

Next-generation Ad-blocker

Cryptocurrency marketplace provides solution for ad-blocking threat to online advertising industry

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ABSTRACT

Consumer disaffection with irrelevant and obtrusive ads has resulted in the rapid growth of ad-blocker adoption. This fact is making data-tracking nearly useless and threatens the entire online advertising business model as a result. The industry's current solution is an arms race of anti-blockers versus anti-anti-blockers and in some cases alliances with the ad-blockers, themselves. This inefficient counter-productivity inevitably leads to a dead-end. To solve this problem, we offer an economical and technical solution aimed at fixing the imbalance of power between the online advertising industry and internet users who unwittingly provide the ad machine its revenue source: data. Our proposition is to substitute mutually beneficial, proactive commerce for this wasteful battle by creating a cryptocurrency-based marketplace for consumers, webmasters, and data management platforms. In our vision, the industry pays a fair, market-determined rate to users for their data and attention. This voluntarily provided user information exchanged for compensation presents truly valuable data to the industry when compared to the current ill-gotten and often misinterpreted data harvested at present. To power this network and to create a stable method of exchange a devoted cryptocurrency is proposed to be released to the public via a one-time only offering. Once live, average internet users within the system will be paid with this cryptocurrency in exchange for their attention. The cryptocurrency lives on the Bitcoin blockchain in the form of so-called colored coins. It has the transparency, fluidity, and security of Bitcoin without its dramatic price volatility.

Keywords: online advertising, real-time bidding, ad-blocking, cryptocurrency, blockchain, colored bitcoins.

Definitions

System is the proposed framework of software modules that constitute the new approach to ad-blocking. *System* consists of online behavior and user profile data handling framework and an automated marketplace for advertising industry participants and consumers.

RTB is the real-time bidding framework for the online advertising industry, created by Jason Knapp. *RTB* is a means by which advertising inventory is bought and sold on a per-impression basis, via programmatic instantaneous auction, similar to financial markets.

System Coin is a Blockchain-based proprietary cryptocurrency. *System Coin* can be used with the help of the Blockchain-based, System-enabled wallet which can send and receive *System* payments in *System Coin* including micropayments; payments are practically instant.

External currency exchange engine or entity (*Exchange*) is the facility where *System Coin* is freely traded against other currencies. *Exchange* is a third party entity. *System* does not have any technical participation or influence on the *Exchange*.

Identity is a *System*-understood Blockchain address. May belong to a person or an organization.

Signed Tag is a text containing user *System Identity* that has been signed under specific conditions with any other *System Identity*. *Signed Tags* prove that a user belongs to some group or has some quality (e.g. customers of a company, members of a club, visitors of a location, etc).

System-ready user software agent (*Application*) is a user's browser, which tells a website that it follows the *System* project rules for surfing the web.

Application incorporates *System Coin* crypto-wallet, *Identity* (hidden by default), user agent policies (surfing policies), user profile (with sections and sharing conditions for each section, stored locally), specific protocol purposes text tags signed with *Identity*, search queries history and visited sites history (also stored locally).

System-ready website (*Website*) is a website which recognizes *System* users and treats them in a special way. *Website* incorporates *System Coin* crypto-wallet, *Identity* (optionally tagged with *System* certified partner's *Identity*), *Website* policy.

1 New Ad-blocking: More than Merely Blocking Ads

1.1 Ad-Blocking Appeals to Emotion not Reason

Most of Internet monetization strategies rely on advertising. However, as Rod Serling put it back in 1997, "It is difficult to produce a television documentary that is both incisive and probing when every twelve minutes one is interrupted by twelve dancing rabbits singing about toilet paper."

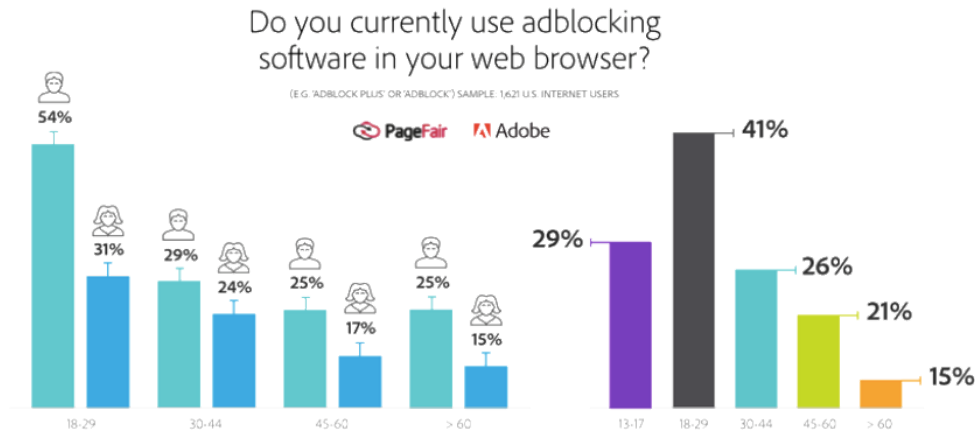
Users are expected to accept the presence of online ad in exchange for free content but things have become complicated; consumers and content providers have developed a love-hate relationship regarding advertisements. As multiple studies show¹, already in the beginning of the last decade, across all media channels, two-thirds of consumers were interested in products and services that would help them skip or block marketing ploys.

Importantly, the wording people use to articulate the reasons to use ad-block software somewhat differ, though. The top reasons mentioned are the perception that sites are easier to navigate without ads slowing downloads time and, by extension, browsing as a whole. People tend to explain their hate with more prudence involved while, in reality, emotions and tendency to follow the crowd are the leading factors.

We propose to educate users about exactly why they should be using ad-blockers, in general. It is not because they are "cool" or even because they "block ads"; rather, it is because you are getting ripped off and exploited of your valuable attention and data.

1.2 The Size of Problem: Equally Overestimated and Underestimated

¹ J. Walker Smith, AAAA Conference, April 15, 2004; Rainie, L., Purcell, K.: State of the news media.



A number of software solutions have emerged that block online ads and data tracking. A few pieces of research claim that approximately a quarter or even a third of internet users are now blocking ads and that annual growth is close to 50%. These figures look a bit shocking but we have to take into consideration that, according to deeper studies², half of surveyed people suppose they're using an ad-blocker when, in fact, they are not. The reason is that they often confuse ad-blockers with their browser's built-in pop-up blocker or their antivirus software.

Interestingly, among consumers not blocking ads, about 20% are past users of ad-blockers who quit because of useful content being blocked as a side effect or because of a direct response from website managers. It is our estimation that about two-thirds of consumers using ad blockers are open to reconsidering and stopping the blocking of at least some ads.

Despite the fact that ad-block providers are the main sources of these statistics, the problem is larger than even objectively collected stats can indicate. The use of internet ad-blocking software is increasing rapidly and this growth is comprised the most productive internet using demographic. Online advertisers are seeing serious decline of revenues as a result.

Ad-blocking software is a mighty weapon. It blocks advertisements and removes both the direct attention and the background attention processing of the consumer. Last but not least, ad-blocking used to be a niche pursuit, but new, simple to install ad-blocking software has set the foundation for what has become explosive, unheeded growth.

² Samar Das, c3research; Kristina Sruoginis, IAB research.

1.3 Whitelisting: Advertisers' Tool Will Soon Turn Against Them

Because banning ad-blocking software on desktops is next to impossible from a technical point of view, advertisers are left to use an alternative technique known as “whitelisting”—the word describes a user’s ability to disable ad-block for a specific site (e.g. as is mandatory on Forbes.com). Advertising industry players are persuading users to whitelist by informing them of reasonable advertising policies with on-site pleas and also by trying to generally improve user experience by choosing more streamlined and native type ads. Despite all efforts to improve the “ad-experience” for their users success has been limited.

Advertisers spend considerable funds to educate people to manage their data and train consumers in using these kinds of interfaces in their browsers. This is a very dangerous move they undertake, however.

Annoyance is yet a stronger driver of ad-blocking usage relative to the other identified reasons such as irrelevance and privacy-invasiveness. The two latter issues have to do with user-data rather than with ads themselves. This equation can be flipped and the data problem may become the main one. What if people begin to think of the very same whitelisting UI as a self-controlled personal data management tool? An educated crowd is very tricky to control.

1.4 The Battlefront is in Data-tracking—Not Ad-blocking

The ongoing rise of incentives and interest for data in the field of behavioral advertising has resulted in an arms race between data collection and data protection. The battles are going on in both legal and technological venues. Advertisers keep proposing pervasive-like changes to privacy policies; consumers keep objecting. Consumers install ad-blockers, webmasters deploy anti-ad-blockers.

Showing ads is perfectly legal and the prerogative of advertisers. Users need to serve themselves and decide on their own personal mix of avoidance technologies. This part of the war is comparatively fair.

On the other hand, the data-tracking part of the battle is not yet fair or even known for the most part. The technical abilities of users vary from those able to disable scripting languages and cache cookies to those applying advanced tools

such as Tor, etc. Still, very few of them distinguish between different degrees of tracking severity.

Personal data intrusion should not even exist in absence of a truly effective, widespread, and broadly applicable opt-in/opt-out “button.” We suppose that privacy invasiveness will soon become a stronger factor relative to the other characteristics of the conflict, i.e. annoyance and irrelevance.

A major inhibitor of ad-blocking growth appears to be the lack of mainstream exposure. Such exposure can be engineered easily. The ad-blocking software is poised for long-term growth in this manner or another, and websites/online advertisers will need to adapt.

We propose to maintain exposure of public to educational information regarding ad-blocking technology focusing on the self-management of personal data. This will increase consumer interest in ad-blocking software in general, and in data protection in particular.

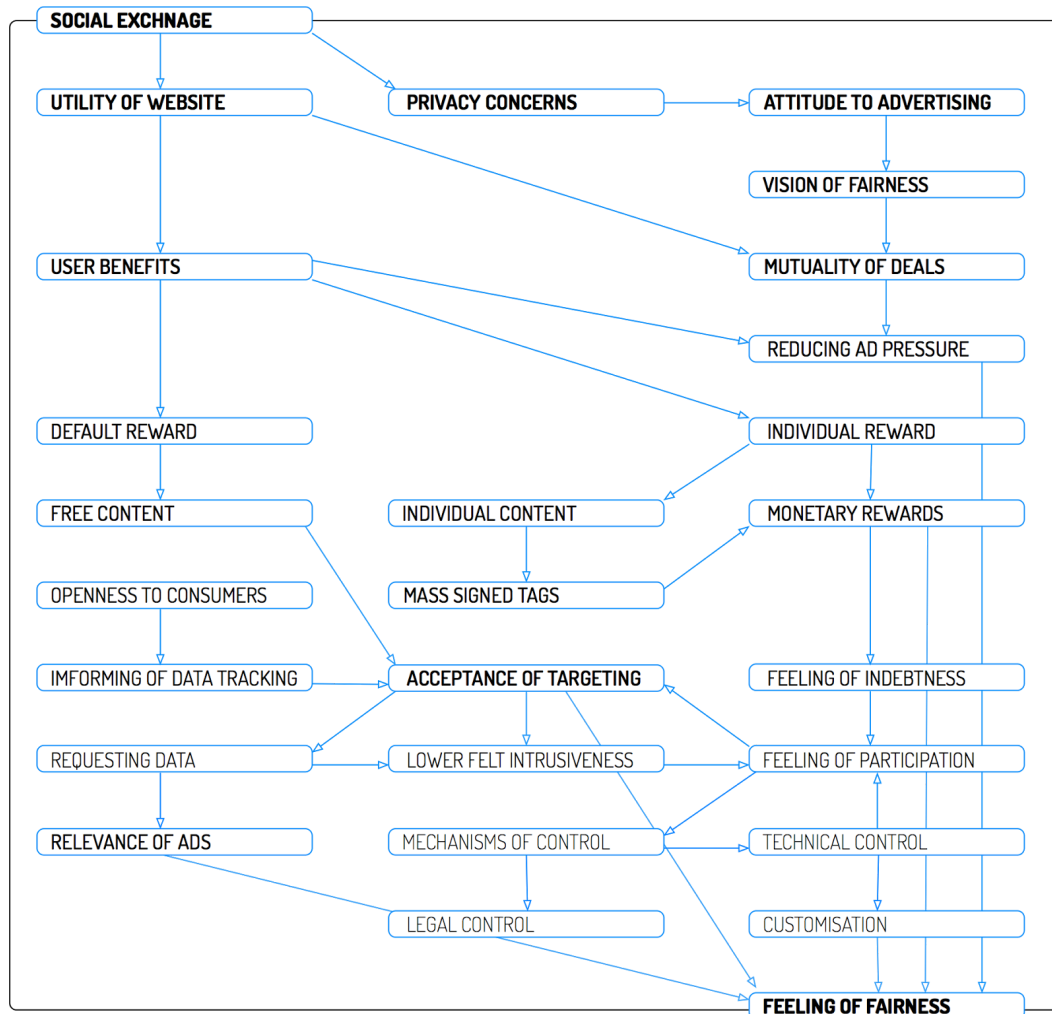
2 Quality Ad-Targeting

2.1 Introducing Fairness in Advertising

In advertising, relevance means much more than quality content. An ad made by the best designer and copywriter in the world will score zero if it doesn't find an audience. On the other hand, an ad with a decent design and copy targeted to the perfect audience will enjoy a healthy response score.

The level of relevance modern advertising technologies can offer is not too high, but the question is whether System can make it any better. We continue to receive questions with highly dubious undertones that require some attention:

- Doesn't paying consumers spoil the quality of the audience?
- You say you will survey consumers to clarify the information needed by advertisers? Isn't that where you started at, shouldn't you protect users' privacy instead?
- Why do you think consumers' answers won't be biased and misleading?



To answer these questions, let's begin by describing some interconnections of these important issues:

1. Consumer privacy is being compromised by advertisers.
2. Consumer attitude to advertisers' intrusion depends on many factors.
3. The level of intrusion as it is felt by a consumer differs from the actual state of affairs.
4. The relevance of ads is the factor that makes consumers' life better.
5. A degree of mutuality in consumer-publisher relations is possible.
6. The role of a monetary compensation for consumers is yet unclear.
7. Consumers' acceptance of fairness of the value exchange is the key.
8. Providing personal data by consumers themselves affects many value parameters in the system.

9. Availability of control for consumer & advertisers relations is very important.
10. A technological type of control works better than a legal type.

Consumers perform a kind of a social exchange deal when providing information to marketers. People unconsciously compare potential pluses marketers might provide against the psychological inconvenience and direct money cost (if involved) of a given privacy intrusion act.

The main factors that increase the value of a data provision deal are:

1. Reduced risks associated with the deal, for instance, with the help of a law.
2. Financial rewards in various forms such as discounts.
3. Increased convenience, for instance, time saved.

System technologically targets the main junction point of the described social exchange, the one between a website visitor and the website itself. This piece of technology is called System Signed Tags.

In this exchange relationship, a website may offer a default “reward”—free content for a consumer—and also an individual “reward” that is being defined based on the list of System Signed Tags owned by both consumer and website. This individual reward can be literally anything because System has the payment capability; something can be sold at a discount, for example.

In return for the rewards from a website, the consumer observes ads and allows performing the work on the data that helps the further improvement of targeting for later advertising. It is important to note that System includes the unusual component of mutuality here. The System browser has the conversational UI/UX options that make it possible to conduct a “slow dialogue”: a user may be prompted with short surveys or single questions. This may be based on watched ads, on recent browsing history, on previous answers, etc.

Of course, consumers are only willing to accept our targeting clarification efforts if they feel they receive at least as much as they give. This feeling is very hard to “quantify”, especially amid concerns around the privacy issues. To make consumers feel comfortable, and therefore willing to cooperate, we not only need to fully inform them of the ad-targeting practices but also to make them able to customize any parameter involved. Of course, there’s certain limit of complexity

after which the friendliness of the user interface will be questionable but we have to follow the strict principle that absolutely everything is under a user's control.

However, we have to anticipate the result of the fact that today most consumers are not fully aware of how and what data is collected, therefore this new conception of transparency might temporarily lead to a negative effect. Many people probably do not realize how high the actual intrusiveness into their lives is by data-collection scripts. On the other hand, however, this is a positive factor for System because this eye-opening effect may serve as a great marketing case and impetus for change.

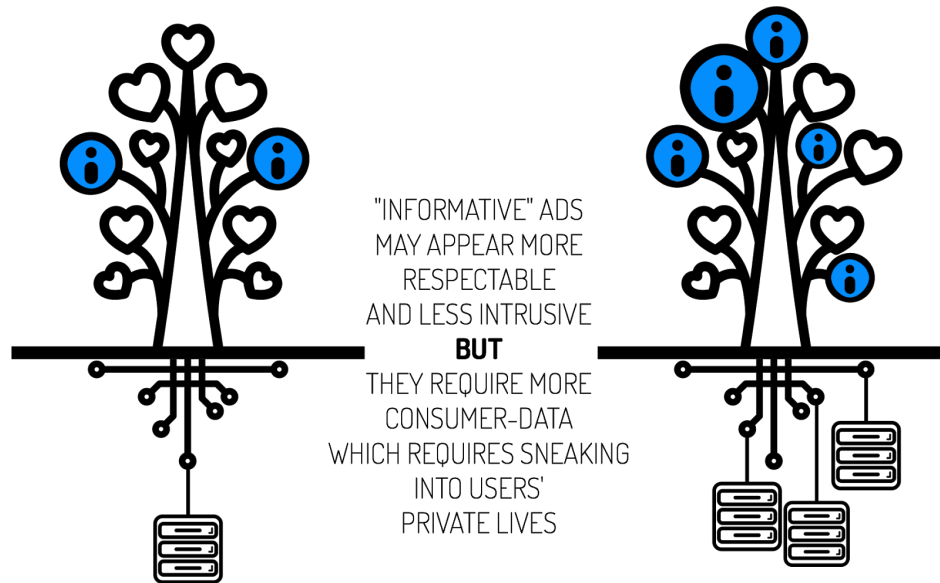
The above facts are to be used by System to create a responsible attitude to the new practice of being paid and asked for targeting clarifications. System has a real foundation by which to suggest changing the minds of average web users. Thus, the problem of data supply abuse with an intention to gain more money from System is not going to become a problem on the first stage of adoption.

In each truly honest commercial trade, people assess the fairness of the deal in terms of mutual outcomes. Advertising is to become a truly honest commercial act via System and fairness is to become the main fuel for the System-enabled advertising market.

2.2 Increased Benefits by Increasing Relevance

The most successful way to justify a questionable deal is to exaggerate the positive outcome to the buyer. That's what advertisers do for a living, that's what the advertising industry claims it does through the practice of targeting. They say it makes advertisements more interesting and more useful. There is only partial scientific support for this claim.

The statistically proven fact reads in a more narrow sense: fewer ads and more targeted ads are better than more ads with less targeting. So, the main advantage of targeting has to be some reducing of ad pressure. It is not so in the incumbent advertising world. It is so; however, in the System-enabled world.



System is also going to help its adoption by utilizing the interesting and paradoxical fact that more informative ads appear to be less intrusive. In reality, though, more informative ads are actually more interfering with the consumer data. If calculated accurately, the amount of data required to make ads more informative and well-targeted is larger to the amount of data needed for a less informative and generally more emotional ad.

To improve consumers' acceptance of the targeting concept, System will involve them in the process by vividly informing customers what data provided by them in the past was able to make the presented advertisement more interesting since consumers will be able to mark ads as relevant (or not) directly.

2.3 Mutual Benefit: Fairness in Advertising

Although the previously discussed factors to improve balance in the system are important, the real value of System is in changing the way people see and comprehend what websites they visit have to offer. By implementing surfer-website payments, System can totally change the way people perceive the website's content. Attitude to one important detail may change the opinion about the rest of content and functionality. System-equipped webmasters can offer all sort of direct deals to their visitors. Good sites with good deals will get good feedback.

It is important to note here that free content cannot be considered a benefit— as having value at our social exchange. Not any longer. After many years of consuming free content, consumers have developed a mentality that it is a norm. Therefore, the issue of mutuality is not a central one in the current advertising industry discourse.

Re-inventing the need to pay back a favor to a website is very important. System Coin is a great tool to make people feel they owe something to the website. As this generally healthier attitude develops over time, payment for quality content may become more of a norm too.

Openly calling for fairness based on mutually agreed and understood terms will increase consumers' acceptance of data-tracking efforts by websites and reduce the perceived level of undesired interference in consumers of website content.

Informing customers about the benefits of advertising relevance is great but it should be done separately; otherwise, the appeal of the idea of co-beneficial mutuality will look weaker.

2.4 Mechanisms of Control

Consumers' assessment of the fairness of procedures depends on the norms of openness and honesty in a given cultural layer or society. Consumers tend to easier accept some specific norms if such norms are stated explicitly in a ledger of rules. Software mechanisms, organizations, and their officers must be vested in their actions towards consumers. That is essential to the overall success of the ecosystem. No laws equals no business.

Providing consumers with a high level of control by allowing them to view and customize every aspect of data-accumulation increases adoption.

Allowing consumers to participate in the control procedures makes them even better and provides an important presence of decentralized, external control missing from the competition. Not only knowing, but understanding, and even taking part in the process of collection of information to be used in ad-targeting is what makes System unique for a consumer. Acting according to these new, higher standards of procedural fairness increases the perceived trustworthiness of the project. A willingness to disclose information and share ideas is what System is hoping to engineer.

3 Economic Model

3.1 Core Principles

3.1.1 Zero Market Interference

System does not sell ads. System does not replace filtered ads with its own ads. System does not manipulate any markets. System does not directly affect prices for ads or data sets. Rising prices may be the result of a growing overall quality of the ecosystem and its applied qualities such as targeting. System does not censor whitelists. System does not enforce whitelisting.

3.1.2 Zero Payment Burdens

System does not concentrate payments in the system, it does not serve as a hub for transactions. Although such a payment protocol may impose small fees per transaction, System does not do that. Payments for ads (or anything else) are not collected by System and later distributed to other parties. Deals take place directly, without an intervention of System' centralized authorities, as they normally do in existing markets.

3.1.3 Monetary Control

Although System does not impose fees on any deals, contracts or transactions, System restricts the usage of the system in a monetary way such that only System Coin can be used by participants of the system for any economical interactions between them. System does not control System Coin in a direct way. System has no power to issue new coins outside the already announced format.

3.2 Estimated User Earnings

So how much can a given user earn in one year? We can start the estimation by calculating how much “harm” is done by ad-block users. The global stats are hard to get but we can use the well-known facts: Google is nearly one-third of the market, Google gets about 70 billion in ad revenues annually, Google has 1.2 billion users. That gives us Google's losses of \$60 per person annually, the entire industry's losses are approximate \$200.

According to the Pareto rule, only one fifth of a system makes four-fifths of the business, so those people who will actually earn something noticeable in the system are five times more "expensive". That gives us \$1,000 per person annually.

3.3 Sources of Value and Benefits

3.3.1 Improved Web-browsing Experience

Filtering ads in your browser improves your attention and makes it more valuable to the industry. The phenomenon has been tested and approved by many. While you may be interested in one ad out of ten thousand shown to you during a certain time when the total quantity of ads shown in the same length of time falls to one hundred you are likely to be interested even more than in one ad.

3.3.2 Mass Matters

A local critical mass makes ad placing more coherent. Advertising is still a very local business. Online shopping constitutes only about 5% of global retail, so it can still be neglected. Most of the things are bought locally from local businesses who need to advertise locally. System will go city by city reaching a local critical mass in smaller cities in a short period.

System will be very relevant even with a small total number of users because our promotion efforts will not be wastefully spread over the Globe. We will bombard with high intensity in targeted segments. That means a lot for a local advertiser.

System-enabled ad platforms will probably be the only aggregated source of ad-placement operating in a small town of 15,000 or so. It is also important to keep in mind that ad filtering and data-tracker-blocking represents serious intrinsic value for consumers as it reduces distraction during web-browsing.

3.3.3 Ad-blocking Goes Mainstream

The considered business segment is about to turn from early advanced adopters to mainstream users. System will, not only work locally, it will target the population at large.

3.3.4 Friendly Attitude

Cross-tagging creates better targeting. Ad-blocking generally is a value re-distribution tool, not value creation. Money is taken from one party (i.e. advertisers) and handed over to privileged participants of the system. No new value is created. System is very different in this sense.

System provides better targeting—a rarity in the advertising industry. New targeting tools are very hard to invent and implement. The System approach is to ask users directly in an unbiased manner. It's a complicated technology but works since users are actually the last remaining source of true data about themselves.

Advertising as an industry has finally come to the point where it has to learn to conduct a direct dialogue with consumers. The technical approach is the distribution of Tags. To reach certain minimal ability to cross-check the validity of answers will also require some critical mass of Applications installed.

3.3.5 *Fair Game*

Openness of mutual interests and transparency of transactions creates a stable ground for the marketplace. Ad-blocking is a scenario full of natural conflicts. By creating a marketplace, System significantly reduces the tension in the professional community.

The Adblock Plus approach includes backstage deals and transparency of where the money goes.

The Brave browser approach to replace ads with own ads looks so bad, and may even be deemed illegal in many countries. The further re-distribution of the income among publishers and users does not help that.

3.3.6 *Differentiated Marketing Positioning*

System promises users some profit in real money once a critical System of installations is achieved. The promise of real money (fiat currency or Bitcoin) is very important. System developers should realize the controversial nature of the phenomenon. They should take into account the mistakes of the past industry's attempt to pay for viewing ads about ten years ago. Having internal Coins and external Exchange helps us to achieve the balance between fraudulent and useless data and valuable consumer input. We suggest to apply considerable

efforts to create a healthy market making the foundation on all involved Exchanges.

3.3.7 *Peer-to-peer In-browser Payment*

Fast and handy crypto-payments are still new to the majority of the Global population. This may be an additional great selling point.

3.3.8 *Coupons and Discounts*

The Tag mechanism is a peer-to-peer solution for any type of negotiation between a user and a website. It can also be used for coupon distribution activities.

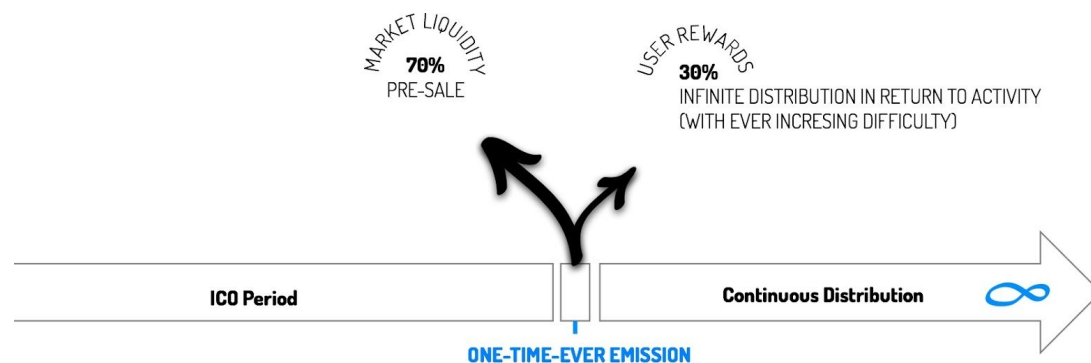
3.4 **Properties of System Coin**

System Coin is designed to serve the health of the economy, of course, but it also suits interests of both long-term investors and middle-term speculators.

The one-time issuance principle guarantees the growth of value as long as the ecosystem doesn't stagnate. Unlike the most of the "app coins", System Coin has an application in its core that is in high demand.

Advertising affects everyone and involves a lot of money. Tracking is becoming a really big issue, not only in advertising but elsewhere, on different occasions.

3.4.1 *Stage 1: Initial Coin Offering*



There are two stages involved in System Coin's distribution: one to be distributed immediately after the ICO period and the rest to be distributed during an indefinitely long time, with distribution tempo ever decreasing. ICO goes until the specific date, whatever is accumulated until then — gets distributed among the participants. The larger part goes to immediate distribution. There are several reasons for this.

The system will need immediate liquidity (more market makers) after the product launch by the end of the year, thus many potential independent sellers of the currency are needed: someone will have to sell coins to advertisers.

Another reason is that examples of other systems indicate the opposite balance (majority to be distributed over a long time after the ICO) doesn't lead to system stability. At least it is far from being enough to make the system any better.

Considering that in real life the majority of money is owned by the large stakeholders such as banks and states, it is going to work. When people say the current global money system is decadent, they forget to add that no other system has proven to be viable yet. The current balance of money in the world is the result of a long, evolutionary process. As any evolution, it shows results that might seem strange in design but at least they are viable by definition.

3.4.2 Stage 2: Continuous Distribution

The remaining 30% will go towards continuous distribution. Anyone who runs Application, as well as the webmasters of Websites will be able to receive money every day, according to the involvement measures. These measures include:

1. Visiting specific sites (growing number in the partner list);
2. Time spent online visiting many sites;
3. Completing surveys, answering questions about yourself and your preferences, helping to clarify your advertisement-oriented profile;
4. Assisting the system by discovering and reporting botnets and other abuses;
5. Referring other people, bringing them to the system.
6. Gaining Tags.

Along the way, the measures of the difficulty of distribution will increase for each parameter. However, the value of money will go up too, and also, users can

customize a lot of things in Application's UI, maximizing one type of participation in continuous distribution or another.

3.5 System Coin: Technical Implementation

3.5.1 Blockchain: the Trust Protocol

In recent years, "blockchain" has turned into a catch-all phrase for anything involving a distributed, public ledger or database. Blockchain technology has been hyped for use everywhere from traditional banking institutions to the healthcare industry. When first confronted by the reality that Bitcoin is here to stay and kill many of them, banks reacted with hostility and skepticism. Today banks and financial institutions seem to agree with the Bitcoin community that the technology behind Bitcoin can provide an efficient platform for settlement and for issuing digital assets.

Curiously, though, they shy away from Bitcoin itself. Instead, they want something they have control over and doesn't require listing transactions publicly. The problem is that the Blockchain is specifically designed to obviate private firms. The Blockchain is and will always be purely customer-to-customer. The notion of a "blockchain company" or "private blockchain" is nonsense by its very nature.

Bitcoin is not just a protocol or money; it is a new business model for open source software. Industry refusal to acknowledge this point has resulted in multiple misunderstandings, which have persisted for a variety of reasons. The System team realizes that by using a true blockchain-based money not the slightest piece of monetary control will remain in private hands. System Coin will be left to its market forces immediately after its one-time issuance. System does not want to maintain any authority nor is it able to thanks to the decentralized and public nature of the Blockchain. System does not have to be trusted—and this is the beauty of the whole concept.

3.5.2 Bitcoin: the Only Safe Blockchain

Strictly speaking, there are no other fully functioning blockchains apart from Bitcoin; therefore, the Blockchain is Bitcoin. Thus, one can't really be "blockchain agnostic" at this point in time.

Moreover, some people in Bitcoin community will do their best to stifle the emergence of any serious alternative. Bitcoin is the perfect example of the so-called Lindy effect. When it was young, it was fragile and could have died multiple times. Now, every day it survives adds two more days to its life expectancy.

The essence of a blockchain is the consensus process. The Blockchain is an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof of work as well as all the previous proofs of work. Without Bitcoin's essential qualities, a real life blockchain most probably cannot take off. Alternative blockchain creators often attempt to compromise primary principles that have already proven to be viable. For example, proof-of-stake is a concept trying to marry two contradicting phenomena: blockchain as the means to get rid of the need of credibility and authority that wants to get inserted into the decision making this way or another.

The only alternative to Bitcoin worth mentioning is Ethereum, and it is many orders of magnitude less secure yet, so it is mentioned here only anecdotely. "Smart contracts" - the idea Ethereum boasts adding to the blockchain world - are not "legally binding contracts" in any part of the world, and will probably not be before long. "Smart contracts" are ordinary software with some centralised intervention. Ordinary software rarely works as expected, has bugs, and is vulnerable. Do not compare smart contracts with Bitcoin and do not expect the same level of security!

3.5.3 *Colu.com: the Most Reliable Operator for Assets-over-Bitcoin*

There are three prominent operators, namely Omnilayer, Counterparty, and Colu, as well as a handful of powerful protocols built on top of the Bitcoin Blockchain. They all allow issuance and transfers of user-created assets. This is an evolution of the Bitcoin concept often referred to as Bitcoin 2.0 or, in a more narrow sense, "colored Bitcoins". "Colorization" is a term that stands for attaching a specific name, feature or even promise to a transaction conducted in the Bitcoin network.

Among the three operators mentioned, we consider Colu as most suitable for System. Colored addresses are free to create and require only a small transaction fee on issuing new coins. Assets can be locked so that no new shares can ever be created. While these features are available from several providers, Colu is the best because of its organizational structure. The company—yes, this open source protocol is supported by an Israeli corporation—

is transparently funded and operated and has clear business goals. Open source community-run projects are cool but often lack direction, are unreliable and always slow. Colu supports many ongoing classes of assets and has extensive experience in the field. Therefore, using Colu brings excellent value to the System project.

Another important reason to consider is that Colu offers the only protocol that doesn't take an additional "native" coin to run it. Omnilayer needs such a coin and Counterparty does as well.

Last but not least, the Colu team has been advancing towards its Lightning Network (LN) implementation aggressively. It is essential for System to have a micropayment capability like LN, so Colu's progress in the field is vital for us to take into consideration.

3.5.4 The Wallet Infrastructure: Provided by Mycelium

A crypto-currency wallet is not an easy thing to develop. User security must be balanced with a featureful, intuitive interface. Thus, System is integrated with the most respected wallet team in the industry, Mycelium, to make the receiving and selling of crypto-currency seamless for System users.

3.5.5 Why not BTC?

Recently, many have been asking, "If the System Network runs on the Bitcoin Blockchain then why is System Coin necessary? Why don't System users simply receive Bitcoin for their participation in this Blockchain-based system?"

One of the tenets of System is that the price of ad placement on the network should be determined by supply/demand of ads as well as the overall health and appeal of the System ecosystem, itself. Again, if we were to have all of this rely on Bitcoin, in addition to the two factors above, we would be introducing the fluctuating value of Bitcoin as another variable in determining the price of ads which would make the entire system vulnerable to any turbulence within the Bitcoin space. We do not see this as a necessary risk.

We do not see the Bitcoin economy as relevant to our application. The Bitcoin Blockchain plays an important role in System Coin distribution and will hopefully become more vital once LN arrives. Until then, we want to embrace the liquidity and security that is available on the Blockchain but discard the volatility in order

to create a stable, purely market-based value for transactions within the System Network.

4 Our System versus the Ad-block Competition

4.1 Superior Conflict Management

“Ad-block” is a word heard more and more these days. Its massive adoption, incorporating ad-filters and data-tracking, has been disrupting the online ad world for years. However, the gravity of usage and its implications for advertisers grows larger every day and is threatening to change the way they do business.

The main difference between System and others is in the way System handles the inescapable conflicts created by ad-blocking. There is a handful of business segments with hundreds of large multinational companies. The real-time bidding framework in the online advertising business is remarkably complex. There are dozens of linkage points where money/service flows have a long history of evolving relations.

So far, many ad-blocking businesses choose the simplest path—just ignoring the existing ecosystem. They would cut off some portion of an audience from the regular marketplace, seize its attention, and impose their way of doing things as a rule. Here are some examples of these “rules” and the forms they can take:

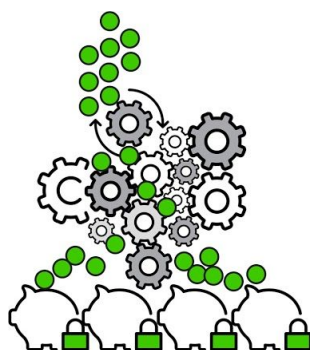
- AdBlock: Ignores the advertisement world completely and relies on user donations
- Brave: Unlawfully replaces existing ads with their own.
- Somewhere in between these extremes, other ad-blocking businesses follow a less marginal trail and practice a spot cooperation with certain ad-networks. We consider that as a vague and deficient strategy as well.



Look at the diagram above. These is a myriad of agents involved in the morally questionable business of exploiting user data. Can an outsider possibly build new junctions on all the business borders you see in this image? We strongly doubt it! Thus, this obvious hopelessness results in a commonly taken defamiliarization approach in the ad-blocking business.

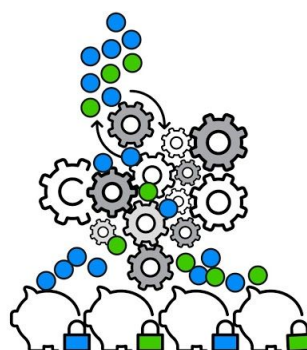
System Network also admits that an ad-blocking business can not manage to install its agents into all the important interconnecting points in the RTB world over-night. Think of it as of jungle inhabited by many species interlocked into a complex food chain. Consumer's attention is the food and ad inventory is the oxygen for those living in this pyramid. All known attempts of meddling with the ecosystem lead to an ecological catastrophe.

System offers a sane and reasonable solution to this problem, however. We do not ignore the jungle; we do not introduce new species to the jungle; we stay in the jungle but package food into various plastics and supply various oxygen-dependent ferments that can dissolve our plastics using strict chemical laws.



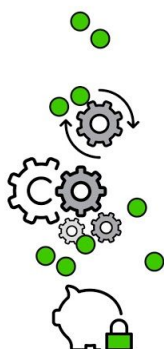
TRADITIONAL SYSTEM

Full ecosystem
Lots of traffic, lots of money
Ordinary fiat money
Consumers abused
Unstable system



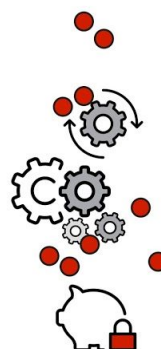
PROPOSED SYSTEM

Hybrid ecosystem
Lots of traffic, lots of money
Two types of money
Balanced mutual interests
Stable system



ORDINARY ADBLOCKING

Isolated ecosystem
Low traffic, lack of money
No money for consumers
Triggers arms race
Unstable system



BRAVE ADBLOCKING

Isolated ecosystem
Low traffic, lack of money
Centrally distributed bitcoins
Laws violated
Severely unstable system

Plastic, in this analogy, is System data-protection. Ferments are the System Coin proprietary Blockchain-based crypto-currency that is to be presented to a number of independent market makers operating on several crypto-exchanges.

4.2 Money Makes all the Difference

While our competitors use, “We’re paying our customers” as a purely marketing-based gimmick. System introduces the money aspect in a much more comprehensive, scientific way. System money is not just used to placate a consumer with micro-payments for browsing; it is meant to serve as a circulation system for all participants, including dozens of business segments in the RTB framework. System Coin allows protected-by-System consumers to participate in the existing advertising framework to any extent they wish with any customization they are willing to apply.

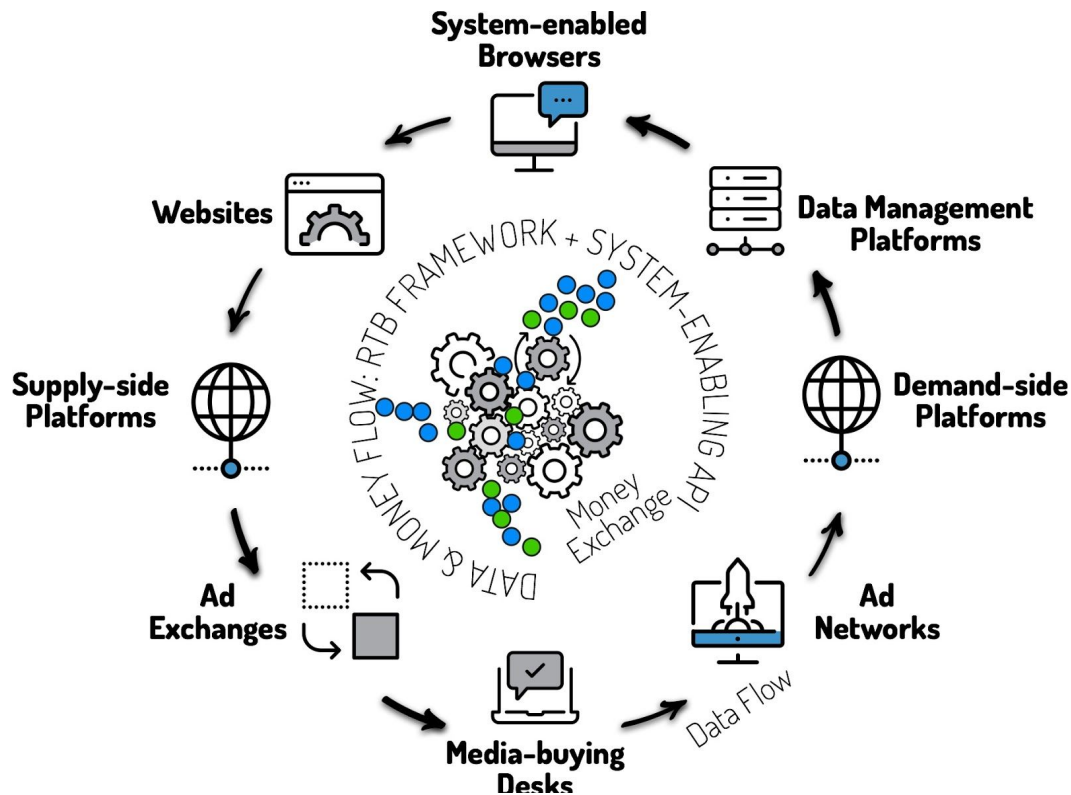
Of course, advertising players from any business segment will need to purchase System Coins to include System-protected consumers in their targeting streams. It is the ad industry’s problem that ad-blockers deny revenue from the rapidly emerging demographic that is “ad-blocker users”.

Such is life when one lets a situation devolve into such poor conditions. Thankfully, this is yet another aspect of the legacy-world that cryptocurrency can improve.

5 Bridging the Gap between Consumers and the RTB Infrastructure.

System aims to avoid conflicts with the existing advertising infrastructure. Real-time bidding industry (RTB) infrastructure already constitutes a huge portion of the digital advertising sector, and it is growing. System would like to improve this system by adding transparency as well as a way for web users to participate in an unobtrusive, profitable way.

RTB is essentially a continuous stream of instantaneous auctions that determine which ads are shown to which users on a website. Every time you load a site, supply-side places ‘asks’ for available ads and demand-side places bids for single user ad-impressions. System affects the packaging of data of some consumers and offers easy-to-use tools for all RTB participants who would like to upgrade to include System Network consumers into their revenues.



Data is the single most important element supporting the RTB value chain. Data variables include, but are not limited to, purchase intentions, household demographics, and behavioral patterns. System enriches the data with an entirely new dimension of user-survey based parameters.

When a System-enabled user visits a website, the web server delivers some code (Signed Tags) to RTB-and-System-enabled market participants—SSP or DMP. SSPs (supply-side platforms) allow publishers to select demand partners (i.e., who gets access to inventory such as ad network or ad exchange). Of course, SSPs manage supply selection, i.e. availability, and pricing.

SSPs were historically set to managing many types of ad inventory levels, so adding System specifics is nothing revolutionary for these organizations. Take one of the largest SSP in the USA for example. PubMatic's Ad Price Prediction service accepts bids even from non-RTB enabled demand sources such as ad exchanges, ad networks, and direct-to-agency orders. Any bid wins only if it has the highest effective demand-side price.

The “effective price” parameter normalizes the System-price-scale to an ordinary one. It is the way for two price standards to co-exist. One price is a usual one that depends on user/publisher qualities and the other price takes into consideration that part of the payment has to be forwarded to the consumer. In fact, by the time the data packet starts to travel, the Blockchain payment is not confirmed but a side-chain secondary level payment (such as “Lighting Network”) is already implemented.

By normalizing this double computation, System data will represent quite an upscale audience, in general. That is especially remarkable because within the RTB framework supply-side platforms have been developing primarily as algorithm-driven systems used by online ad sellers to monetize unsold ad inventory. Sellers used to employ SSPs mostly to increase the value of indirect ad inventory through yield optimization techniques.

Now, System-enabled SSPs provide sellers with opportunities not only to pinpoint and bundle specific segments of audiences but sell individual ad impressions at premium rates to premium consumers. Typically that can be achieved only by direct ad sales (in-house ad sales division working with ad agency).

Data management platforms (DMPs) mine online user metrics via cookie IDs or pixel tags obtained from a user’s web browser. DMPs are normally expected to adhere to self-regulatory practices established for online data collection and supply consumer privacy controls in order to maintain trust with agencies and consumers alike. All of the major DMPs offer opt-out tools for users. In contrast, System-user-data is always protected and can only be released via micropayment (in some case, with a certified promise of the payment). Instead of a primitive opt-out switch, System offers its users a complete UI to control the data flow. Thus, consumers may move themselves up in the user-level stats indicated by the System SSP tool. SSP operators will clearly see the accumulated effect of System-enabled consumers in terms of revenue acquired by an SSP.

Conclusion: Playing the Game with a Calm Hand...

We aim to cooperate and improve the existing infrastructure not to merely differentiate from other ad-blockers but because such approach promises more reward for stakeholders and fewer lawsuits. Also, it generally makes more sense

from both an ideological as well as business standpoint to cooperate with existing giants and seek gradual change when lacking the resources for an all-out attack.

We at System think more choice is better than less. If you do not want to “sell yourself” then continue using your current web-browsing method (but know that others are profiting from your data crumbs and attention). The monetization aspect of System is but one part. There is also the improvement of the web-browsing experience. You will see ads, but they will be for interesting products and services precisely because such participation is part of the System experience. System can not only show you relevant ads but it can also help you acquire said goods with a steady trickle of cash!

But even more importantly, we prefer to support practical ways of withstanding the pressure of the current establishment. Unbridled heroism isn’t always productive in and of itself. Only a sea-change inducing technology—like Bitcoin—can make lasting, impactful change to the technocracy we face. It is our only “weapon” in this war. Transparent, market-driven, un-hackable.

But, even Bitcoin, with huge international consensus, draws criticism from certain contingencies who prefer to spend their energy and resources supporting alt-coins. This obviously decelerates Bitcoin’s adoption and in many cases hurts its credibility due to mainstream audiences’ confusion of alt-coins with Bitcoin. So, we would advise the fighters of globalization and the corporate governance to support Bitcoin. We at System could have used an alt-coin but we chose to use Bitcoin for both its technical expediency as well as its status as the only viable disruption of the mainstream.

In summary, we prefer to cooperate with the advertising giants who “steal” our data. Free markets work, necessarily. We offer alternatives, and incentivize these alternatives. Other approaches—like Brave’s—are placed precariously on top of this conflict. We doubt that Brave has any real power to stand against the industry for any significant time period. System faces the same challenge but our strategy is a long-term one—not some parlor-trick designed to wow its audience, profit, and only to disappear as people begin to peek behind the curtain.

Slow and steady wins the race. Kickstarting an evolutionary alternative seems like the right choice considering the opponent. It won’t work overnight, it won’t work with one or two updates. But, it will work if we have the will and perseverance to work together and form a cohesive unit.
