

WHITE
PAPER

DECEMBER 2017

IMPORTANT NOTICE

PLEASE READ THIS SECTION AND THE FOLLOWING SECTIONS ENTITLED “DISCLAIMER OF LIABILITY”, “NO REPRESENTATIONS AND WARRANTIES”, “REPRESENTATIONS AND WARRANTIES BY YOU”, “CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS”, “MARKET AND INDUSTRY INFORMATION AND NO CONSENT OF OTHER PERSONS”, “NO ADVICE”, “NO FURTHER INFORMATION OR UPDATE”, “RESTRICTIONS ON DISTRIBUTION AND DISSEMINATION”, AND “RISKS AND UNCERTAINTIES” CAREFULLY.

YOU SHOULD CONSULT YOUR LEGAL, FINANCIAL, TAX, AND OTHER PROFESSIONAL ADVISORS BEFORE ACCESSING THE CONTENTS OF THIS WHITEPAPER.

FaircapX, Inc. (“Exsul”) will distribute ExsulCoin (“XUL”) tokens, and will deploy all proceeds of the sale of XUL tokens to fund Exsul’s cryptocurrency project, technology platform, businesses, and operations.

The XUL tokens do not confer any ownership or security interest over Exsul’s assets or properties, and do not offer any fixed or contingent assurance of financial return. XUL tokens do not constitute a collective investment scheme in any jurisdiction. This Whitepaper does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities or a solicitation for investment in securities in any jurisdiction.

This Whitepaper does not constitute or form part of any opinion on any advice to sell, or any solicitation of any offer by Exsul to purchase any XUL tokens nor shall it or any part of it nor the fact of its presentation form the basis of, or be relied upon in connection with, any contract or investment decision.

No person is bound to enter into any contract or binding legal commitment in relation to the sale and purchase of the XUL tokens and no cryptocurrency or other form of payment is to be accepted on the basis of this Whitepaper.

No regulatory authority has examined or approved of any of the information set out in this Whitepaper. No such action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction. The publication, distribution, or dissemination of this Whitepaper does not imply that the applicable laws, regulatory requirements or rules have been complied with.

There are risks and uncertainties associated with Exsul and its respective businesses and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in this Whitepaper).

This Whitepaper, any part thereof and any copy thereof must not be taken or transmitted to any country where distribution or dissemination of this Whitepaper is prohibited or restricted.

No part of this Whitepaper is to be reproduced, distributed, or disseminated without including this section and the following sections entitled “Disclaimer of Liability”, “No Representations and Warranties”, “Representations and Warranties By You”, “Cautionary Note On Forward-Looking Statements”, “Market and Industry Information and No Consent of Other Persons”, “Terms Used”, “No Advice”, “No Further Information or Update”, “Restrictions On Distribution and Dissemination”, and “Risks and Uncertainties”.

DISCLAIMER OF LIABILITY

To the maximum extent permitted by the applicable laws, regulations, and rules, Exsul shall not be liable for any indirect, special, incidental, consequential, or other losses of any kind, in tort, contract, or otherwise (including, but not limited to, loss of revenue, income or profits, and loss of use or data), arising out of or in connection with any acceptance of or reliance on this Whitepaper or any part thereof by you.

NO REPRESENTATIONS AND WARRANTIES

Exsul does not make or purport to make, and hereby disclaims, any representation, warranty, or undertaking in any form whatsoever to any entity or person, including any representation, warranty or undertaking in relation to the truth, accuracy, and completeness of any of the information set out in this Whitepaper.

REPRESENTATIONS AND WARRANTIES BY YOU

By accessing and/or accepting possession of any information in this Whitepaper or such part thereof (as the case may be), you represent and warrant to Exsul as follows:

- you agree and acknowledge that this Whitepaper does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities in any jurisdiction or a solicitation for investment in securities and you are not bound to enter into any contract or binding legal commitment and no cryptocurrency or other form of payment is to be accepted on the basis of this Whitepaper;
- you agree and acknowledge that no regulatory authority has examined or approved of the information set out in this Whitepaper, no action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction and the publication, distribution, or dissemination of this Whitepaper to you does not imply that the applicable laws, regulatory requirements or rules have been complied with;
- you agree and acknowledge that this Whitepaper, the undertaking and/or the completion of the Exsul Initial Token Sale, or future trading of the XUL tokens on any cryptocurrency exchange, shall not be construed, interpreted, or deemed by you as an indication of the merits of Exsul, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in this Whitepaper);
- you agree and acknowledge that the distribution or dissemination of this Whitepaper, any part thereof or any copy thereof, or acceptance of the same by you, may be prohibited or restricted by the applicable laws, regulations, or

rules in your jurisdiction and where any restrictions in relation to possession are applicable, you have observed and complied with all such restrictions at your own expense and without liability to Exsul;

- you agree and acknowledge that in the case where you wish to purchase XUL tokens, the XUL tokens are not to be construed, interpreted, classified, or treated as:
 - any kind of currency other than cryptocurrency;
 - debentures, stocks, or shares issued by any person or entity;
 - rights, options, or derivatives in respect of such debentures, stocks, or shares;
 - rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss;
 - units in a collective investment scheme;
 - units in a business trust;
 - derivatives of units in a business trust; or
 - any other security or class of securities.
- you have a degree of understanding of the operation, functionality, usage, storage, transmission mechanisms, and other material characteristics of cryptocurrencies, blockchain-based software systems, cryptocurrency wallets, or other related token storage mechanisms, blockchain technology, and smart contract technology;
- you are fully aware and understand that in the case where you wish to purchase any XUL tokens, there are risks associated with Exsul and its respective business and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in the Whitepaper);
- you agree and acknowledge that Exsul is NOT liable for any indirect, special, incidental, consequential, or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with any acceptance of or reliance on this Whitepaper or any part thereof by you; and
- all of the above representations and warranties are true, complete, accurate, and non-misleading from the time of your access to and/or acceptance of possession of this Whitepaper or such part thereof (as the case may be).

CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

All statements contained in this Whitepaper, statements made in press releases or in any place accessible by the public and oral statements that may be made by Exsul or its respective directors, executive officers, or employees acting on behalf of Exsul (as the case may be), that are not statements of historical fact, constitute “forward-looking statements”. Some of these statements can be identified by

forward-looking terms such as “aim”, “target”, “anticipate”, “believe”, “could”, “can”, “estimate”, “expect”, “if”, “intend”, “may”, “plan”, “possible”, “probable”, “project”, “should”, “would”, “will”, or other similar terms. However, these terms are not the exclusive means of identifying forward-looking statements. All statements regarding Exsul’s financial position, business strategies, plans, and prospects and the future prospects of the industry which Exsul is in are forward-looking statements. These forward-looking statements, including but not limited to statements as to Exsul’s revenue and profitability, prospects, future plans, other expected industry trends, and other matters discussed in this Whitepaper regarding Exsul are matters that are not historic facts, but only predictions.

These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual future results, performance, or achievements of Exsul to be materially different from any future results, performance, or achievements expected, expressed, or implied by such forward-looking statements. These factors include, amongst others:

- changes in political, social, economic, and stock or cryptocurrency market conditions, and the regulatory environment in the countries in which Exsul conducts its businesses and operations;
- the risk that Exsul may be unable to execute or implement its business strategies and future plans;
- changes in interest rates and exchange rates of fiat currencies and cryptocurrencies;
- changes in the anticipated growth strategies and expected internal growth of Exsul;
- changes in the availability and fees payable to Exsul in connection with its businesses and operations;
- changes in the availability and salaries of employees who are required by Exsul to operate their respective businesses and operations;
- changes in preferences of users of Exsul’s products and services;
- changes in competitive conditions under which Exsul operates, and the ability of Exsul to compete under such conditions;
- changes in the future capital needs of Exsul and the availability of financing and capital to fund such needs;
- changes to regulations in the jurisdictions where Exsul operates;
- war or acts of international or domestic terrorism;
- occurrences of catastrophic events, natural disasters, and acts of God that affect the businesses and/or operations of Exsul;
- other factors beyond the control of Exsul; and
- any risk and uncertainties associated with Exsul and its businesses and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as

referred to in the Whitepaper).

All forward-looking statements made by or attributable to Exsul or persons acting on behalf of Exsul are expressly qualified in their entirety by such factors. Given that risks and uncertainties that may cause the actual future results, performance, or achievements of Exsul to be materially different from that expected, expressed, or implied by the forward-looking statements in this Whitepaper, undue reliance must not be placed on these statements. These forward-looking statements are relevant only as of the date of this Whitepaper.

Neither Exsul nor any other person represents, warrants, and/or undertakes that the actual future results, performance, or achievements of Exsul will be as discussed in those forward-looking statements. The actual results, performance, or achievements of Exsul may differ materially from those anticipated in these forward-looking statements.

Nothing contained in this Whitepaper is or may be relied upon as a promise, representation, or undertaking as to the future performance or policies of Exsul.

Further, Exsul disclaims any responsibility to update any of those forward-looking statements or publicly announce any revisions to those forward-looking statements to reflect future developments, events, or circumstances, even if new information becomes available or other events occur in the future.

MARKET AND INDUSTRY INFORMATION AND NO CONSENT OF OTHER PERSONS

This Whitepaper includes market and industry information and forecasts that have been obtained from internal surveys, reports, and studies, where appropriate, as well as research, publicly available information, and industry publications. Such surveys, reports, studies, market research, publicly available information, and publications may be based on information obtained from sources believed to be reliable, but there can be no assurance as to the accuracy or completeness of such included information.

Save for Exsul and its respective directors, executive officers, and employees, no person has provided his or her consent to the inclusion of his or her name and/or other information attributed or perceived to be attributed to such person in connection therewith in this Whitepaper and no representation, warranty, or undertaking is or purported to be provided as to the accuracy or completeness of such information by such person and such persons shall not be obliged to provide any updates on this same.

While Exsul has taken reasonable actions to ensure that the information is presented accurately and in its proper context, Exsul has not conducted any independent review of the information extracted from third party sources, verified the accuracy or completeness of such information, or ascertained the

underlying assumptions relied upon therein. Consequently, neither Exsul nor its respective directors, executive officers, and employees acting on its behalf makes any representation or warranty as to the accuracy or completeness of such information and shall not be obliged to provide any updates on the same.

TERMS USED

To facilitate a better understanding of the XUL tokens being offered for purchase by Exsul, and the businesses and operations of Exsul, certain technical terms and abbreviations, as well as, in certain instances, their descriptions, have been used in this Whitepaper. These descriptions and assigned meanings should not be treated as being definitive of their meanings and may not correspond to standard industry meanings or usage.

Words importing the singular shall, where applicable, include the plural and vice versa and words importing the masculine gender shall, where applicable, include the feminine and other genders and vice versa. References to persons shall include corporations.

NO ADVICE

No information in this Whitepaper should be considered to be business, legal, financial, or tax advice regarding Exsul, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in the Whitepaper).

You should consult your own legal, financial, tax, or other professional adviser regarding Exsul and its respective businesses and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in the Whitepaper), including the suitability of a purchase of XUL tokens. You should be aware that you may be required to bear the financial risk of any purchase of XUL tokens for an indefinite period of time.

NO FURTHER INFORMATION OR UPDATE

No person has been or is authorized to give any information or representation not contained in this Whitepaper in connection with Exsul and its respective businesses and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in the Whitepaper) and, if given, such information or representation must not be relied upon as having been authorized by or on behalf of Exsul. The Exsul Initial Token Sale (as referred to in the Whitepaper) shall not, under any circumstances, constitute a continuing representation or create any suggestion or implication that there has been no change, or development reasonably likely to involve a material change in the affairs, conditions, and prospects of Exsul or in any statement of fact or information contained in this Whitepaper since the date hereof.

RESTRICTIONS ON DISTRIBUTION AND DISSEMINATION

The distribution or dissemination of this Whitepaper or any part thereof may be prohibited or restricted by the laws, regulatory requirements, or rules of any jurisdiction. In the case where any restriction applies, you are to inform yourself about, and to observe, any restrictions that are applicable to your possession of this Whitepaper or such part thereof (as the case may be) at your own expense and without liability to Exsul.

Persons to whom a copy of this Whitepaper has been distributed or disseminated, provided access to or who otherwise have the Whitepaper in their possession, shall not circulate it to any other persons, reproduce or otherwise distribute this Whitepaper or any information contained herein for any purpose whatsoever nor permit or cause the same to occur.

RISK AND UNCERTAINTIES

Prospective purchasers of XUL tokens (as referred to in this Whitepaper) should carefully consider and evaluate all risks and uncertainties associated with Exsul and its respective businesses and operations, the XUL tokens, the Exsul Initial Token Sale, the ExsulChain technology platform, the Exsul education app, and the Exsul Wallet (each as referred to in the Whitepaper), all information set out in this Whitepaper prior to any purchase of XUL tokens. If any of such risks and uncertainties develops into actual events, the business, financial condition, results of operations, and prospects of Exsul could be materially and adversely affected. In such cases, you may lose all or part of the value of the XUL tokens.

OVERVIEW

OVERVIEW

We believe blockchain technology can be used to relieve human suffering.

Wars, violence, and persecution have driven more people from their homes than at any time in modern history. At the end of 2016, there were 65.6 million people¹ who were forcibly displaced worldwide. And, if we were to put all these people together, forming their own country, it would be as large as the United Kingdom. These unprecedented numbers risk destabilizing host countries as public authorities struggle to secure the funding needed to integrate them². Make no mistake, this is the global refugee crisis—and it is only getting worse.

At the same time, we are experiencing another unprecedented event: the global decentralization of value. Traditionally, online payments going from one party to another would have to pass through a financial intermediary (a “trusted third party”) for processing. Blockchain (also called distributed ledger) disrupts this model by leveraging the resources of a global peer-to-peer network to form an immutable ledger of transactions—based upon cryptographic proof instead of trust—enabling secure direct transactions by obviating the need for a trusted third party. Further, this immutable, distributed ledger, acting as a cryptographically secure “write once, read many” database, can also be used to record and store digitized value of nearly any kind, including identity verification, creditworthiness, and educational achievement. Blockchain technology thus enables us to create, transmit, and confirm value

like never before, allowing any two parties to transact directly, quickly, and securely, unencumbered by prohibitive third-party processing fees (e.g., wire transfer fees) or restrictive procedures.

We believe blockchain technology can solve many of the critical challenges faced by refugees today. Specifically, we believe the creation of an online marketplace and community, matching refugees with supporters, and driven by a suite of smart contracts built on the Ethereum network, can improve outcomes by cutting across agencies to produce meaningful efficiencies while encouraging regulators to co-create solutions. Additionally, we propose the creation of a mobile education platform to deliver personalized and specialized content to refugees, to help them overcome critical integration challenges and access key services. The marketplace and platform will be linked and work together to create value across the community; for instance, refugees can take specialized courses in computer programming on the education app, link their programming achievements with verified identity documents—which can help meet requirements for employment—and then find local or remote programming work through the platform. Compensation and payments, too, can be made over both the marketplace and platform, and value can be converted to local currency using existing Ethereum ERC-20 token-to-debit card solutions.

These technologies, working together, can address major challenges faced by both refugees and governments as they struggle with the current

crisis. While certainly not an immediate solution to the war, violence, and disaster that force innocent people to flee their homes, the proposed technology is a long-term plan to relieve the suffering faced by millions of refugees.

EXSULCOIN AND THE EXSULCHAIN PLATFORM

The ExsulChain platform is an online, on-chain decentralized marketplace designed to meet the unique needs of vulnerable populations, yet can accommodate the diverse and sometimes-unpredictable needs of refugees. Interested individuals begin by creating an ExsulCoin Wallet through an online sign-up form requiring only a name and basic contact information. The ExsulCoin Wallet is a secure digital wallet used primarily to store, send, and receive ExsulCoins (“XUL”), an Ethereum ERC-20 compliant token³.

ERC-20 TOKEN STANDARD AND THE ETHEREUM ECOSYSTEM

The ERC-20 token standard is a set of six functions and two events that enable interoperability across multiple interfaces and decentralized applications (“dApps”) within the Ethereum ecosystem⁴. Ethereum’s underlying blockchain technology has a built-in Turing-complete programming language that can be used to encode arbitrary state transition functions, allowing users to write smart contracts and decentralized applications on top of the platform. The ERC-20

standard allows compliant tokens to be instantly compatible with the Ethereum wallet, as well as other compliant clients or contracts.

XUL TOKENS

The XUL token is implemented on the Ethereum blockchain and uses Solidity⁵ as a smart contract language. The XUL token is designed primarily to represent fungible powers on the ExsulChain platform.

Specifically, XUL can be used on the ExsulChain platform to:

- Nominate a refugee-led project for listing on the platform;
- Vote for a listed refugee-led project;
- Provide commentary on listed projects;
- Rate project-related interactions; and
- Fund listed projects that have received a quorum of votes, either through the gifting of ExsulCoins or another accepted ERC-20-compatible token.

“Refugee-led project” is defined as any project that involves an individual with refugee status in a leadership position. A displaced person receives refugee status through a Refugee Status Determination (RSD) process, which is conducted by the country of asylum or through the office of the United Nations High Commissioner for Refugees (UNHCR)⁶. Nominated projects that are listed, but fail to receive a quorum of votes, will be delisted, and any funds or XUL intended for delisted projects will be returned to their source wallets.

NANOWORK

ExsulChain is also a marketplace for nanowork: small tasks which are essential to the completion of projects. Through nanowork requests, project leaders have on-demand access to a diverse, global, and scalable workforce, thereby improving the odds of project success. Additionally, nanowork offers ExsulChain users flexible work opportunities that are not necessarily dependent on specific geographic locations or fixed contract lengths. Nanowork is broad in nature and may include Mechanical-Turk-like⁷ human intelligence tasks, as well as temporary human-intensive work such as “come to the clinic with me and translate what the doctor says,” or “help me move a heavy refrigerator.” These nanowork requests are listed alongside projects on the ExsulChain platform, and users may convey their interest in taking on the nanowork task by commenting on the project. The project listing may request a fee in XUL from interested parties to comment on the project, which will serve the purpose of commencing the hiring process while simultaneously disincentivizing non-serious requests. Project leaders compensate nanoworkers for tasks completed using XUL tokens. XUL, therefore, also acts as a cryptocurrency and, depending on market value may, in the future, be denominated in smaller fractional units to accommodate user needs.

Project leaders will be able to rate nanoworkers upon task completion. These ratings will be linked to the nanoworker’s ExsulCoin Wallet, creating an immutable, transparent

“résumé” of the user’s practical skills and abilities. Over time, ExsulChain will incorporate machine learning technology to reduce search times for both nanoworkers and project leaders, by presenting only those individuals or tasks that are most likely to be selected by the user. Machine learning can also improve market efficiency, as task compensation can be mispriced. The transparency of blockchain allows ExsulChain to track demand of task types. By doing so, compensation pricing can be made dynamic, fluctuating according to supply and demand.

THE EXSULCOIN WALLET

The ExsulCoin Wallet is a free, standalone, Ethereum-based wallet that works primarily with the XUL token, but may also work with other ERC-20 compliant tokens. Anyone is free to create an ExsulCoin Wallet, which requires only a name and contact information, where wallet details will be sent. In contexts where contact information is not available, Exsul will deploy high-touch onboarding teams to help new users create and record wallet information. Previous experiences in refugee camp contexts suggest high-touch onboarding will lead to substantially higher sign-up rates, user adoption, and user retention. Further, high-touch onboarding, defined as in-person help that addresses a new user’s specific challenges to using the technology, will create the trust necessary for user pictures to be taken and linked to ExsulCoin Wallets, which will help meet the minimum standard of personalization necessary to build community trust around project

listings. Through agency partnerships, the ExsulCoin Wallet will also link user identity documents, RSD, biometric data, emergency health records (e.g., blood type and any allergies to medicines), education achievement information, and other needed data to meet identification verification (IDV) and know your customer (KYC) standards, creating efficiencies in refugee identification and delivery of aid. Linking this additional information is optional, but users who do not provide sufficient information for verification will be excluded from certain activities, depending on the legal obligations Exsul and ExsulChain must meet in various jurisdictions.

EXSULCOIN REPUTATION SYSTEM

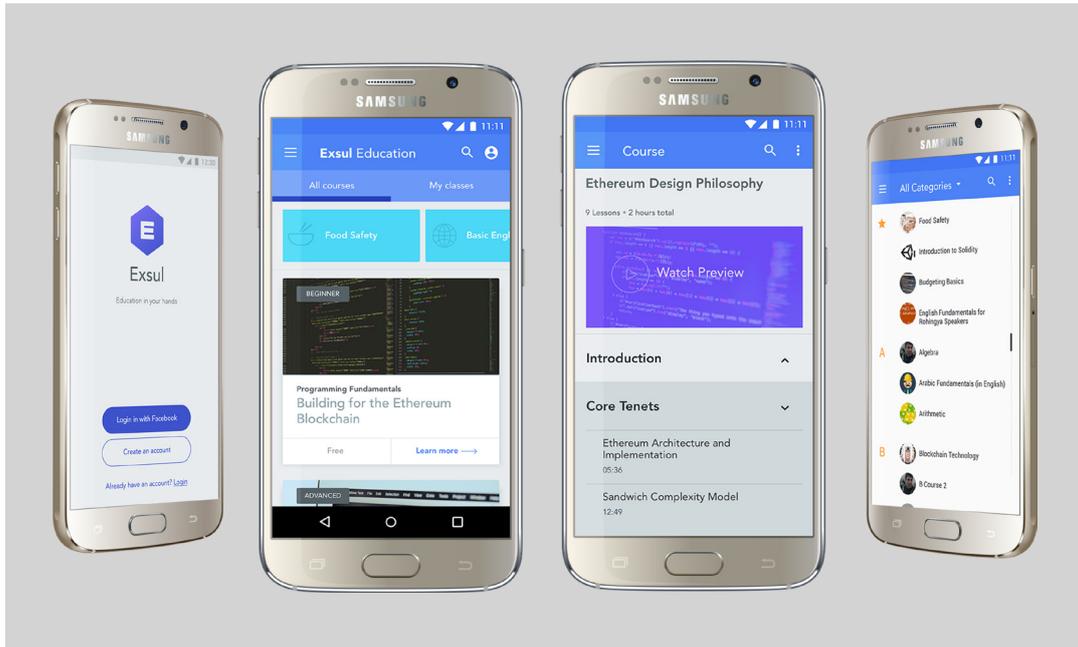
Users access the ExsulChain platform using their ExsulCoin Wallet, which is represented primarily as an “address”

on the Ethereum blockchain. Linked to the ExsulCoin Wallet are the wallet owner’s name and contact information, as well as any information the user has allowed to be attached. Because the ExsulCoin Wallets are built on blockchain, user reputations can be linked to specific wallet addresses, allowing stakeholders on the ExsulChain platform to verify one another. User reputation can consist of meeting IDV and KYC standards, RSD, nanowork ratings, and XUL transfer history. The mutual verification of stakeholders on the ExsulChain platform encourages stronger collaboration between users, along with improved user behavior. Users who repeatedly do not fulfill agreed-upon terms or try to game the system would have their actions recorded on the blockchain, which will then act as an immutable deterrent against future bad behavior.

THE EXSUL

EDUCATION APP

THE EXSUL EDUCATION APP



The average length of time a refugee spends in exile is between 10 to 15 years⁸. Given this sobering view, the scope of assistance must necessarily extend beyond basic survival and consider long-term solutions. To this end, we believe providing high-quality education will generate the greatest impact across the greatest number of people. Our assessment is based on the following data⁹:

- Refugee youth regard going to school as a basic need, not a luxury.
- Refugees will one day return to their homeland, and will need to bring with them specialized knowledge and skills for rebuilding their countries.
- Refugees are five times more likely to be out of school than the global average, with the gap widening as children get older.
- Global conflict and violence are increasing and, consequently,

the refugee crisis is expanding, causing demand for education in the countries that shelter refugees to be stretched unsustainably thin.

- Only 22% of refugee adolescents attend lower secondary school, compared to 84% of adolescents globally.
- Just 1% of refugees attend university.
- Quality education reduces child marriage, child labor, exploitative and dangerous work, and teenage pregnancy.
- Education has a multiplier effect on other goals, on eradicating poverty and hunger, for example, and on promoting gender equality and economic growth.
- Not educating children will perpetuate cycles of conflict, increasing future forced displacement.

The Exsul education app focuses primarily on personalization through

artificial intelligence, seeking to transcend current limitations in education through various efficiencies and optimizations. The decision to build a mobile app was driven by data highlighting broad access to cheap Android smartphones around the world and their ability to overcome critical challenges in delivering content to refugees. For instance, placement in traditional schools alone is sometimes inadequate for refugee children. Specifically, refugee children are often bullied and discriminated against because of cultural differences; they often have difficulty transporting themselves to and from school (e.g., prohibitive cost, or, for public transportation, knowing which stops to get off at); and refugee children are often placed in classes based on age rather than ability—a critical misstep with lifelong consequences, especially if the child does not speak the local language. These challenges can all be mitigated with mobile delivery of personalized education.

We believe current approaches to mobile learning are inadequate because they focus on generating incremental improvements in content (e.g., higher-resolution videos, or more “likes”). Our experiences in the field, however, have suggested students nearly always want to learn, and will often pursue learning despite poor study materials or difficult circumstances. For instance, in our Myanmar, Uganda, and Bangladesh field studies, we have seen young students, living without electricity and swarmed by mosquitoes, reading decades-old textbooks under candlelight. Our data suggests

content that many people “like” is not nearly as substantial or important as content that you (specifically) can master. Our focus, then, is to figure out what you like, and then optimize the delivery and consumption of that content such that overall classroom hours are reduced while mastery of the material is achieved.

The Exsul app is built using React Native¹⁰, the same framework used for the Facebook app. The global usage and adoption of Facebook strongly influenced our decision to use React Native, as well as to build a user experience current Facebook users would find familiar and feel immediately comfortable with.

Users sign up for a Exsul account using their ExsulCoin Wallet. Upon signing in, users are brought to a dynamic list of courses personalized to meet their goals, engagement, and interest. In addition, users are always free to choose from a listing of all available courses.

Exsul collects user data in a variety of ways to track user engagement and attention. Data collected may include: time of day and how often the app is accessed, search terms, eye movements, and time spent reviewing content. In the future, we may also collect data relating to device usage, as well as embed predictive tests into course materials. All of these data will be used to reduce overall learning time and improve mastery of the material.

In addition to personalized education, Exsul will also deliver teacher training to bolster current approaches to

THE EXSUL EDUCATION APP

educating refugees. Our goal in this is fundamentally human: teachers can create a safe haven for students. When properly trained, teachers are able to identify children at risk of abuse or suffering from sexual violence, and can then help connect them with appropriate services.

Our focus on educating refugees is rooted in nurturing peace and prosperity in the world. Observed over 21 years, regions with very low average rates of education had a 50% chance of experiencing conflict. We hope to end that. Ultimately, high-quality education helps refugees stand on their own, and empowers them with a future where they have the tools to find solutions for themselves and their communities.

MACHINE LEARNING AND THE EXSUL APP

Current machine learning techniques are capable of adjusting the learning experience to each particular student. Traditional teaching methods tend to group students together based on age rather than skill. Furthermore, there are limits to the degree to which any teacher can adjust the learning environment to optimally educate every student, due to classroom size and the accuracy of the evaluation process¹¹. On the other hand, studies have shown that one-to-one teaching is more likely to generate higher student learning performance^{12,13,14}.

Adaptive learning systems are an alternative to bridge the gap between individual teaching and the group setting. By exploiting the technology built into current mobile devices, it is now possible to gather enough

data from each user to create distinct student profiles, which can then be used to accurately model capabilities and suggest learning tasks. Several modeling methods have been shown to yield promising results, and each will be investigated in more detail to support the Exsul app.

Neural networks have attracted a lot of attention in the educational field due to their ability to classify students, share characterizations, and simulate and track learners' cognitive processes^{15,16}. Modeling a student's abilities will allow the system to suggest tasks that would improve learning capabilities.

Bayesian networks are used to model conditional probabilities based on empirical data. They are also popular and have previously been used in educational contexts to develop systems such as OLE¹⁷, and ANDES¹⁸. Obtaining these probabilities estimates will allow Exsul to suggest appropriate next steps for the student.

Other promising techniques that will be useful to investigate in this context are modeling students with hidden Markov models (HMM), or posing the problem as an optimization task which could be solved through global optimization methods (e.g., genetic algorithms, CMA-ES).

All in all, these adaptive techniques will allow Exsul to deliver a personalized learning experience to each user, providing the right trade-off to keep students challenged but never discouraged.

THE EXSUL EDUCATION APP

THE EXSULCOIN ECOSYSTEM

Educational achievement on the Exsul app is recorded and linked to a user's ExsulCoin Wallet, creating an immutable record of education level and knowledge. The user then takes that knowledge and applies it to diverse real-world paid work scenarios (nanowork), where the user's understanding, skills, and abilities are transparently rated and verified. To meet employment standards, the user may attach identity verification (IDV), accessed through biometric data, creating a solid record of education, skills, and abilities that is highly resistant to disaster, thus overcoming the challenges of losing official records. Should a user receive refugee status, he may ask for assistance specific to his circumstances through a project listing, have a global community of stakeholders refine and improve the scope of that assistance, and then receive funding—if needed—directly from interested supporters. If anything more than funding is needed, he may call upon the same stakeholder community for additional assistance,

where a minimum response will be assured through fair market compensation in XUL. Finally, users who have a track record of excellence may receive additional opportunities to partner with Exsul in the creation of impact projects—both for and not-for-profit—that help the overall community. All of these interactions are immediate, transparent, and honest—entirely open to public review.

OPEN COMMUNITY

Though blockchain technology seemingly encourages user anonymity and privacy, refugees—and thus ExsulChain and ExsulCoin—usually seek the opposite. They seek to be seen. They seek to be less invisible. Field interviews with refugees reveal diverse and beautiful human stories from people who seek a voice, who want to matter, in a world that is often uncaring or indifferent. The ExsulCoin ecosystem is designed to highlight user identity and to celebrate individual achievement. Then, it fosters “trustless” collaboration between users to strengthen the overall community and deepen social assimilation.

We believe this openness is essential to refugee integration. Specifically, the transparency of the ExsulChain on-chain rating system makes plain the overall reputation of each individual person. Collectively, we are then able to analyze net integration with local communities; for instance, how many refugees access local services or apply for licenses or what kinds of work they are engaging. Individually, we can calculate creditworthiness (based on token payment history, for instance), education level, and aptitude for leadership. Analyzing these data should allow governments and agencies to co-create solutions with Exsul and, upon deployment,

accurately measure any statistically significant improvements in refugee outcomes. The transparent nature of these data analyses will propel innovation in future humanitarian aid, as each deployed intervention's efficacy will be made obvious, making it impossible for governments or agencies to lie about the merits of any particular strategy.

Members of the public who seek to end the refugee crisis will thus be empowered to hold other stakeholders accountable for their words and actions. This is the type of change in the world we seek.

DISCUSSION OF REFUGEE STATUS

The 1951 United Nations Convention Relating to the Status of Refugees¹⁹, and the 1967 Protocol Relating to the Status of Refugees²⁰, defined a refugee as someone “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group of political opinion, is outside the country of his nationality, and is unable—or unwilling to avail himself the protection of that country.” The OAU Convention of 1969²¹ expanded this definition to include situations of mass flight from war, as well as persecution. The Cartagena Declaration in 1984²² added massive human rights violations. Clearly, defining “refugee status” has been historically inadequate and will likely continue to evolve in the future. Because of this, Exsul will continually update its definition of “refugee” to include the most recent data and findings whenever possible. Future updates may include gender-based factors, people in refugee-like situations (e.g., the Bedouin in Kuwait or Iraq, and the Rohingya in Myanmar, who are stateless but are not recognized as refugees), internally-displaced people (who flee for the same reasons as refugees, but have not crossed a border), and those who move as a consequence of natural disasters, environmental factors, or famine—all of whom need the same protections as refugees, but are labeled differently to meet the needs of centralized aid agencies. ExsulChain, as a decentralized platform with global scalability, focuses primarily on overall impact and direct aid, and can thus utilize a broader, more inclusive definition. Indeed, Exsul is morally obligated to be as inclusive as possible, since a larger pool of users will generate more impactful projects and deeper community relationships.

UPDATES

Stakeholders will be regularly updated through our social media channels:

 [Facebook.com/ExsulCoin](https://www.facebook.com/ExsulCoin)

 Telegram: <https://t.me/joinchat/Civ-nQ5iADEGz0crOVRddw>

 [Instagram.com/ExsulCoin/](https://www.instagram.com/ExsulCoin/)

 [Twitter.com/ExsulCoin](https://twitter.com/ExsulCoin)

TEAM

TEAM



JAMES SONG

FOUNDER

James Song is the founder and CEO of FaircapX, a startup focused on solving Myanmar's biggest challenges. Formerly, he was a managing principal at Faircap Partners, an American investment advisory in Myanmar, where he structured deals that bridged the gap between rich and poor, creating substantial value for investors while providing crucial resources to disadvantaged and marginalized Burmese communities. His work at Faircap Partners led him to develop local software engineering teams in an effort to build Myanmar's technology sector, and those experiences have evolved into what is now FaircapX, ExsulCoin, and ExsulChain. James currently leads the team with his deep technical knowledge and substantial experience working with refugees in the United States, Myanmar, Bangladesh, and Uganda.

James graduated salutatorian from Harvard University, and received an MSc in neuroscience from University College London. His extraordinary accomplishments and track record have been recognized by the World Economic Forum, which named him a Young Global Leader.



DARIO BRAVO

SENIOR DEVELOPER

Dario Bravo has been a software engineer for the last 15 years and brings broad practical understanding to his craft, having worked in several industries, including finance, media, banking, and gaming.

When not working relentlessly, Dario Bravo enjoys reading, writing, ham radio, and astronomy.

TEAM



LAURA SORABILLA

SENIOR DEVELOPER

Laura has over 10 years of experience as a software engineer and consultant. She brings deep fintech knowledge to the ExsulCoin team, having led several bank projects as software architect and team leader.

Laura is incredibly passionate about improving the lives of others, and is committed to solving critical challenges facing refugees through blockchain.



LOUIS YEUNG

COMPLIANCE

Louis has 12 years of experience in the financial markets. He co-founded Faircap Partners with James Song, and currently manages its Myanmar investments. Prior to Faircap, Louis was a portfolio manager for the Royal Bank of Scotland's structured products group. He has advised several startups and is passionate about blockchain's potential to increase access to opportunities globally.



COCO RATTIKARN

Exsul CONTENT CREATION

Coco is a graphic designer and illustrator from Bangkok, Thailand, and is responsible for creating many of the beloved animated characters the Exsul app uses in its children's content. In addition to creating beautiful things, Coco works out religiously and loves kittens.



RICHARD KING

Exsul UI/UX DESIGN

Richard brings over 15 years of design experience to the team, and is an expert in combining data and design to create mobile applications that people love. He is responsible for all of Exsul's UI and visual design.

ADVISORS



RAJIV PANT

ADVISOR

Rajiv Pant is Chief Product & Technology Officer at the Wall Street Journal, responsible for product, design, and engineering. He reports jointly to the WSJ editor-in-chief and to Dow Jones corporate. Previously, as the CTO of the New York Times, Rajiv led the successful development and delivery of dozens of acclaimed mobile and web products over four years. Earlier, he headed up digital technology at Conde Nast for four years, where he managed multiple successful teams, including Reddit. His leadership experience includes CTO of Cox Media Group, VP engineering at Knight Ridder, and roles at startups.



RACHEL SCHUTT

ADVISOR

In July 2017, Dr. Rachel Schutt joined Harvard University as Education Program Director for the Institute for Applied Computational Science (IACS). Formerly, Rachel was the Chief Data Scientist at News Corp (NASDAQ: NWS) where she oversaw the company-wide data strategy as an executive on the senior technology leadership team. Rachel was named a World Economic Forum Young Global Leader in 2015, and is on the 2014 Crain's New York Business 40 under 40 list. She has expertise in corporate data strategy, data science; and data science education and curriculum design.

She is the co-author (with Cathy O'Neil) of the book, "Doing Data Science" based on the "Introduction to Data Science" class she created and taught at Columbia University, and is a founding member of the Education Committee for the Institute for Data Science at Columbia. Previously, Rachel was a statistician at Google Research and holds patents based on her work in the areas of social networks, large data sets, experimental design, and machine learning.

Rachel earned her Ph.D. in Statistics from Columbia University, a Masters degree in mathematics from NYU, and a Masters degree in Engineering-Economic Systems and Operations Research from Stanford University. Her undergraduate degree is in honors mathematics from the University of Michigan.

ADVISORS



JAMES JALIL

ADVISOR

James Jalil is a partner at Thompson Hines' Corporate Transactions & Securities and International practice groups, and is a principal member of the Family Office Services Group. He chairs the firm's India Desk, as well as its Cryptocurrency Group.

An authority on securities and corporate transactions, in the United States and internationally, Jim counsels clients on mergers and acquisitions, public offerings registered with the Securities and Exchange Commission, private placements of securities exempt from registration, venture capital financings, hedge funds, and cryptocurrency issues.

A prominent thought leader on cryptocurrency, Jim provides insight into the unique regulatory challenges surrounding alternative financial services, and is a frequent presenter and commentator on the legal implications of Bitcoin.

Jim is a member of The Wall Street Bitcoin Alliance (WSBA), an executive committee member in the Hedge Fund Association's (HFA) Academic Advisory Board 2013, member of the NYS Bar Association's Securities Law Committee from 1986 to 1992.



MOHAMMED SHAFI

ADVISOR

Mohammed Shafi is a Rohingya refugee living in the Cox's Bazar area of Bangladesh. Shafi is a Rohingya community leader and works extensively with international media, including BBC and The New York Times. He was born in Rakhine State, in Burma, and has been a refugee since 1992. Shafi dreams of a better life for his wife and two children, in his Burmese homeland.

EXSULCOIN
INITIAL TOKEN
SALE

EXSUL INITIAL TOKEN SALE

An Initial Token Sale is an event whereby a blockchain-related project sells a portion of its cryptocurrency to interested parties, typically prior to building or releasing its product. An Initial Token Sale is usually conducted to generate revenue during the earliest stages of a project, which can then be directed towards operational costs and expenses.

The sale of XUL tokens by Exsul in connection with an Initial Token Sale (the "Exsul Initial Token Sale") to you as a purchaser thereof, will be subject to and governed by the T&Cs—which is a separate document setting out the terms

and conditions of the agreement as between Exsul and you in relation to the Exsul Initial Token Sale. In the event of any inconsistencies between the T&Cs and this Whitepaper, the former shall prevail.

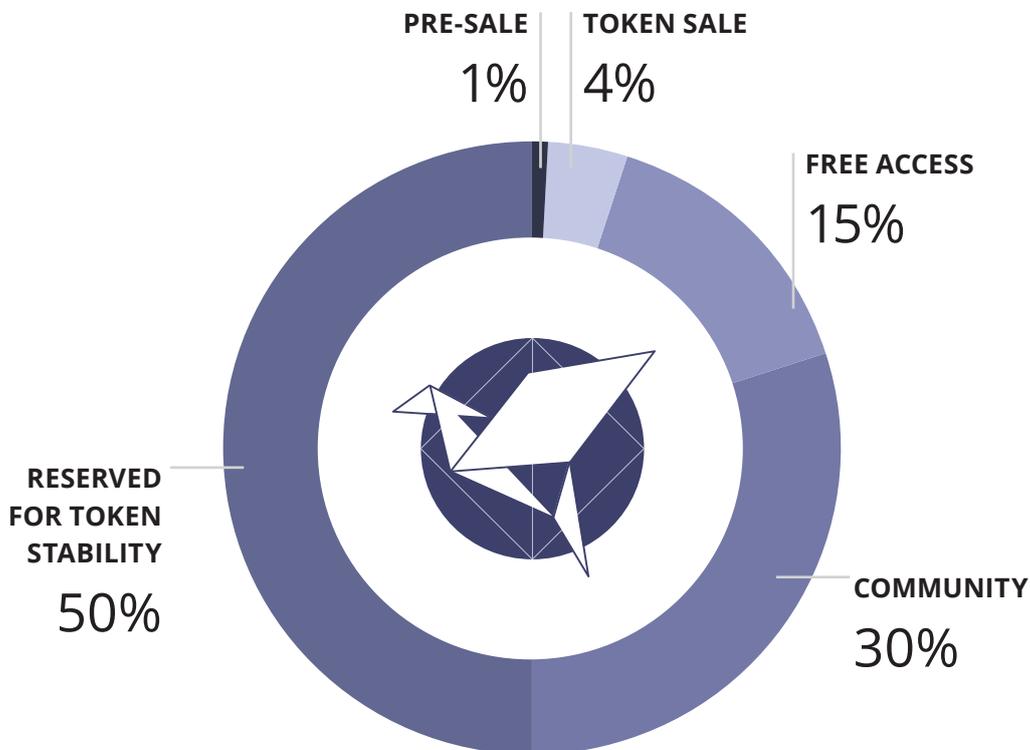
Exsul will deploy all proceeds of the sale of XUL tokens in connection with the Exsul Initial Token Sale to fund Exsul's cryptocurrency project, its businesses and operations.

Unless the context requires otherwise, references to "we" or "us" in connection with the Exsul Initial Token Sale shall be construed as references to Exsul.

The EXSUL INITIAL TOKEN SALE will occur on:

February 12th, 2018
10pm Singapore Time (UTC +8)
10am New York Time

Official Website:
www.ExsulCoin.com



EXSUL INITIAL TOKEN SALE

TOKEN SALE OVERVIEW

On November 15th, 2017, starting at 10pm Singapore time (10am New York time), a pre-sale of XUL tokens will occur. Only 1% of all XUL tokens to be created for purchase in the Exsul Initial Token Sale will be offered during the pre-sale. On February 12th, 2018, starting at 10pm Singapore time (10am New York time), 4% of all XUL tokens to be created for purchase by the public in the Exsul Initial Token Sale will be offered, under the ticker symbol XUL. A further 30% of all XUL tokens to be created will be retained by Exsul for community initiatives, community development, research, legal fees, education, and other needed functions. No tokens will be retained by team members. Half of all XUL tokens (50%) will be held in cold storage, to be used to reduce volatility and maintain token price stability in local markets, as may be needed from time to time. The remaining 15% of XUL tokens to be created will be distributed to refugees globally at no charge. Further details of the distribution of tokens are described below.

Each XUL token will be sold for 1/1000 ETH during the Exsul Initial Token Sale, meaning one ETH will give you 1000 XUL tokens. During the pre-sale, purchasers will receive a confirmation that XUL will be delivered to their Exsul Wallets at 1/2000 ETH, meaning one ETH will give you 2000 XUL tokens at the time of the Exsul Initial Token Sale, if purchased during the pre-sale. Other accepted cryptocurrencies will be converted live in ETH. There is a minimum purchase amount of 100 XUL per purchase (equivalent to 0.1 ETH) during the Exsul Initial Token Sale.

There is a fixed limit of 144,000 ETH accepted for purchase of XUL tokens in the Exsul Initial Token Sale. This maximum represents 4% of all XUL tokens. Should this amount be reached before the end of the sale on March 14th, 2018, at 9pm Singapore time (UTC +8), which is 30 days after the token sale commencement date,, we will cut off the sale. Note: total XUL token supply is 3,600,000,000—sufficient for all current stakeholders to hold one XUL, but not enough for each person on Earth to own XUL, encouraging continuing demand.

In the event that the amount of contributions falls short of the maximum amount, the difference between such lower amount of XUL tokens and the maximum amount of XUL tokens will be reserved for future token sales.

EXSUL INITIAL TOKEN SALE

RATIONALE FOR A 1 + 4% TOKEN SALE

Funding shortages have long plagued humanitarian aid efforts. Exsul seeks to deliver high-quality, free basic education to everyone who needs it. Additionally, we would like to see that everyone who wants to work finds work. Finally, we believe people should be treated like people, and we would like the resources needed to make that happen. The refugee crisis affects over 130 countries, each with their own specific laws and contexts; we believe legal compliance across so many jurisdictions will be substantial—and expensive. Further, we cannot foresee all the potential problems that may arise from helping millions of people across the world. Exsul therefore will set aside a significant portion of the proceeds to fund a legal foundation, as well as include contingency expenses in costs relating to onboarding users to the ExsulChain platform. Should there be an unlikely surplus of proceeds from the token sale, those funds will be directed towards projects Exsul deems to be of high merit.

XUL LISTING ON EXCHANGES

XUL is an ERC-20 compliant token and every effort will be made to list XUL on every cryptocurrency exchange possible. Further, every effort will be made to create partnerships with ERC-20 token wallet developers to push a wallet update including XUL. While the ExsulChain platform requires the ExsulCoin Wallet, specifically, we believe these broad partnerships will augment community diversity and awareness. Note, however, after the Exsul Initial Token Sale, there will be a 14-day cooling off period before Exsul lists the XUL token on any exchange.

EXSULCHAIN SUSTAINABILITY

Exsul will seek to collaborate with exceptional ExsulChain users to co-create cash-generating impact projects. We believe this strategy enhances the overall sustainability of Exsul, the ExsulChain platform, and ExsulCoin. Funds generated from these co-created projects will be used to enhance our community and technology.

Some examples of co-creation projects we have planned:

EXSUL BEADS

Exsul Beads leverages social media to tell refugee stories. Social media channel following is augmented through careful and targeted communication strategies, and then products representing refugee stories are made for sale.

The first Exsul Bead product offering is a bracelet featuring a single Burmese jade bead. For decades, jadeite has been mined in Burma and used to fund oppressive military operations against various ethnic groups, including the Rohingya, a stateless people living in a region straddling Myanmar and Bangladesh. The same

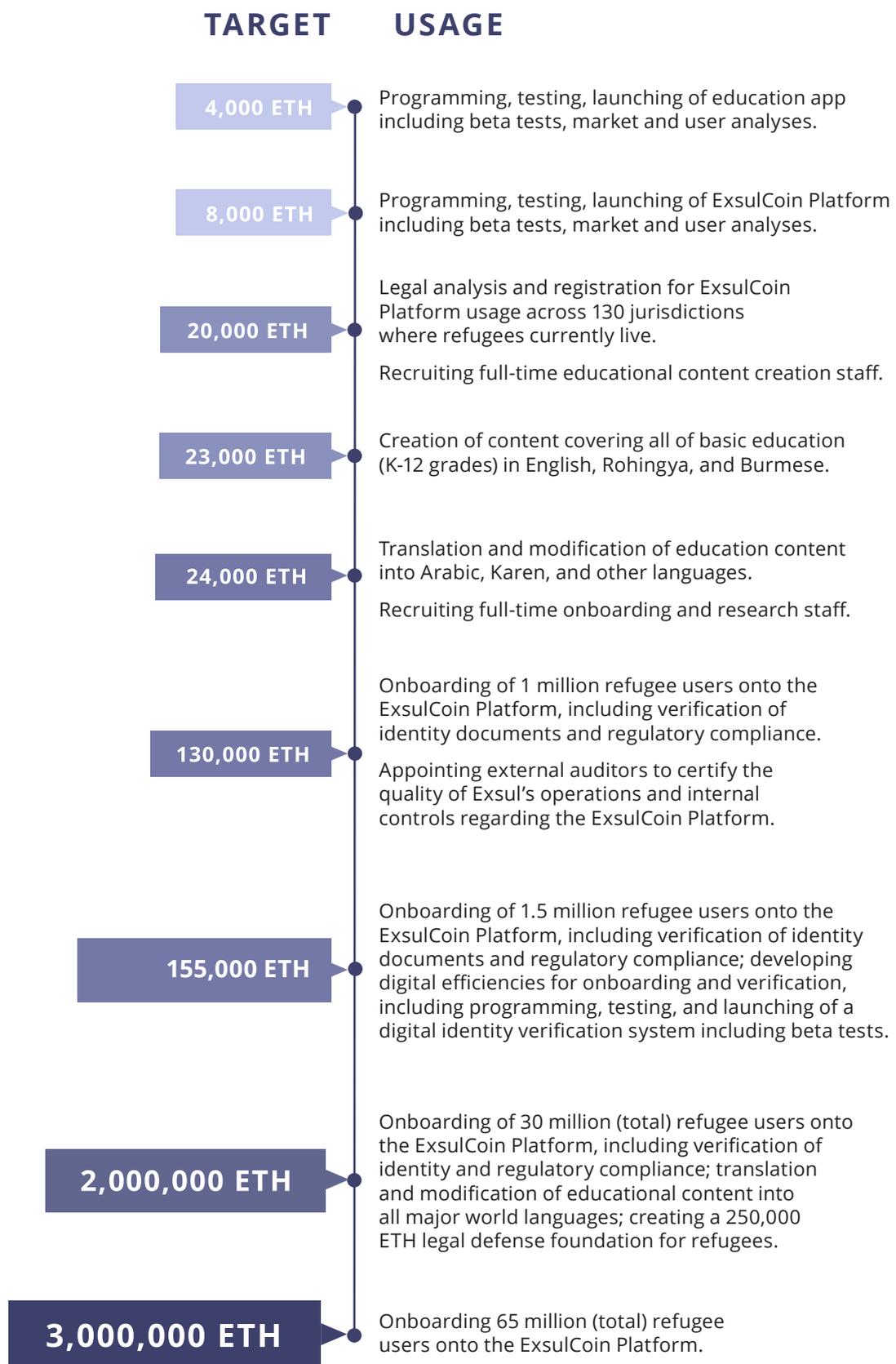
jade that has traditionally been used to fuel oppression of these people is now used to empower them, as they are able to make better-than-average incomes from sales of the Exsul Bead bracelet. Each bracelet is tied together using recycled plastic string from Taiwan. This material was chosen to represent the Chinese Burmese exiled to Taiwan²³ after Chiang Kai-shek's defeat in China, reminding wearers that no one is immune to refugee status, and what "ties" us together is compassion and understanding, not blame or fear.

EXSULMED

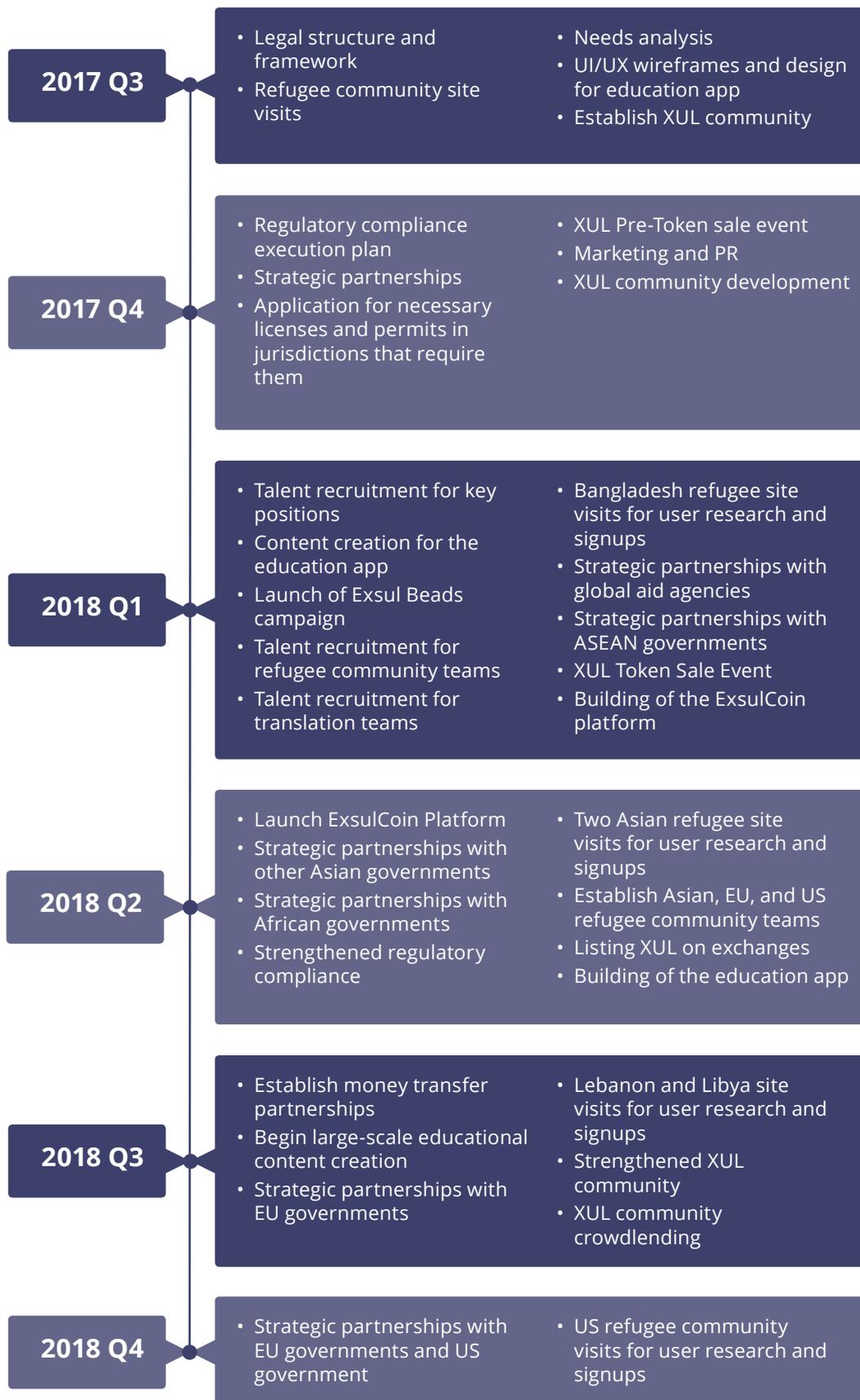
ExsulMed is an offshore technology team that handles medical coding and billing in the United States. Briefly, in the United States, healthcare providers are reimbursed for services rendered by first translating medical procedures into specific "codes." These codes are often updated, creating costly billing errors. We believe an offshore team of highly-trained nanoworkers (e.g., nurses or doctors in their home countries, but have been resettled in a place that does not recognize their training) can handle medical coding cheaper and faster than any other solution available today.

MILESTONES

MILESTONES



ROADMAP



REFERENCES

REFERENCES

1. UNHCR: Global Trends: Forced Displacement in 2016. URL: <http://www.unhcr.org/5943e8a34> (2017), (Accessed August 1st, 2017)
2. Mockaitis, T.: The Real Refugee Threat. URL: http://www.huffingtonpost.com/tom-mockaitis/the-real-refugee-threat_b_9108532.html (2016), (Accessed August 1st, 2017)
3. Reiff, N.: What is ERC-20 and What Does it Mean for Ethereum? URL: <http://www.investopedia.com/news/what-erc20-and-what-does-it-mean-ethereum/> (2017), (Accessed August 1st, 2017)
4. See: <https://www.ethereum.org/ether> (Accessed August 1st, 2017)
5. <https://solidity.readthedocs.io/en/develop/> (Accessed August 1st, 2017)
6. <http://www.unhcr.org/en-us/refugee-status-determination.html> (Accessed August 30th, 2017)
7. <https://www.mturk.com/mturk/help?helpPage=overview> (Accessed August 1st, 2017)
8. Devictor, X. and Do, Q.: How many years do refugees stay in exile? URL: <http://blogs.worldbank.org/dev4peace/how-many-years-do-refugees-stay-exile> (Accessed September 1st, 2017)
9. UNHCR: Missing Out: Refugee Education in Crisis. URL: <http://www.unhcr.org/en-us/missing-out-state-of-education-for-the-worlds-refugees.html> (2016), (Accessed August 13th, 2017)
10. <https://facebook.github.io/react-native/> (Accessed August 13th, 2017)
11. James, L.A., Evaluation of an Adaptive Learning Technology as a Predictor of Student Performance in Undergraduate Biology, (Master's Thesis), Appalachian State University, North Carolina, USA, May 2012.
12. Bloom, B., The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring, *Educ. Res.*, vol. 13, pp. 4-16, 1984
13. T. Kidd, *Online Education and Adult Learning*. New York: Hershey, 2010
14. Vandewaetere, M., Desmet, P., and Clarebout, G., The contribution of learner characteristics in the development of computer-based adaptive learning environments, *Computers in Human Behavior*, vol. 27, No. 1, pp. 118-130, 2011.
15. Drigas, A.S., Argyri, K., Vrettaros, J., Decade Review, *Artificial Intelligence Techniques in Student Modeling*, in *Best Practices for the Knowledge Society. Knowledge, Learning, Development and Technology for All*, vol. 49, Lytras, Ordonez de Pablos, Damiani, Avison, Naeve, and Horner, Eds. Berlin, Heidelberg: Springer Berlin Heidelberg, 2009, pp. 552-564.
16. Frias-Martinez, E., Magoulas, G., Chen, S., and Macredie, R., Recent soft computing approaches to user modeling in adaptive hypermedia, In *Adaptive Hypermedia and Adaptive Web-Based Systems*, the series *Lecture Notes in Computer Science*, vol. 3137, pp. 104-114, Springer Berlin Heidelberg, 2004.
17. Garca, P., Amandi, A., Schiaffino, S., and Campo, M., Using Bayesian networks to detect students' learning styles in a web-based education system, *Proc. ASAI Rosario*, pp. 115-126, 2005.
18. Gertner, A., and VanLehn, K., Andes: A coached problem-solving environment for physics, In *Intelligent Tutoring Systems*, vol. 1839, pp. 133-142, Springer Berlin Heidelberg, 2000.
19. <http://www.unhcr.org/en-us/1951-refugee-convention.html> (Accessed August 1st, 2017)
20. <http://www.unhcr.org/en-us/protection/basic/3b66c2aa10/convention-protocol-relating-status-refugees.html> (Accessed August 13th, 2017)
21. <http://www.unhcr.org/en-us/about-us/background/45dc1a682/oau-convention-governing-specific-aspects-refugee-problems-africa-adopted.html> (Accessed August 13th, 2017)
22. https://en.wikipedia.org/wiki/Cartagena_Declaration_on_Refugees (Accessed September 5th, 2017)
23. <http://thediplomat.com/2017/03/taiwans-little-burma/> (Accessed August 1st, 2017)

ExsulCoin

📍 244 Fifth Avenue
New York, NY 10001

🏠 www.ExsulCoin.com