

# IRX

Intelligent Risk Exchange

May 2019

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## Executive Summary

This whitepaper gives a high-level description of IRX, the Intelligent Risk Exchange. The aim is to describe the concepts and possible technical implementation. It also presents a roadmap with milestones and estimates.

IRX is a platform that aims to disrupt and replace the traditional insurance working models. Our offering is a global and alternative marketplace that uses technology as one of the pivot differentiators. The working platform leverages blockchain and revamps many of the currently outdated insurance processes.

We are focusing on the functional concepts and business case. There are two particular topics we intentionally left out which are the token economics and detailed technical design. We will present those aspects in separate material.

## Vision

***To facilitate the transfer of risks from companies directly to capital providers for a premium.***

Borrowing concepts from the Insurance Linked Securities and Captive markets, we aim to eventually offer financial investors the ability to directly buy the risk in return for the premium. This is the essence of what an insurance company does, and it has proven to be a profitable business model for centuries. But instead of a single insurance company taking on the risk and manage it, the platform would allow multiple capital providers to back it using standardised investment products.

The initial phase aims to provide insurance products from established insurance providers to build up traction.

## The Insurance Market

### Existing Challenges

There are a number of challenges for today's insurers. Increased regulation and capital requirements, lack of digitalization, legacy IT and an aging workforce are factors which make it hard for insurers to keep up and provide a modern service and innovative products. Below are some of the most significant challenges:

**Outdated or non-existent IT infrastructure.** Insurance organisations are behind other financial institutions in their modernisation and leverage of technology. The excessive manual processing results in an inability to adapt, scale and launch new products in new markets.

**Costs and inefficiencies.** Having a large number of intermediaries between the insurance carrier and the client, as well as large workforces of their own add costs to both the insurer and the customer.

**Relationship based growth.** In some traditional insurance markets, business is still done based on personal relationships. This creates an inefficient marketplace where business is allocated as favours or alongside commercial alliances, rather than what is optimal for the customer.

**Launching new insurance products.** The process of launching a new product is hard enough. The actuary models, legal and regulatory aspects, commercials and distribution alone require a flexible and capable infrastructure. Coupled with the requirement of data, IT applications, automation and integration makes it difficult for insurers to move fast.

## Market Opportunities

Given the challenges above, the insurance industry is ripe for disruptors to enter and innovate. The barriers are usually capital and regulatory hurdles and not the insurance itself. Incumbents often want to portray insurance as hugely complex but in essence it is basic statistics. However, being one of the oldest financial services around, there is a myriad of aspects which combined can make it difficult to enter.

**Digitalisation.** Bringing digitalization to insurers will allow them to distribute their products cheaper and reach new audiences. Moving away from paper based processes also allows insurers to scale up and grow without adding costs linearly.

**Automation.** In many insurance organisations, processes are highly manual. We have seen numerous examples where underwriting is based on gut feeling and “years of experience”. Excel spreadsheets are used as data repositories, data is entered and reconciled manually and business processes are not supported by appropriate IT tooling. Automation allows these processes to manage themselves with a zero or low touch.

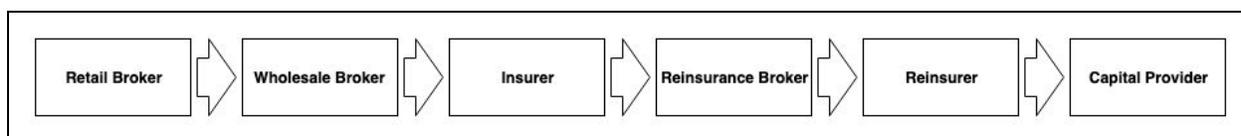
**Data.** A key ingredient to accurately assess risk is data. Insurance companies are one of the richest sources of data, including detailed personal information. However, in order for data to be useful, it needs to be structured, mapped and stored properly. In addition, with new products such as On-Demand insurance or Cyber, “own” data is no longer enough. To scale up, Big Data becomes a must i.e. huge multidimensional and interconnected datasets.

**New Insurance Products.** The recent wave of insurtech startups re-thinking insurance has resulted in a need for capacity providers to be able to support them. A strong focus on API driven architecture, data sharing, mobile first approach is required.

**Global Reach.** Trading across borders is now the norm and even SME's are often exposed to risks across multiple regions. Insuring shipments, subsidiaries in different locations and being able to base operations where the business takes you are key. Growth is also a key driver, and is not necessarily coming from the UK or US region.

## Future Direction

**Shortening the value chain.** As illustrated below, the insurance value chain sometimes gets quite long and involves many participants who each take their commission.



*Example of an insurance value chain*

There is a strong interest to reduce the number of intermediaries but retain the value-add they sometimes have.

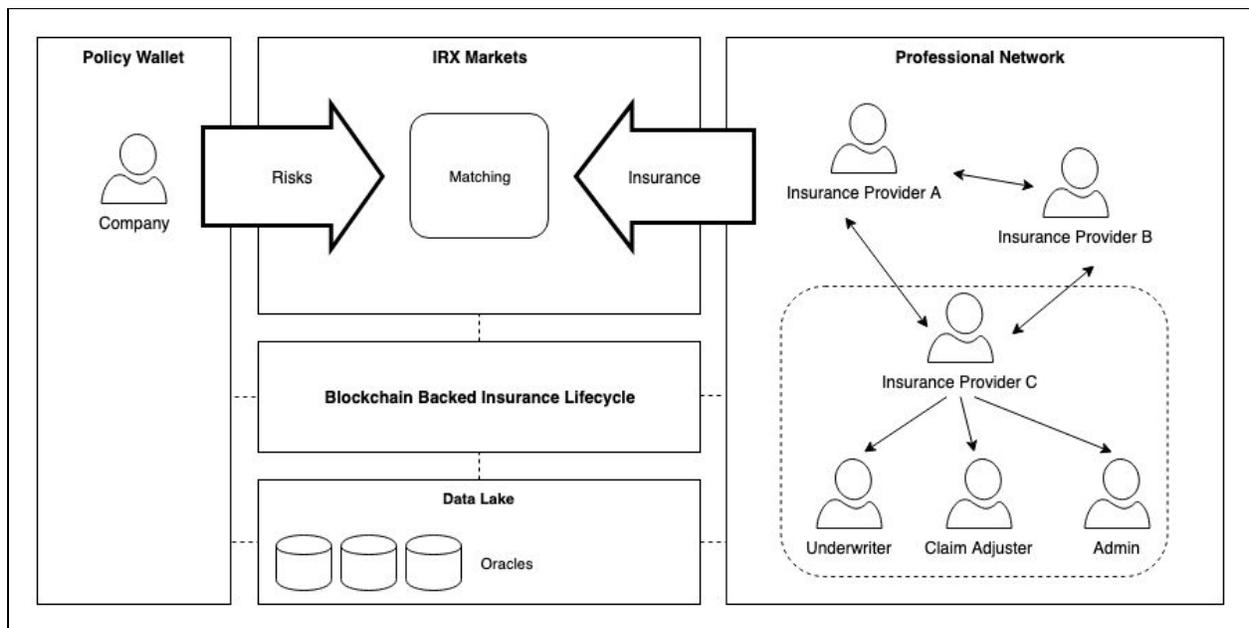
**New market locations.** London is no longer the only centre of insurance. Locations such as New York, Bermuda, Singapore are quickly gaining market share, working with local carriers.

**Artificial Intelligence.** AI can replace underwriting where risk assessment, matching and pricing can be done with algorithms instead. Fraud detection is another area where machine learning can be much more efficient than humans, analysing vast datasets for patterns indicating fraud. Automated claim management can also be implemented with machine learning.

## IRX

IRX aims to provide an answer to the challenges mentioned above and take advantage of the opportunities.

## Overview



*Initial version of IRX*

## Target Audience

**Small Medium Enterprises SME.** Small and medium sized companies rarely have dedicated risk officers and limited resources to spend on insurance. They look for simple, easily understood products and services. This is also an underserved and underinsured market segment.

**Brokers and Agents.** We target the smaller scale brokers and agents who might not be able to develop their own technology solutions and who would like to be part of a virtual network of partners.

**Insurers.** Insurers who are looking for an efficient distribution channel for their products would be ideal partners. Growing distribution can be costly and difficult to achieve in new territories.

## Key Features

### Policy Wallet

The policy wallet is the way a policyholder interacts with the platform. It provides a convenient way of storing information related to insurance as well as finding the right products and managing the insurance process.

Data collection is centered around the risks that the company faces, in a language that can be understood by non-insurance people. Industry jargon is avoided.

Data ownership remains with the policyholder who selects to whom data should be provided. It allows for information to be reused between various products and providers.

There are various privacy levels of data:

**Public.** Basic information such as what insurance is of interest and which country the user is based in.

**Personal.** Personal information such as names and date of birth.

**Sensitive.** Sensitive information such as medical data.

Holding data in your wallet will be rewarded with IXT.

## IRX Markets

The marketplace is where buyers and sellers of insurance come together to transact. Its main purpose is to match the interests of the two sides and then to complete transactions i.e. bind policies.

### Matching

Companies create enquiries describing who they are and what they are looking for. The enquiries are published to an order book. A matching engine constantly checks the order book for matches to the available products. Once a match is found, a request for a quote (RFQ) is created. If possible, the premium will be automatically calculated based on the supplied enquiry information and a quote generated. If it is not possible, the RFQ is forwarded for manual quoting.

### Listing

Products are listed on the marketplace using an interactive product editor which allows an insurance provider to specify:

**Enquiry parameters.** This determines what product specific questions need to be asked when an enquiry is filled in.

**Policy document templates.** These are the documents that will be sent to the company when the policy is issued. They could also be replaced with URLs that links to documents hosted by the insurance provider.

**Pricing model.** Initially we will allow for a simple rating based model where  
**Issuer information.**

After a product has been configured, it is reviewed and approved to make sure all the information is provided and that it will work on the platform.

### **Quoting**

Automatic quoting is straight-forward. The enquiry information is passed into the pricing model and the policy documents gathered. The quote will be returned containing all the information necessary to bind the policy.

If the enquiry falls outside the boundaries of what can be automatically quoted it will be forwarded to an insurance provider to quote manually. The insurance provider might request for further information and clarification.

### **Binding and Issuing**

Binding a policy mean that a contractual agreement is reached and the policy should be issued. The process starts with the quote and the terms being accepted by the company. The documents are generated based on the product templates and sent to the company via email. They are also available to download in the wallet for later reference.

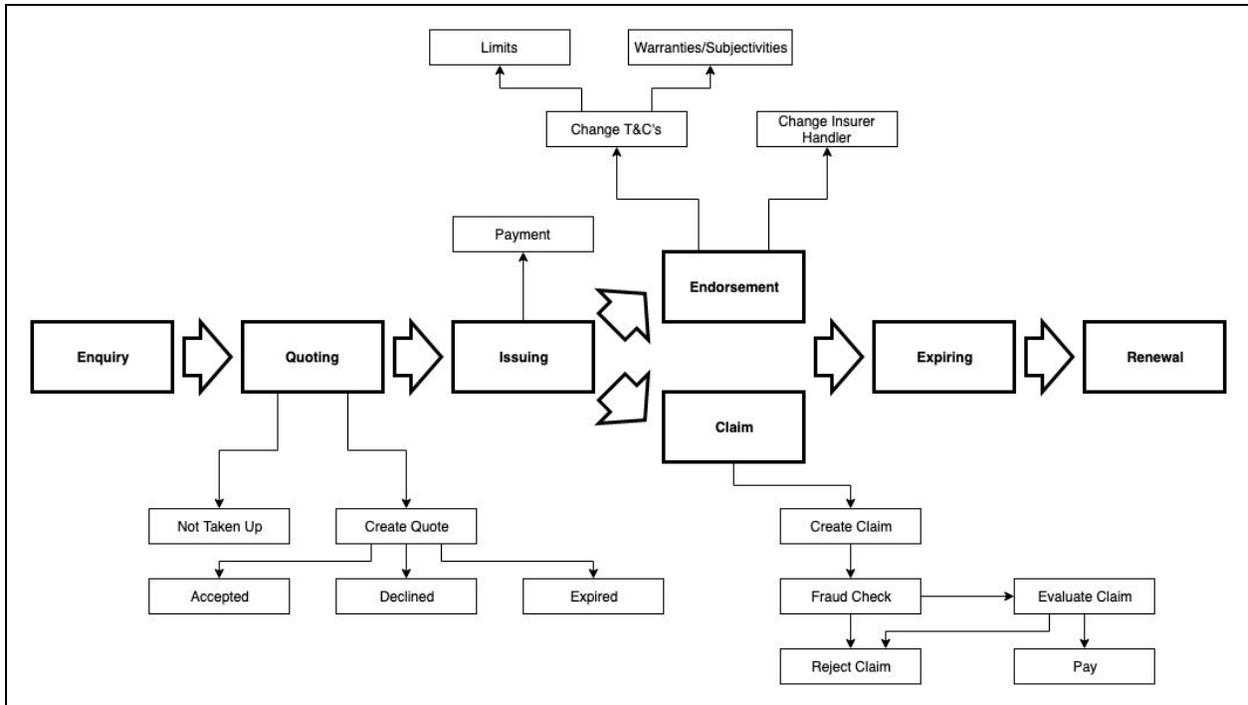
### **Portfolio Management**

After the policies have been bound and issued they will be added to the portfolios of the people involved. The portfolio presents the policies as a table which can be used for analysis, reporting and management. Filtering, reports, data download and lifecycle actions are supported. Exposure, i.e. the amount of risk is displayed on individual and aggregated level.

## Decentralized Insurance Lifecycle

After a policy is bound and confirmed, it will be published on the blockchain as a smart contract. The smart contract models the lifecycle of a policy in a product specific way, thus allowing for a shared, golden record of the state of the policy.

The purpose of this is to connect the various participants of the policy i.e. policyholder, insurance providers and external entities such as law firms and advisors. Sharing data and processes in such a way, without having to give access to each other's databases and other internal systems is a huge benefit to everyone.



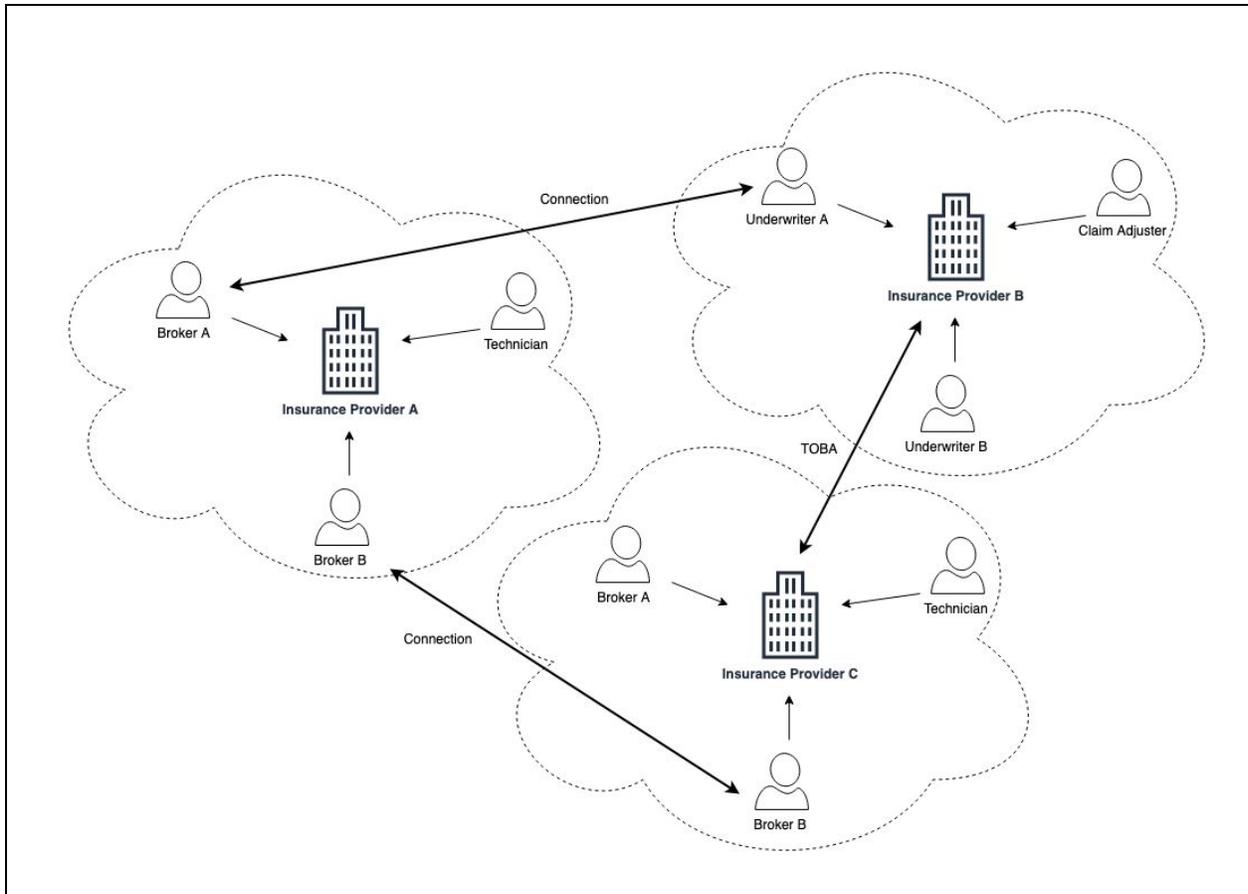
*A simplified depiction of the insurance lifecycle*

Connecting to the blockchain is easy. As a signed up and verified insurance provider you will be given a blockchain account which would allow you to connect through our UI or directly to the blockchain.

Until insurance providers have integrated their systems fully the lifecycle might be updated retrospectively, as information reaches us. Our aim is to initiate the state changes throughout the process from the blockchain but we will support both ways.

## Professional Network

This is the LinkedIn for insurance professionals, allowing an individual and a company to market themselves, connect with others and collaborate.



*Example of connections in the professional network.*

There are plenty of traditional networks who rely on a central entity to administer it, and some of them take a hefty membership fee. Our network allows a more decentralised and effective way of partnering with a focus on the business purpose.

All insurance providers have an account profile in the professional network. The company will have an official page which displays information about its location, products, expertise and services. Individuals such as brokers and underwriters also have an account and a public page.

A company profile page shows:

***Company Name and Logo***

***Company Description***

***Location***

***Class of Businesses***

***Territories***

***Products and Services***

There are a number of different links that the network will consist of:

**Between companies.** Additional information can be attached to the link such as if a Terms Of Business Agreement (TOBA) exists.

**Between individuals.** Linking up with others allows direct messaging and sharing of data.

**Between individuals and companies.** This indicates if a person works for a company. The link will result in “Verified” being displayed on the personal profile against the position. This is an important indication of credentials.

**Collaboration.** Companies and individuals can create permanent links between each other to indicate commercial agreements and subsidiaries but there is also a way to create a temporary structure for collaboration during a specific deal or similar. This allows direct communication and document sharing between the collaborators that is not shared with the wider network.

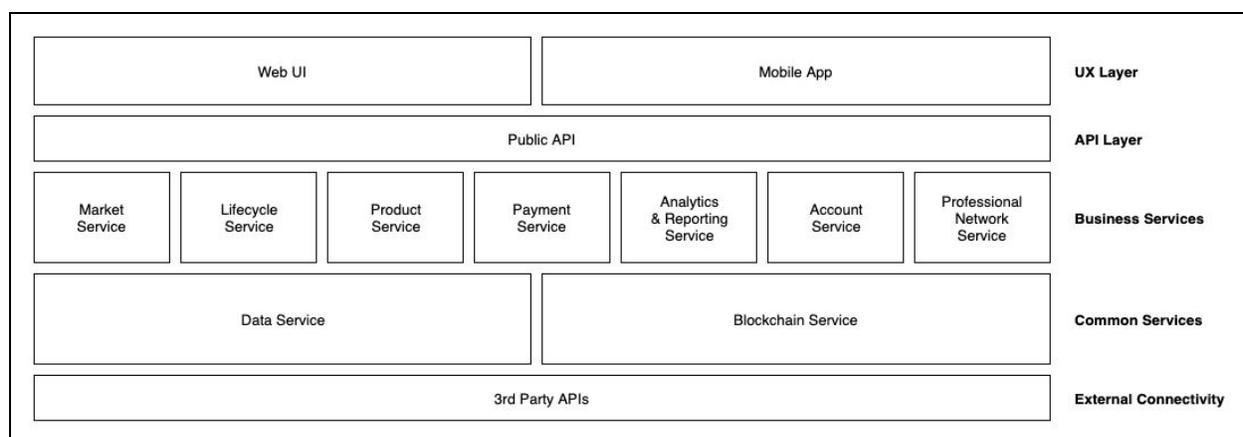
## Bordereaux Integration

Events and data can be retrieved and consumed via our Bordereaux API and data models. This allows for a quick integration to legacy, internal systems. It can be as simple as sending bordereaux files to an FTP drive or real-time event listeners, depending on the need.

## Technology

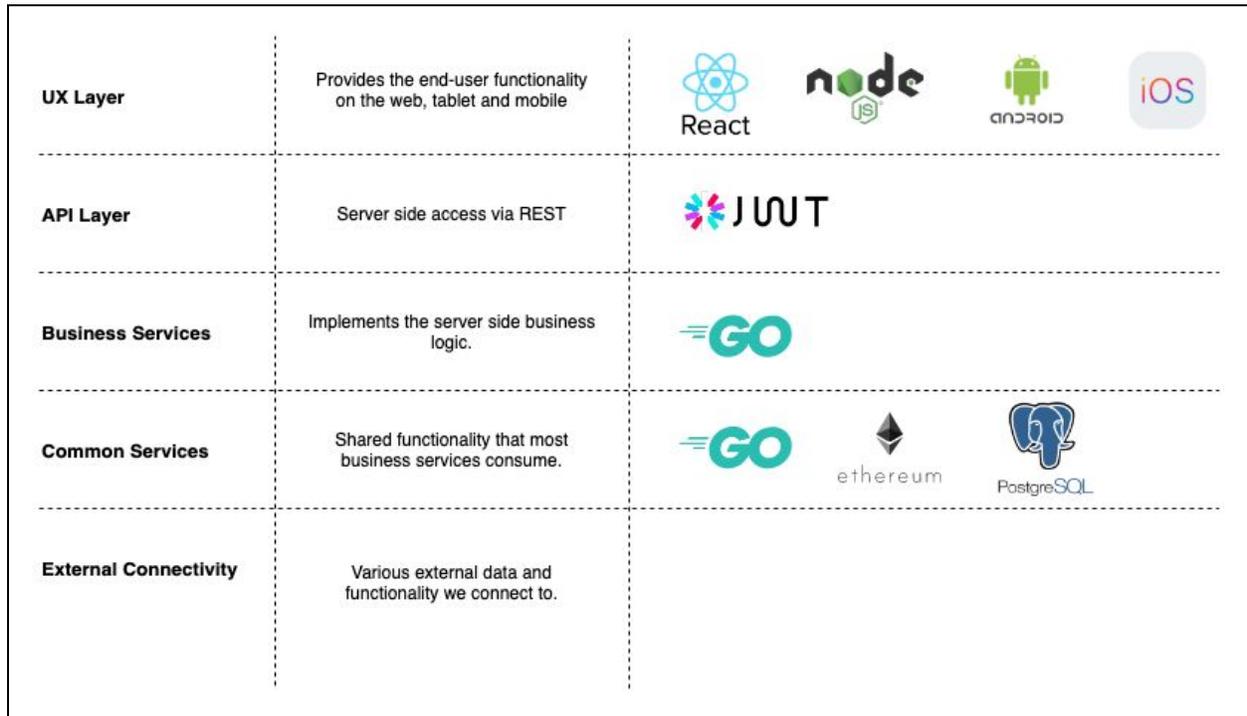
### Architecture

The architecture follows a modular and layered approach for standard functionality. In some areas where high-performance is required, or vast amounts of data is expected, layers might be compacted or removed.

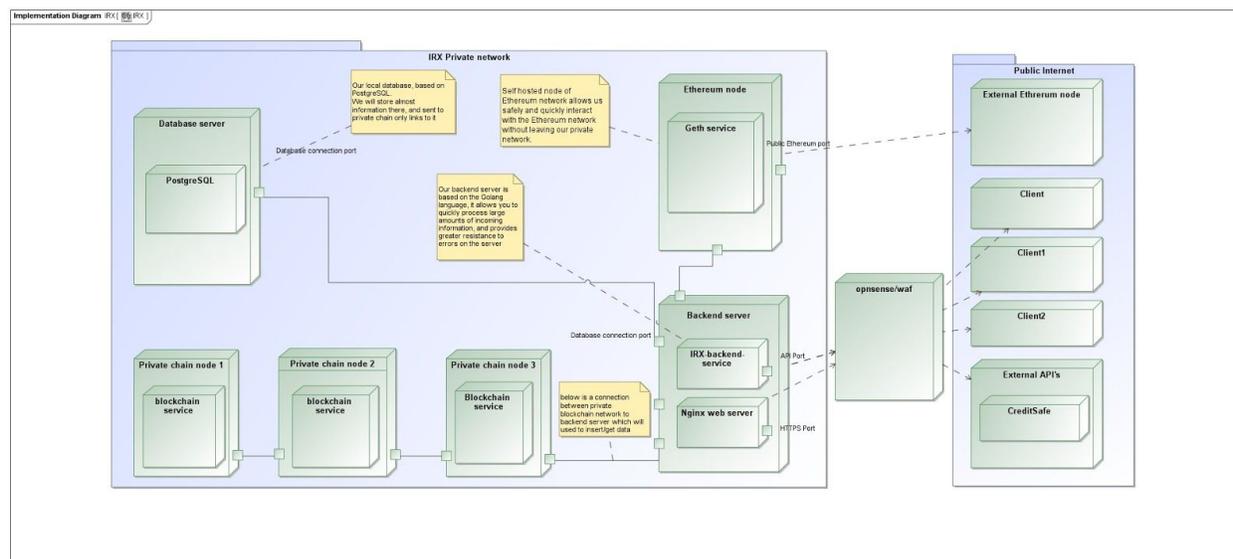


*The diagram shows the main logical components*

## Technology Stack

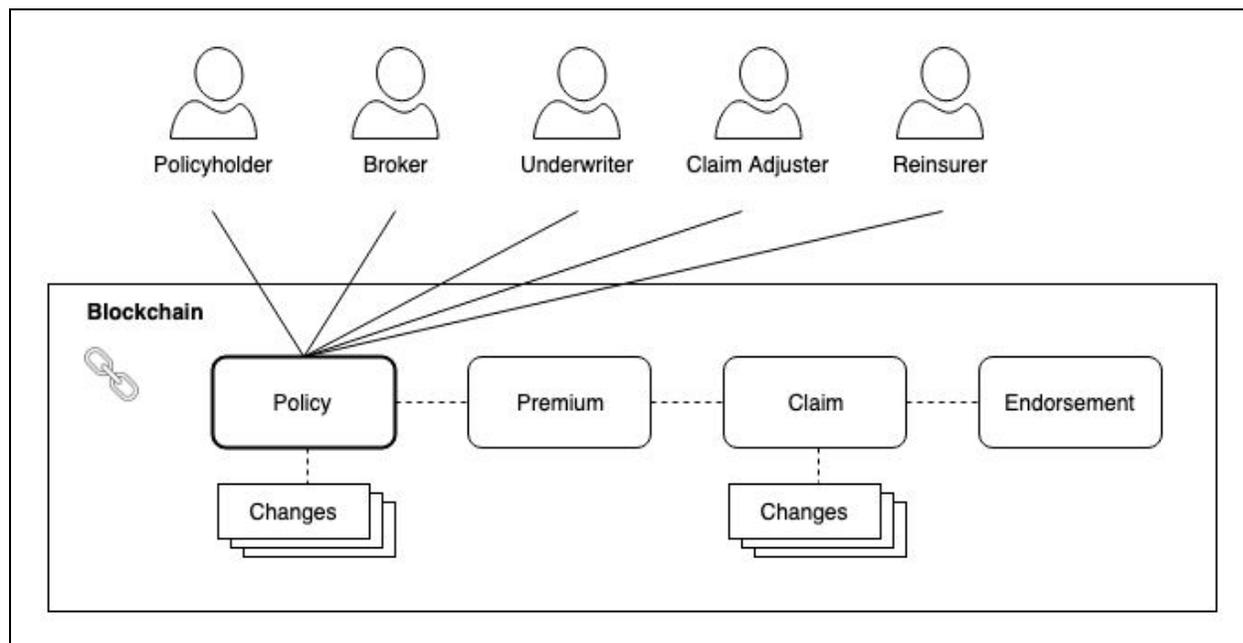


## Implementation



## Blockchain

Blockchain technology backs our insurance lifecycle and provides guarantees and trust. An insurance policy involves multiple parties who all need to contribute as it moves through the stages of binding, premium payment, claims and endorsements.



*All policy participants share one version of the data without duplication and replication.*

During these stages sharing data is key. For example as a claim is initiated, the description and evidence about the event will be supplied by the policyholder and processed. This will involve everyone across the insurance value chain and external parties such as law firms. Having a golden record is vital and without the decentralised trust of blockchain the question has always been who this golden record should sit with. In many cases, the companies end up with complex and costly reconciliation efforts instead.

With blockchain, insurance providers and their partners can integrate live data without the need to duplicate and replicate. This results in significant cost savings and reduces turnaround time.

## Platform Payments

All charges and payments are carried out and counted in IXT, but in order to enable companies to join and transact easily there is an ability to purchase the IXT with a normal Fiat payment.

The table below shows the initial fees and rewards. These will be under constant review and subject to change and will initially be geared towards building traction. We will airdrop IXT to early adopters from our pool.

Activity	Fee/Reward
Transactions. Initially will carry a flat fee regardless of type.	<b>200 IXT fee</b>
Sign up as an insurance provider.	<b>1,000 IXT fee</b>
Invite an insurance provider.	<b>1,000 IXT reward</b>
Invite an individual.	<b>200 IXT reward</b>
Data staking by company.	<b>500 IXT per 30 days reward</b>
List a product.	<b>1,000 IXT fee</b>

## Company Pools

Our company pools have been resized to fully focus on traction.

**Team pool.** The team pool has been reduced to 2m IXT. A portion of the previous allocation has gone into the partnership with PayRue to allow for IXT integration as part of our B2C efforts.

**IXT Protect.** We have around 3m IXT allocated in IXT Protect to back the staking programme.

## Roadmap

The roadmap is subject to change as we start working through the tasks. We follow an Agile model where a large portion of discovery is done as part of the two week sprints.

<b>Phase 1</b>	<b>Platform Delivery Q3 2019</b>
	<b>Milestones</b> Analysis and Design. <b>June 2019</b> Functional Design. <b>June 2019</b> Technical Implementation. <b>Aug 2019</b> Testing and pilots. <b>Sep 2019</b> Launch. <b>Sep 2019</b>
<b>Phase 2</b>	<b>Commercial Development Q1 2020</b>
	<b>Milestones</b> Direct Risk Transfer. Licensing and Regulation.

	Partnerships.
<b>Phase 3</b>	<b>Growth</b>
	<b>Milestones</b> Marketing. Incentives and Rewards.

## The Company

IRX is built and operated by IXT Ltd. The company is based in Gibraltar and was founded in 2017 by Ingemar Svensson, Mikael Olofsson and Cristina Dolan. Collectively they spent decades successfully building global solutions, marketplaces and businesses in various industries.

IXT Ltd delivers products that focus on the usage and adoption of blockchain and cryptocurrency in the insurance industry.

## Glossary

**Insurance Provider.** A company who provides insurance products and services. It can be an insurance company, broker or agent.

**Enquiry.** A request from a company to get a quote for a particular insurance need.

**Product.** An insurance product defines the details of what the policy covers. It includes the information required to understand the terms as well as a model to give a premium amount. In some cases, the premium might be manually provided or sit outside the exchange.

**Company.** A company who is interested to buy insurance against some risks it is facing. Initially, only European companies will be covered who follow EU regulations.

**Quote.** A quote is the premium amount for a particular insurance need. It also includes contractual terms.

**Policy.** A policy is an instance of a product where an insurance provider has given insurance to a policyholder for a given premium.

**Sector.** The sectors describes what a company does i.e. plumbing, IT Services or Construction.

**Underwriter.** Evaluate the risks of companies and decide how much coverage the client should receive, how much they should pay for it, or whether even to accept the risk and insure them.

**Broker.** A broker works on behalf of a company to find the best suitable insurance for the best price. For this, the broker will have access to insurance markets who can provide this, as the broker would not provide insurance itself. However, to the exchange, a broker will also just be seen as a provider of insurance, albeit it not directly.

**Bind a policy.** Binding an insurance policy means that there is a commitment and agreement in place, but the policy hasn't necessarily been issued yet.

**Premium.** The amount of money a policyholder would need to pay to receive the insurance. Can be paid upfront, monthly or annually.

**Wording.** The contractual terms of the policy that specifies how the insurance product works and what it covers.

## Disclaimer

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