affect how their goods are accessible to millions of users shopping on Amazon. On August 9, 2010, in collaboration with CPC Strategies, Search Engine Journal organized a Marketing ThinkTank webinar to dispel common misconceptions and answer questions about Amazon SEO. Pat Petriello, Head of Business Strategies at CPC Strategy, unpacked Amazon's A9 search engine rating algorithm and variables impacting the competitiveness of every company on the biggest business in the world. Following is an overview of the webinar:

- A9 is the organic product rating algorithm for Amazon, which consists of direct and indirect variables used to align the search queries of consumers to items they are most likely to buy.
- According to Amazon: 70% of Amazon consumers rarely navigate through the first search results page.
- 35% tap on the first item listed on the search page for Amazon shoppers.
- 64% of clicks account for the first three things shown in search results.
- On the first page of search results, 81 percent of searches are on products.

Learning how the A9 algorithm operates and what it takes to be on the first page of the results pages of Amazon's search engine is really important to boost revenue for any company. The A9 algorithm is the method that Amazon uses to determine the classification of items in the search results. It is similar to the algorithm used by Google for its search results, because it uses keywords when determining which results are most important to the search and therefore which results will be shown first. There is one key difference, though, between the algorithms of Google and Amazon: the A9 algorithm still puts a strong emphasis on transaction converts. That is because Amazon is a corporation with a stake in marketing products that are more likely to result in sales. Amazon will therefore rank more strongly listings with a strong sales record and a high conversion rate (Treccani IT, 2020; Search Engine Journal, 2020). Among the SEO factors to optimize for positioning on Amazon are:

- keywords
- CTR
- review
- sales
- performance of the pages
- factors off-page

#### 3.2 Understanding Amazon SEO and the Amazon ranking algorithm (A-9)

Amazon SEO means optimizing product listings to appear at the top of the Amazon search results (for all relevant keywords). Just like on Google, buyers on Amazon enter a keyword to find what they are looking for and just like on Google, users mainly click on the first few results and rarely click on a product on the second, third or any further page. If someone is selling on Amazon, this means that the rankings on Amazon are the most important success factors for their business: The higher one rank, the more the chances of selling. If someone ranks on page 3 or lower, it's unlikely to sell anything. On top of that, more than 66% of shoppers now start their search for new products on Amazon. The ranking of a product is determined by an algorithm called "A9" (shorthand for "algorithm").

With millions of products to choose from, buyers perform hundreds of millions of search queries on Amazon every month. For every single search query, Amazon needs to decide within a few milliseconds which one of the hundreds of millions of products it will show on ranking position number 1, number 2, etc. Which factors does Amazon take into account to solve this very complex challenge? Amazon ranks products based on purchase likelihood. Three parties come together on Amazon: A buyer, a seller, and Amazon. Shoppers come to Amazon for only one reason: they want to buy. This searcher intent represents an important contrast to the mechanics of Google. When a user types “iPhone” into Google, it’s unclear what this user is looking for. The user might want to buy an iPhone, but also might be just looking for an image of an iPhone to use in a presentation. On Amazon, there is only one intent behind every search query: buying the product. Sellers, on the other hand, also use Amazon for one reason only: they want to sell. Finally, Amazon wants to generate revenue, but Amazon will only make money if a sale takes place (Amazon receives a 15% commission from a seller or collects the margin from a vendor). Figure 1 illustrates the concept.

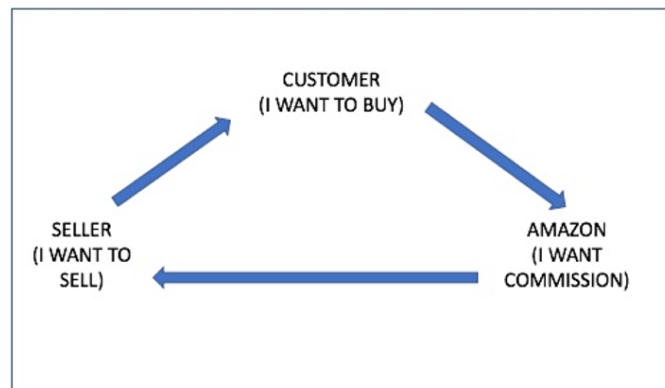


Figure 1. Amazon business model

Amazon’s goal, therefore, is to build an algorithm that increases the number of transactions. To achieve this, Amazon places the product that shoppers are most likely to buy on rank 1, the second most likely on rank 2, and so on for every single search query. In other words, Amazon has to rank all products by purchase likelihood. Keywords and performance determine Amazon rankings and purchase likelihood. Purchase likelihood appears to happen within seconds for the user, but behind the scenes, the verification of purchase likelihood is a very complex challenge. There are hundreds of millions of products and hundreds of millions of search queries. The purchase likelihood of a product varies for every search query. For example, an iPhone might have a very high purchase likelihood for the search query “iPhone”, but the same iPhone will have a very low purchase likelihood for the search query “smartphone”. Amazon has to determine the purchase likelihood not just for every product, but for every combination of product and search query. To tackle this challenge and rank products, Amazon follows a two-step process:

**STEP 1:** Keywords determine if the product ranks on Amazon. In the first step, Amazon filters out all products that are not relevant for the customer search query by looking at the keywords. If a product does not contain all keywords of the search query, it cannot appear in the search results. This step is important because it drastically reduces the number of products that Amazon needs to sort by purchase likelihood.

**STEP 2:** Performance determines how high a product is ranked on Amazon. In the second step, Amazon determines the purchase likelihood for the remaining products and ranks them in a specific order. To do this, Amazon looks at the performance of the products. Performance is measured by CTR (click-through-rate in search result), CR (conversion rate on the product page), and sales. These are significant Key Performance Indicators (KPIs) for Amazon as they represent the steps that users need to take to buy a product. Amazon looks at these KPIs on a keyword-specific level. An iPhone, for example, will have different CTRs, CRs, and sales for the keywords “iphone” and “smartphone” (Sellics, 2020). Figure 2 summarizes the concept. This process and strategy can form a self-perpetuating flywheel between rankings, sales, and marketing initiatives that improves the sales.



Figure 2. Relation between marketing and sales in Amazon

### 3.3 How to create optimal content for Amazon listing

Amazon functions as a regular search engine and optimizing the content will increase the search results clickrate (CTR) and conversion rate (CR) on the product page. All CTR and CR are boosting sales and thus increasing the ranking (Figure 3). PPC measures and other marketing measures that generate traffic to a product page will be more successful if they optimize the content of the product in their core. Therefore, the optimization of all these product pages is always the most important step for positioning on Amazon (Sellics., 2019).

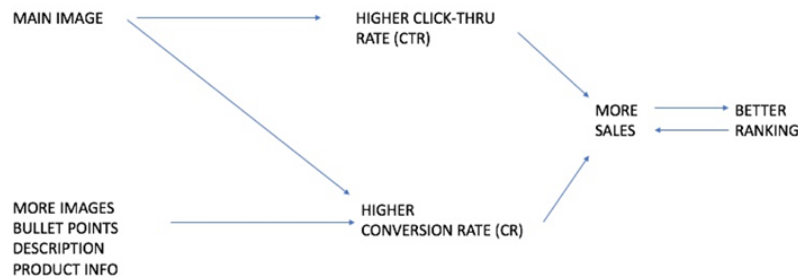


Figure 3. Relation between image and sales in Amazon

As Figure 3 shows, if the images of the products and their copies are improved, it is likely to improve the positions in the rankings. To brand-registered retailers and suppliers, respectively, Amazon Enhanced Brand Content and A+ Content are expanded content capabilities. Such improvements will give a significant graphical upgrade to the standard product description page with different layouts and an easy-to-use web platform to generate compelling texts and colorful images. Improved material helps to answer the questions of customers in a more definitive and engaging manner. Therefore, strong improved content could lead to a better conversion rate, higher sales, and lower returns. According to Amazon, improved content by a lower conversion rate could increase the revenue by 3-10 percent (Stone, 2019).

## **4. Conclusions**

The purpose of this article is to describe the path of a small peak, that had started from the sale of online books alone and had managed, over time, to become one of the greatest powers of global e-commerce, i.e. Amazon. The first factor that defined the success of the company is the vision of a great entrepreneur and visionary, like Jeff Bezos, who started in the right moment and owned diffusion of internet and e-commerce. He managed to enter the market in a smart way, without hesitating and focusing on short-term goals. Mainly, he always re-invested.

The second factor behind this company's prosperity is the research part, that focuses on innovation and the perfection of what is already available. As described in our article, there are many "captured" customers, but it is well known that in this type of market, the competition is high. Everyone tries to copy from the best platforms, to steal the keys to success. That is why the only way to survive in this type of market is by being a step ahead from others. This concept of continuous development is widely applied by Amazon (as described through the transition to a new algorithm) and this has allowed this company to become the first in the world in e-commerce, creating a real stable market monopoly. The third factor is certainly the differentiation of products and the introduction of the new services to customers, as to improve not only the offer but also the quality of the service. Customer satisfaction is fundamental to Amazon's success since only with a good chunk of customers can high profits be maintained. Furthermore, Amazon pays to intermediary sellers, who use the website. Amazon gives the opportunity to anyone who is able to create their own online store, not by opening another e-commerce site, but by exploiting the potential that amazon offers, as well as allowing to reduce costs in exchange for a percentage on sales. Although Amazon earns on sales but also offers services to increase them, thus allowing advantages both for itself and for the seller.

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