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Exploring Cybersecurity Threats in Digital Marketing

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Article Info	Abstract
	Cybersecurity is crucial to digital marketing hence dealing with security threats in cyberspace is essential for success in digital marketing which is an online business. The cornerstone of any online business is security. The primary objective of any form of online marketing business is to connect a business or organization with its target audience via digital channels. This paper identifies strategies put in place for a successful digital marketing business in the midst of incessant cyber threats. Online survey was used to collect data from those involved in one form of digital marketing or the other. This includes social media promotion, mobile phone advertising, content marketing, influencer advertising, third-party merchant marketing, search engine optimization, paid channel advertising. Usable data was collected from 680 participants who were members of a Facebook group of 34,000 digital marketers. The data gathered was evaluated using (SPSS). Responses from digital marketers indicated major cybersecurity threats and the different ways digital marketers have been able to explore them were exposed.

1. Introduction

Digital marketers work with e-commerce websites daily and these e-commerce websites' transactions are constantly under attack by hackers. Most times, third party services are used such as pay pal who use customers payment data, sometimes this customers payment information could be compromised and exploited by hackers if not handled securely.

Security threats majorly come from compromised user accounts, even marketers accounts have higher risks because they are allowed higher permissions and access rights. Excessive access requests, daily downloads and changes in accounts information pave way for access to compromise or threats. For instance, malware attacks can be curtailed using anti-malware measures by encrypting transaction data files and covering up security patches to avoid security breaches.

The need to integrate transformational digital marketing strategies into business strategy has become very urgent. [1] noted that marketing is central to existence. [2] stated that "marketing is concerned with relationships which can be referred to as exchange relationships." This is profound because human interactions have become ubiquitous and pervasive and have become a great enhancer of marketing, especially in this digital era.

Digital marketing strategy enables individuals or organizations to reach clients by combining advanced technologies with existing marketing plans. [3] suggests that society has experienced a structural shift in economic systems, driven by digital technology. [4, 3] also clarified that digital

marketing has become inventive. The nouvelle procedure assists associations with accomplishing their marketing objectives through building up a connection among customization and mass circulation.

With the vigorous advancement of technology in society, it is more important now than ever that we follow a digital marketing strategy. [5] clarified that digital strategy should be the foundation of an organization's "key" market procedures. These ideas are re-echoed by [6], which clarified that emerging technologies have constrained organizations to reevaluate techniques. The authors proceeded to explain that integrating technology into marketing enables marketers reach a younger audience who always use mobile devices. The perspectives of [7] is that there is a correlation between embracing innovation and marketing system, and this is in concurrence with [5] and [6], who both recognize that innovation is quickly creating a new operating style and will indeed change organizations customary operating style.

A marketing strategy which utilizes innovation to enhance an organization's capacity to capture the market begins with a sound procedure. [8] agreed with these arguments and further proposed that digital marketing strategies have to be prioritized. The president of EDventure Holding Inc., Esther Dysan, clarified that the Internet is not simply another distribution or advertisement platform, but has become a media that has fundamentally changed how business is conducted by organizations [9].

The perception that our private information is more sensitive than ever before [10] is part of living in the digital age. Reports of ID theft and data breaches have multiplied, with millions of consumers feeling the effects. While businesses and organizations are increasingly working. You can also play a part in this war.

Cyber-attacks fall into two major categories: breaches of data security and sabotage [11]. Private data, intellectual property, trade secrets, and bid, acquisition, and price-related information drive data breach targets. Sabotage may appear as service denial attacks that overload web servers with dubious messages, and result in server downtime arising from compromising systems infrastructure.

1.1. Cyber insecurity as a threat to digital marketing

Content advertisement in digital marketing is very common in many businesses today, because it is very useful in customer drive and helps in retaining the customers. Customers get valuable information through these sources too. Content management systems (CMS) are vulnerable to cyber-attacks. Most hackers are used to the procedures in these content management systems (CMS) like WordPress, Drupal, and Joomla, and can easily distribute malware successfully if not blocked. Another digital marketing instrument that is under serious threat of cyber-attack by online criminals is email marketing. Organizations email accounts could be used by hackers to distribute spam messages that carry viruses thereby causing sites to be blocked by the system of the organizations concerned for the security of other websites on their server. Persistent appearance of this threat can make these sites to be blacklisted, blocked and the email advertising/promotion stopped. Identity theft is a major threat in social media advertising. The main culprits are free or downloads by unauthorized persons, compromised passwords or payment transactions.

In [12], it is suggested that the success outcomes of an organization may be attributed directly to the efficacy of its marketing communication. It cannot be over emphasized that to achieve an organization's mission and goals on the web, there is a need for specific digital marketing strategies to protect online promotional activities. More importantly, it has been known for a long time that

digital marketing growth is due to the rapid technological advances and the dynamic market environments [13]. In this study we attempt to investigate and discourse the digital marketing tools mostly used by businesses and strategies used to secure their assets, as well as the effectiveness of the various tools they have used. The study also attempts to understand the challenges faced by digital marketers and measures put in place to prevent, counter and minimize effects of cyber-attacks.

2. Methodology

In this study, a survey method is used to collect data by means of questionnaire instrument (Google forms). Usable data was collected from 680 participants who are members of a Facebook group in Nigeria, comprising 34,000 digital marketers, and the sample population was randomly selected. The questionnaire gathered data from those involved in various forms of digital marketing; using social network marketing, mobile phone marketing, content marketing, influencer marketing, affiliate marketing, search engine optimization, paid channel advertising etc. The questionnaire collected data that covered: channels used by digital marketer; which of the tools/channels are more preferred by various digital marketers. The survey information collected was examined using the Statistical Package for Social Sciences (SPSS).

2.1 Research question formulation

In designing the research questions, we critically studied and investigated the independent variables affecting our expected outcome variables and elicit the following research questions as a guide for our research; (i) What are the basic tools and channels a digital marketer should use for maximum output, and which one is preferred? (ii) What are the types of digital marketing strategies or tools mostly practiced/used by digital marketers? (iii) What are the challenges faced by digital marketers and how are they tackled? (iv) How effective are the digital marketing tools adopted by marketers? (v) What measures are taken by digital marketers, web designers/developers to ensure security in cyberspace?

3. Results and discussion

Table 1 shows basic types of digital marketing, the number and percentage of respondents that prefer each channel as a preferred digital marketing channel.

Table 1: Basic digital marketing tools preferred by marketers

S/N	Types of Digital Marketing	Number of Respondent that prefer this type of Digital Marketing	%
1	Search Engine Optimization (SEO)	407	59.9
2	Search Engine Marketing and Paid Channel Advertising	375	55.2
3	Social Network Marketing Content marketing	581	85.4
4	Affiliate Marketing	450	66.2
5	Influencer Marketer	352	51.8
6	Email Marketing	553	81.3
7	Viral Marketing	598	87.9
8	Mobile Phone Marketing	320	47.1
9		220	32.4

Table 2 shows digital marketers most preferred tools. From Table 2, 59.9% of the respondents, use search engine optimization in their digital marketing operations, 55.22% of the respondents, use

search engine marketing and paid channel advertising in their digital marketing operations, 85.4% of the respondents, use social network marketing, 66.2% of the respondents, use content marketing, 59.9% of the respondents, use search engine optimization in their digital marketing operations, 81.3% of the respondents, use influencer marketer in their digital marketing operations, 87.9% of the respondents, use email marketing in their digital marketing operations. 47.1% of the respondents, use viral marketing in their digital marketing operations, and 32.4% of the respondents, use mobile phone marketing in their digital marketing operations. Our results show a correlation with results in [5], which indicates that organizations should adopt digital marketing strategies to engage their customers and thereby reach their marketing goals in an oversaturated online business landscape.

Table 2: Digital marketers most preferred tools

S/N	Digital Marketing Channels	Tools Preferred by Respondents	Number of Respondents	%
1	Social Media	Facebook	553	81.3
		Instagram	562	82.6
		Twitter	391	57.5
2	Paid Social Media	Hoot suite	467	68.8
		Social Pilot	224	32.9
		Buffer	378	55.6
3	Design	Canva	358	52.6
		Photoshop	493	72.5
		Animator	140	20.6
4	Analytics	Google Analytics	612	90.0
		Kiss metrics	535	78.7
		Facebook Insights	548	80.6
		Twitter Analytics	388	57.1
		Periscope	321	47.2
5	Video Hosting Sites	YouTube	496	72.9
		Vimeo	247	36.3
		MySpace	346	50.9
		Dailymotion	302	44.4
		Flickr	376	55.3
		Wista	121	17.8
6	Search Engine Optimization (SEO)	Google Search Console	624	91.8
		Google Keyword Planner	432	63.3
		SEMRush	588	86.5
		Serpstat	566	83.2
		Yoast	435	63.9
		Moz	620	91.1
7	Affiliate Marketing	Flippa	436	64.1
		Google AdSense	631	92.8
		Jumia	344	50.6
		Konga	316	46.5
		AffTrack	221	32.5
		MailMunch	565	83.1
		Landing Pages	434	63.8
		Blogs/Websites	522	76.8
		Google Analytics	567	83.4
		SEMRush	523	76.9
		Clickmeter	331	46.7
		Ahrefs	234	34.4
		Google Keyword Planner	345	50.7
		CJ Affiliate	123	18.0
8	Paid Channel Advertising	Adword	497	73.1
		Blogs	268	39.4
		Social Media	599	88.1
		Email List	510	75.0
		Vlogs	231	33.9

The respondents overall, perceive digital marketing as constituting a majority of the marketing activities performed through digital channels. The results similarly support previous research which indicate that digital marketing can offer benefits through cost efficiency [14]. Additionally, social media offers digital marketers cost benefits and wide audiences [15].

Among the interviewed respondents that use organic social media as their digital marketing channel, 81.3% utilize Facebook, 82.6% use Instagram as their digital marketing channel, while 57.5% use Twitter. Facebook and Instagram are the tools of choice among digital marketers for social media without paid promotion.

Our data showed that 68.8% of respondents who use paid social media for digital marketing chose Hoot Suite. 32.9% of respondents that use paid social media for digital marketing said that they use Social Pilot. Another 55.6% of respondents that use paid social media for digital marketing said that they use Buffer. Hoot suite is the most preferred tool digital marketers use for delivering advertisements to, or for sponsored marketing messages on popular social media platforms, while targeting a specific sub-audience.

We then found that 52.6% of respondents chose Canva as tool for creating their graphic designs, when creating interesting and valuable content. 72.5% of respondents chose PhotoShop as tool for creating their graphic designs, while 52.6% of respondents chose Animator PhotoShop Plug-in as tool for animating pictures in their graphic designs. From our results, we consider that digital marketers prefer to use PhotoShop tool for graphic designs.

The results indicate that 90% of respondents use Google Analytics to plan their marketing strategy, that 78.7% of respondents use Kiss Metrics, that 80.6% of respondents use Facebook Insights, that 57.1% of respondents use Twitter Analytics, and that 47.2% of respondents use Periscope. The study confirms previous research findings which report that analytics enable marketers derive a variety of insightful metrics related to their website visitors and their online behaviour, and performance. We can conclude that Google Analytics, Facebook Insights, and Kiss Metrics are preferred Analytics tools among digital marketers.

The results show that 72.9% of respondents use YouTube for hosting videos in their digital marketing platforms, that 36.3% of respondents use Vimeo for hosting videos, that 50.9% of respondents use MySpace for hosting videos, that 44.4% of respondents use Dailymotion for hosting videos, that 55.3% of respondents use Flickr for hosting videos, and that 17.8% of respondents use Wista for hosting videos. We can conclude that YouTube is the preferred tool for hosting videos among digital marketers

In this study, we found that 91.8% of respondents use Google Search Console for search engine optimization, 63.3% of respondents use Google Keyword Planner for search engine optimization, 86.5% of respondents use SEMRush for search engine optimization, 83.2% of respondents use Serpstat for search engine optimization, 63.9% of respondents use Yoast for search engine optimization, and 91.1% of respondents use Moz for search engine optimization. Most marketers use Google Search Console, Moz, SEMRush or Serpstat tools in achieving the highest ranking in the search engine results pages (SERPS) listings using a combination of keywords (or keyphrases) entered by search engine users.

The results indicate that 64.1% of respondents use Flippa in their affiliate marketing strategy, 92.8% of respondents use Google AdSense in their affiliate marketing strategy, 50.6% of

respondents use Jumia in their affiliate marketing strategy, 50.6% of respondents use Jumia in their affiliate marketing strategy, 46.5% of respondents use Konga in their affiliate marketing strategy, 32.5% of respondents use AffTrack in their affiliate marketing strategy, 83.1% of respondents use MailMunch in their affiliate marketing strategy, 63.8% of respondents use Landing Pages in their affiliate marketing strategy, 76.8% of respondents use Blogs/Web sites in their affiliate marketing strategy, 83.4% of respondents use Google Analytics in their affiliate marketing strategy, 76.9% of respondents use SEMRush in their affiliate marketing strategy, 46.7% of respondents use ClickMeter in their affiliate marketing strategy, 34.4% of respondents use Ahrefs in their affiliate marketing strategy, 50.7% of respondents use Google Keyword Planner in their affiliate marketing strategy, and 18.0% of respondents use CJ Affiliate in their affiliate marketing strategy. This result shows that organizations should involve Affiliate marketers in their digital marketing strategy. The authors of [16] suggest various tools for organizations to target advertising at customers at a low cost through Affiliate Marketers, who earn a commission on their sales. There is a close agreement with the result of our study. However, we conclude that most digital marketers use Google AdSense, Google Analytics, MailMunch, Blogs/Web sites or SEMRush in their affiliate marketing strategy. The results also show that 73.1% of digital marketers who filled the questionnaires use adword for their paid channel advertising, to deliver high volume of targeted traffic of potential customers to their e-commerce web sites within a short period of time and thus improve their sales. 39.4% of digital marketers use blogs for their paid channel advertising, 88.1% of digital marketers use social media for their paid channel advertising, 75.0% of digital marketers use email lists for their paid channel advertising, while 33.9% of digital marketers use vlog for their own paid channel advertising. We conclude that most digital marketers use social media, email lists, or adword for their paid channel advertising needs. The data from this study supports observations reported in previous research, which show that e-mail is widely and actively used and is perceived as one of the most important digital marketing tools [17]. The respondents also think that social media plays a significant role in digital marketing and business endeavour [18]. Table 3 shows different challenges faced by digital marketer and the various solutions implemented by responding digital marketers.

Table 3: Challenges faced by digital marketer and solutions implemented

S/N	Challenges faced by Digital Marketer	Solutions Implemented by Respondent Digital Marketer
1	Generating traffic and leads	1. Creating good content 2. Content promotion 3. Linking back to website 4. Search engine optimization
2	Engaging social media followers	1. Be social 2. Posting interesting and useful content 3. Start engaging followers 4. Ensure every post offers real value
3	- Ideas for blog posts - Content creation	1. Set up Google Alert for industry and related topics 2. Putting together contents and ideas over the week or regular events to post about 3. Following web trends 4. Hire a freelance writer
4	Search Engine Optimization (SEO) for website	1. Run a quick SEO audit 2. Hire an SEO expert
5	- Return on Investment (ROI) on marketing activities - Increase conversion rate	1. Set up ROI reports 2. Use marketing software 3. Use effective landing pages 4. Target the right channels and audience
6	Managing website	1. Higher a freelancer 2. Host your website on a platform that integrates all your marketing channels

The responses from our survey show that cyber security threat is a very present issue which can influence all digital marketing activity. As the value and volume of data continue to grow, and digital assaults become more sophisticated, digital marketers are faced with potentially vulnerable touch points that can be exploited. Table 4 contains major cyber security threats and proven ways responding digital marketers have been able to tackle them.

Table 4: Cyber security threat and digital marketer handling of threats and attacks

S/N	Cyber security threat	Measures Respondent Digital Marketers use in tackling threats and attacks
1	**Content marketing:** Content Management Systems like WordPress make managing the content marketing more comfortable, but hackers are acquainted with the WordPress product and easily compromise the website to circulate malware.	1. Ensure that only patched and updated operating systems and software packages are used on servers. 2. Content Management Systems are accessible via secure private networks alone. 3. User password authentication policy is enforced. 4. Administrators must moderate the creation of user accounts 5. Users must be properly trained on the security features of organization's CMS and install updates immediately they are available 6. Host organization's website only with a hosting company that focuses on customer security.
2	**Email Marketing:** Email marketing is one of the effective although traditional methods of digital marketing. It however poses a challenge of phishing attacks. Hackers can use the email accounts of companies to send spammed and virus infected emails. If this attack is not mitigated, servers can black-list and block the site which will affect the company's email campaign.	1. Never open emails from unknown senders and always verify the identity of suspect email senders and their safety, by contact them before opening it. 2. Verify that ISP and servers are reliable and responsible. 3. Use security software tools to monitor your email marketing needs and ensure the emails you send out to desired audiences are encrypted to reduce the risk of a phishing attack. 4. Set up outbound filters to prevent emails with hidden malware. 5. Include the email systems in network security audit
3	**Social Network Marketing:** The approach of Social networks has changed the definition of communication and social interactions. Identity theft is the main threat and risk when it comes to social network marketing. Whether it's unauthorized downloads, weak passwords, or sharing of confidential information, social networks may be used as a platform to exploit private data.	1. An effective user password authentication policy must be enforced. 2. Administrator must monitor all social network activity. 3. Implement very strict privacy settings.
4	**E-commerce:** The high risk and potential vulnerability in e-commerce continue to present a challenge for digital marketers.	1. Use of SSL (Secure Sockets Layer) protocols and a two-step verification process 2. Take all the precautions to provide a safe and secure payment method for the customers. 3. Guaranty that hackers cannot subtly access client's bank and card details.
5	**Non-Human Traffic:** About half of the traffic on the Internet is not from humans. This includes click fraud bot nets, link scrapers which collect information from web pages, spam bots, and more.	1. Botnet discovery tools search the computers against a list of threats and monitor communications for behavior patterns that can be used by bots. 2. Another way of combating these threats is to expose false domain lists or to share information and track the originating IP addresses.

		3.	CAPTCHA checks that ensure that the user is human can be used to combat Bots
6	**Customer Relationship Management:** Customer relationship management, or CRM, is a core part of any business, and a business-critical application that stores vital business information. They store information along with the processes they manage.	1. 2. 3. 4.	Firewalls Security software Use of private networks e.g. VPNs A strong password policy is a high-risk factor for cyber-attacks.
7	**Customers as Threats:** You want to build good relationships with your customers, but there's always a chance a customer might try to cheat you.	1. 2. 3. 4. 5.	Get software that can detect fraudulent activity and inconsistent user information Take a look at the customer's phone number, zip code, and their reported residence. Do they match? If they don't, you know something is wrong. In order to prevent this, your site should have an elaborate lead validation script. You should also review login activity, such as the IP address traffic is coming from. Many leads coming from the same IP address could indicate fraud Follow up on leads that seem suspicious, such as sending out "customer surveys" requesting additional information. If a lead or retail sale fail the validation process Block the IP address where the lead came from and don't do business with them again.

4. Conclusion

Digital marketing is about utilizing digital technology to achieve marketing objectives. To be successful and operate safely in cyberspace, digital marketing requires a certain skill set to utilize digital technology effectively. The research and practice of digital marketing is improving with the advancement of technology. The advancement in technology fosters multifaceted opportunities and at the same time poses unprecedented challenges for the marketers.

To be successful in the digital marketplace, sound knowledge of the benefits and limitations of digital marketing is required in addition to the necessary skill to carry out the function of digital marketing. It is very necessary that digital marketers understand the strengths and weaknesses of the various digital marketing strategies and the risks faced with them in terms of security.

Hackers are also very knowledgeable and familiar within the terrain that they operate and as such always come up with new and more sophisticated software to crawl the internet, steal information, or just wreak havoc. All the web platforms, payment systems, and social media sites used should have all possible safeguards in place. Monitoring a site for intrusion or suspicious behavior is also a must. One should integrate security measures for digital marketing campaigns.

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