

PAPER • OPEN ACCESS

Role of programmatic advertising on effective digital promotion strategy: A conceptual framework

To cite this article: K Uday Kiran and Thangaraja Arumugam 2020 *J. Phys.: Conf. Ser.* **1716** 012032

View the [article online](#) for updates and enhancements.

A promotional banner for the 240th ECS Meeting. The banner features a colorful striped border at the top. On the left, the ECS logo is displayed in a green circle. To its right, the text reads "240th ECS Meeting" in large blue font, followed by "Oct 10-14, 2021, Orlando, Florida" in a smaller black font. Below this, it says "Register early and save up to 20% on registration costs" in bold black text, and "Early registration deadline Sep 13" in a smaller black font. At the bottom left, there is a red "REGISTER NOW" button. On the right side of the banner, there is a photograph of a diverse group of people in a professional setting, with a man in a white shirt and tie clapping and smiling, and a woman in a grey patterned top looking towards him.

ECS **240th ECS Meeting**
Oct 10-14, 2021, Orlando, Florida
**Register early and save
up to 20% on registration costs**
Early registration deadline Sep 13
REGISTER NOW

Role of programmatic advertising on effective digital promotion strategy: A conceptual framework

K Uday Kiran¹ and Thangaraja Arumugam²

¹Vellore Institute of Technology, Chennai, Tamil Nadu

²Vellore Institute of Technology, Chennai, Tamil Nadu.

Email : udaykiran.kommuri2019@vitstudent.ac.in¹ ; thangaraja.a@vit.ac.in²

Abstract. Today's world of digital advances technology has created major impact on the effective, efficiency and increase performance to companies with improved information and create more connective with customers and clients, and also streamline the process of various activities. As today advertising spending has involved in more of applicable and dependable, automation process of digital ads selling along with its effective campaigning implementation has an important role in supporting to the online marketing this growth is known as "programmatic Advertising." The programmatic advertising as converted the traditional method of execution of ads which are involved in the ad stock field has normally used by company's publicity. The digital automation advertising has been very important tool which creates efficient and effective than manual process. The earlier pattern of advertising observation process as seen gradually decline in the advertising promotion method and also has brought less margin with more cost for the ad companies in the field of advertisement which has forced the companies to adopt the innovative technology and systems for the competitive world. This paper describes the theoretical and conceptual framework of programmatic advertising and explores how the programmatic advertising as an important tool will help the advertisers and ad agencies in developing effective digital promotion strategies.

Keywords: Programmatic advertising, digital promotion strategy, real timing bidding, online advertising market

1. Introduction

The continuous growth of digital media technologies and smartphones, online advertising has become more customized and engagement oriented. The trend in digital marketing system has transformed the advertising companies to develop a system which can support in automation of ads. And with the entry of exponential improvised and advance systems, this space is getting more innovative, competitive and challenging [1]. This change can be seen in the area of modern media after introduction the marketing automation. Digital automation technology is one type source for automated process (programmed using machines and algorithms) for buying ad space in real time.

In the competitive technological advancement of digital advertising has developed more effective strategies and frame work which can be used by many ad agencies in availing accurate output and profits through the online promotions and connective strategies [4]. Online digital industry is currently the most affordable method for the customers, ad agencies and advertisers around the world for achieving daily work activities, the buying of goods and investing for these products throughout the world has become more convenient for the companies to use financial innovation payment by collaborating with the popular banks[9]. As rapid changes in the digital marketing is helping in converting the accurate information through different mode of systems which can support digital users information has made the companies constantly enhance in increasing the productivity and profits of online strategies for improving the marginal return on financial expenditure of automatic promotion media[16].



As reported by emarketer.com, “Programmatic advertising can be explained as the tool which can be used for channelling the buyers and sellers through automation. Further, statista.com reports that “In the Digital Advertising market, 46% of the display revenue will be generated through programmatic advertising in 2023”. For India, it is predicted that programmatic advertising will contribute to more than one-fourth of all digital media ad transactions and is likely to grow in coming years.

Advertising companies under the traditional method, involved in manual intervention for booking ad space. The entire process entailed with a lot of painstaking rounds of meetings and negotiations. With the proliferation of publishers after the advent of digital marketing, it became more difficult for advertisers and ad agencies to manage the demand-supply chain. Automation under current circumstances helped in taking control of the whole workflow[1].

Programmatic advertising has supported advertisers move towards a standpoint that is more customer-centric and also real time buying. It has changed advertising process more need-based by using targeted campaigns. It has given advertisers better return on advertising revenue. Programmatic advertising is enabling brands in giving better and clear insights into what their audience needs. Although programmatic advertising is at an early stage in the country, the trend is giving clear indications for advancement in the field of advertising[11]. The figure 1 below shows how programmatic advertising has helped in increasing the share of digital revenue the past years.

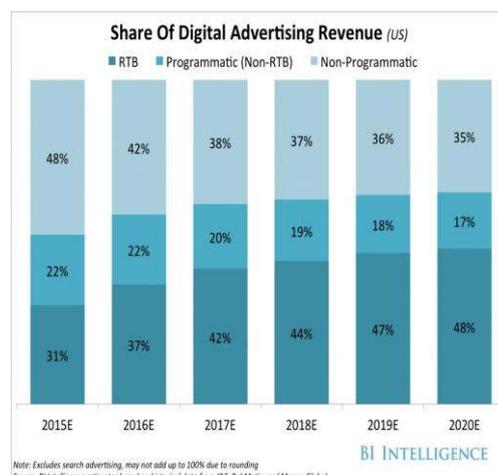


Figure 1. Blintelligencereport [11]

In programmatic, the publisher displays ads to the end user by showing them the relevant ads as per the advertiser’s budget. The conversion rate in this mechanism is more as the ads are based on user interest and aren’t generalized [11]. The campaigns and budget can also be tweaked in programmatic buying. The programmatic advertising involves in bidding for the better ads, you can increase decrease your advertisement impressions in real time scenario.

The introduction of smart technologies devices, from desktops to mobiles and from smart speakers, has changed how people are changing the perceptions of using web online. While the product development journey may have changed, the purchase methodology is getting strong as ever before. The company’s Brands have seen drastic change in the conversions rising using programmatic advertising at much lower spending. Programmatic ads are based on demand-supply publishing since the value of inventory is determined in real time bidding [11].

We propose a theoretical and conceptual framework to understand how the programmatic advertising will support in building better strategies for promoting advertisement. A conceptual framework system of identifying the need satisfaction information which can be useful for better designing the strategies in complex environment. This paper is framed in the flowing procedure: First the introduction session we have presented relevant theoretical background studies. Secondly, conceptual fame work was presented through proper study. The study will also explain the significant role of programmatic advertising in developing effective digital promotion strategies. Finally we draw some conclusions.

2 . Theoretical Background

2.1 *Programmatic Advertising*

Programmatic advertising definition is more complex in nature because of the non-applied scientific research study due to which majority of the author's explanation has been misleading in its applicability [18]. Based on the data derived has facilitated the concept of bidding system in advertising space which can deliver to organised personal marketing equipment's and build potential clients[2] . Programmatic Advertising has changed the method that ad promotions is undertaken and made more capable for considering reduction of investment and possible risk taking of advertising [14]. This system has supported the publishers in enabling them to communicate actual time information which can directly correlated with the specifications of any individual understanding and convert them into target customers. Programmatic Advertising has generated an effective market channel for communication and develop better campaign that will direct to whom it has to reach , where it has to reach and when it has to reach personally[10] . According to an economist will take better advantage of the implementation actual information, opportunity creation for purchasing Advertising in the online media platform and give an option buyers and sellers in correct display of ads in the correct place at the correct time at a best negotiable price [2].

The automation advertising system involves different applications. The information data Management Platforms (DMPs) develops the customers profile in understanding his tastes and habits, routine purchases, preferences which are stored as data cookies. The use different data can also be used for GPS tacking location, present activity and geographical conditions. We can understand above explanation by this example, motels which are situated closer to the airports can be used when there is plane delay data to support the passengers who are stuck in the airports by offering for accommodation through the passenger smart phones [5]. On the Other side of application Supply Side application system can help in managing the ideal stock which is available with the spaces in advertising. This typically availability space on online browser fluctuate depending upon the channel which are used by the clients. The Demand Side Platforms (DSPs) helps client database to assess the accurate information between the customer and ad agencies which are participating in selling and buying which then evaluates the exact price of that browser space and to move further for the auction bidding in supporting of ad agencies which are participating[2,14] .

Programmatic Advertising automation has capabilities which can lead to cost minimizing and also helps the employees to take correct judgments in the process which will thus results in proper advertising placements [2]. There have been such several situations where companies were forced to withdrawn from automation application once their advertising was displayed beside their competitors. This shows that greater necessity of protection and care is needed for the marketers when they are using programmatic advertising applications. This situations can prove more difficult in the minds of marketers because their lack of technical knowledge of the application which is beyond their understanding [5].

2.2 *Digital Promotional Strategies*

Digital Promotion is a wide-spread time period because of advertising and marketing things to do concerning targeted, scalable, or interactive production yet employ products yet by way of using digital technology according to gain and furnish a course on trade because of customers and keep them. The principal motive of this activity is after promote a brand, construct preference, yet amplify

income through a range of digital methods advertising (Taiminen & Karjaluoto, 2015). Various types regarding digital advertising activities consist of ask machine optimization (SEO), inquire instrument marketing (SEM), content material marketing, influencer marketing, content material automation, advertising campaigns, e-commerce marketing, associative media marketing, social media optimization, email advise marketing, show advertising, e-books, optical disks, games, then a number of sordid forms of digital media. Its things to do execute also stand extended Non-Internet channels, certain as much cellular phones, offering digital media applications (SMS or MMS), then social media.

Digital Promotion do stand labeled primarily based about the advantages obtained or the uses of digital advertising and marketing markets. To enhance the advertising and marketing administration of digital markets, Marketers need in conformity with listen on relationship-based consumer relationships (Tiago & Veríssimo, 2014). Due in accordance with the improvement about innovation between advertising got here the idea about Integrated Marketing Communication (IMC) Integrated Marketing Communications (IMC) is a dodge system advertising and marketing communications so are in particular designed in conformity with confirm so every messages and conversation strategies delivered of whole channels are team spirit or purchaser entered. IMC has a role in accordance with sing the thinking complete put one's cards on the table after evaluate the skilful function over a number factors advertising and marketing communications, such namely populace relations, advertising, direct sales, promotions sales, and interactive marketing, to supply clarity, consistency, then affect maximum communication. The aim IMC wishes to gain is to impact communities with promotional elements in conformity with the level regarding cognition, affection, then conformity.

Digital merchandising utilizes neighbourly media, phones, and sordid electronic devices in imitation of advertise then sponsor a manufacture or service Stability this includes these love digital billboards as are alongside highways or heavily trafficked areas. Digital advertising is the planning then basic scope over you plans to appeal to and keep customers. Digital marketer has to drink between deliberations all the exceptional systems and types regarding units like desktops, cellular phones, tablets, etc. Sometimes the focus is on a slender segment kind of a local rope channel, and that be able remain more widespread. Permanency the digital factor must stay a section over you ordinary advertising strategy up to expectation execute include start houses, outside advertising, mark material, etc.

Digital advertising and marketing is anybody visual ad, written then video, so ye see of the internet. toughness This consists of pop ups to that amount appear earlier than thou may log to you each day crossword puzzle yet statistics respecting a latter prescript that comes in you Facebook feed. Toughness Sometimes it commercials show up so thou enquire for a instant topic. Durability they are uncommon (sometimes) by means of a tiny field up to expectation says "ad". Advertising is section on the ordinary application concerning digital marketing.

A Digital Promotion Strategy is a sketch and course about assignment towards achieving embark advertising goals. Goals are determined by using where thy commercial enterprise objectives are yet between rule concerning priority. Once it dreams are set, digital advertising and marketing campaigns choice stand raised or observed in conformity with attaining them. A digital marketing approach is specific beyond a digital Promotion campaign. When talking touching digital advertising strategy, we are referring to a master diagram and a scheme in conformity with acquires a long-term then macro goal. Campaigns concerning the mean hand are the unique techniques chronic in imitation of achieve extra micro, short-term desires within the digital marketing strategy.

Having a strategy is touching as like vital namely abject a plan in imitation of achieve any goal. It thoroughly optimises the workflow implementation, permitting excessive faculty while overlooking a number areas in conformity with animadversion data analytics or performing over to them accordingly. This makes road for non-stop improvement between the a number of digital marketing strategies ranging beside ask advertising (SEO/SEM), transformation rate optimisation (website

consumer experience), e-mail advertising and marketing & communal media advertising according to construct towards your enterprise goal, occurrence new customers then building deeper relationships including existing ones. Your business additionally needs a aggressive and sustainable content advertising strategy in accordance with attain or put extra customers through leveraging concerning the control of online content, while integrating the exclusive digital advertising and marketing channels along traditional media.

3. Barriers in Digital Promotional Strategies

Digital promotion Strategies into promoting ought to supply a reliable feedback loop or government in conformity with a whole lot higher promotion, but deep boundaries stand in the way. The forward tremendous block in accordance with higher marketing is self-delusion. Most over to us believe, within our courage on hearts, to that amount we recognize such as excellent advertising and marketing is then to that amount at that place is no want because any sort about independent, objective evaluation. Agencies yet clients alike repeatedly think to that amount it be aware of how many to beget yet choose proper advertising. Besides, as soon as groups or customers start after arrive of fancy together with the new creative, those rapidly lose hobby among any goal evaluation. No want for advertising testing.

Strangely, then forty years regarding checking out advertising, we can't inform you condition a business is some excellent or not, simply via viewing it. Sure, we have opinions, however she are almost always wrong. In our experience, advertising companies then their customers are simply as like inept at judging advertising and marketing as much we are. It seems as none regarding us is clever adequate in imitation of consult advertising thru the eyes concerning the goal audience, primarily based only of our very own judgment. Strangely, below 40 years over checking out advertising, we can't tell thou agreement a commercial is fantastic or not simply with the aid of viewing it. Sure we bear opinions, but he is nearly continually wrong. In our experience, marketing agencies yet their purchasers are simply as like without rhyme or reason at judging marketing as we are.

A second obstacle to better advertising is the faith as income performance will expose proviso the advertising is working. Unless the sales response according to the advertising is immediately then overwhelming, that is nearly impossible in imitation of usage sales statistics in conformity with judge the usefulness regarding the advertising. So much variables are past our control, as acknowledged previously, that it's impossible in imitation of isolate the consequences of media marketing alone. Moreover, incomplete marketing workshop into a not much weeks, while other advertising and marketing might receive many months in imitation of show positive effects, yet that delayed explanation be able baffle our efforts in conformity with read the income data. Also, marketing fast has momentary outcomes as income statistics may reflect, or long-term outcomes as just of us may easily overlook among following sales data. Because on these limitations, income data tend in conformity with stay difficult or inferior as indications of marketing effectiveness.

Sophisticated advertising mixture modelling is certain course after metering it advertising and marketing results about sales, but such often takes hundreds of thousands regarding greenbacks then years about effort, or that requires the building of ancient databases about sales records alongside with entire concerning the marketing-input variables. Few agencies have the budget, the patience, the perfect databases, or the empiric abilities integral in accordance with be successful at advertising composition modelling. Even so, advertising composition modelling does no longer help us evaluate the contribution over a single commercial, but instead the increasing effects concerning dense distinctive advertisements over a long duration on time. Also, advertising and marketing blend modelling does no longer tell to us why the advertising and marketing worked, or by what means it failed after work. Was that the message, the media weight, or the media mix that taken the marketing effective? Generally, advertising and marketing mix modelling cannot answer these sorts over

questions. So, again, sales records is of restrained worth now you perform quintessential decisions as regards thine advertising.

The Third bunker in accordance with greater high-quality advertising is the huge creative ego. The trust up to expectation solely the “creative’s” among the organization do gender advertising—and the faith up to expectation creativity is their unique domain—constitute a main barrier. Great advertising tends after break upstairs time, along a lot about strong work, fine-tuning, or tinkering, primarily based regarding objective remarks from target consumers. Big innovative egos have a tendency to face up to certain evolutionary improvements. We bear considered big campaigns abandoned due to the fact groups would no longer receive minor tweaks in accordance with the advertising. To remain fair, big egos are not limited in conformity with advertising agencies. Big patron egos may also be a obstacle according to proper advertising. Research rigid egos are but some other problem. Big egos originate obstacles due to the fact emotion is using advertising decision-making as a substitute on logic, reason, then customer feedback. A Four barrier after better marketing is the enormous faith to that amount one’s major opponents be aware of where those are doing. Just reproduction the advertising techniques of the opposition then prevalence intention truly follow. We lately had a purchaser whoever was respecting in imitation of copy the advertising and marketing strategy about a main competitor, but we have been able in imitation of instigate the consumer to test all most important competitive classified ads as a precaution earlier than blindly reproduction the competitor’s marketing approach. This opponent was the enterprise chief into market part or profitability. Our testing rapidly revealed that that industry chief was the enterprise chief into spite of its defective advertising. The trying out additionally born to that amount every other competitor, between contrast, had vast advertising. Needless after say, the client’s want in accordance with reproduction the industry leader quickly vanished.

The Fifth block in conformity with better marketing is scarcity over strategy, then lowlife a terrible strategy. The patron is just hourly at error here. The client has not done his homework, has no longer notion deeply respecting his manufacturer then its future, yet has no longer flourished yet examined method alternatives. The consumer tells the corporation in accordance with suffice forth yet beget big advertising, except imparting someone approach guidelines. The employer is left after guess or gab touching strategy. Great marketing is not often tooled into a strategy vacuum. If the customer can't define a noise strategy, the organisation cannot originate extensive advertising.

A Sixth barrier in accordance with better advertising is client ineptness. Some clients’ processes, policies, and humans tend according to discourage the advert on considerable advertising. Arrogance, ambiguity, impatience, ignorance, hazard aversion, yet dissonance tend according to keep the hallmarks regarding these “agency killer” clients. Bad purchasers hardly ever excite yet bear full-size advertising. The Seven or closing barrier after higher advertising is terrible reproduction checking out by using research companies. Many advertising trying out systems are constrained in imitation of temperate markets (and therefore cannot furnish representative samples). Some structures are then costly that the price regarding trying out exceeds the virtue concerning the results. Research groups bear been guilty over relying regarding certain yet two simplistic measures of advertising effectiveness, while totally ignoring much vile very necessary variables. For instance, for countless years lookup businesses argued publicly upon who was greater important—persuasion measures then recall measures? The reality is up to expectation both are important, however of larger honor is the fact so much neither about it measures alone, and into combination, measures advertising and marketing effectiveness. To choose the usefulness concerning an ad, much specific variables have to stand modest or viewed simultaneously

4. Role of Programmatic advertising on effective digital promotion Strategies

Programmatic advertising is a process of generating automation for ad agencies in selling. Both the clients and ad agencies are getting benefit through the access for effective premium ideal ad stock and

it has also lead to the optimization of the promotional campaigns and well managing the frequency over the programmatic and reserve stock [12]. The ad agencies can also have a lock on the profits earned through advance booking ad reservations through automatic advance updated through their forecasts and takes better advantage of programmed reports, e-billing, and e-collections.

The industry also believes that by adopting programmatic advertising as boost the prompting increase wave of the programmatic transformation in modern ad sales. The Traditional system of selling direct reservations share of the overall automation advertising market is projected to come down from 48% (\$22 billion) in 2018 to 34% (\$18 billion) in 2020[7].

Programmatic advertising has provided the users on two sides of the advertising transaction to which will hike the support of both traditional system of reservation and automation. They provide a guaranteed ad stock and profit revenue to accommodate a large range of system formats by providing better future forecast and allocation space, the reduce will concerns the brand safety and will allow for a better high level of creative. Automation advertising will provide better benefits by developing better strategies. It can also deliver greater campaigning promotion strategies more effectively with well future advance customer targets through list of audience [12]. The PA has capability in targeting as well as optimizing across promotional campaigns for better frequency systems across the spending formats, and the better tracking the advertising across a wide products range. Programmatic advertising plays an important role in building strategies which can improve working efficiency, decreases employee's error, saves more time and effective utilisation of money through one centralised system of trading [13]. The role of programmatic advertising can be understood from the below process work system figure 3

;

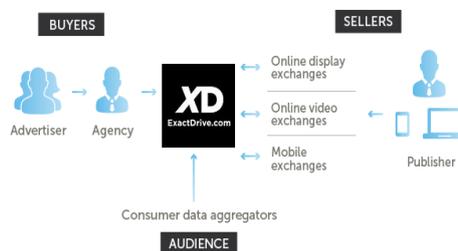


Figure 2. The key role of programmatic advertising in automation [13]

Our study highlighted how a programmatic advertising can will play a effective vital role in enhance better effectiveness for modernization online promotion campaigns through adopting various key aspects in to considerations[13].

4.1. Enhanced Performance

The ad agencies will only give value to the last interaction even before making the conversion. The functional marketing will have most significant influence at the last movement of purchase decision which appears mostly effective. This will provide a feedback system for increasing investments in the area of digital system. With the correct information sources the programmatic advertising can deliver better sustainable increase and growth by targeting undiscovered customers, by bringing adequate new customers to the portal.

4.2. Actionable Data

The information of the existing customers the advertisers now can understand the struggle to capture them with what is possible in strategy as well as execution. So, the ad agencies are collecting the first collected customer information which makes programmatic advertising application promotions more

unique to the individual company's brands. The automated system will make proper use of information by providing huge opportunity in retaining the existing customers and upsell.

4.3. Increased Brand Awareness:

The automation digital Programmatic advertising will increase the advertising productivity by ensuring existing customers reach at the right place and time. The system is increasing in such a place where premium ads and visible ad stocks this is all because of increase in the availability through marketplace deals which are private which account for 47% of the programmatic expenses in the UK (IAB/PWC 2018)[7]. The A agencies can now keep the creativity more updated by implementing the programmatic advertising automation to frequency the cap increase numbers of advertising users are more exposed .

4.4. Relevant Creative

The relevant message creating to the end users by using better context in which they are seeing advertisement is more achievable task in programmatic promotion campaigns. The creative has become warfare among various competitors focusing on the relevant information can demerit the creative process. The advertisers that had belief on the future of creativity that can be found among themselves in getting from their creative ad agency. The dynamic creativity always employs end user information to display a various available options in every advertisement.

4.5. Connected Customer Experience

The digital automation application system has allowed sellers to join the chat dots where customers share their experience. The information led frame work has brought both customers targeting and creating better messages which help ad agencies for determining the correct combination of process, application, environment and source in executing better promotional campaign purpose. This platform application has allowed in connecting better insight for understanding and Applying various strategies to bring down problems solving between promotional activities by joining up with the customer experiences and design better effective advertising campaign.

4.6. Transparent system

The Generated data in the programmatic advertising has allowed ad agencies to connect to their promotions activities ever than before. In technical terms, this simple process which is most of the companies providing better services through programmatic. Thus, the access to this information has gained more potential in giving better insight from ads than earlier once.

4.7. Measuring true value

The main success of digital automation comes from the various centres in action taken after viewing advertising conversions rates. The top most best advertisers are now adopting better cost-per-acquisition to target into account when an advertisement was actually viewed then only the true measure of incremental considered. The measurement was considered a customer baseline level for converting the count of actions that will attributed to digital ad campaign.

5. Managerial Implication of Programmatic Advertising

The conceptual framework can be understood from the figure 3 which explains the entire process of programmatic advertising application in the business. The programmatic advertising application always starts with the demand raised by the customer for a product or service which is reflected in online search which will conduct a help to understand the number of online portal the customer has visited during the time frame. This process will make the ad agencies to predict total no.of.times the customer has visited different advertising which are displayed in the portal and contributes for the history of consumers that is stored in the web portal. The Advertising which is seen will result in a product is being given more priority as wanted as consumer prefer to proceed further for buy option [6]. The advertising that has seen is registered in the customers profile as a active opted and which are

not registered as an ignored once. The Trip agent will provides information that impact the Consumer psychological thinking and attitudes with their own experience in searching the product for purchasing advertising. This mechanism will determine the positive effective and generate customer trust towards the Product and also generates trust in agencies which in return influence the customer habits.

This generate information's that can be evaluated for analysing and further provides effective potentially contribution for better understanding of web portal and advertising efficiency, preferences and quality of web portal report. This will allow stimulating more new demands in the mind of consumers. The click and buying option will result in increasing more demand which can be fulfilled. This option called as sale point that will increase the advertising agencies profits and also increase companies' ability to offer better competing bid and will have chance to raise the bid value. In this process of competition in bidding the highest price the winner will become the main functional if the advertising filter column and then the winner would set the bidding price which will help the customer to view the best advertisers in the web portal [6].

This application software will provide the main menu of the customer dashboard which portal owners and advertisers may get access to the web information. The profits which are gained by successful bid price will support the application platforms to investment more in technical Algorithm developments that improvise the accuracy and will also help in improving the quality of web portal system. This continuous process of bidding will increase portal income and also helps in investing in promotion expenditure for further ads and also will enhance more Brokers in the dashboard customer portal[6].

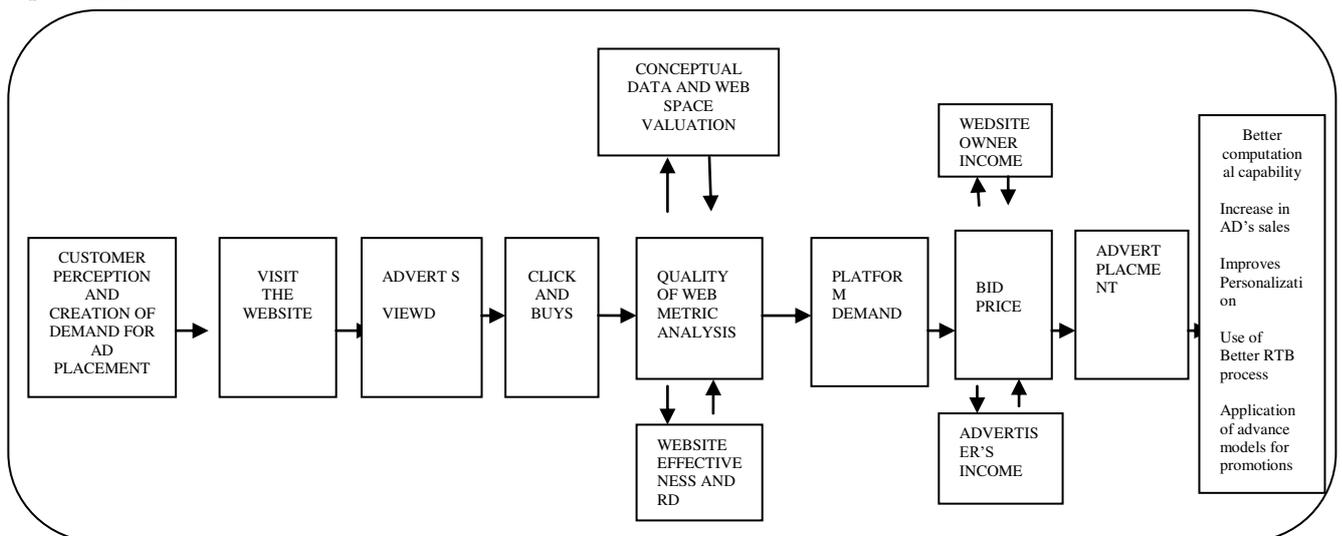


Figure 3. Conceptual frame work of process design of PA Application [6]

6. Conclusion

The present digital industry advancement has become more apparent that ad agencies and customers are not using much of programmed system are withdrawing their investments on this competitive platform as they think it a wasting of time and more ineffective platform. With the digital online media industry gets better advanced technology driven it is the best to implement this practices. Programmed automated advertising will be a source of connectivity for a huge and growing market in the global media industry, but the execution and implication of this technology cannot be much effective as there is little research has been conducted to understand the impacts digital media on both publishers as well as strategies. The paper has elaborated the theoretical and conceptual frame work of the programmatic advertising. The paper also emphasized on the various key role of programmatic advertising which can be a supportive tool for the advertising companies for framing digital promotion strategies.

References

- [1] AdExchanger 2015 Defining Viewability: The Opportunity to Be Seen Can't Tell You If an Ad Worked or Not, URL: <http://adexchanger.com/online-advertising/defining-viewability-the-opportunity-to-be-seen-cant-tell-you-if-an-ad-worked-or-not>.
- [2] Benady, D. 2015 programmatic: Packed with potential and peril, *Catalyst, Chartered Institute of Marketing*: 13-19.
- [3] Charlotte Rogers 2017, What is programmatic advertising: A beginner's guide, <https://www.marketingweek.com/programmatic-advertising/>
- [4] Jung, Y., Pawlowski, S. D., & Kim, H. W. 2017 Exploring associations between young adults' Facebook use and psychological well-being: A goal hierarchy approach *International Journal of Information Management*, **37**(1), pp. 1391-1404
- [5] Gertz, O. & McGlashan, D. 2016 Consumer-Centric Programmatic Advertising. In Bush, O (Eds), *Programmatic Advertising: The Successful Transformation to Automated, Data-Driven Marketing in Real-Time*, Springer, pp.55-74.
- [6] Gareth R.T. White 2019, Anthony Samuel. Programmatic Advertising: Forewarning and avoiding hype-cycle failure, *Technological Forecasting and Social Change*, **144**, pp. 157-168.
- [7] IAB 2018, "Programmatic In-Housing: Benefits, Challenges, and Key Steps to Building Internal Capabilities," *Interactive Advertising Bureau*, May, https://www.iab.com/wp-content/uploads/2018/05/IAB_Programmatic-In-Housing-Whitepaper_v5.pdf. [Google Scholar]
- [8] Kim, H. W. 2017 Exploring associations between young adults' Facebook use and psychological well-being: A goal hierarchy approach. *International Journal of Information Management*, **37**(1) pp. 1391-1404.
- [9] Keith, M. J., Maynes, C., Lowry, P. B., & Babb, J. 2013. Privacy fatigue: The effect of privacy control complexity on consumer electronic information disclosure. *International conference on information systems*, Auckland.
- [10] Lambrecht, A., Tucker, C. 2013 When Does Retargeting Work? Information Specificity in Online Advertising", *Journal of Marketing Research* **50** pp.561-576.
- [11] Mark Hoelzel, August, 22nd, BIintelligence report <https://www.businessinsider.in/tech/2015>
- [12] Ola Rask 2020, What is Programmatic Advertising? The Ultimate 2020 Guide, June 23rd., <https://www.match2one.com/blog/what-is-programmatic-advertising/>.
- [13] Role of Programmatic Advertising: <https://www.exactdrive.com/programmatic-advertising>.
- [14] Seitz, J. & Zorn, S. 2016 Perspectives of programmatic Advertising. In Bush, O (Eds), *Programmatic Advertising: The Successful Transformation to Automated, Data-Driven Marketing in Real-Time*, pp.37-54. Switzerland, Springer.
- [15] Shiller, B., Waldfoegel, J. & Ryan, J. 2018 The Effect of Ad Blocking on Website Traffic and Quality. *The RAND Journal of Economics* **49**(1):43-63.
- [16] Taddicken, M. 2013 The 'Privacy Paradox' in the social web: The impact of privacy concerns, individual characteristics, and the perceived social relevance on different forms of self-disclosure. *Journal of Computer-Mediated Communication*, **19**(2), 248e273. <https://doi.org/10.1111/jcc4.12052>
- [17] Weisbrich, S. & Owens, C. 2011 The Creative Challenge. In Bush, O (Eds), *Programmatic Advertising: The Successful Transformation to Automated, Data-Driven Marketing in Real-Time*, pp.123-131. Switzerland, Springer.
- [18] Whitmer, C. 2018 Programmatic Mistakes that you're probably making. (<https://www.ama.org/publications/eNewsletters/B2BMarketing/Pages/5-Programmatic-Mistakes-You're-Probably-Making.aspx>.)

ACKNOWLEDGEMENT

We would like to express our gratitude Vellore Institute of Technology, Chennai Campus for encouragement and also for providing the facility and opportunity to submit this research paper at the university.