Ubex

ARTIFICIAL INTELLIGENCE

in Advertising

WHITEPAPER

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Executive Summary

The digital advertising market has been actively growing for the last 4 years; its size has exceeded the size of the television segment in 2017. This is a historic event for the advertising market. One of the most promising segments of digital advertising is programmatic advertisement, which shows an average annual growth rate of more than 23% against a 4% growth rate of non-programmatic segments. According to the forecasts of Magna Global, the market size of advertising software will reach $42 billion by 2020.

Nevertheless, despite these positive dynamics, the digital advertising market has many problems, including low targeting efficiency, non-transparent counterparty relationships and a high level of fraud. As a result, all sides of the relationship suffer - advertisers overpay for each client involved, publishers receive lesser rewards and consumers of advertising are dissatisfied with its quality.

Ubex proposes to solve these problems by combining all the advantages of programmatic technologies, neural networks and smart contracts in a single system. Through this approach, Ubex provides a transition from the traditional pay-per-click scheme to the payment for targeted actions, which is the most fair and interesting model for all market participants.

We present to you the Ubex project - a global, decentralized exchange of programmatic advertising based on neural networks and smart contracts. The mission of Ubex is to create a global advertising ecosystem with a high level of mutual trust and maximum efficiency.

Advertisers can automatically purchase ad slots using the Ubex system. The programmatic system automatically chooses ad slots that have the highest probability (calculated via neural networks algorithms) to engage the target user. Procurement of advertising takes place in real time using programmatic technology on the basis of neural networks with the application of smart contracts. Neural networks contribute to the optimal distribution of the ads among available ad slots and the smart contracts eliminate risks for advertisers and publishers by providing more transparency.

Advantages of Ubex in comparison with other advertising exchanges:

1. Neural networks maximize purchasing efficiency.

Neural networks, which process information about each visitor to the member networks' websites, are at the heart of Ubex's advertising purchasing algorithms. The neural networks evaluate the interests of users, calculate the likelihood of targeted actions for all advertiser offers, and choose the most suitable advertisement. Neural network are able to do it because of the track-record of the previous actions of users, and the statistical datasets provided by site-owners. All these inputs improve the ability of neural network to make better predictions. Thanks to this, member network website visitors see only those ads that are maximally

confined to their interests, and which would convince them to fulfill the target action with maximum probability. Ubex algorithm also estimates the economic efficiency of displaying various advertising options to each particular user. Therefore Ubex maximizes the targeting of advertising and the economic efficiency for advertisers

2. Blockchain-based smart contracts minimize participants' risks.

Ubex aims to solve the problem of low confidence in the purchase of digital advertising. Smart contracts allow for making the relationship of advertisers and publishers (owners of ad slots on sites) as transparent and fair as possible, as well as minimizing the risks for all parties. By applying such an approach, Ubex allows passage from the traditional pay per click scheme to the model of payment for targeted actions, the most fair and interesting model for advertisers.

Our team consists of high-level professionals with extensive experience in areas of marketing, neural networks and blockchain. We perfectly know and understand all the advantages of these technologies, which we are able to apply effectively in order to achieve the maximum result in terms of advertisers' budget efficiency and publishers ads revenues. The infrastructure developed by us will allow us to take the process of buying advertising and its economic efficiency to a new level.

The market

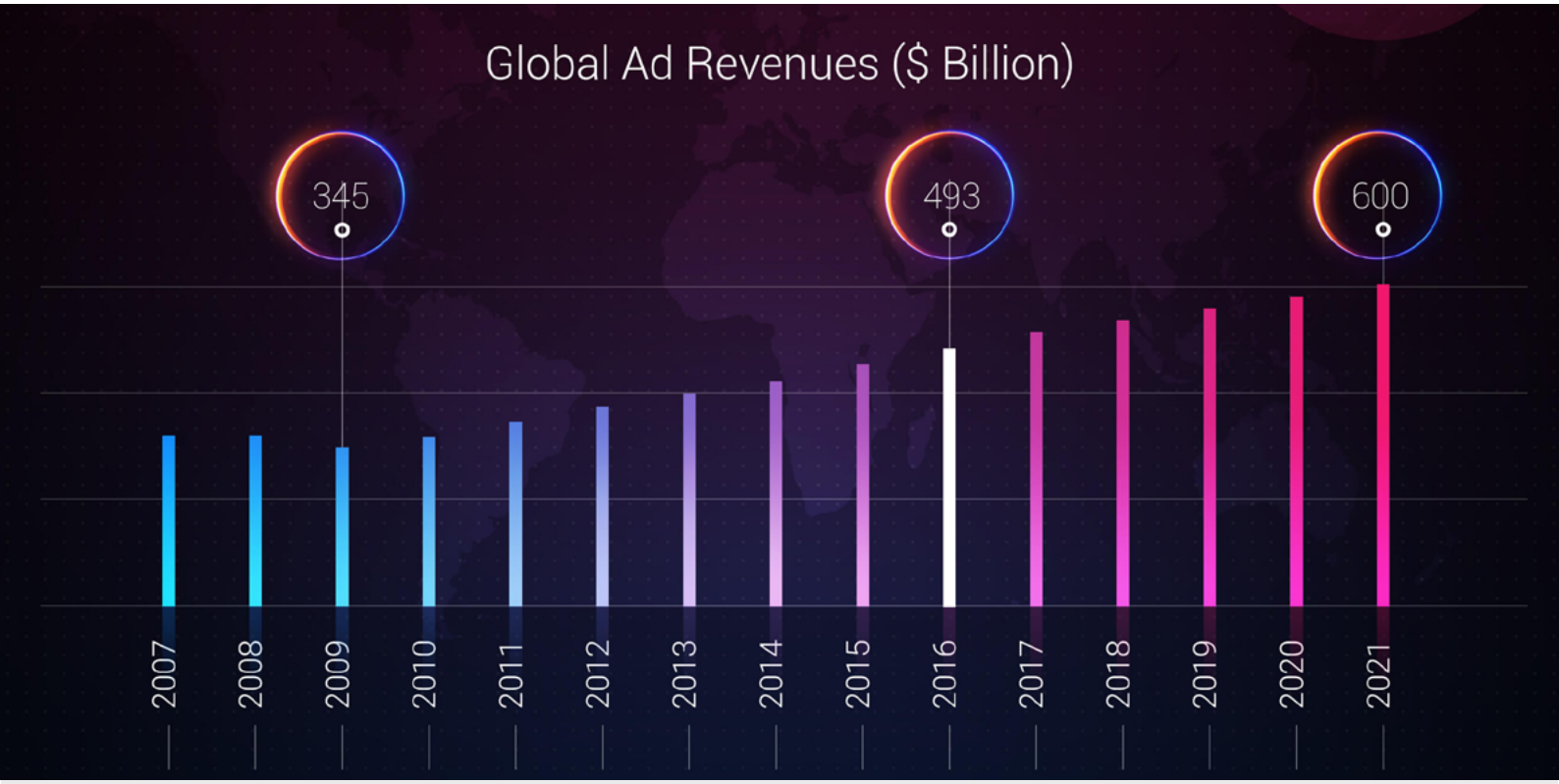
What is programmatic advertising? In plain English, it is buying real-time advertising on the basis of an auction. The concept of the software is definitely broader and includes limited auctions and direct sales of advertising as well.

In general, programmatic advertising is a set of methods for purchasing advertisements on the internet using automated systems and algorithms to make decisions about a transaction without human participation based on socio-demographic and behavioral data about users available to both the platform and the advertiser.

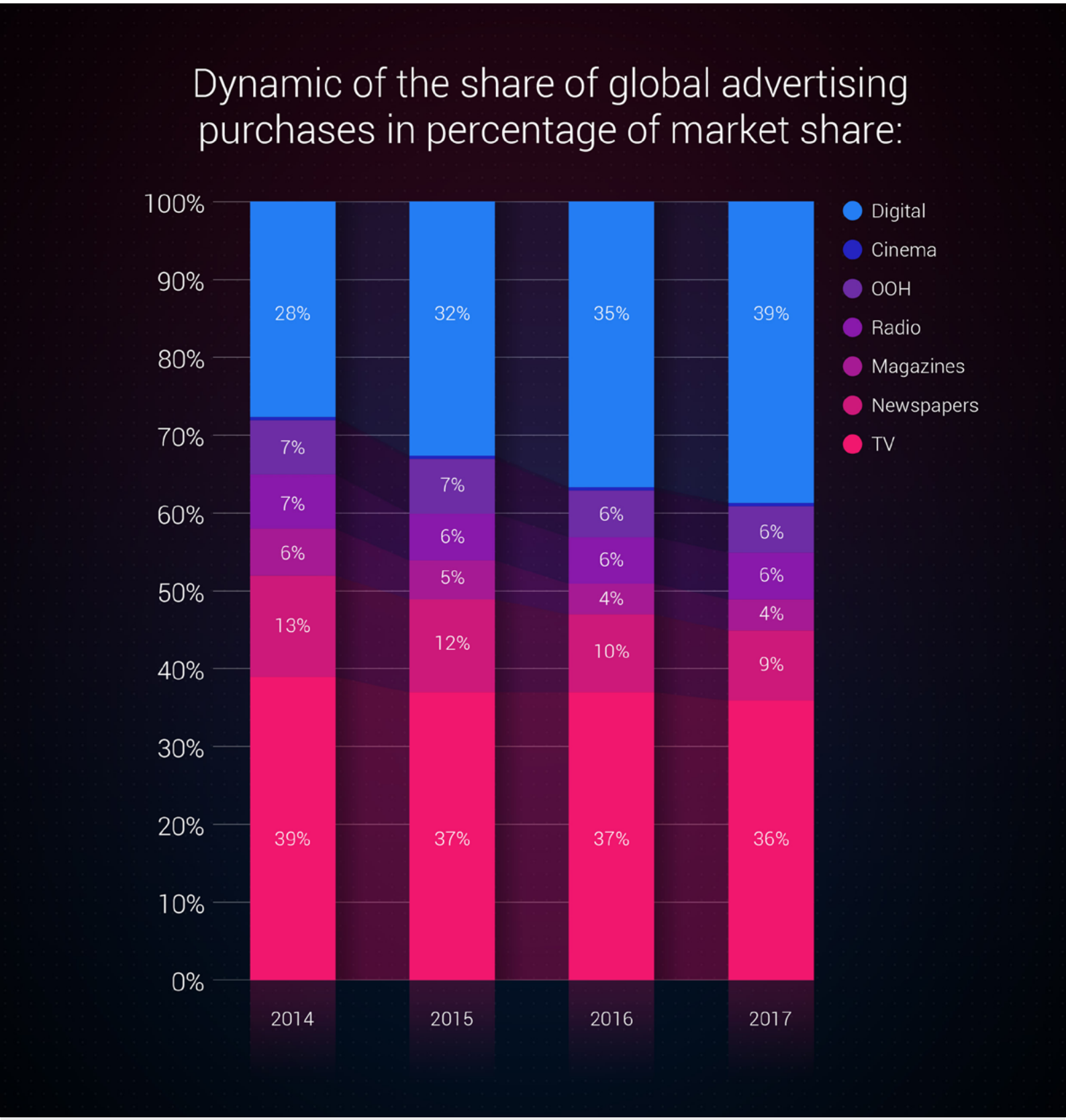
It works as follows: when a user visits a web page, that user is shown ads. For those fractions of a second, while the website is loading, the system analyzes the composition of the audience of the website, correlates this data with client targeting and selects the appropriate advertising format. After that, an auction is conducted among advertisers whose target audience corresponds to this particular visitor of the website and who want to show their advertising. During the auction, the highest bid and the winner of the auction are selected. The advertisement of the winner is uploaded to the website and shown to the user.

The whole process of Big Data processing and holding an auction takes from 100 to 200 milliseconds. All the work is done by algorithms, a person only controls the results obtained.

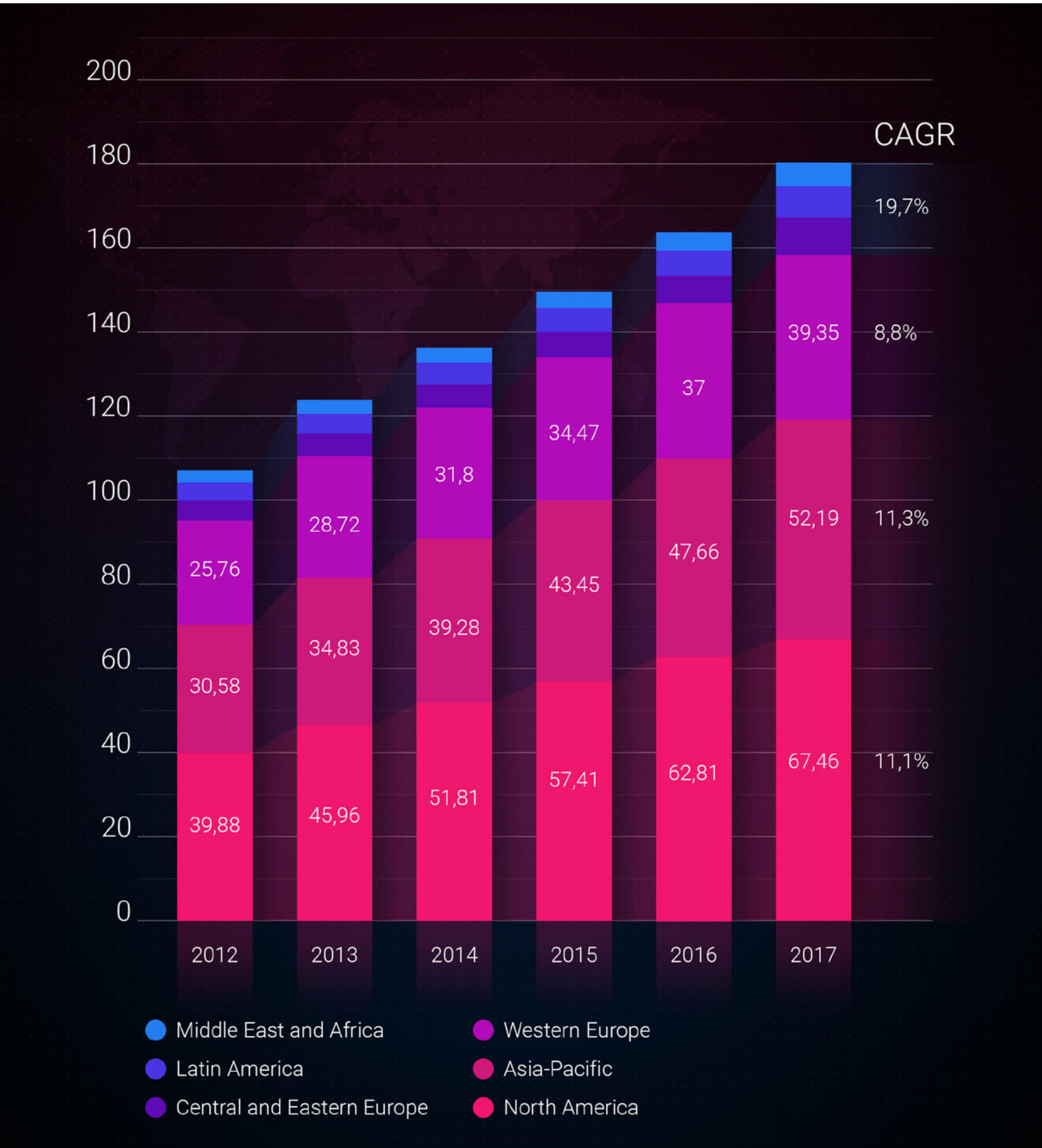
According to Magna Global, the size of the global advertising market was $465 billion in 2015, $493 billion in 2016 and $500 billion in 2017.



If we analyze the segmentation of the entire advertising market in more detail, two key competing segments can be distinguished: the digital segment and the television segment. As part of the overall market trend, the cost of television advertising exceeded the costs of internet advertising until 2017. In 2017, there was a historical event for the advertising market – the volume of the world market of internet advertising exceeded the volume of traditional television advertising for the first time and reached a size of $192 billion.

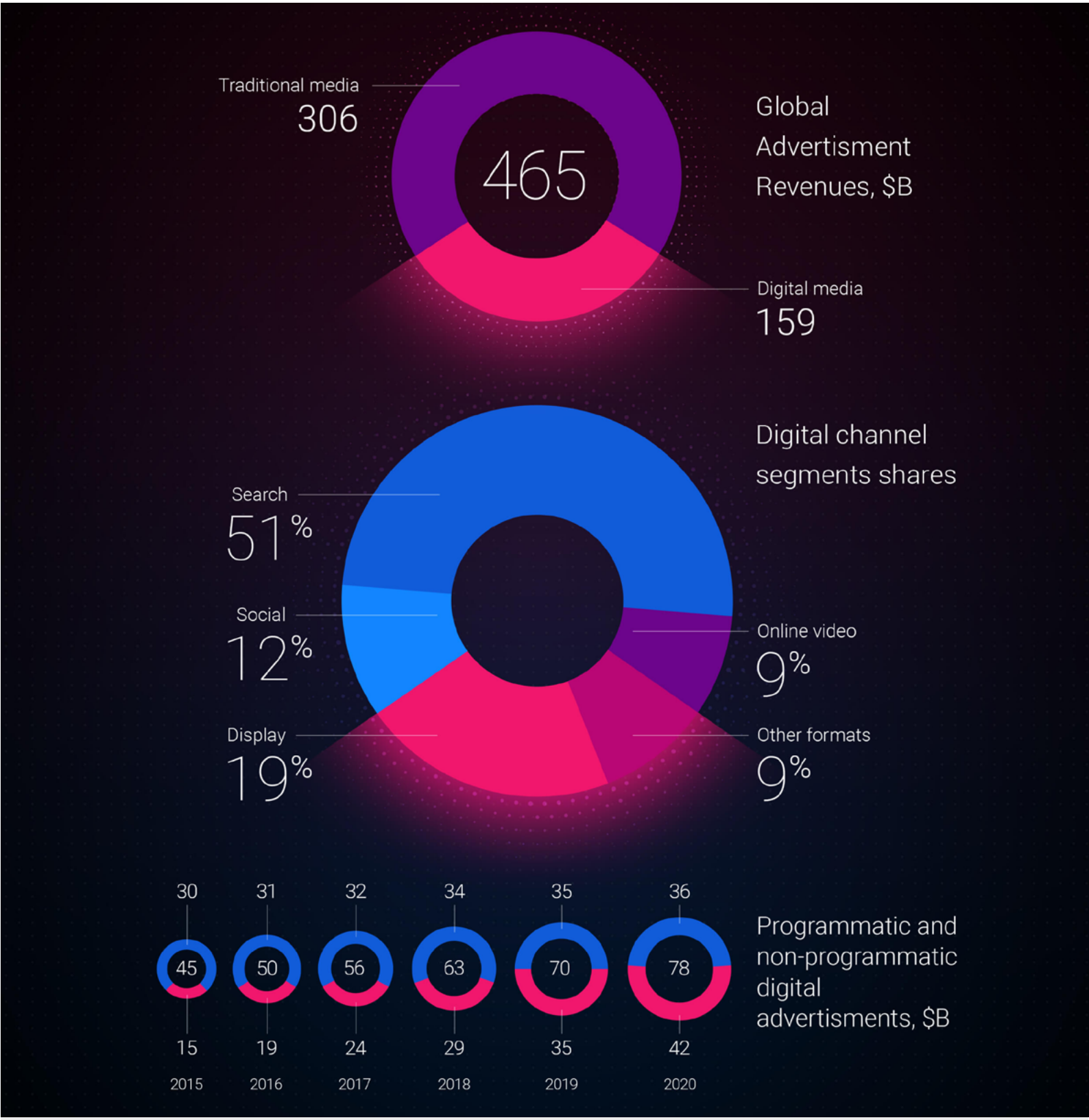


In a number of countries, the digital segment already occupies more than 50% of the market. The main contribution to the growth of the digital content market over the past 5 years has been provided by the countries of Eastern Europe, the Middle East and South America.

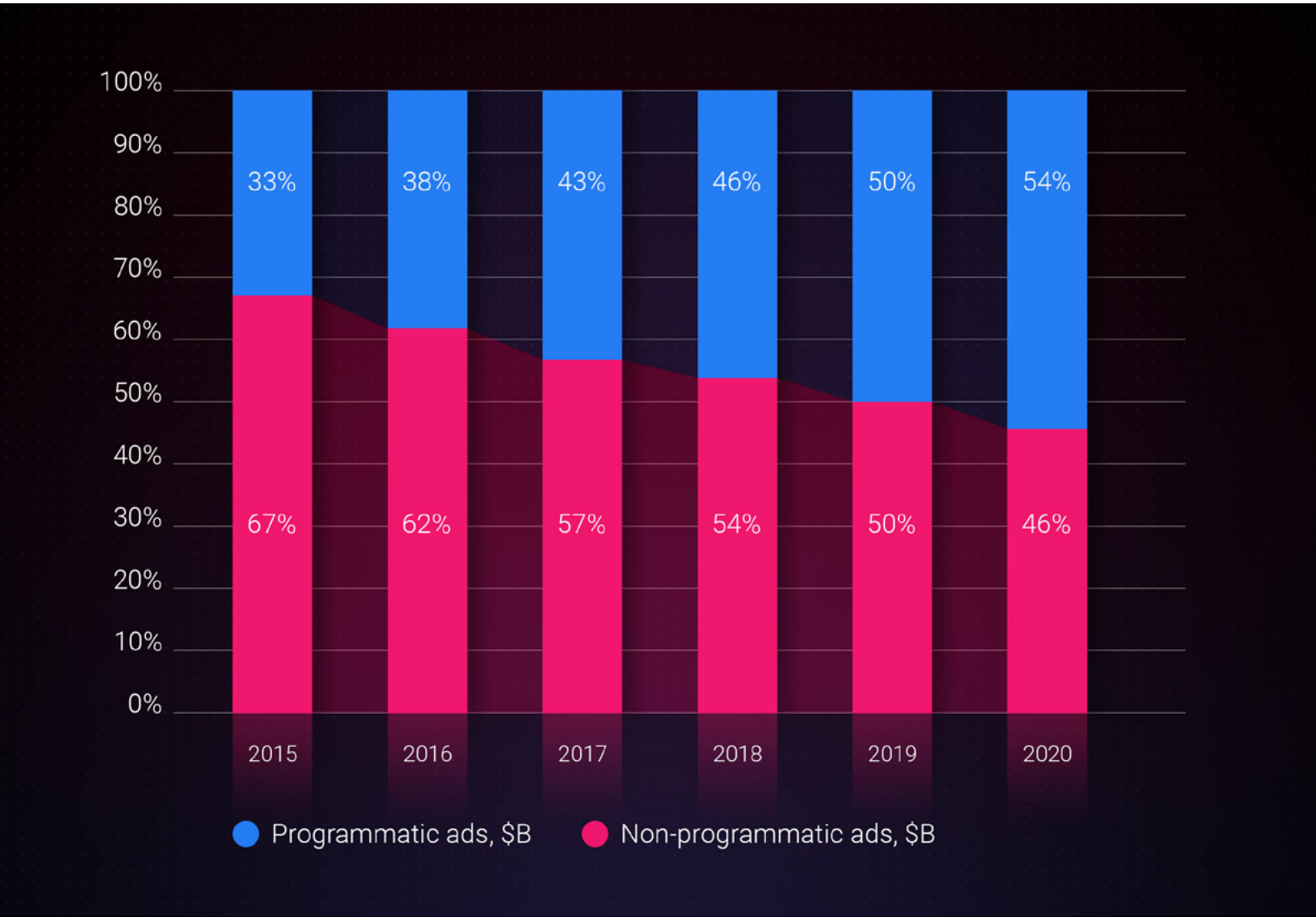


According to the forecasts of Dentsu Aegis, the share of internet advertising can exceed 50% of the total advertising market in 2018 in countries such as Australia, New Zealand, China, Norway, Denmark, Sweden, the Netherlands and the United Kingdom.

The target market for Ubex (programmatic advertising market) is part of the digital advertising market. Basically, it is advertising demonstrated through online video and banners. The chart below shows the dynamics of the advertising software market from 2015:



The programmatic advertising market has been growing by more than 25% annually demonstrating growth rates much faster than any other segment of the advertising market and reached $24 billion last year. The market size of advertising software will reach $42 billion by 2021 and its share will exceed the non-programmatic segment, continuing to displace the old format of work from the market.



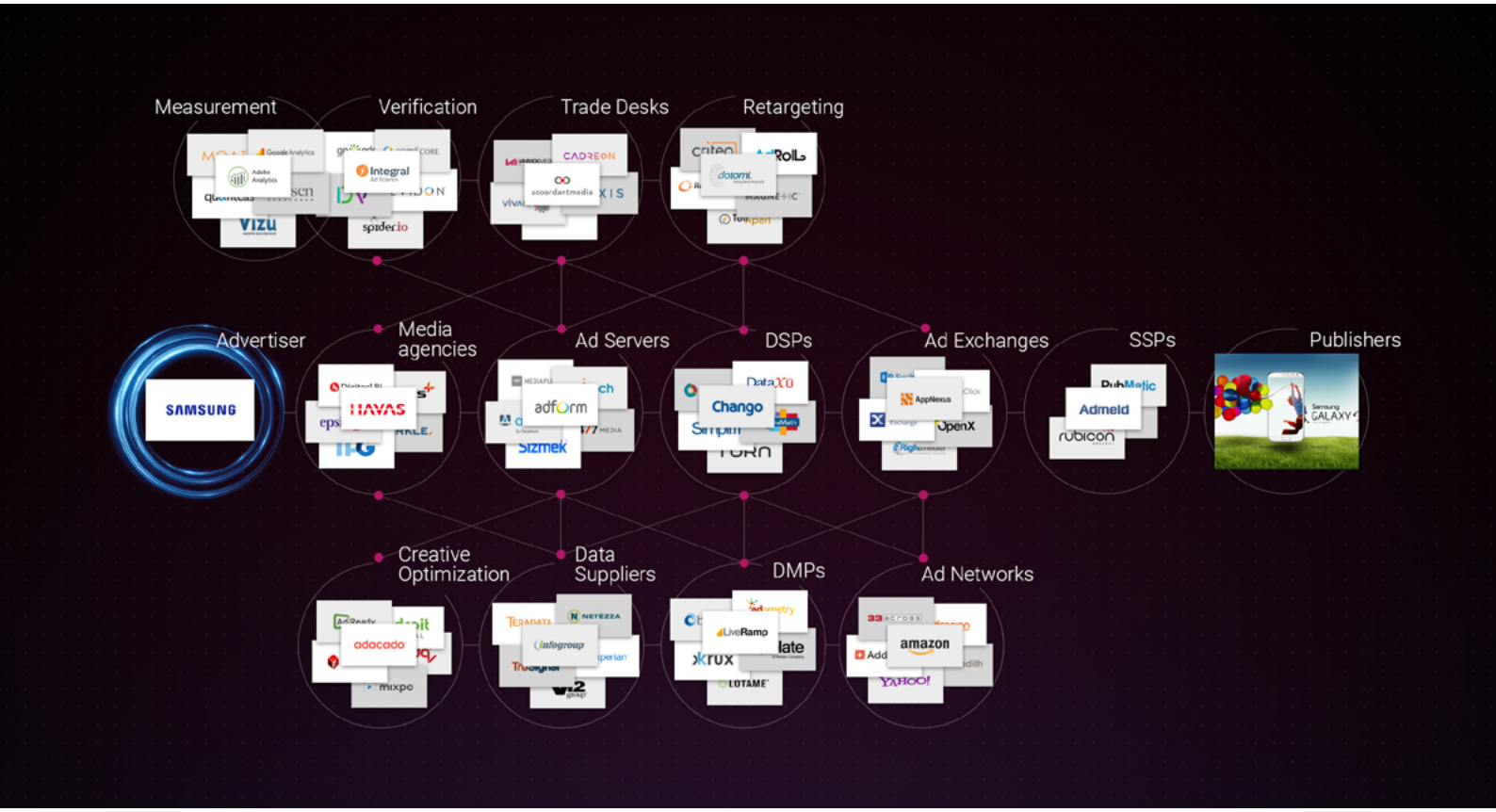
Of course, before programmatic advertising appeared, advertisements were bought and sold manually. Advertising networks were buying up wholesale ad views from online publishers on completely different websites and then resold them to smaller advertisers on opaque terms. It was unreliable, inefficient and slow.

The advantage of programmatic advertising is that it makes the buying process quick, more efficient and less expensive. Advertisers can customize their advertising campaigns (through highly accurate targeting of users who show the right advertising at the right time) and strategically monitor their productivity. This approach allows you to improve the targeting significantly and actually move from purchasing ad views to direct purchases of the target audience.

That is why the market of programmatic advertising demonstrates such impressive growth rates; the potential of programmatic algorithms is huge. At the same time, this potential cannot be fully realized without the implementation of blockchain technology and neural networks. Thus, the emergence of Ubex will be a catalyst for the growth of the software market and digital advertising in general.

Market structure

The structure of the digital advertising market consists of a chain of participants represented, on the one hand, by advertisers and on the other, by publishers with a number of intermediaries between them, performing a variety of functions. The current digital-advertising purchasing scheme:

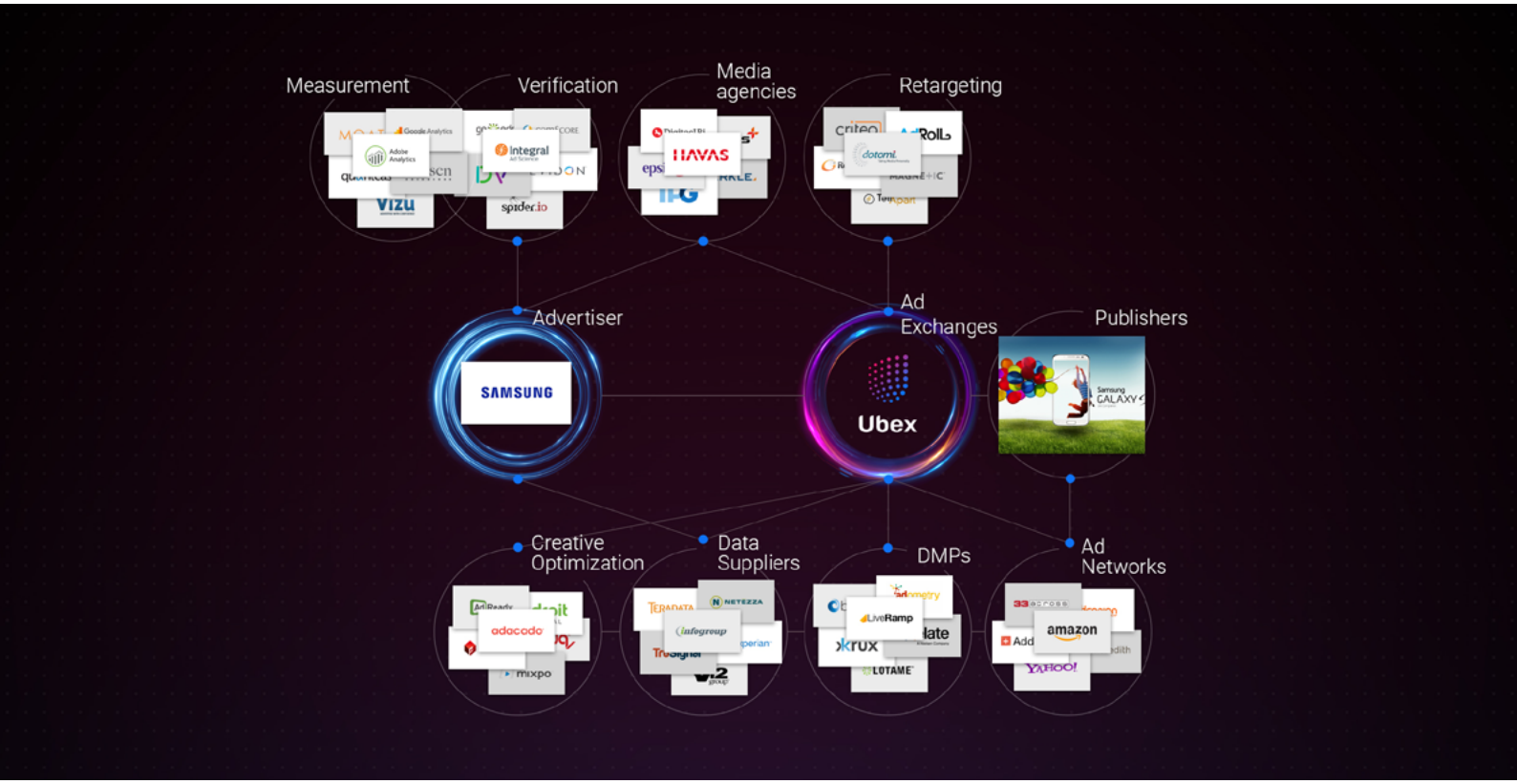


Large and medium-sized advertisers purchase digital advertising through media agencies, which in turn, deal through affiliated trade desks or directly with purchases in one of three ways:

- Directly from the publisher.
- Through banner networks (horizontal and vertical networks).
- Through advertising exchanges.

External technical services like demand-side platforms (DSPs), supply side platform (SSPs) and Ad Servers are also used for purchasing and monitoring. Each of these services solves a certain task but increases the final cost for the advertiser (the costs for these services are added to the commission of agencies). Advertisers and media agencies use ancillary services to increase the effectiveness of advertising (creative optimization, data suppliers / data management platforms, retargeting, etc.).

Ubex facilitates purchases of digital-advertising. The Ubex digital ad purchasing scheme will look as follows:



Advertisers can easily purchase advertisements from publishers through the Ubex advertising exchange without resorting to the expensive services of agencies and other intermediaries. Ubex combines the functionality of an advertising exchange with a service to monitor all the performance indicators of each ad placement of each publisher, thereby eliminating the need for appropriate external tools. Similarly, Ubex combines the functionality of a DSP / SSP.

Ubex aggregates proposals for the provision of advertising slots directly from the publishers. Combined with the use of additional data providers, Ubex grants a synergistic effect, since the more data that is input into the neural network, the more accurate its predictions are with respect to the probability of a targeted action of each particular user in response to advertising materials.

Comparative analysis of alternatives

Advertiser selection criteria						
Method of purchasing digital advertising	Companies	Complexity of purchasing	Targeting ability	Lead cost	Risk of fraud	Pay per result option
Programmatic advertising exchanges on the basis of blockchain and neural networks	Ubex	Low	High	Low	Low	Yes
Traditional programmatic advertising exchanges	DoubleClick, RightMedia, OpenX, AdECN, PLYmedia	Low	Moderate	Moderate	Moderate	Moderate
Media / digital agencies	WPP, Havas, OMD, Merkle, DigitasLBi, Omnicom Group	Low	Moderate	High	High	No
Horizontal advertising network	Google, Yahoo, Amazon, Microsoft, CPX	Moderate	Low	Moderate	High	No
Vertical advertising network	Adify, MobSoc, RGM Alliance, Inflection Point Media, Martini Media	Moderate	Moderate	High	High	No
Directly between the publisher and the advertiser (includes contextual advertising in search engines and banner advertising in social networks)	NYTimes, Flickr, Craigslist, imdb, BBC	High	Moderate	Low	Moderate	No

Publisher selection criteria					
Digital advertising sales method	Companies	Complexity of purchasing	Targeting ability	Lead cost	Risk of fraud
Programmatic advertising exchanges on the basis of blockchain and neural networks	Ubex	Low	High	Low	Low
Traditional programmatic advertising exchanges	DoubleClick, RightMedia, OpenX, AdECN, PLYmedia	Low	Moderate	Moderate	Moderate
Media / digital agencies	WPP, Havas, OMD, Merkle, DigitasLBi, Omnicom Group	Low	Moderate	High	High
Horizontal advertising network	Google, Yahoo, Amazon, Microsoft, CPX	Moderate	Low	Moderate	High
Vertical advertising network	Adify, MobSoc, RGM Alliance, Inflection Point Media, Martini Media	Moderate	Moderate	High	High
Directly between the publisher and the advertiser (includes contextual advertising in search engines and banner advertising in social networks)	NYTimes, Flickr, Craigslist, imdb, BBC	High	Moderate	Low	Moderate

Ubex provides maximum profits on key parameters for both advertisers and publishers, thus creating an effective environment for cooperation with a high level of mutual trust.

Advertisers: problem and solution

Advertisers lose money on every attracted buyer because of the traditional approach to advertising purchases. In most cases, advertisers are forced to incur excessively high costs to attract buyers for three reasons:

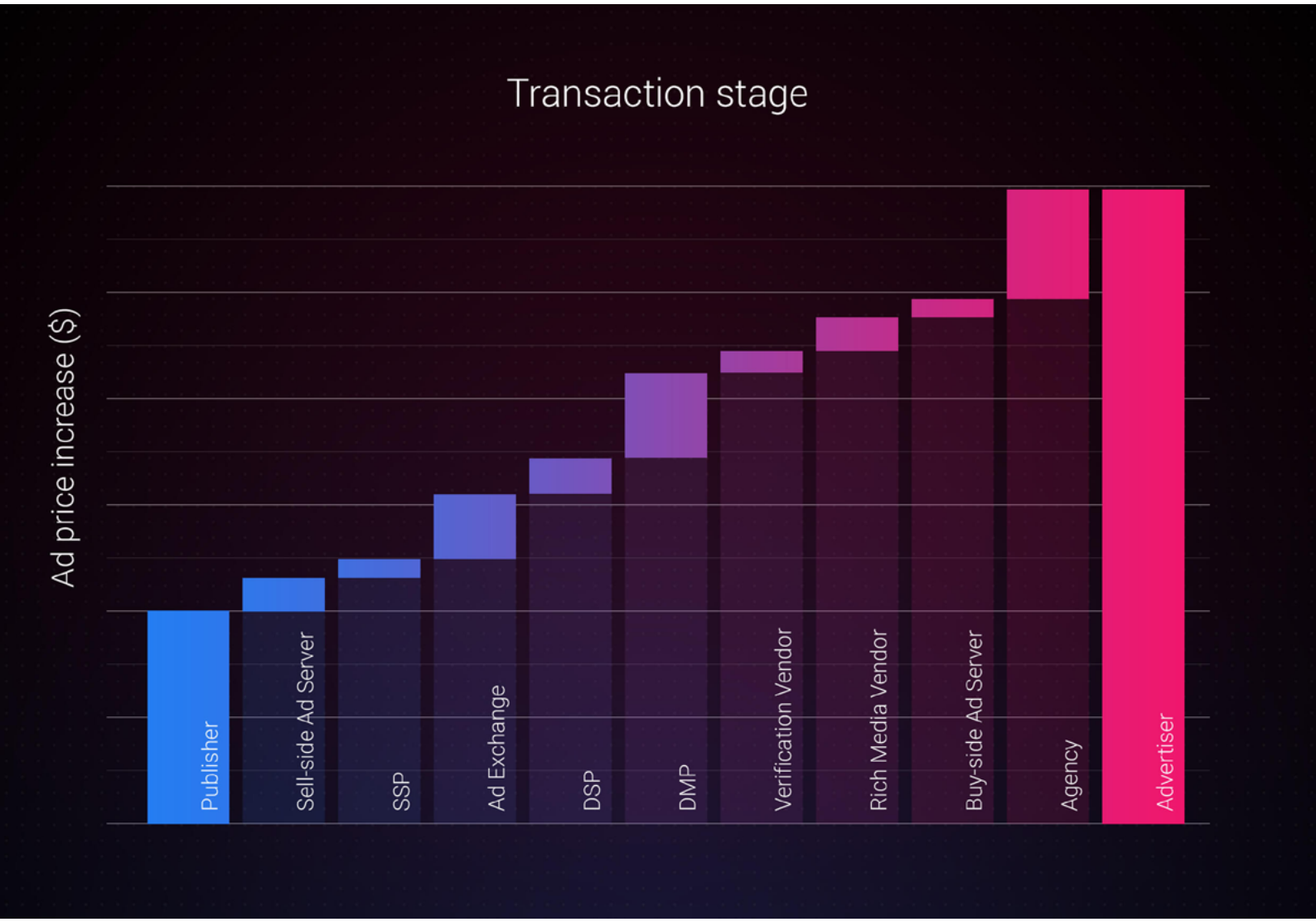
1. Presence of brokers => high commissions (Effect on customer acquisition cost: ± 30%)

There is no single instrument by which a large advertiser could easily filter out the most effective websites for their advertising and remain certain that their media budget for digital advertising would be spent efficiently. In addition, the budgetary policies of large companies often do not possess sufficient flexibility to allow employees to purchase advertising slots on various websites (which belong to different legal entities) in the volumes necessary.

In order to save money and speed up the process, medium and large advertisers often prefer to work through digital agencies (or full-cycle advertising agencies that have a digital department within their structure) that, within the budget approved for a certain period, are engaged in the purchase of advertising slots and monitor the effectiveness of such purchases.

The disadvantage of this approach is the need to pay considerable commissions to the agencies for their services (about 10-20%). Many other services existing in the chain between the advertiser and the publisher also require additional costs, which increase marketing budgets two or even threefold relative to the price of advertising from the publisher.

Formation of the cost of advertising relative to the publisher's original price.



Another drawback of the current system of working with agencies is that advertisers do not always receive up-to-date and reliable information about how their advertising budget is being spent and what results can be guaranteed for the effectively applied funds. In addition, many media agencies do not disclose the algorithms they apply and what audiences have been attracted to the sources of advertising.

Ubex offers a solution in the form of smart contracts on blockchain. Thanks to the Ubex purchasing system, the process of acquiring advertising slots and selecting the most

effective websites for placement is simplified to the maximum and transaction risks are thereby reduced to a minimum because of the neural network algorithms, which select the ad slots with the maximum potential targeting effect for the advertiser. Ubex transaction algorithms automatically solve the issues that advertising agencies traditionally undertake (for a large commission). Once the payment is made, the advertiser can automatically purchase advertising according to the specified requirements set for the target audience, geography, time of displays and many other parameters. In addition, advertisers with high ratings have an option to defer payments. Thus, with the help of Ubex, it is possible to purchase advertising directly without any brokers, which significantly increases the economic efficiency of cooperation.

2. Pay per click => Risk of fraud (Effect on customer acquisition cost: ± 30%)

There are various models of payment for digital advertising. In most cases, advertisers are forced to accept the pay-per-click model, and thus carry the publisher's risk of fraud.

Despite its convenience for publishers, the pay-per-click model often creates incentives for fraud. Fraud, in its most basic form of explanation, is an imitation of the actions of real users, aimed at achieving KPIs set by the advertiser, thus inflating targeted actions artificially, and, as a result, obtaining higher payments for no concrete feedback at the expense of the advertiser. The amount of fraud in the programmatic segment has reached critical levels.

AppLift and Forensiq have both conducted studies on the issue and revealed that about 34% of all mobile ad displays raise suspicions about their origins and 22% of them are blatant fraud. Accurate estimates based on research conducted by Videology, place losses attributed to fraud in 2015 at $6.3 billion USD and $7.3 billion in 2016. Juniper Research forecasts that losses of advertisers and other market participants from fraud by 2022 will reach critical levels of a mind-boggling $44 billion. Incapsula in turn, estimates that bots generate up to 52% of all traffic to advertisers' websites, thus resulting in direct losses of advertising budgets in the amount of 52% or more. According to the results of the Forrester study, 92% of advertisers with a budget for display advertising from $ 1 million in 2018 see the fight with fraud as their main task.

Incapsula estimates that up to 52% of all traffic to advertisers' websites is generated by bots.

In this case, the best alternative for advertisers would be to pay for targeted actions (COST PER ACTION), for example:

- Registering on websites.
- Filling forms with contact information.
- Clicking “Call Me Back” buttons.
- Purchasing products.

Paying for an action creates incentives for cooperation of all participants within the system. This payment model motivates participants to:

(1) Maximize honesty. Simulating target actions is much more complex and expensive than simulating clicks. In the case of payment for targeted actions, advertisers do not pay for anything other than for the user's action and conversion from these actions to payment for the goods is substantially higher than in the case of clicks.

(2) Improve the effectiveness of advertising through interaction. Under the COST PER ACTION model, advertisers do not pay publishers for any activities other than those required by the model. Thus, the publisher has a vested interest in generating quality traffic. The creation of such a symbiotic relationship eliminates the desire for fraud on behalf of all involved. This format assumes and ensures mutually beneficial cooperation, whereby each party gets what they want in return for observing an established set of rules.

At the same time, current technologies do not allow switching to the COST PER ACTION model of payment, because in this case publishers will not be insured against fraud on the part of advertisers. The publisher's reward depends on the honesty of the advertiser and the credibility of the sales data they provide. If the advertiser decides not to disclose information about actual targeted actions to the publisher, then the publisher is technically unable to learn about fraudulent actions. This does not promote mutual trust and efficiency within the current system even when paying for targeted actions and not mere clicks. Therefore, the market needs a solution ensuring that the advertiser and the publisher are insured, guaranteeing maximum transparency in the exchange of information about user targeted actions. At the moment, no company on the market provides such a solution.

With the help of smart contracts on blockchain, Ubex allows for the transition to the COST PER ACTION model of payment, eliminating fraud and the need for clicks. At the same time, Ubex solves the problem arising from the transition to the COST PER ACTION model of payment from other websites, as Ubex tracks all user actions on publishers' sites (as well as on the advertiser's site in case the user moves to it) and saves all data on the blockchain. Based on the results of actual actions, which the publisher can easily verify in the blockchain, payment is made for targeted actions only.

3. Weak algorithms => Inefficient targeting (Effect on customer acquisition cost: ± 20%)

Current algorithms demonstrate advertising to users who do not constitute part of the target audience of the advertiser's product. This reduces conversions to purchases, both with the pay-per-click model, and when paying for targeted actions (in the event that the targeted action is higher in the conversion funnel than the actual purchase).

The essence of targeted advertising is the ability to display ads to a specific target segment of users, according to their location, gender, age, interests and other individual parameters.

Targeting allows for optimizing marketing budgets and is increasingly being used in digital advertising. In cases where the purchase of advertising takes place without programmatic algorithms, advertisers or digital agencies have to resort to manual searches for specific sites that lie within the scope of interests of their target audience, as well as select the socio-demographic, geolocation and time criteria that could predict purchases by the greatest possible number of visitors to such websites.

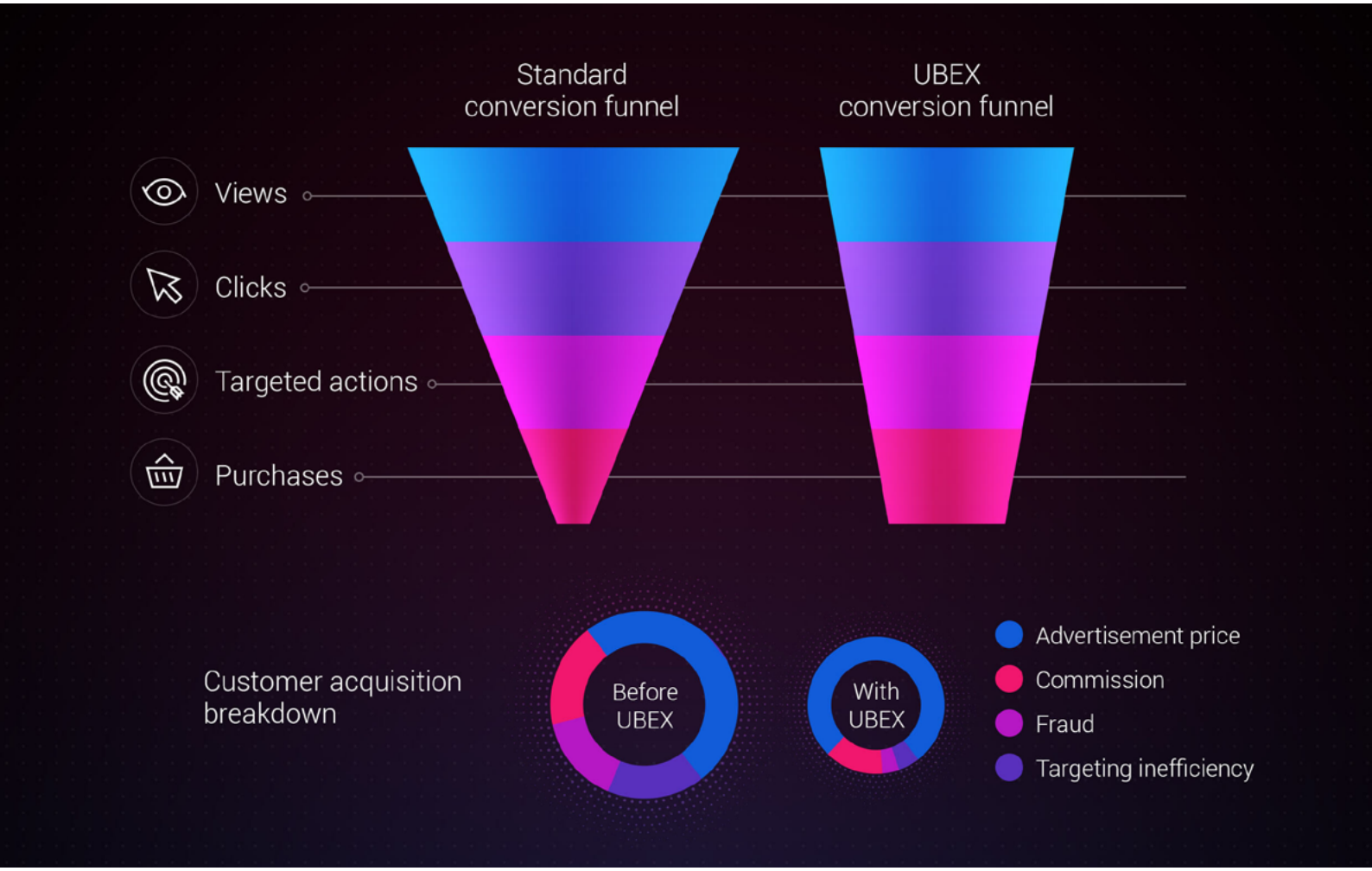
Programmatic algorithms allow for significant increases in the effectiveness of targeted advertising. Programmatic advertising conducts in-depth evaluations of target groups of users based on the history of their search requests, file downloads, application installs and online purchases. Such algorithms do not violate any laws in the field of personal data privacy, since they treat users only as cookie-identifiers. So, if the user systematically visits resources on automotive subjects, it is quite logical to refer to the segment of motorists. Of great interest is also the possibility of correlating online and offline information about users. The latter can include visiting public places and events, traveling abroad, shopping and so on. Other important functions of programmatic include displays of advertisements on various devices of the same user and searches of “user twins”. For example, if it is known that customers are interested in traveling and cycling, the programmatic algorithm will expand the target audience by finding users with similar interests.

Nevertheless, available alternatives use a fairly narrow range of settings for filtering and, accordingly, a low level of targeting. Their algorithms do not make use of neural networks, thereby significantly hampering their effectiveness. In addition, the advertiser cannot affect the possibility that their advertising could be shown to users outside their target audience.

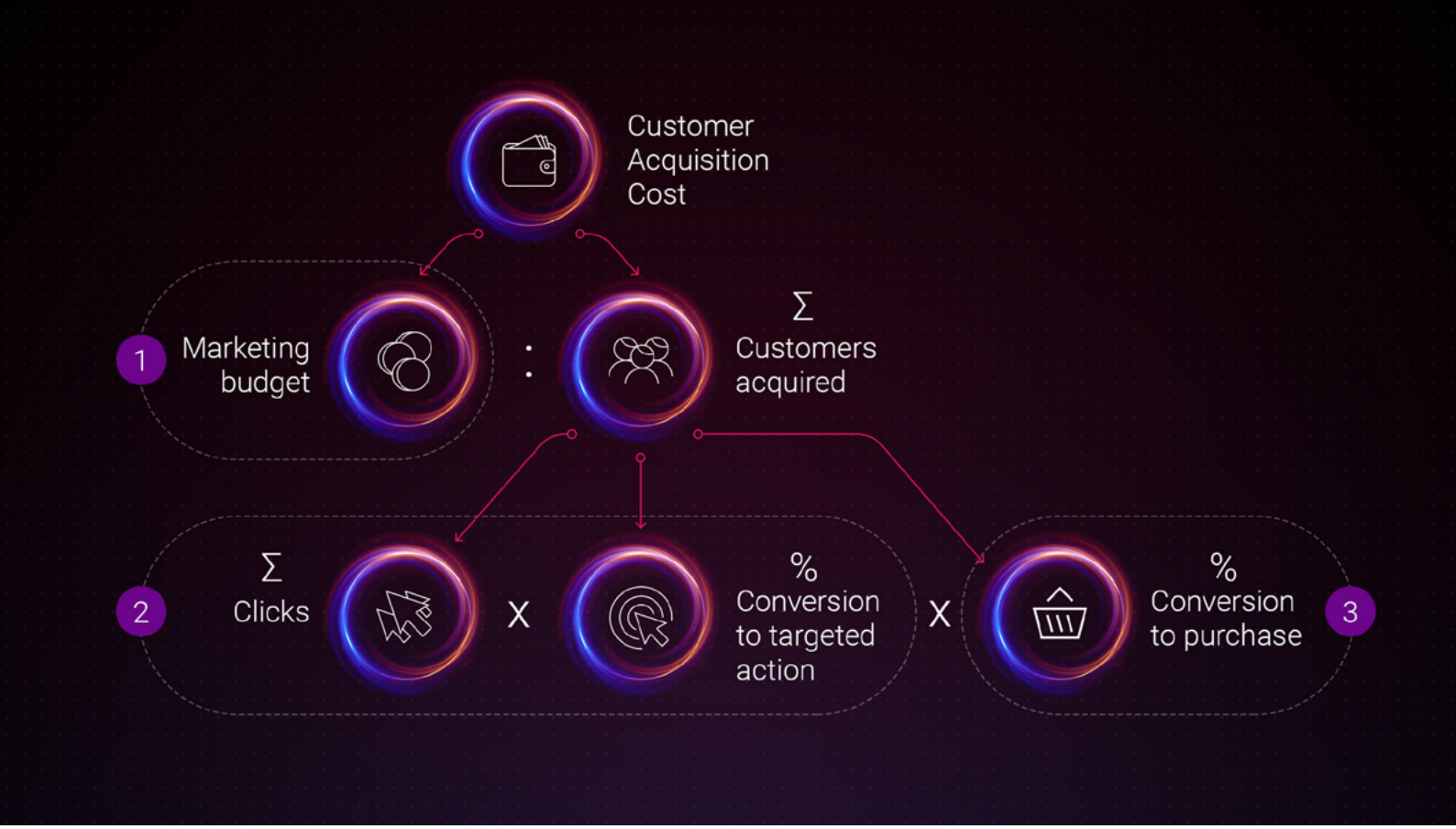
As a result, advertisers face the problem of optimizing marketing costs. They need to spend a substantial amount on digital advertising during campaigns to obtain preliminary statistics about the effectiveness of certain channels used for advertising. Each combination of “channel + advertising material” requires a separate budget for such a test. In addition, advertisers need to earmark long

periods for experiments, often lasting at least three months (in the case of COST PER ACTION), plus analysis of the results. Information about the predicted effectiveness of different channels enlisted for individual advertising materials, results in significant financial and time costs (which creates significant difficulties for advertisers with small advertising budgets, since it forces them to spend the entire budget on experiments) for the advertiser, and the data obtained has a limited “shelf life”, as after a year or two it becomes obsolete. At the moment, the problem remains unsolved, because there is no service that would provide flexible express forecasts for individual promotion methods for specific advertising materials of various advertisers.

Using neural networks and accumulated data, the Ubex algorithm selects the most current advertising offers relevant for certain visitors, maximizing the probability of obtaining the desired results. Moreover, the Ubex neural network evaluates the probability of targeted user actions. By applying such an approach, the Ubex algorithm estimates the economic efficiency of displaying various advertising options to each particular user. Thanks to the use of neural networks, the relevance of advertising displays is increased, along with predictability of advertising efficiency and the need to burn through budgets on trial and error approaches is reduced.



Thus, with the help of Ubex, advertisers will reduce the average cost of attracting customers by 50%.

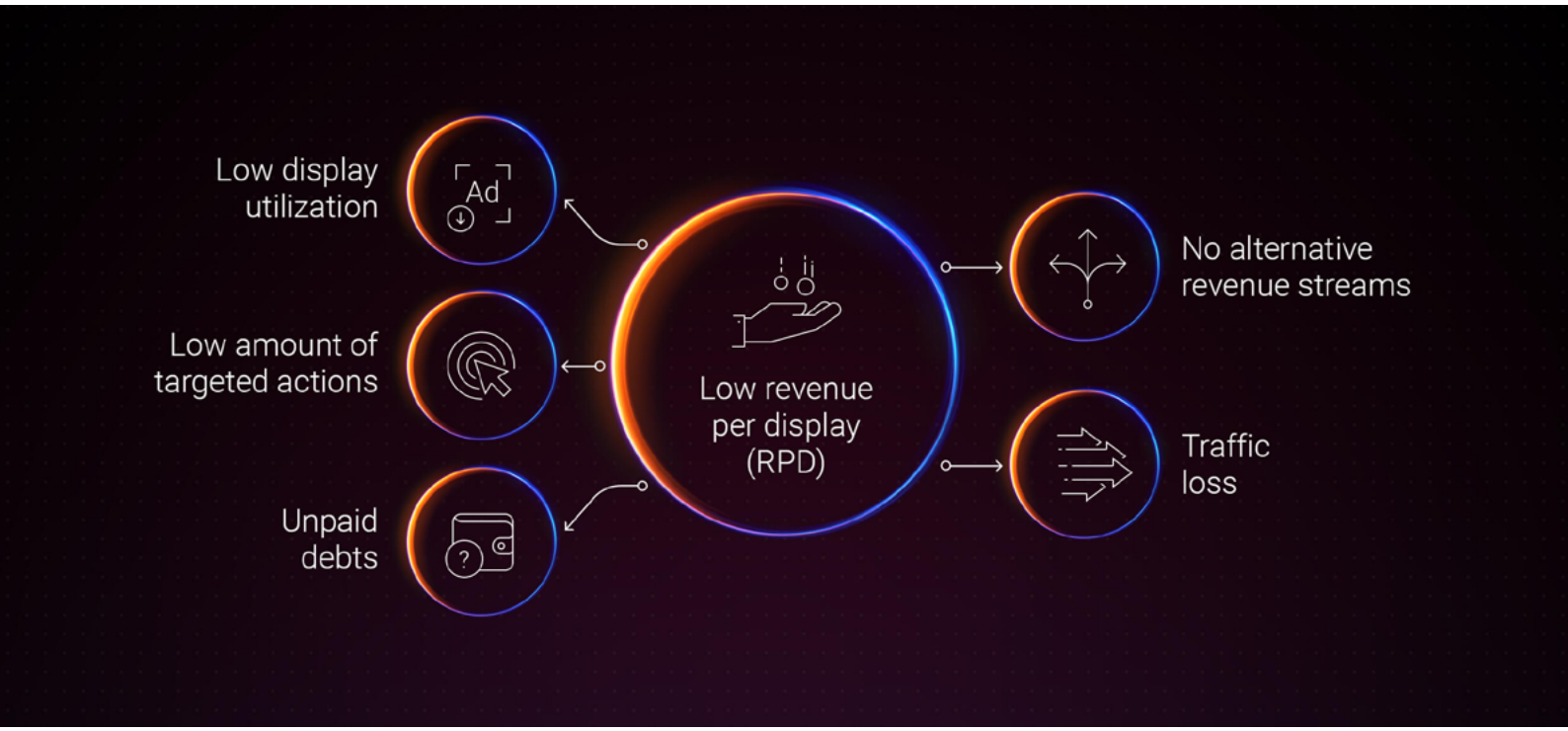


Reducing the cost of attracting customers to advertisers is made possible thanks to the transfer of all transactions to smart contracts and optimization of targeting by the neural networks.

Problem	Loss Drivers	Technology	Solution
High commissions	(1) Marketing budget	Blockchain	Elimination of unnecessary intermediaries through smart contracts
Risk of fraud	(2) % Conversion to targeted action	Blockchain	Saving of all user actions in the blockchain and complete transition to the COST PER ACTION model
Ineffective targeting	(3) % Conversion to purchase	Neural networks	Increase in the relevance of advertising with the use of neural networks

Publishers: problem and solution

Publishers are not getting enough revenue from their advertising slots because of a suboptimal sales system. There are several barriers that prevent publishers from maximizing revenue and contributing more funds in the growth of user engagement:



1. Low efficiency of purchasing algorithms => Suboptimal loads of advertising slots

Even in the case of a high volume of high-quality user traffic, whose profile is ideal for certain advertisers, according to both socio-demographic parameters and interests, publishers may experience problems with loading ad slots.

Such “gaps” in the effectiveness of current sites, allocated for the purchase and sale of advertising, arise because of the imperfect nature of algorithms designed for distributing offers among publishers' advertising slots.

Smart algorithms based on neural networks on the Ubex platform are able to optimally distribute thousands of ads from advertisers online. The Ubex algorithm maximizes revenues of publishers with the most effective ad slots on account of their maximum load capacity.

2. Inefficient targeting => Low number of targeted actions

Due to the imperfections of the targeting algorithms available on the market, with some rare exceptions, advertisers are forced to adhere to the proverbial strategy of “shooting sparrows from cannons", trying to reach their target audience with a certain margin to spare.

In addition to the irrational use of advertising budgets, the reverse side of this approach is the immense amount of irrelevant advertising on publishers' websites, which means that each ad slot attracts a relatively small number of targeted actions. In turn, the less targeted the ad slot attracts, the lower the publisher's revenue via the COST PER ACTION payment model.

The Ubex neural networks solution increases the targeting of advertising, thereby maximizing the likelihood of target actions being performed by the audience of interest to the advertiser. Thus, the revenue for the publishers' most effective advertising slots is maximized.

3. Lack of transparency on the part of advertisers => Problems of non-payment of advertising costs

Three key risks exist for publishers when working on the basis of the COST PER ACTION model:

(a) Shaving is the concealment, by the advertiser, of the fact of fulfillment of a targeted action by a user, attracted by advertising to the publisher's website.

(b) Failure to pay for advertising for verified targeted actions by both parties leads to court lawsuits on debt collection, which in itself is an expensive and laborious process for the publisher.

(c) Late payment of advertising is more common than failure of payment in principle, but also detrimental to the financial performance of the publisher (increase in the volume of illiquid accounts receivable in assets to the detriment of additional working capital).

The solution to the problem of shaving risks, non-payment for services or delays in payments for advertising by advertisers is achieved in Ubex through the application of three mechanisms based on blockchain technology:

(i) Tracking. When connecting to the Ubex advertising exchange, advertisers and publishers install tracking services. It is possible to track user behavior at all stages of the conversion funnel with the help of such tracking services. If the user sees the advertisement of a particular advertiser (for example, an online store) in the form of a banner on the publisher's website, and after that they paste the website address of the online store into their browser

search bar (instead of clicking on the banner link or making a purchase through a widget), Ubex algorithm will be able to track the entire route of the user from the display of the promotional offer to payment for the purchase by recording each user's transaction in the blockchain (However, more thorough description of the tracking process can be found on the page 27).

(ii) The rating mechanism. A multi-level system of rating of counterparties on the Ubex advertising exchange takes into account all the transactions that system participants had ever concluded, the volume of these transactions, the timeliness of payments, as well as all complaints, claims and reviews following the results of fulfilled or canceled transactions. The rating of each of the participants is used by the algorithm in making decisions about the selection of advertiser offers for displays on specific advertising slots. The rating is considered by the neural network as one of the factors making it possible to choose among several alternative offers aiming for placement on each of the publisher's advertising slots.

(iii) Escrow / factoring. Ubex solves the problem of late payments through the use of a crypto-financial platform allowing instant payments and verification of smart contracts on the one hand and keeping advertisers' budgets in escrow on the other. An advertiser with a low rating makes an advance payment through their personal account and payment for targeted actions occurs as the actions take place. In turn, the publisher gets detailed information about what targeted actions were taken and to what extent for each particular advertiser for a relevant period. The publisher will also see how much they need to be paid by the advertiser. All information about the targeted actions and their value is stored in smart contracts based on the blockchain system. It is thus impossible to forge any formation by any of the platform participants or even the Ubex team.

Escrow is not the only solution that Ubex offers. In the case of large advertisers, the task of deferring payments in order to fulfill financial KPIs in terms of working capital may be relevant. For such advertisers, Ubex offers a flexible factoring solution. The option of factoring is available only for advertisers with high ratings and no arrears of payments. In case of results of losses for publishers due to non-payment or delays in payments, the advertiser is forever deprived of the right of applying the factoring option. Factoring services will be provided by a third party, called Factoring center. Ubex itself is not involved in the financial transactions, except for ensuring the correctness of the rating system. Thus, Ubex minimizes risks for publishers.

Only blockchain will make it possible, in principle, to switch to a model of payment for targeted actions.

Blockchain allows for the implementation of: (1) tracking of target actions and saving them in a database transparent for all participants, (2) creating a trusted reputation rating (3) creating mechanisms for guaranteeing mutual settlements, (4) tokenization of ad slots for publishers and factoring centers for advertisers, (5) distributed data mining for consumer-related information

4. Underdevelopment of monetization systems for advertising slots => Lack of alternative sources of income

Many publishers lose revenue due to reduced displays of advertising. Mainly the number of hits becomes smaller due to the increased use of adblockers by users (according to the IAB study, penetration of adblockers among desktop browser users is more than 25%). This leads to a reduction in the volume of working capital, which is often limited by long delays in payments from advertisers or digital agencies. Financial difficulties compel publishers to look for new sources of raising funds for contribution, in the development of their websites and increasing future advertising revenues.

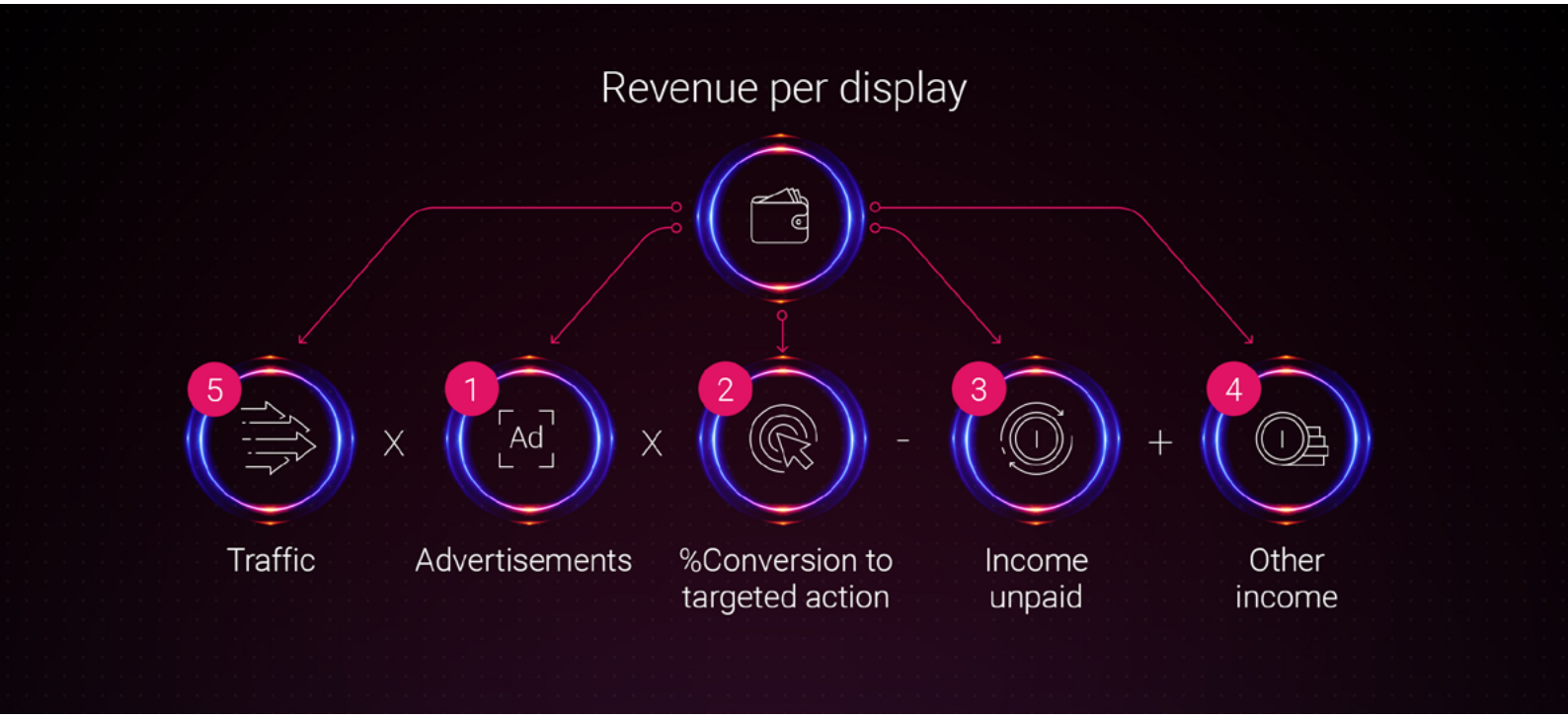
Ubex offers publishers the opportunity to tokenize their advertising slots. By utilizing all the statistics of users and advertising platforms available inside the exchange, Ubex algorithms provide forecasts of potential publisher earnings and give an opportunity of forecasting future earnings provided the necessary rating is available. Thus, through tokenization, publishers can improve their financial performance by increasing their working capital. The tokenization of future incomes is based on blockchain-based smart contracts, while the amount of potential future income is forecasted by the neural networks.

5. Inefficient targeting => Partial loss of ad traffic

Users are increasingly complaining about irrelevant ad displays. According to the IAB UK study, 46% of users block advertising because of low relevance. About 55% of the audience complains that advertising simply irritates them. People who do not use adblockers (for example, because they do not know about their existence), can visit frequent websites less often, because they are overloaded with annoying and irrelevant advertising, and avoiding such websites is the only resort to seeing less advertising. In turn, this also leads to a reduction in revenue of advertising for publishers. Therefore, the publisher is directly interested in having their audience see only those ads that do not cause irritation and seem relevant. The currently available algorithms for selecting advertising, overload the audience with inappropriate advertising, thereby contributing very little to the preservation of advertising traffic for publishers and, accordingly, their profitability.

Thanks to the use of algorithms based on neural networks, Ubex offers users the most relevant advertising options. The profits for all parties involved are maximized through this approach. This includes the advertisers, publishers, and users, who will see less irrelevant advertising. Thanks to the placement of advertising on their websites through the Ubex exchange, publishers reduce the outflow of users who are annoyed by advertising that does not match their interests. In turn, the retention of user traffic allows publishers to increase their profitability.

With the help of Ubex, publishers will significantly increase revenue from effective sites:



The increase in revenue from advertising slots for publishers is made possible due to the transfer of all transactions with advertisers onto smart contracts and optimization of targeting by neural networks.

Problem	Loss drivers	Technology	Solution
Low ad slot load	(1) # Amount of advertisements	Neural networks	An algorithm that distributes offers from advertisers in real time in the most optimal manner.
Low number of targeted actions	(2) % Conversion to targeted action	Neural networks	An algorithm that increases the level of targeting of advertising, and thus maximizes the number of targeted actions.
Non-payment of advertising costs	(3) Debts unpaid	Blockchain	Tracking of target actions of users and saving them in a database transparent to all participants. A multi-level rating system, as well as an escrow mechanism for guaranteeing mutual settlements.
Absence of alternative sources of income	(4) Other income	Neural networks and blockchain	The possibility of tokenization of advertising slots by publishers (earning revenue for future projected revenue).
Loss of part of the advertising traffic	(5) Traffic	Neural networks	Maximizing the relevance of advertising for each user.

The product

The Ubex advertising exchange will be located at www.ubex.com and it will have a convenient interface that will work with the exchange services from PCs, tablets and mobile devices. The two main sections for advertisers and publishers will be presented on the website, the principles of interaction with which are described below.

Ubex: Service for Advertisers

Advertisers can set up and run an ad campaign in a few clicks. Tasks that required an entire team of digital marketers can now be taken over by Ubex algorithms.

An advertising campaign is created through a personal account in four simple steps:

(1) Create an offer and specify the commercial terms.
The user specifies the cost of advertising, or a percentage of the sale, as well as deferred payment (for advertisers with a high rating). Also, the advertiser chooses the targeted actions they are willing to pay publishers for.

(2) Select a widget or create your own.
Widgets can be personalized by the advertiser and can also be provided by the exchange (for example, the payday loan, a form for obtaining microcredits). In the case of personalized widgets, it is enough to upload a banner or video and install and configure all the necessary forms through a handy designer available in the personal account. For more complex settings, widgets can be written in a customized Java script-code.

(3) Select the interests of the target audience, the time of displays, geography and other criteria.
After setting up the widget, the advertiser sets the rules for displaying the ads so that advertising is as relevant to the target audience as possible. In parallel with the settings, the neural network provides forecasts of the effectiveness of the customized advertising campaign.

(4) Launch an advertising campaign and monitor the results.
With the help of a personal account in the Ubex system, the advertiser can monitor in real time all the key metrics for the created advertising campaign. These metrics include the targeted actions that were taken, their time, the publishers on whose platforms advertising was displayed, the activity of these publishers in the advertising campaigns. The neural network also provides updated reports on the effectiveness of the advertising campaign.

Payment is made only upon the completion of targeted actions specified in the offer. Funds are credited from the amount held in the escrow system of the Ubex crypto financial platform, or from the advertiser's account at the time indicated in the smart contract (in case of factoring payments for advertisers with high ratings).

Ubex: Service for Publishers

Publishers can quickly and conveniently connect their advertising slot to the Ubex advertising platform and start earning as soon as the tracking add-on accumulates enough data about site traffic for further analysis by the neural networks. Connection to the Ubex system takes place in four simple steps:

(1) Register an advertising slot.
The publisher allocates slots for ad units on a website, marks them with a special identifier and places the Java script code of the exchange. Any owner of internet resources with regular user traffic of sufficient volume as per the requirements of the advertisers can receive approval for registration. After reviewing the application, the publisher receives a notification email.

(2) Adjust advertising topic restrictions.
In the Ubex interface, the publisher chooses the topics that they allow for placement on their websites. For instance, the owner of an internet resource on contributions can narrow down the topics for advertising exclusively to financial services. The publisher can add new restrictions in the future, when they see the first results of ad displays chosen by the neural networks as the most relevant for their resource.

(3) Specify geolocation, audience interests and social parameters
To facilitate the indexing of their resource in the general site directory, the publisher can specify additional data for accounting when searching for advertisers. These parameters will be considered by the neural networks in the event the publisher refuses to set traffic tracking on their website (the algorithm will prioritize only those publishers that have installed tracking on their resources).

(4) Set restrictions on widgets and advertisers
Publishers can view existing widgets for each topic and disable the ones they choose. For example, the owner of a resource with articles on contributing in precious metals may want to turn off a widget used to purchase cryptocurrencies without leaving the resource. Also, the publisher can create a “black list” of specific advertisers whose widgets they do not wish to see on their resource.

Payment is made only upon the completion of targeted actions specified in the offer. Funds are credited from the amount held in the escrow system of the Ubex crypto financial platform, or from the advertiser's account at the time indicated in the smart contract (in case of factoring payments for advertisers with high ratings).

The Ubex Platform

The Ubex platform will provide ample opportunities not only to publishers and advertisers, but also to companies that need regression analysis of user data. The system's neural core, which is responsible for making decisions at all stages of the life cycle of the advertising material, will have an API, access to which can be provided to partner companies.

The behavioral decision-making blockchain allows one to evaluate user data and make a judgment about the perceived interests of the user. This regression estimate can be used not only to display advertising materials, but for other purposes as well. The API will provide an opportunity to retrieve a list of expected categories with an estimate for each based on a query with user data.

Training the system core to obtain relevant and accurate forecasts is a laborious process. In this regard, the platform will provide the ability of adding statistical data to the site user's actions, which can be used as a training sample for the system's core. The site owners who provided data will receive a reward proportional to the contribution of the data provided for training the system core. These actions are similar to mining, when users are rewarded for labor-intensive work (providing statistical data for the formation of a training sample).

The Ubex Wallet

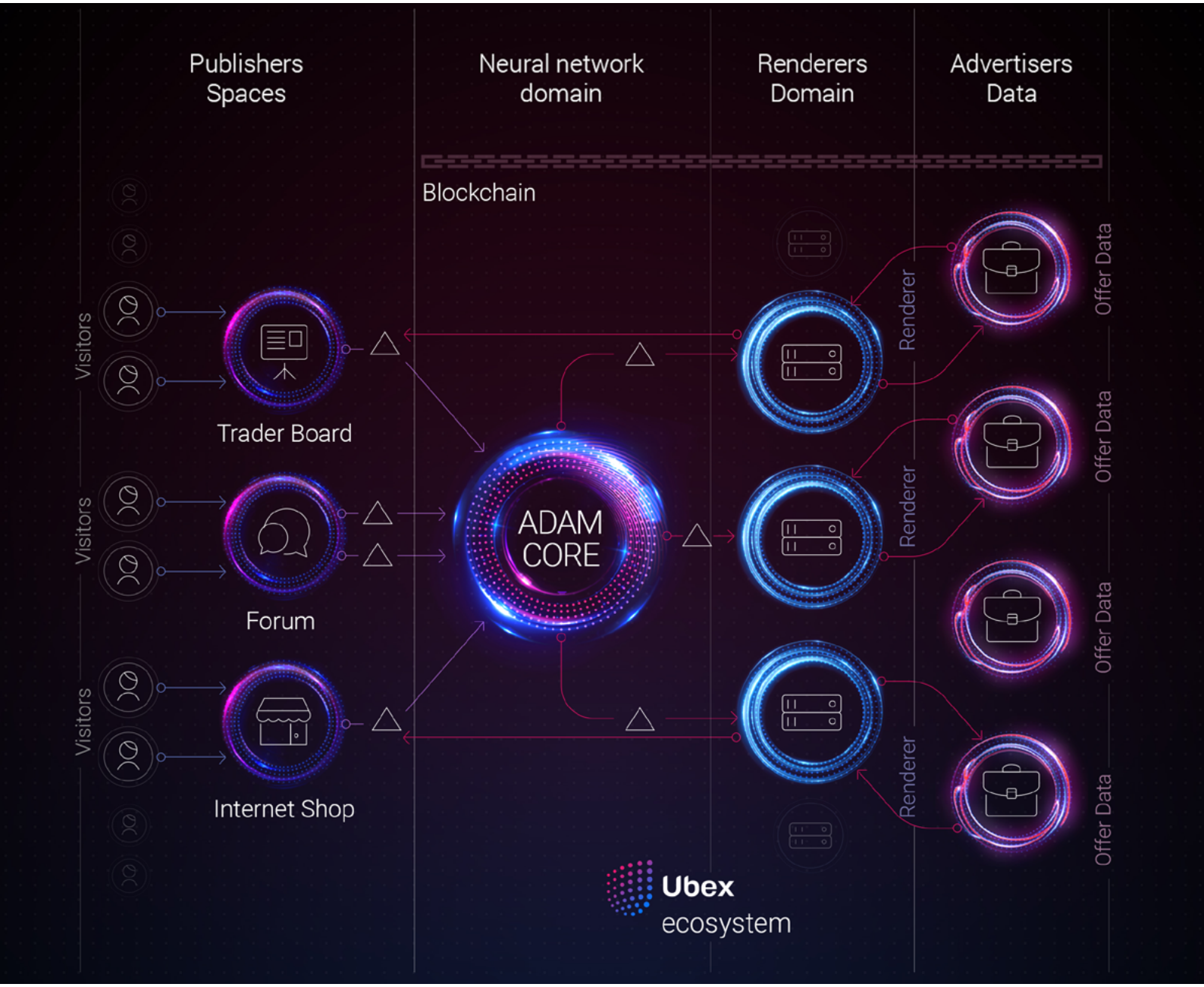
The UBEX Token will act as a payment unit on the Ubex platform. The need for a Token is based on the need to credit funds from advertisers' accounts for the displays of advertising materials that they have bought. Basic cryptocurrencies do not allow the crediting of funds from third party accounts even if one has permission from the third parties. The Token allows for setting quotas (allowances) to a specific address within which the owner of the address can use the funds available on the account. Crediting is possible only on condition that the account holder has established the size of the quota and only from the address to which the quota is issued, otherwise the funds cannot be credited.

In addition, as mentioned in the previous section, the Ubex platform will enable the owners of websites, who are providing statistical data for training of the system core, to receive UBEX Tokens as a reward for their actions (similar to mining). 5% of the income from all Ubex transactions will be distributed to the data providers. Due to the existence of the allowance techniques in proprietary Tokens, these Tokens allow executing smart contract, which allows such actions to be written. The use of cryptocurrency does not directly provide such opportunities. We call this function Ubex Data Mining (UDM).

The Ubex platform will allow the input of Tokens into the system and their output for a wide range of crypto and fiat currencies. The Ubex platform will allow the input of Tokens into the system and their output for a wide range of crypto and fiat currencies. Any user can exchange his tokens for such cryptocurrencies as ETH, BTC, USD, etc. using the Ubex exchange rates. The exchange rates will be determined by the needs of the market and based on the trade data of the UBEX Token.

The technology

How it works: The system's Neural Core and its interaction with the blockchain.



The system core named Advanced Decentralized Advertising Marketing (ADAM) is responsible for making the decision to display advertising materials. This decision is based on the data stored in the blockchain as well as on the model data of the neural network stored internally.

The main features of the system can be explained on the life cycle of a widget that promotes a car insurance service – from (1) the advertiser's, (2) the publisher's and (3) the user's perspective respectively.

(1) The Advertiser. The widget appears in the system after the advertiser registers and adds an offer that promotes the insurance service. Each participant has a correspondent entity in the system Smart-Contract of the Ethereum blockchain, so during the registration process the system creates an entity in the blockchain, fills it with general data and initializes visitor-related coefficients (their meaning will be discussed later). The offer entity is created in the blockchain when the advertiser creates it within the management interface. Along with other promotional materials, the advertiser can register a widget, load the start banner and specify the format and list of fields requested from the user. In addition, the advertiser specifies the parameters for displaying the offer promotional materials and widgets (subject, geodata, a list of visitor interests, age and censorship restrictions, etc.). Most of these parameters are stored in the Smart-Contract of the Ethereum blockchain as well, excluding the heavy data stored on the external storage and linked to the offer entity via the URL. Given the fact that the system is decentralized, the advertiser can register at any partner sites that are members of the Ubex exchange network, the data will be eventually added to the blockchain in any case. The data of the advertiser, the offer and promotional materials along with the parameters for displaying widgets can be used by any member of the exchange that have a necessary rating and access level.

(2) The Publisher. The widget can start working on the publisher's website as soon as the publisher registers, passes the KYC procedure and adds a placement space. During the registration process, the entity is created in the Ethereum Smart-Contract with all the data of the publisher. When creating a placement space, the publisher, similar to the advertiser, specifies a set of parameters (subject, geolocation, typical interests of his website visitors, age and censorship boundaries, etc.). The data of the created placement goes to the blockchain as an entity as well. To achieve better results, the publisher can integrate the tracking services of the exchange, thus providing extended statistics for their visitors. Decentralization, as in the case of the advertiser, allows one to register at any partner websites available on the Ubex network, the data will be added to the blockchain as a main system data storage. All of the publisher space data can be used by any decision-making service that operates within the Ubex exchange.

(3) The Visitor. An initial request comes from a visitor's browser to the tracking balancer. The role of this balancer is to switch the visitor's request to one of the hundreds of tracking micro-service instances (trackers). The tracker is responsible for management processing of a visitor's request, including, but not limited to, gathering visitor data, interaction with neural network nodes, holding preliminary results, transferring data to and from renderer instances and responding to visitors with a final advertising widget. The Ubex exchange will operate dozens of automated decision-making nodes of the neural network (DSP – Demand Side Platform). Consider such a node as a black box able to get a list of parameters and respond with a single number (or with a list of single numbers) showing the degree of correspondence to predefined result. Each DSP is a small, learned neural network model that can communicate with the blockchain as a decentralized storage. The first such DSP node starts working after the tracker feeds it the visitor's data.

DSP-1 (behavior analysis). The DSP receives from the tracker dozens of parameters at the input stage, including the publisher data, placement space data, current visitor's data, extended data of the authorized user in case of integration, and the marketing history of the current user. The tracker marks the current visitor in the browser, understanding when the same visitor requests displays of advertising material even on another website. In addition, the history of the visitor's activity on the publisher's website is also provided, for example, in the case of online stores, this includes previous orders of the visitor and other information available relevant to that particular visitor. At this stage, the tracker can read the correspondent data from the Ethereum blockchain including publisher-related and space-related coefficients. These coefficients act as a precise tuning mechanism giving the neural network the ability of making decisions for each particular visitor of the particular publisher's website. The more input data is provided, the more accurately the neural network will be able to understand the interests of the visitor. As a result, DSP-1 tries to choose top visitor preferences in terms of core system categories (tags) with a correspondent number for each of them. For example, the tags “electronics”, “currency” and “blockchain technology” result in 0.15 (15%), 0.35 (35%) and 0.41 (41%) numbers respectively. The tracker collects all the data returned by the DSP-1 and prepares to interact with further DSPs along the chain.

DSP-2 (offer selection). The DSP-2 should select the list of potential candidates, such as advertising materials and widgets that can be potentially interesting to the visitor. By receiving input from the tracker (obtained from previous DSP-1), the current DSP-2 conducts its regression evaluation of all

available advertising materials according tags selected on previous step. Like in case of DSP-1 the tracker can get advertiser-related coefficients from the Ethereum blockchain, include all the data received on previous step and feed it to DSP-2. As a result, the tracker receives a decision number for each material, for example, for three materials including “TV banner”, “auto insurance widget” (the widget under consideration in this case), and “property mortgage banner”, we get 0.1 (10%), 0.65 (65%) and 0.73 (73%) respectively.

NOTE. At the moment, most of the existing programmatic exchanges would have already decided to display the “property mortgage banner”, as the correspondence is at maximum. But not Ubex.

DSP-3 (final decision). At the input stage, the next DSP-3 receives all the parameters collected by the tracker on the current query and selects one (and only one) from the materials selected on previous step. The statistical data is parsed by tracker and provided to DSP-3 for analysis. The final DSP selects not only the most relevant, but also the most financially effective result (which is beneficial both for publishers and advertisers). For this purpose, neural network regression is performed for each user action on the advertising material and a map is created containing the estimated indicators.

Rendering and responding to the user. At the next stage, the tracker already knows which banner / widget to display. It gives the task to one of the thousands of rendering micro-services (renderers) to build a bundle of scripts, css and images for the displayed widget. This final bundle of code and assets is returned to the visitor of the publisher's website.

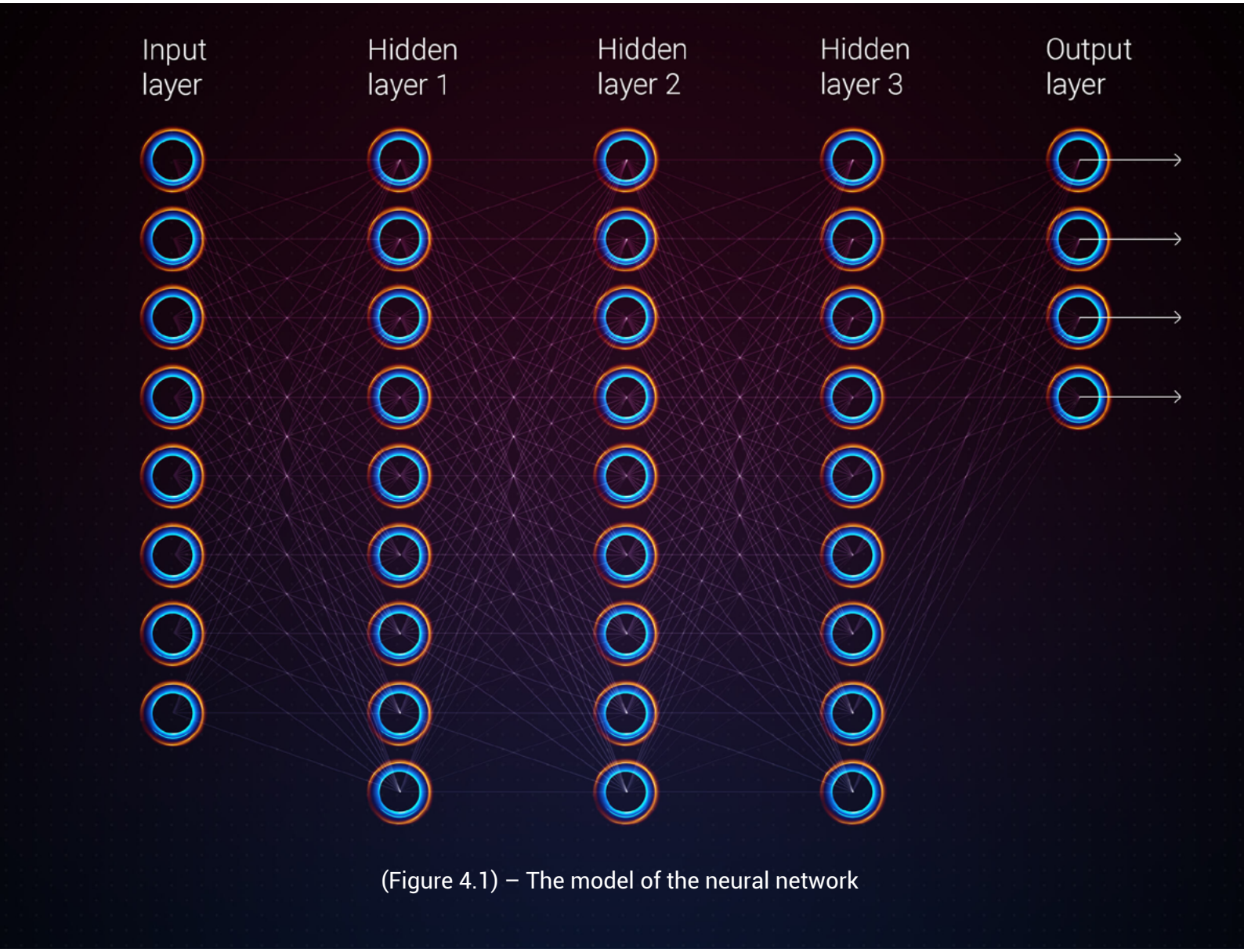
All further user actions, including analytics, clicks and interactions with advertising material are served by the tracker. If the user interacts with the widget, it will be reflected in the publisher and advertiser statistics and leads to changing publisher-related, space-related and advertiser-related coefficients stored in the Ethereum blockchain, which, eventually, affects further decisions.

Thus, we obtain a highly organized, intelligent system consisting of hundreds and thousands of DSPs that make small decisions at every stage of displaying advertising material.

The model of the neural network

As part of the system, thousands of DSPs will perform regressive estimation of qualitative or quantitative indicators for compliance with a certain result.

Each DSP is a neural network.

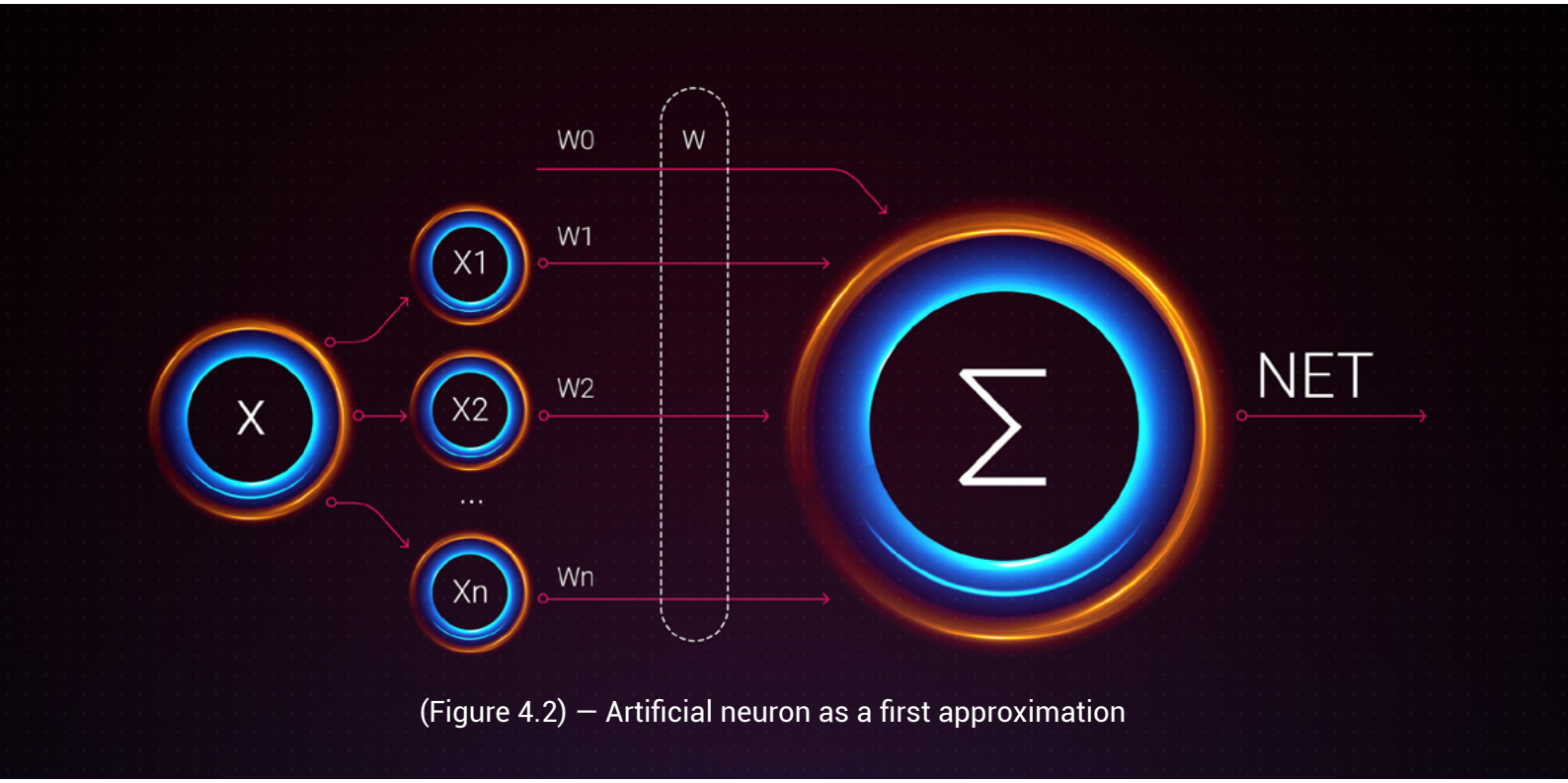


(Figure 4.1) – The model of the neural network

The layer of input parameters consists of normalized per unit indicators. At the output stage, the neural network gives normalized per unit judgments about the set of output properties.

Each node within the hidden layers of the network is a neuron. At the first approximation, the artificial neuron imitates the properties of a biological neuron. At the input stage, an artificial neuron receives a certain number of signals, each of which is the output of another neuron. Each input is multiplied by the corresponding weight, similar to the synaptic force and all products are summed, determining

the activation level of the neuron. Figure (Figure 4.2) presents a model that realizes this idea. Here, the set of input signals, denoted x1, x2, ..., xn, arrive at an artificial neuron. These input signals correspond to signals that come to the synapses of a biological neuron. Each signal is multiplied by the corresponding weight w1, w2, ..., wn, and is sent to the summation block, denoted by Σ. Each weight corresponds to the "strength" of one biological synaptic connection. The summing unit, which corresponds to the body of the biological element, algebraically combines the weighted inputs, creating the output NET:



(Figure 4.2) — Artificial neuron as a first approximation

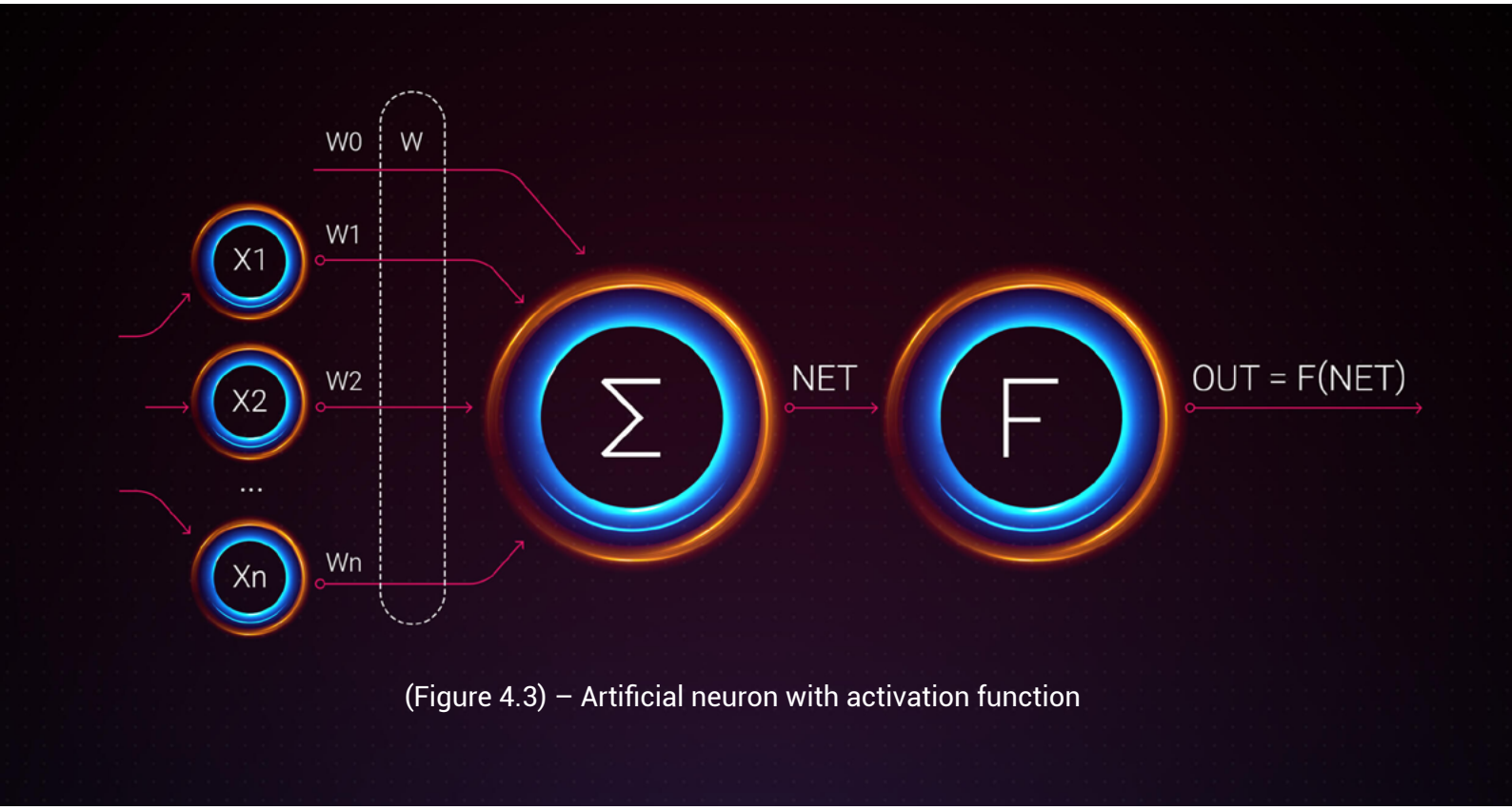
The given description can be represented by the following formula

$$NET = \sum_{i=1}^{n} w_i x_i + w_0$$

where w_0 is the bias;
w_i is weight of the i-th neuron;
x_i is the output of the i-th neuron;
n is the number of neurons that enter the processed neuron.

The w0 signal, which is called the bias, displays the function of the limiting value, also known as the shift. This signal allows shifting the origin of the activation function, which further increases learning speed. This signal is added to each neuron, it learns like all other scales, and its feature is that it connects to the +1 signal, and not to the output of the previous neuron.

The received NET signal is usually processed by the activation function and gives the output neural signal OUT (Figure 4.3)

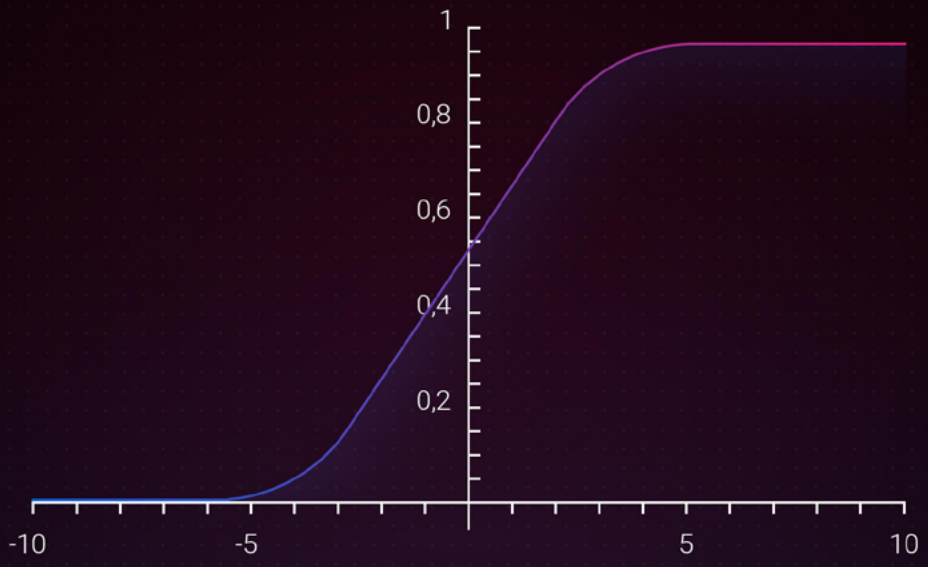


(Figure 4.3) – Artificial neuron with activation function

If the activation function narrows the range of the value of NET so that for each value of NET the OUT values belong to a certain range, or the finite interval, then the function F is called a narrowing function. A logistic or "sigmoidal" function is often used in the case of such functions. This function is expressed mathematically as follows:

$$OUT = \frac{1}{1+e^{-NET}}$$

The main advantage of such a function is that it has a simple derivative and differentiates along the entire abscissa axis. The graph of the function has the following form (Figure 4.4)



(Figure 4.4) – Type of sigmoidal activation function

The function amplifies weak signals and prevents saturation from large signals.

Neural Network Model

If we consider a behavioral DSP analyzing the initial user query, then the input parameters can be:

- ...
- Country – USA (0/1)
- Country – United Kingdom (0/1)
- ...
- iPhone Device (0/1)
- ...
- Chrome browser (0/1)
- Safari browser (0/1)
- ...
- Number of visits to the site (0..1, sigmoid, 0 – no indicator, 1 – infinity)
- Number of displays of advertising materials (0..1)
- The number of clicks on materials (0..1)
- Number of interactions with the material (forms submits) (0..1)
- ...
- Number of hits in the “technology "category (0..1)
- Number of hits in the “insurance" category (0..1)
- ...

- The scope of actions in the “technology” category (0..1)
- The scope of actions in the “insurance” category (0..1)
- ...
- The publisher-related coefficient 1 (0..1)
- The publisher-related coefficient 2 (0..1)
- The publisher-related coefficient 3 (0..1)
- ...
- The space-related coefficient 1 (0..1)
- The space-related coefficient 2 (0..1)
- The space-related coefficient 3 (0..1)
- ...

Here, the number of hits is a collective indicator. For online stores, this can be the purchase of goods from the category, for a forum, it can be the number of views of topics in a category, etc. By analogy, the scope of actions is also a collective parameter. For online stores, it is the volume of purchases of goods from the category, for a forum, it can be the number of posts written by a user in a category. Publisher-related and space-related coefficients are used for precise tuning in terms of particular publisher and his particular space statistics. They are changed by the system after any user action (show, click, action, etc.). These coefficients will be stored in the Ethereum blockchain, which will allow regression estimation on it in a decentralized manner using any DSP.

There should be normalized per unit compliance indicators at the output of a behavioral DSP neural network for the categories of the exchange, for example:

- ...
- Technology – 0.023
- Insurance – 0.321
- Mortgage – 0.003
- ...

To train a neural network, Ubex will use The Big Data statistics of displays of advertising agencies, the strategic partners of Ubex. Teaching the neural network is the most challenging part of the system's core, especially obtaining the proper training data sets. That is why Ubex introduced the ability of gaining UBEX Tokens for providing marketing data. It could be as simple as installing small tracking script code on an agency/publisher website and receiving the appropriate reward.

A selective DSP takes into account everything that was calculated by the behavioral DSP. Similarly to the behavioral neural network, the advertiser-related coefficients of adjustment also enter the selective input to obtain an individual result.

There should be normalized per unit compliance indicators at the output of a selective DSP neural network corresponding to each advertising material, for example

- ...
- iPhone banner – 0.043

- Insurance company widget – 0.134
- Currency Exchange banner – 0.002
- ...

The final DSP taking the final decision must calculate the normalized coefficient for each user's action for each advertisement. The display of the iPhone banner is calculated by one neural network, the action on the widget of the insurance company is performed by another neural network, etc. At the input stage, each neural network receives the behavioral indicators of the visitor (similarly to the behavioral DSP), the publisher-related, space-related and advertiser-related coefficients and at the output stage receives one normalized indicator.

Returning to the example from the previous section, we can consider only two banners – the “property mortgage banner" and the “auto insurance widget" (our widget).

For the “property mortgage banner", we receive:
click 0.1 (10%)
action 0 (not performed)
For the “auto insurance widget":
click 0.12 (12%)
action 0.025 (2.5%)

To make a final, weighted decision, it is necessary to calculate the estimated cost of placing advertising material using the following formula:

$$C = S_e * S_c + C_e * C_c + A_e * A_c$$

, where
S_e – show ad estimation
S_c – show ad cost/price
C_e – click to ad estimation
C_c – click to ad cost
A_e – action by user estimation
A_c – action by user cost

Let us assume the adviser pays for the “property mortgage banner":
the display is 10 units
the click is 120 units
action is 0 units
Accordingly, C = 10 * 100% + 120 * 10% = 22

For the “auto insurance widget” the advertiser pays:
the display is 5 units
the click 90 units
the action 400 units
Accordingly, C = 5 * 100% + 90 * 12% + 400 * 2.5% = 25.8

As you can see, even at half the price per display and almost half the price per click, it is more profitable to make money on displaying the “auto insurance widget”.

Thus, due to the use of neural networks, the Ubex algorithm allows for taking into account a variety of factors that affect both the relevance of the advertising display and its economic efficiency. The Ubex algorithm collects data about the profile of each specific publisher, its space and advertiser, including their behavior, geography, visiting time, interests, etc., and calculates the probability of a targeted action for each individual advertisement. The more data passes through the Ubex neural networks, the more effectively it solves its tasks.

Roadmap

Q4 2016
Creation of an advertising platform for promoting Payday Loans

Q1 2017
Development of integration tools to link marketing campaigns with publishers' websites

Q3 2017
Introduction of an API interface for use by publishers to register advertising space

Q4 2017
Addition of new types of advertising tools and customization of widgets

Q1 2018
Introduction of advertiser auctions

April 2018
Development of the exchange smart contract prototype for the storage of basic information

May 2018
Launch of the desktop and mobile Alpha versions of the Advertiser application

August 2018
Launch of the desktop and mobile Alpha versions of the Publisher application

October 2018
Development of the system's neural core prototype and initial training of the neural networks

November 2018
Introduction of smart contracts capable of storing neural network adjacent coefficients in the blockchain

December 2018
Introduction of an API prototype for sharing training data in exchange for rewards (data mining)

January 2019
Launch of the Beta versions of Advertiser and Publisher applications

March 2019
Release of the initial versions of operational applications and smart contracts

Team & Advisors

Artem Chestnov

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Ubex CEO and Co-founder

Ex-Marketing Director AB Inbev, Belgium

Artem is a serial entrepreneur with a background in marketing, mainly focused on the European market. Artem graduated from INSEAD MBA in France and Singapore and spent most of his career in the Netherlands and Belgium as head of marketing and innovations for a major consumer goods company (sales volume of 56 bln USD in 2017, budget under personal management 40m USD). Participated in various top-management roles in a number of Tech and Blockchain projects, including LAToken, Reborn and Medviser.

Daniel Biesuz

@biesuz

Ubex Head of Legal and Co-founder

Partner at ILFP, Zurich

Daniel Biesuz has built his career in the legal space, helping the M&A process of companies in Switzerland. He was consulting companies in the blockchain and ICO space, and after meeting with Artem, he decided to contribute time and money into idea of AI-based advertisement. His experience with previous projects, like Global Blockchain Technology Fonds, Lapo Blockchain and InsurePal and helped kick-start the legal and contribution block.

Dan Gartman

@dan-gartman

Ubex CTO

Artificial Neural Nets Master
Data Science Certified Engineer
Experience with Google TensorFlow, GoLang, Solidity and React.js

Dan was raised in a family of engineers. Being a mathematically gifted child, he released his first game at the age of 12. After graduation, he researched electromagnetic waves and physics of solid objects and worked as a web developer at the same time. During the first five years of his professional career, he mastered C++, PHP and Javascript as a basis for his work and research. Throughout the next 6 years, he engaged in research of artificial neural networks and their influence on internet technologies. Over the last two years, he added decentralization to his work spectrum and implemented a model for speech recognition. He always looks for challenges, and a decentralized marketing exchange is an astounding opportunity to demonstrate his impressive skills.

Alexander Stepochkin

@alexander-stepochkin

Machine Learning Team Lead

Alexander Stepochkin is a Data Scientist Expert and Experienced hands-on Software Architect with full-stack development skills. He has more than 20 years of professional experience in the IT industry and proven accomplishments in the creation of highly reliable distributed systems, such as Yandex Mail Storage. His professional experience includes a wide range of programming languages and platforms. He is enthusiastic about building elegant systems and using data science to make them more intelligent by relying on his excellent mathematical background. Within the framework of the Ubex project, Alexander fulfills the role of Machine Learning Team Lead Specialist.

Andrew Rippon

@arippon

Ubex COO

Blockchain technologies specialist,
ex-lead designer for the Smart Dubai Platform

Blockchain expert advisor to governments, corporations and real estate developers. An ex-advisor to Smart Dubai Office, an initiative of the Executive Office of HH Mohammed bin Rashid Al Maktoum, Worked with Governments, real estate developers and Telcos to enhance cities through clever ICT services based on Data Orchestration / Big Data, Predictive Analytics, Integrated Operations Centres and Innovation on the Smart City project.

Kathrin Anthony

@ekaterina-anthony-mba-a293aa1

Ubex Head of Global Sales

Founder Finvestech.ch, Switzerland

Economics graduate with an MBA in finance management from California State University. Based in Switzerland and actively involved in developing ICO markets and crypto funds offering. Active member of the Crypto Valley in Zug.
Has over 20 years of experience in sales and business development management. From 2005 to 2010 acted as Head of a division at McGraw-Hill Platts, leading distribution and licensing of the Market on Close (MOC) commodities trading platform. In 2010, joined RTS Exchange as Global Business director and Head of office in London to maximize revenues from equity and derivatives trading products from EU and US institutional contributors.

Cooz Komei Tokita

@coozkomeitokita

Director Business Development

Japanese-American from Los Angeles, California, endowed with a Western and Eastern cultural background. Built the first local Bitcoin exchange in Japan in 2013 and other business ventures such as pharmaceutical tech, auto sales, personal finance/ asset planning, and real estate. Early adopter of cryptocurrency and blockchain technology. Author of confidential reports for government and regulatory authorities. Represents the Cryptos Fund, a regulated cryptocurrency index fund following the CCI30 that tracks the top 30 digital assets that make up 90% of the market.

Alberto Maiorana

@albertomaiorana

Ubex Strategic Partnerships

Alberto has 15+ years experience in marketing and business development with a deep vision of the international business and a specific focus on consumer goods and sports & entertainment. He has been working with some of the biggest brands such as GM, Star Wars, English Premier League, KHL, UEFA Champions League and on the international level, particularly across Europe. His specialty is launching new products, setting up and growing distribution and forging commercial partnerships. Alberto has also been directly involved in two startups and executed respective successful exits.

Alex Korobkov

@alexeykorobkov

Ubex IR director

General partner at 4Blocks Capital Partners

Alex is a professional contribution & strategy officer, successful entrepreneur, crypto contributor, ICO and VC advisor possessing more than 18 years' cumulative experience in top management positions in venture capital and private equity (VC&PE), Information and communication technologies (ICT), IT & business consulting in 13 international markets in such companies as Vimpelcom, SAP, i-Free, 4Blocks Capital Partners.

Iyke Aru

@iyke-aru-85b193110

Community director Africa

Iyke is the leading blockchain educator in Africa. He is also a writer and crypto contributor in several successful ICOs. Iyke has 15 years of experience in both mainstream and internet contribution. He writes about cryptos for various top blockchain and crypto news resources.

Igor Selivanov

@igor-selivanov-a0ba03159

Senior Full-Stack & Blockchain Engineer

Igor has been fond of science and computer games since childhood, and as early as school demonstrated outstanding abilities in computer science, in particular, in the field of choosing non-trivial algorithms for solving problems. At the university, he developed desktop applications in C ++ using the Qt library. After graduation from university, he worked in finance in several companies, where he took part in major projects involving the development of websites, corporate CRM and billing systems. Recently, he is actively working on projects using blockchain technology. The technology stack includes the following programming languages: GoLang, C ++, Qt, Java, Javascript, Solidity, ReactJS. He also studies computer security and built a «smart home» from scratch in his spare time.

Alex Zhmurin

@alex-zhmurin-18188532

Senior Javascript Engineer

Alex studied information technologies as a hobby, and after graduation from university, he chose website development as his profession. He spent several years studying Javascript to create convinient and rich user interfaces. He now has more than 10 years of practical experience in the field of development and demonstrates a solid knowledge in the field of Javascript Prototype, jQuery, ReactJS, Material-UI and Redux. He is fond of sports and computers, he is currently studying modeling of human behavior with the help of neural networks.

Eugeny Matveev

@eugeny-matveev-12a769163

Full-Stack Engineer

After graduation from university, Eugene underwent practice in a design studio, where he studied HTML, CSS, jQuery. He later had much hands-on experience developing websites in PHP. Since 2015, he prefer separate a front-end techniques (VanillaJS, Vue) from a back-end ones (PHP, Ruby).

Igor Vatamaniuc

@igor-vatamaniuc

Javascript Front-end Engineer

Igor beleives that user interfaces are a central point of the internet technologies that is why he is a world-recognized professional in the development of web interfaces. He has achieved great success in the development of the visual component of websites, such as prototypes of pages, HTML, CSS, animation on Javascript. If you enjoy visiting some website probably it is a work of Igor.

The Ubex team consists of more than 30 specialists. More details about the team members can be found here - https://www.ubex.com/team/

Michael Gord

@mgord

Technical Advisor

MLG Blockchain Capital Board of Directors Bitcoin & Blockchain Alliance Canada

Michael is a serial blockchain entrepreneur and has founded or co-founded companies including MLG Blockchain, StratX and AirdropX, among others. Michael graduated from Desautels Faculty of Management at McGill University with a concentration in entrepreneurship, marketing and information systems.

Ismail Malik

@Blockchain

Marketing Advisor

Founder Blockchain Lab
Editor in Chief ICO Crowd, London

Ismail is the founder of Blockchain Lab and the publisher of ICO Crowd magazine. He is one of the first enthusiasts of blockchain in London and has been working in the industry since early 2013. Ismail is among the best connected persons in the industry, helping projects develop with his teams based in London and Seoul. He is responsible for helping Ubex with its marketing strategy and execution, as well with talent acquisition.

Arie Orlovsky

@arie-lev-orlovsky-5545021

Adivisor Israel

Ex-Strategy consultant, Booz&Co, IBM

Arie Orlovski is graduate of Technicon in Israel and studied together with Artem in INSEAD in France. He is a seasoned entrepreneur, strategy consultant, technologist and business development executive.

David Lim

@david-lim-6680a614

Advisor China & Korea

A business development director in China

David has 15+ experience in business development in Asia. He is a native Korean who has lived in China for more than 10 years. He is an INSEAD MBA who studied with Artem in France. He is a business development director for China in one of major global logistics companies. He worked on various marketing and investment projects for Korean government in Seoul before his MBA. His working experience covers both private companies and government authorities. David lived and worked Shanghai, Singapore, Hong Kong, Jakarta, and Seoul. Currently, he is based in Shanghai and keen to develop a new business with digital transformation. He is writing his first book about China's digital transformation, which will be published in 2019.

Sergio Pereira

@sergiopreira

Advisor

Co-founder and managing director at ComparaJá

Sergio Pereira is a financial expert with over 15 years of experience. Ever since graduating from Imperial College London with an Electric and Electronic Engineering and Management degree and an MBA in Business Administration from INSEAD, Sergio has worked in various industries from automotive manufacturing to Consulting. Throughout his career, Sergio has occupied management positions in such prominent companies as Toyota and BCG before co-founding the ComparaJá financial comparison platform in 2015 and acting as its managing director to present.

Sergiu Draganus

@sergiudraganus

Advisor

Co-founder and CEO of CryptoCoin.Pro

Sergiu Draganus is a serial entrepreneur and IT specialist with over 18 years of experience. Throughout his career, Sergiu has occupied a variety of positions in companies from various industries. He has served as a CEO, Concept Architect, Board member and technical advisor for leading IT companies and ranking agencies and crypto projects. The companies he has worked in include such eminent names as Virtual Invest, eRanker, BoostIT, IPSX, Swiss Crypto Exchange AG and others. He also the Co-Founder of CryptoCoin.Pro.

Ali Kassab

@ali-kassab-70657015

Advisor

Chairman & CEO of Centurion & Co

Ali Kassab, is a self-made businessman and serial entrepreneur with over 20 years of experience across multinational cloud software and digital payment companies. His expertise is nurturing and building entrepreneurship ecosystems in the MENA region from scratch. He is an innovator and technology enthusiast. He has led successful projects in Europe, North Africa and the Middle East.

Javier Gonzalez

@javieregonzalez

Advisor

Founder of VentureSpec

Javier Gonzalez has a wealth of experience as a startup founder. He is a former Rocket Internet MD and currently provides boutique advisory services post-seed for ventures. Javier holds an MBA from INSEAD, as well a Telecommunications Engineer Masters from ENSEA in France and Systems Analysis at the University of Miami and other professional certificates.

Mickey Choi

Blockchain Advisor

Mickey Global Business CEO

Mickey Choi has been serving as a representative of the stock market community in Korea and has been presenting his experience as a small shareholder in various business fields since 2007. Currently, he has experience in blockchain as an early investor and businessman who is involved in ICO project analysis, marketing, incubation and consulting for investors in many countries around the world. Mickey is an expert on the Korean market and has been involved in its blockchain integration and development for several years.

Timo Trippler

@timotrippler

Advisor

Timo Trippler is an ICO Advisor and entrepreneur with FinTech and InsurTech industry background. He is an expert in financial market and risk management with 12 years of experience in financial transactions. He advised various successful ICO projects and manages multiple crypto fund portfolios. Timo Trippler's work experience and rich expertise in the blockchain and cryptocurrency industries is invaluable when developing marketing, partnership and expansion strategies.

Risks

Risks and strategies for their mitigation

	Risk	Mitigation strategy	Significance	Probability
1	Appearance of a large programmatic digital marketing competitor.	Strategic focus on developing technological advantages (increasing algorithm effectiveness in distributing advertising offers among platform participants).	3/4	2/4
2	Introduction of stringent regulations on blockchain in key jurisdictions and following market shrinkage.	Strategy of geographic diversification and thorough monitoring of information about possible changes in the policies on regulating blockchain technologies across key markets.	3/4	1/4
3	Delays in the development of the Ubex Beta version for initial public release.	Expansion of developer staff and transfer of development of non-key modules to outsourced studios and contractors.	2/4	2/4
4	Decrease in advertising budgets on the market as a result of negative macroeconomic conditions	Flexible redistribution of marketing budgets by taking into account actual forecasts on digital advertising budgets in key geographic areas.	2/4	1/4
5	Attempts at tricking the neural network algorithm by increasing ratings through deal imitation.	Real-time analysis of automatically revealed patterns of suspicious activities on the part of participants.	1/4	2/4
6	UBEX Token liquidity decrease as a result of unprecedented price hikes.	Increasing Token fragmentation and creation of a stabilizing fund from part of the commissions.	1/4	1/4

Legal Considerations (L)

Legal implications with UBEX Tokens

UBEX Tokens are blockchain Tokens, which are digital Tokens created on a blockchain as part of a decentralized software protocol. UBEX Tokens are crypto-Tokens issued on the Ethereum platform on the basis of an ERC20 standard contract. UBEX Tokens are payment Tokens designed to support transactions on the Ubex platform. Ubex do not grant their holder ownership or equity in the Company or the right to participate in the control, direction, or decision making of the Company. Individuals, businesses, and other organizations should carefully weigh the risks, costs, and benefits of acquiring UBEX Tokens. We make no promises with respect to the future performance or value of UBEX Tokens, including no promise of inherent value, no promise of continuing payments, and no guarantee that UBEX Tokens will not decrease in value or hold any particular value. UBEX Tokens are nonrefundable. Ubex purchasers shall accept sole and exclusive risk for the purchase of the UBEX Tokens and shall recognize that the Ubex platform is currently in development and may undergo significant changes. Please refer to the risks associated with Ubex acquisition in the relevant section of our Terms and Conditions. This concept is fundamental to the objective of the Ubex platform - to spread cryptocurrency to the global economy.

Limitations on purchasing and using UBEX Tokens. US Legal Limitations

In July 2017, the Securities and Exchange Commission ruled that some Tokens can be considered as securities and are thereby subject to the agency's regulation. The ruling followed an SEC investigation into a German corporation, backing a group called The DAO (Decentralized Autonomous Organization), that raised $150 million on its ICO. The DAO issued coins that were used to pursue an automated contribution strategy, which entitled Token owners to receive rewards similar to dividends. For more details https://www.sec.gov/litigation/investreport/34-81207.pdf.

The SEC also forced Protostarr, a decentralized application allowing content creators to receive funding from fans and contributors in return for channel earnings, to shut down midway through its Token Sale.

By offering dividends and profit-sharing, these companies were clearly offering a security and failed the Howey Test created by the US Supreme Court to evaluate securities.

Under the Howey Test, a transaction is a contribution contract if:

- It is a contribution of funds.
- There is an expectation of profits from the contribution.
- The contribution of money is in a common enterprise.
- Any profit that comes from the efforts of a promoter or third party to determine whether certain transactions qualify as “contribution contracts."

UBEX is a payment Token used to pay for Ubex platform services. UBEX Tokens are not linked to real assets and do not grant their holders ownership of any share of the company or any dividends. As such, UBEX Tokens cannot be construed as securities and pass the Howey Test as:

- UBEX Tokens are not to be purchased with expectation of profit on potential appreciation.
- UBEX Tokens do not represent a common enterprise, as the Ubex platform is operational prior to offers on contributions.
- UBEX Tokens shall be purchased by affiliates, publishers and other network participants or their service providers to pre-purchase services on the Ubex platform.
- UBEX Tokens do not represent a contribution contract with an expectation of profits from the entrepreneurial or managerial efforts of others.
- UBEX Tokens are not intended for contribution or currency speculation and Ubex reserves the right to refuse to sell its Tokens to any purchaser that does not prove a bona fide intent of purchasing the Tokens for their intended purpose.
- All contributions decisions are made directly by the holder of UBEX Tokens, independent of other holders of UBEX Tokens or the Management of the Ubex platform.

Canada, Singapore and Hong Kong Legal Limitations

Singapore, Canada and Hong Kong have all imposed legal limitations on Token Sales. In July 2017, the Monetary Authority of Singapore (MAS) stated that Tokens fall under its jurisdiction if they “constitute products regulated under the Securities and Futures Act." Some offers may be subject to the SFA, while others may not. All issuers of digital Tokens, intermediaries facilitating or advising on an offer of digital Tokens and platforms facilitating trading in digital Tokens should, therefore, seek independent legal advice to ensure they comply with all applicable laws and consult MAS where appropriate," as stated by MAS officials.

In August 2017, the Canadian Securities Administrators (CSA) released notice 46-307 to initial coin offerings (ICOs) referring to the Howey Test for determining if a Token falls under the definition of a security.

Early in September 2017, the Hong Kong financial regulator, the Securities and Futures Commission (SFS), announced that Tokens issued via ICOs may be classified as securities.

Similar to the US, citizens and residents of Canada, Singapore and Hong Kong can use UBEX Tokens to pay for platform services or exchange them for other crypto Tokens not linked to assets (e.g. Bitcoin, Ether etc.).

South Korea (The Republic of Korea) Legal Limitations

At the end of September 2017, South Korean financial regulators prohibited domestic companies from participating in initial coin offerings. The Management of Ubex reserves the right to stop offering Ubex in South Korea if its financial regulator prohibits the participation of South Korean residents and citizens in offshore Token Sales.

Legal implications of smart contract execution

UBEX Tokens are issued on the basis of a smart contract on a blockchain platform. A smart contract is a digital instrument for the discharge via a programming algorithm. Ubex smart contracts shall fully comply with the laws applicable in their respect and shall ensure compliance with the legal requirements pertaining to the confidentiality of information.

Data protection

The sale and purchase of UBEX Tokens on the Ubex platform may require the provision of personal data. Personal data is information used to identify an individual. Examples of personal data collected may include names, addresses, email addresses, phone numbers, and fax numbers. Personal data may be obtained in a number of ways, including application via the project website, correspondence, telephone and fax and email. We ensure personal data protection through the implementation of an internal Privacy Policy and compliance with the Terms of Use. Generally, an individual is entitled to require a bank, where they concluded any transaction aimed at the removal of any data regarding such transaction from the banking system. Blockchain does not allow deleting data about any transactions concluded. As such, any user conducting transactions via blockchain connected with the purchase and/or disposal of UBEX Tokens shall represent and warrant that they realize the above facts and shall provide a waiver renouncing their right to require removal of any such data from the blockchain. We place significant emphasis on managing possible legal and regulatory risks and work in close partnership with a very reputable international law firm to protect our users.

KYC and anti-fraud

We pay serious attention to know-your client and anti-fraud issues in order to provide our customers and cryptocurrency holders with a transparent business model that is safe and involves minimal risk. In order to ensure that our services are not utilized by illegal elements to further their criminal motives, we intend to facilitate our operations by means of (i) obtaining sufficient information about our clients and verifying customer identity; (ii) conducting ongoing due diligence operations taking place on Ubex platform; (iii) highlighting suspicious customers and operations.

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