

# Characteristics of the digital marketing advantages and disadvantages

S S Veleva<sup>1\*</sup> and A I Tsvetanova<sup>2</sup>

<sup>1,2</sup> Faculty of Management, Technical University of Sofia, 8 Kliment Ohridski Blvd., Sofia, Bulgaria

\*E-mail: s.veleva@tu-sofia.bg

**Abstract.** Digital marketing is an integral part of the process of digital business transformation. It incorporates new marketing techniques that are based on information and communication technologies. For this reason, its application in practice is a prerequisite for the successful development of the business in the contemporary market conditions. The object of this paper is the digital marketing and the subject is the digital marketing advantages and disadvantages. The first purpose of this paper is to systemize the various terms for digital marketing used in the specialized literature and the Internet and to show the differences between them. The second is to present the characteristics of the main advantages and disadvantages of digital marketing. Knowing them in depth, companies will be able to develop effective digital marketing strategies that have high potential to achieve company goals and at the same time are suitable to their profile. Thereby, they will be able to determine to what extent and which tools of the whole digital marketing palette are best suited to their marketing activities.

**Keywords:** digital marketing; strategies; organization; Internet; information; communication; technology; advantages; disadvantages.

## 1. Introduction

The emergence of new dynamic business models as a result of the globalization of markets and the rapid development of technics and technology have completely changed the environment in which the business operates, making it extremely volatile, highly competitive and uncertain. This new business reality poses serious challenges for companies. To be able to survive and achieve high economic results and competitiveness, a complete restructuring of development strategies and transition to digitalization of their activities is required. The digital technologies and the opportunities that they create are the main drivers of business and gradually shift the traditional methods, approaches and tools for performing different business activities in each functional area in the management of organizations. Their practical application allows:

- to create more opportunities for diversification and personalization of products and services;
- to achieve a higher degree of efficiency in the collection, processing, analysis and interpretation of the data needed for the implementation of various business activities;
- to create greater transparency of business processes;
- to create new diversified tools for attracting and engaging customers in order to achieve a higher level of customer loyalty;



- to improve customer service and, on that basis, to achieve a higher level of customer satisfaction;
- to increase sales revenue and profits;
- to create new business models;
- to shorten the time to market for the new products and services;
- to create prerequisites for better planning and management of the businesses;
- to improve the quality of products and services;
- to control resources more effectively;
- to create cost optimization opportunities;
- to improve production processes;
- to create more innovation;
- to create an innovative culture and increase competitiveness.

It is also important to note that the Internet environment has certain characteristics that have a very strong influence on marketing activity. Among them are:

- it provides unlimited communication space in time and space;
- has clearly defined access channels;
- provides high degree of market transparency and transparency in the actions of competitors;
- presents a wide variety of active users who are willing to bear some costs;
- provides high efficiency for clients;
- provides opportunities for extending functions and improving management systems.

In the view of the above, we can say that this turbulent technological wave has completely changed the way in which communication between companies and their real and potential customers is carried out. According to recent data, over 75% of consumers spend a significant part of their daily lives in a digital environment, and it becomes an important part of their lives, thus becoming their true friend when choosing companies, products and services. The IAB survey shows that 100% of internet users in Bulgaria have searched online for their future purchases, while in the European Union this percentage is 96%. This eloquently demonstrates the decisive role of the Internet in brand choosing. 51% of internet users in Bulgaria say that the internet helps them choose better products and services [1, 2]. All these changes in the market conditions as well as in the everyday life of consumers are leading to the formation of a new direction in marketing, namely "digital marketing".

The object of this paper is the digital marketing and the subject is the digital marketing advantages and disadvantages. The first purpose of this paper is to systemize the various terms for digital marketing used in the specialized literature and the Internet and to show the differences between them. The second is to present the characteristics of the main advantages and disadvantages of digital marketing.

## 2. Methods

For the purpose of this paper different literature sources related to digital marketing are analyzed: articles; papers; publications in various media; Internet platforms; data from different Bulgarian marketing agencies.

## 3. Results and Discussion

### 3.1. Digital Marketing

Digital marketing is an integral part of the process of digital business transformation. It is made up of new marketing techniques that are relevant to the current market situation, which are based on information and communication technologies. With the help of digital marketing, businesses have access to more effective customer relationship management tools and provide higher customer satisfaction. These tools are characterized by interactivity and mobility, and at same time people are very close to them and understand them very well, therefore they could meet their needs concerning

the seek of information and its perception. They help to implement the marketing strategies of the companies more effectively and are the bearer of traditional marketing principles, which aim to increase sales revenue, respectively profit, and to achieve a higher level of customer satisfaction.

In order to be more specific about the nature of digital marketing, we must first systematize the various terms used in the specialized literature and the Internet to name this new direction in marketing. Some authors have adopted the terms "digital marketing", "internet marketing", online marketing, web marketing, email marketing, e-marketing and marketing 4.0. as an interchangeable terms and do not make a significant difference between them. Certainly, these terms are similar in content and affect the same subject matter, but nevertheless each of them carries different nuances. The main difference between them is the tools for marketing activities that they focus on. Generally, based on different opinions of the authors, we can divide these terms into two main groups, Table 1.

The terms from Group 1 are more complex and with a wider aspect of meaning. They include marketing activities of the organization that are carried through various digital channels. It is specific for them of being an integral part of the overall marketing strategy and of using not only new, but also traditional techniques and tools for its implementation.

The terms from Group 2 have a very close to the terms from Group 1 meaning, but they only focus on interacting and attracting the attention and interest of the users, based on the opportunities offered by the Internet environment [3, 4].

For the purposes of this paper, the term "digital marketing" is used because, as mentioned above, it has the most complex character and also includes in self all other terms.

**Table 1.** Basic terms

<b>Basic terms</b>		
<b>GROUP 1</b>		<b>GROUP 2</b>
<b>digital marketing marketing 4.0.</b>	digital marketing internet marketing online marketing WEB marketing email marketing E-marketing Marketing 4.0.	<b>internet marketing online marketing WEB marketing email marketing E-marketing</b>

Many definitions exist in the literature and the Internet about the nature and importance of digital marketing. According to Chaffey, digital marketing is the use of information and communication technologies to support marketing activities in order to better meet consumer needs [5]. According to other authors, digital marketing represents the achievement of an organization's marketing goals through the use of digital technologies [6]. A group of CISCO specialists provide the following working definition: digital marketing is a complex of philosophy, strategies and tools for information-marketing activities and interaction with computer networks, enabling market research, as well as the transport, sale and purchase of goods, ideas and services [7]. Other authors have described digital marketing as "product/service positioning and organizations positioning through different types of electronic media", stating that the main differences between this type of marketing and traditional marketing are the better ability to measure and analyze the campaign results [8-11]. According to Chaffey, Charlesworth, and Chris, digital marketing is made up of two main components: Internet marketing and marketing in non-digital channels [4, 5, 12].

Analyzing the various definitions of the authors on the nature and content of digital marketing, it is evident that, despite their great diversity, the concept of tools is central to almost all of them. These tools are used to implement the various marketing activities, whose main purpose is to increase the profit of the company, by attracting new and retaining already existing customers. This leads us to believe that digital marketing is not an entirely new philosophy or a new type of marketing, but rather

a highly developed (thanks to technological advancement) channel in the overall communication mix of the company [13, 14]. This channel includes tools and techniques for marketing activities presented in Table 2.

**Table 2.** Basic tools of digital marketing

<i>Digital marketing – basic tools</i>		
<b>Online tools</b>		<b>Offline tools</b>
<i>Website</i>	<ul style="list-style-type: none"> <li>✓ corporate web site;</li> <li>✓ online store;</li> <li>✓ online platform aggregating services or products;</li> <li>✓ Internet application for services.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Television</li> <li>✓ Radio</li> <li>✓ Digital billboards;</li> <li>✓ SMS and MMS.</li> </ul>
<i>Email marketing</i>	Based on email technology. An extremely effective means of reaching the target audience, even a specific user. Helps to establish personal communication with real and potential users.	
<i>Social media (Facebook, Twitter; LinkedIn; Instagram and others)</i>	The main goal of marketing in social networks (optimization for social networks) is to build the so-called communication funnel to help find and attract users by directing people (users) from social media communities to company websites, blogs or e-shops. Social networks create the opportunity to advertise businesses and also to offer customer assistance. This, in turn, would lead to a significant increase in consumer satisfaction and create preconditions for building loyalty.	
<i>Blogs</i>	An electronic platform that provides a field for discussing various issues and finding relevant information.	
<i>SEO</i>	Website optimization process, using various techniques and tools, to make it easier for these sites to be discovered and ranked higher in search engines.	
<i>Big Data Marketing</i>	Provides tools for collecting, processing, analyzing and interpreting data sets for various marketing purposes - segmentation, planning, feedback, user habits and forecasting.	
<i>Internet advertising</i>	Various paid forms of controlled impact made through the Internet to offer products or services in the interest of a specific, explicit source. The various formats of Internet advertising are: banners; VIP links; Rich media; streaming advertising; pop-ups; online games, contests, polls; online seminars; intermediate pages; landing pages; floating ads; wallpaper ads; trick banner; RSS, site sponsorship; paid search; promotional articles; Google AdWords paid ad slots; batch ads and more.	
<i>Visual marketing (You Tube)</i>	Includes activities that marketed products/ services through visual communication tools.	
<i>Mobile Marketing</i>	Mobile application services providing various aspects of the daily life of the users - from meeting the daily needs to entertaining and useful activities. It is possible to create virtualization by scanning visual images and adding information to them, in order to offer detailed information to users in an interactive way, relying solely on their permission.	
<i>Wearables</i>	Techniques for using wearables such as watches; glasses, etc., directly related to mobile devices and the Internet. In this way a direct connection with the users is achieved, their behavior and habits as consumers are studied, with the aim of achieving precise segmentation and targeting subsequently.	

<b>Internet of Things</b>	It includes Wearables, but is much wider in scope. Applies to all consumer goods and items that can provoke consumption. The direct connectivity of objects to the Internet enables them to deliver personalized information to the user, which turns data transfer into an effective digital marketing technique.
<b>Games and Gamification</b>	Using and accessing arrays of game users by creating games for specific user desires. The approach is evolving extremely quickly because of the precise segmentation opportunities it offers and the ability of getting into the daily lives of gamers by games that embody their habits and personal preferences.

Every day the importance of digital marketing in practice increases, and businesses more and more take advantage of the rich set of tools it offers [15]. According to the latest data from the Bulgarian Media Card, Internet users in Bulgaria have increased from 51% in 2013 to 62% in 2017 and this percentage increases every day. Money spent for online advertising by companies also marked a significant growth rate of EUR 20.22 million in 2013 to EUR 39.40 million in 2017 and it is expected to be significantly higher in 2019 [16]. There is a similar trend globally, as more and more money is being invested in the development of digital marketing campaigns. In this regard, in order to invest these funds effectively and achieve the desired return on investment, it is necessary to clarify the advantages and disadvantages of digital marketing.

### 3.2. Main advantages and disadvantages of digital marketing

With the aim of developing effective digital marketing strategies that have high potential for achieving the company's goals and at the same time to meet at the highest degree the profile and capacity of organizations, it is necessary to know in depth all the advantages and disadvantages that digital marketing carries within itself. In this way, they will be able to determine to what extent and which tools of the entire palette of digital marketing are best suited to their marketing activities. Here, should also be taken into account that in order to work, digital marketing strategy must not focus solely on the technological side of things.

One of the main problems when it comes to digital marketing is the denial of traditional marketing, forgetting that the information and communication tools offered by so called new marketing, are just a "booster" of marketing concepts. Rather, digital marketing is a highly developed (thanks to technological advancement) element of organizations' communication mix. Put differently, without the principles and approaches of traditional marketing, it is impossible to develop a comprehensive and effective marketing strategy for business development.

#### 3.2.1. Advantages of digital marketing

The application of digital marketing allows companies to be flexible and adaptable to changes in the external environment, to build effective relationships with their customers, as well as to be more responsive to their needs and understandings. All this is achieved by the following key benefits of this type of marketing:

- ✓ **High level of interactivity** - creates an opportunity for interactive communication with consumers, thus more responsive to their understanding and expectations for seeking and receiving information. Interactive communication, in turn, creates opportunities to build a dynamic environment, changing space, specific navigation, depending on the user's preferences, dynamic design, use of top-level special computer code, mobile technologies and continuous innovation. Things vary with each visit, depending on his/her skills, accumulated information in the system and knowledge of his/her interests and orientation. This in turn helps to use many non-standard and interesting ways to attract and retain the attention of consumers.



- ✓ **Overcoming geographical barriers and limitations in marketing activities** - digital marketing helps companies to successfully communicate with their customers, sell their products and services and find new business partners in real time anywhere in the world.
- ✓ **Provides opportunities to respond more quickly and flexibly to user needs and wants.**
- ✓ **High degree of measurability of the achieved marketing results** - very often, when conducting traditional advertising campaigns, the registered results are unclear and inaccurate and do not give an indication of whether the funds are spent efficiently whereas the results of digital campaigns are easily and accurately measurable (using modern statistical tools) and are available in real time. They allow marketers to track and analyze consumer behavior and build their profiles.
- ✓ **Facilitates customer segmentation and targeting** - thus achieving better targeting of advertising messages and greater effectiveness of marketing activities.
- ✓ **High degree of personalization of advertising messages** - thanks to collected online information for the consumers, individual offers can be created and thus adding value to them and responding to their needs and desires as precisely as possible in order to increase the consumer satisfaction.
- ✓ **Creates more convenience for consumers** - with the help of digital technologies, they can receive much more and better information about products and services that interest them, buy them from home and save time.
- ✓ **Creates prerequisites and favorable conditions for successful development of virtual enterprises [17, 18].**
- ✓ **Allows companies to reach more users through the use of social networks.**
- ✓ **Increases the traffic to the companies' websites** - through the development of qualitative online advertisements, Internet publications, related to the company's activity, etc. Thus creating an engagement of the users with the thematic content provided for them. As a result, the interest in the offered products/services increases and the sales go up too.
- ✓ **Facilitates communication and interaction with users** - thanks to various platforms such as social networks, web applications or websites, users can ask questions and receive the information they need right away. Accordingly, companies can talk directly with their real and potential customers, build trust and get feedback on the products and services they offer [19].
- ✓ **Facilitates the tracking and analysis of competitors' actions.**
- ✓ **Increases the degree of control and correction in the processes of development and implementation of various marketing activities.**
- ✓ **Potential for shortening the time needed to prepare and conduct marketing research.**
- ✓ **It requires less investment** - the use of different digital tools for marketing activities requires less investment than traditional channels, therefore digital marketing has higher profitability [20].
- ✓ **Suitable for start-ups, small and medium-sized companies** - thanks to all the advantages listed here, we can say that digital marketing is very suitable for new and small companies as it provides a high degree of efficiency with small investments.
- ✓ **Creates opportunities for developing new business models and strategies such as mass customization, co-creation and more.**

### 3.2.2. Disadvantages of digital marketing

In order to create working marketing strategies, on the basis of information and communication techniques and technologies, companies must be well aware not only of the advantages they bring, but also of the disadvantages hiding in their application in practice.

The main disadvantages of digital marketing are:

- ✓ **The use of digital marketing makes business organizations an "open book" for competitors** - this is probably one of the most serious disadvantages of digital marketing, as digital marketing campaigns can be quickly and easily copied by their competitors.

Trademarks and logos, corporate identities, can be copied and used by them to mislead consumers in order to gain market share. In addition, they can easily manipulate consumers through inaccurate information about products, services or brands, which can seriously damage the image of a company and lead to customer outflow.

- ✓ **In digital marketing, you need to build relationships with a consumer who you do not see in person-** this requires specific knowledge of the psychology of online consumer behavior. Very often, however, marketers do not take this into account and rely on traditional consumer psychology when designing digital marketing campaigns. This, in turn, leads to a lower efficiency since it does not take into account the particularities of consumer behavior and the relationships that are created online.
- ✓ **Digital marketing campaigns can be perceived by users as unserious, if not professionally designed and properly targeted;**
- ✓ **The online reputation of companies can be destroyed by negative feedback** - negative comments and information about products and services, and trademarks are visible and accessible to all users on the Internet, which can seriously damage the image of a company and lead to customer outflow.
- ✓ **Lack of consumer trust** - the fact that digital marketing campaigns involve the use of technologies that track and collect data from users on the Internet leads to privacy issues including the security of their privacy. Thereby, people take a serious distrust of this type of marketing and often refuse to participate in such events, which is one of the biggest challenges facing the development of digital marketing. For this reason, the topic of online trust and its impact on digital marketing strategies is becoming increasingly important and has been the subject of much research in the field.
- ✓ **Overloading the Internet space with online advertising messages** - the excess of online advertising messages in the form of banners, the continuous appearance of open and close windows, interruption of video materials and etc. can lead to consumer irritation, which will inevitably affect their attitude towards the companies.
- ✓ **Digital marketing is not suitable for all types of products, services and companies** - there are a number of products and services whose target audience cannot be reached and influenced by the tools offered by digital marketing. This is due to the fact that for one reason or another, these users are not online or do not trust the information they can obtain from the Internet.
- ✓ **Digital marketing is highly dependent on technics and technology** - this on the one hand requires serious knowledge in the field and on the other hand can lead to a number of technical errors as the information and communication tools offered by digital marketing are not without fails. It is often the case that the chosen technical solution does not work properly and results in incorrect outcomes, thereby causing the fail of the advertising campaign. Examples include broken links, slow loading or non-loading promotional messages or websites, paid advertising buttons that do not work, statistical analysis tools that do not process information correctly, and many more [21-23].
- ✓ **Use of inappropriate digital tools and applications** - there is a wide variety of tools and applications on the Internet and new ones are emerging every day. This makes it very difficult for the marketing professionals to choose the ones that will be most effective for the specific marketing events and will meet the needs and goals of the companies in the best possible way.
- ✓ **Lack of clear criteria for choosing digital tools in marketing campaigns.**
- ✓ **It is very difficult to keep up-to-date information in the digital world** - thanks to the dynamism that is changing the world of digital technologies, information there gets old very quickly and have to be replaced very frequently with new ones. It became a serious challenge for many companies as they do not have the necessary resources for that.

- ✓ **Very often, digital marketing campaigns are developed and conducted on their own without aligning with the overall marketing strategy of the company** - this usually results in the inability to achieve the intended results, lower efficiency, and misuse of funds.
- ✓ **Emphasis on technical solutions at the expense of content** - in the desire to be attractive and fashionable to their clients, very often, companies overdo the technical appearance of advertising messages, leaving the content in the background, which in the long run does not lead to good and stable results.

#### 4. Conclusion

We definitely can say that digital marketing provides a huge arsenal of opportunities for more effective customer relationship management and competitive advantage. It greatly facilitates the activities of marketing professionals and shortens the time to develop and run marketing campaigns. It meets the needs and understandings of modern business.

The scientific and practical results in this paper could be summarized as follow:

- 1) The various terms for digital marketing used in the specialized literature and the Internet are systemized and the differences between them are shown.
- 2) The main advantages and disadvantages of digital marketing have been clarified and new ones have been added. The added advantages are: creates prerequisites and favorable conditions for successful development of virtual enterprises; increases the degree of control and correction in the processes of development and implementation of various marketing activities; suitable for start-ups, small and medium-sized companies and creates opportunities for developing new business models and strategies such as mass customization, co-creation and more.

The added disadvantages are: in digital marketing, you need to build relationships with a consumer who you do not see in person; digital marketing campaigns can be perceived by users as unserious, if not professionally designed and properly targeted; digital marketing is not suitable for all types of products, services and companies; use of inappropriate digital tools and applications; lack of clear criteria for choosing digital tools in marketing campaigns; very often, digital marketing campaigns are developed and conducted on their own without aligning with the overall marketing strategy of the company and sometimes it emphasis on technical solutions at the expense of content.

The findings in this paper, on one hand, are a good base for future developments in the field of digital marketing, and on the other, would help companies to develop their marketing strategies and plans. But in order to work effectively and efficiently, digital marketing activities must not be considered on their own, but as dependent on the overall marketing development strategy of companies. Only then they will be able to make the most of the full potential of information and communication technologies in order to achieve higher economic results and competitiveness.

#### References

- [1] Global Leadership Forecast 2018 [https://www.ddiworld.com/DDI/media/trend-research/glf2018/global-leadership-forecast-2018\\_ddi\\_tr.pdf?ext=.pdf](https://www.ddiworld.com/DDI/media/trend-research/glf2018/global-leadership-forecast-2018_ddi_tr.pdf?ext=.pdf)
- [2] 8 IAB 2012 [http://iabulgaria.bg/wp-content/uploads/2012/11/iab\\_europe\\_media\\_multi-tasking\\_means\\_more\\_active\\_consumers\\_bulletin.pdf](http://iabulgaria.bg/wp-content/uploads/2012/11/iab_europe_media_multi-tasking_means_more_active_consumers_bulletin.pdf)
- [3] Jones A, Malczyk A and Beneke J 2011 Internet Marketing: a highly practical guide to every aspect of internet marketing Textbook University of Cape Town
- [4] Charlesworth A 2014 Digital Marketing: A Practical Approach Routledge
- [5] Chaffey D 2015 Digital business and e-commerce management: strategy, implementation and practice 6th ed. (Harlow: Pearson Education Limited)
- [6] Chaffey D, Ellis-Chadwick F, Johnston K and Mayer R 2009 Internet marketing: strategy, implementation and practice 4th ed. (Harlow: Pearson education)
- [7] <https://sisconet.com/>



- [8] Patukale V 2015 Digital Marketing eBook 1st ed. Tech Some
- [9] Slavola M 2016 Digital marketing J. Economic and Social alternatives 3 36-48
- [10] Ilin I, Klimin A and Shaban A 2019 Features of Big Data approach and new opportunities of BI-systems in marketing activities. E3S Web of Conferences 110,02054. DOI: 10.1051/e3sconf/201911002054
- [11] Krymov S, Kolgan M, Suvorova S and Martynenko O 2019 Digital technologies and transformation of modern retail. IOP Conference Series: Materials Science and Engineering 497(1),012126. DOI: 10.1088/1757-899X/497/1/012126
- [12] Chris A 2015 Difference between digital marketing and social media
- [13] Velev M 2006 Marketing communications (Sofia: Softtreid)
- [14] Klimin A I, Tikhonov D V and Efimov A M 2017 Evaluation of the effectiveness of marketing communications in Russian business using the example of St. petersburg enterprises. Proceedings of the 30th International Business Information Management Association Conference, IBIMA 2017 - Vision 2020: Sustainable Economic development, Innovation Management, and Global Growth 2017-January, c. 1465-1482
- [15] Fejling T, Torosyan E, Tsukanova O and Kalinina O 2019 Special aspects of digital technology-based brand promotion. IOP Conference Series: Materials Science and Engineering 497(1),012027. DOI: 10.1088/1757-899X/497/1/012027
- [16] BG Media Map, <https://www.piero97.com/wp-content/uploads/2018/06/mm18-A.pdf>
- [17] Tsvetanova A 2005 The nature of the virtual enterprises Proc. Int. Conf. on Management and Engineering (Sofia)
- [18] Tsvetanova A 2005 Prerequisites for the virtual enterprises emergence Proc. Int. Conf. on Management and Engineering (Sofia)
- [19] Krasnov A, Chargaziya G, Griffith R, and Draganov M 2018 Dynamic and static elements of a consumer's digital portrait and methods of their studying Int. Sc. Conf. on Digital Transformation on Manufacturing, Infrastructure and Service (Saint-Petersburg)
- [20] Veleva S 2019 Guidelines for analysis of enterprise's marketing costs Proc. Int. Conf. on Management and Engineering (Sozopol)
- [21] Krasnov S V, Sergeev S M, Mukhanova N V and Grushkin A N 2018 Methodical forming business competencies for private label, pp. 553-558. DOI: 10.1109/ICRITO.2017.8342489 <https://www.scopus.com/inward/record.uri?eid=2s2.085049665660&doi=10.1109%2fICRITO.2017.8342489&partnerID=40&md5=692c6e7963ea6396df62945f1e85a63f>
- [22] Didenko N I, Skripnuk D F and Mirolyubova O V 2017 Big data and the global economy статья № 8109611. DOI: 10.1109/MLSD.2017.8109611 <https://www.scopus.com/inward/record.uri?eid=2s2.085040630365&doi=10.1109%2fMLSD.2017.8109611&partnerID=40&md5=31168dd68403b50ef21b971d8f24a728>
- [23] Lichy J Kachour M and Khvatova T 2017 Big Data is watching YOU: opportunities and challenges from the perspective of young adult consumers in Russia 33 (9-10), pp. 719-741. DOI: 10.1080/0267257X.2017.1313301 <https://www.scopus.com/inward/record.uri?eid=2s2.085017448538&doi=10.1080%2f0267257X.2017.1313301&partnerID=40&md5=3b3802436d51963669424c4ff4087f4e>

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