

Roin Whitepaper



The cryptocurrency for a new Rocks & Geologists' ecosystem

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.....a geological Solutions Company



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EXECUTIVE SUMMARY

The Rocksolve team is building next-gen geological solutions for the mining, construction, environmental and energy industry which is to be based on blockchain technology. Rocksolve will be using cryptofinancing (digital token sale) for growth capital and ecosystem transactions.

The Rocksolve ecosystem is an evolution in cryptocurrency, it offers geological products and services that allow the user to engage in a multitude of digital interactions - from data gathering, interpretation, knowledge sharing, requesting solutions and analysis enabled via a cryptocurrency - Roin.

The Rocksolve ecosystem will allow individuals and businesses to conduct state-of-the-art geological evaluation, send, receive, trade, manage geological digital assets in online wallets. This will enable solutions to global challenges to be addressed and rewarded, free from geographical barriers and the challenges associated with paying for and receiving services from geologists working from anywhere across the globe.

Why ROCKSOLVE?

Civilisation has always depended on rocks - from the stone age to the Iron age and now the information age with focus of energy requirement shifting from CO2 heavy fuels to renewables and low carbon energy sources. Geologists have always been at the forefront of providing the data, knowledge and insights required to solve problems across many industries.

Geological data, knowledge and insights exist around the globe on individual computers, paper files in drawers and residing in the brains of geologists. The potential to improve how we address major business and societal problems exists if these resources are harnessed and utilised. These requires developing tools and technologies for **data gathering, knowledge generation** and

collaboration. Rocksolve exists to address these issues. The vision is to build the technologies which will make solving global problems requiring knowledge of rocks easier, faster and inclusive.

For example, the geological related software market for the energy industry is worth \$8 Billion. These tools are needed for gathering and interpreting Terra bytes of data. However, most of the commercially available applications are legacy native apps with little scope for tapping into the cloud computing revolution and application of new AI, machine learning technologies. The industry radically needs the infusion of new technologies and new ways of working.

The founder, Gideon Giwa left a career with Royal Dutch Shell (RDS) as a Petroleum Geologist to set up Rocksolve. Building Decentralised apps on the back of Blockchain technology and creating Roin (a digital asset token) provides the platform to realise 3 key objectives:

1. Enable data gathering, knowledge development and sharing whilst breaking down barriers associated with geography, accessibility to global financial markets and costs
2. Incentivise developers, geologists and business managers to tap into these ecosystem
3. Deliver a robust ecosystem which acknowledges, rewards and ensures the value inherent in the digital assets (data, knowledge and solutions) are unlocked promptly, accessed digitally and solutions delivered to the benefits of all.

Since 2016, the Rocksolve team

1. Delivered the marketing and awareness effort to get into to consciousness of some of the key stakeholders
2. Delivered a working cloud based sedimentary data gathering app
3. Mobile version on course for delivery - summer 2017

Going forward - a digital token sale will enable

- The development of the full suite of applications described in section 4.0
- The Integration of machine learning, AI, Big data analytics
- Delivering the awareness and marketing require to drive community development and usage

- The full development of the ECOSYSTEM digital infrastructure to continue the delivery of the vision and mission

ROIN ICO

Rocksolve will host a Pre-ICO (Initial Coin Offering) starting on the 11th of September 2017 at 12:00 CET until the 17th of September at 23:59 CET. The ICO will start on the 18th of September at 00:00 CET until the 30th of September 2017 at 23:59 CET. A total of 50 Million ROIN, including the bonuses will be allocated for purchase by investors during the ICO while 10 Million will be held for future release.

Phase 1 (Pre-ICO) starts with a 25% BONUS, at the rate of 1 ROIN = XLM 50 or \$1. The ROIN will be listed and traded on major cryptocurrency exchanges around the world, starting in the 4th Quarter of 2017.

ROIN is a digital token to be issued on the Stellar Network. Stellar provides desired features such as:

- Built-in exchange: The protocol has a decentralised token exchange that enables you trade issued tokens with other assets created within the network or externally.
- Speed: Transactions are confirmed and completed within 3-5seconds
- Security and Transparency: Consensus must be reached by nodes in the network in order for a transaction to be valid. The distributed nature of the nodes makes it extremely difficult to tamper with transactions. Once consensus has been reached and transactions placed in the ledger it cannot be altered. Also, all transactions are visible on the network which makes public auditing easy.

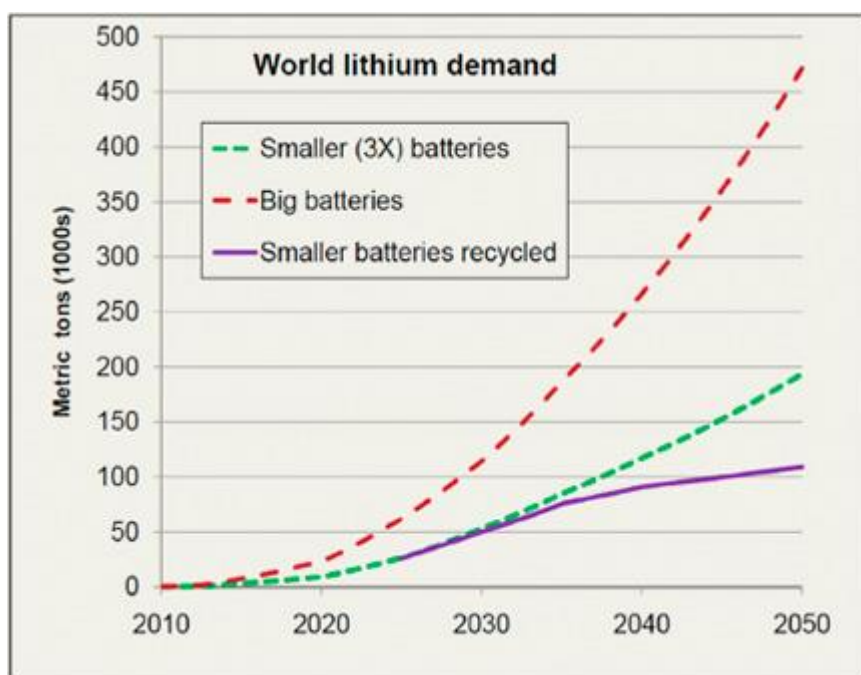
For more information do visit <https://www.stellar.org/blog/using-stellar-for-ico/>.

This paper will focus on the usability and features of the ROIN token.

1.0 THE OPPORTUNITY

Geologists play a major role in the mining, construction, environmental and energy industry. They are critical in locating the resources of interest, determining the quantity and ensuring efficient extraction to maximise profits, reduce cost and ensure safe operations. Across many countries, millions are employed in this area in the academia, industry and regulatory agencies.

The mining industry is expected to experience a large increase in demand for raw materials over the next few decades as a response to the world's increasing demand for minerals such as Lithium for powering the battery industry. Analysts at Morningstar expect lithium demand to rise 16 per cent a year from 175,000 tonnes in 2015 to 775,000 tonnes by 2025, the fastest rise of any significant commodity over the past century. Another analyst's view is presented in the chart below where Lithium demand is expected to rise significantly.

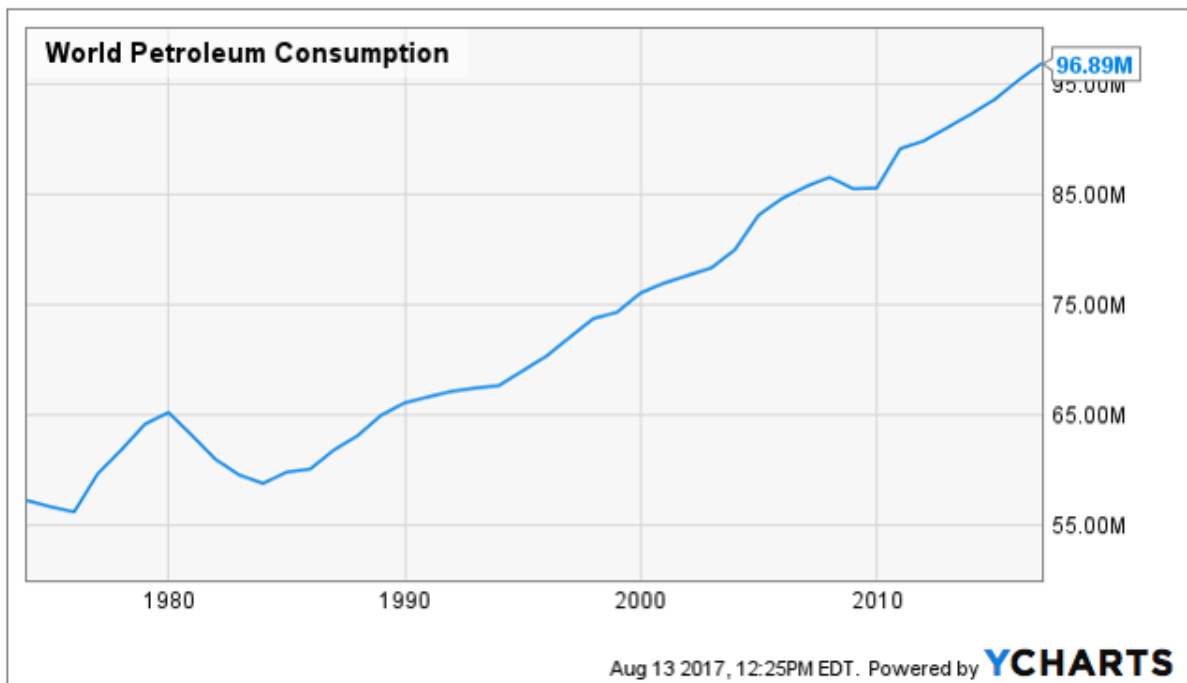


Courtesy of <https://www.wealthdaily.com/articles/forget-oil-this-metal-will-power-the-future/6068>

Also in the construction industry, geologists are responsible for identifying the geological factors that could affect construction projects. They undertake technical and scientific analysis of rock, soil, groundwater and other conditions to determine the likely impact that major construction developments will have on sites. They also analyse ground materials to assess their risk factors and advise on the best procedures for developments and the suitability of construction materials.

Furthermore, regarding the impact of human activities on the environment and vice-versa, environmental geology plays an important role in planning, especially as far as the development of urban areas and the growth of megacities are concerned. Because land is the surface expression of subsurface geology, those involved with the planning process must appreciate and understand geology, hence a continuing need for geological data to be gathered and processed.

Lastly, the world's energy need is growing as the population increases and demand rises in emerging economies – see chart below.



BP estimated in its annual global energy outlook that it expects the world energy demand to rise by 37% from 2013 to 2035. This will mean an increase in global production from 82 Million barrels of oil equivalent (MMboe) per day to 112MMboe/day of clean gas to power our homes

and liquid hydrocarbon to provide the chemicals required for our e.g. fertilisers – to feed billions – and other uses. Significant investment in exploration, production and development will be required to meet this demand. These billion-dollar investments are always underpinned by rigorous geological evaluations. An opportunity exists to improve the quality of available technologies to deliver better geological evaluations and help the world meet its need.

2.0 THE PROBLEM

Oil and gas, mining and environmental companies need access to vast amounts of rock data. Currently, academics in many parts of the world, students and professional workers across these industries lacks access to tools (if they exist) that facilitate mobile, cloud based data gathering, interpretation and integration.

Existing tools and software are based around dated and cumbersome desktop applications and technologies not utilising the inherent power of the internet. These expensive tools lack integration potential and are sometimes unavailable to independent consultants and smaller companies.

Complex supply-chain systems, geographical boundaries and non-inclusive global financial systems mean that diverse and smaller organisations are unable to participate. Consequently, the industry and society at large is robbed of the vital contributions academic institutions, independent geologist and smaller organisations can provide. This system also perpetuates ineffective, legacy technology built by large corporate organisations with little or no incentive to innovate. Lastly, collaboration is significantly hindered with the status quo.

Rocksolve seeks to fill the gap by delivering innovative, cloud based, multi-platform solutions designed to deliver value to all – small and large organisations and independents priced using ROIN that can be either be earned by contributions to the ecosystem or purchased.

ROIN will facilitate these transactions enabling reduction in cost and time required to deliver value inherent in these digital assets wherever they may reside or be needed.

3.0 ROCKSOLVE

Rocksolve was formed in September 2015 by Gideon Giwa, a geologist who previously worked with Royal Dutch Shell solving oil and gas business problems. Rocksolve is in the business of developing, marketing and sales of geological software.

Rocksolve is seeking to deliver a suite of web based and cloud enabled apps designed by geologists for use by all geologist across the Academia, Industry and Government Agencies. The suite of applications is aimed at enabling geologist gather rock data in the field (outcrop) or in the lab, interpret them and deliver logs, cross-sections and maps as digital assets which can be exchanged for value. Accessing the data everywhere, interpreting, integrating with petrophysical logs, seismic and other datasets to create cross-sections, maps and business analysis for use in helping exploration and asset managers make better decisions. It will provide the tools that individual geologists need to transfer their knowledge into digital assets to be sold across a common marketplace, and allow companies to easily find and purchase the data they need from specialists all facilitated by ROIN.

By focusing on cloud based solutions, Rocksolve seeks to reduce the carbon footprint of the major resource industries. Cloud computing has facilitated advances in energy efficiency as less equipment is needed to run equivalent workloads, which reduces data centre space and the associated waste footprint. Less physical equipment plugged in means data centre will consume less electricity. Travel will be reduced as geologists are able to collaborate better on these platforms. Lastly, cloud computing means data centres situated in colder climes such as Iceland reduces cooling energy requirement further reducing the overall carbon footprint per analyses.

4.0 SOLUTIONS

1. Rocksolve's cloud based suite of applications (and mobile apps in some cases) for geological data gathering, interpretation, integration and collaboration. The projects are in different stages of development:

(a) **Geosolve** - data gathering and interpretation of geological logs for use in the field and work locations. All geological evaluations begin with data gathering. This solution enables offline and online data gathering and interpretation. The cloud based approach lends itself to data aggregation and applying machine learning and artificial intelligence turning knowledge into digital assets. Images 1 & 2 below are from the working mobile app while 3 & 4 are from the web app.

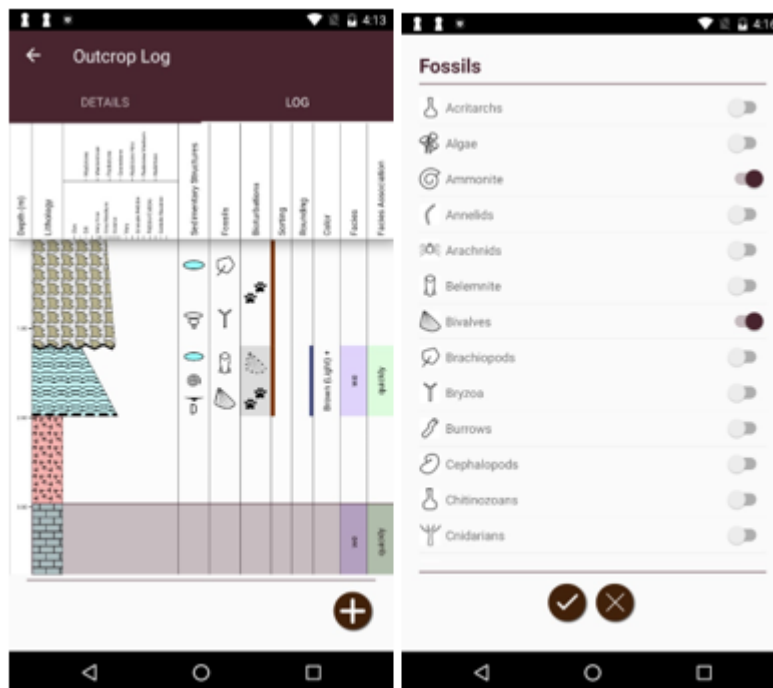
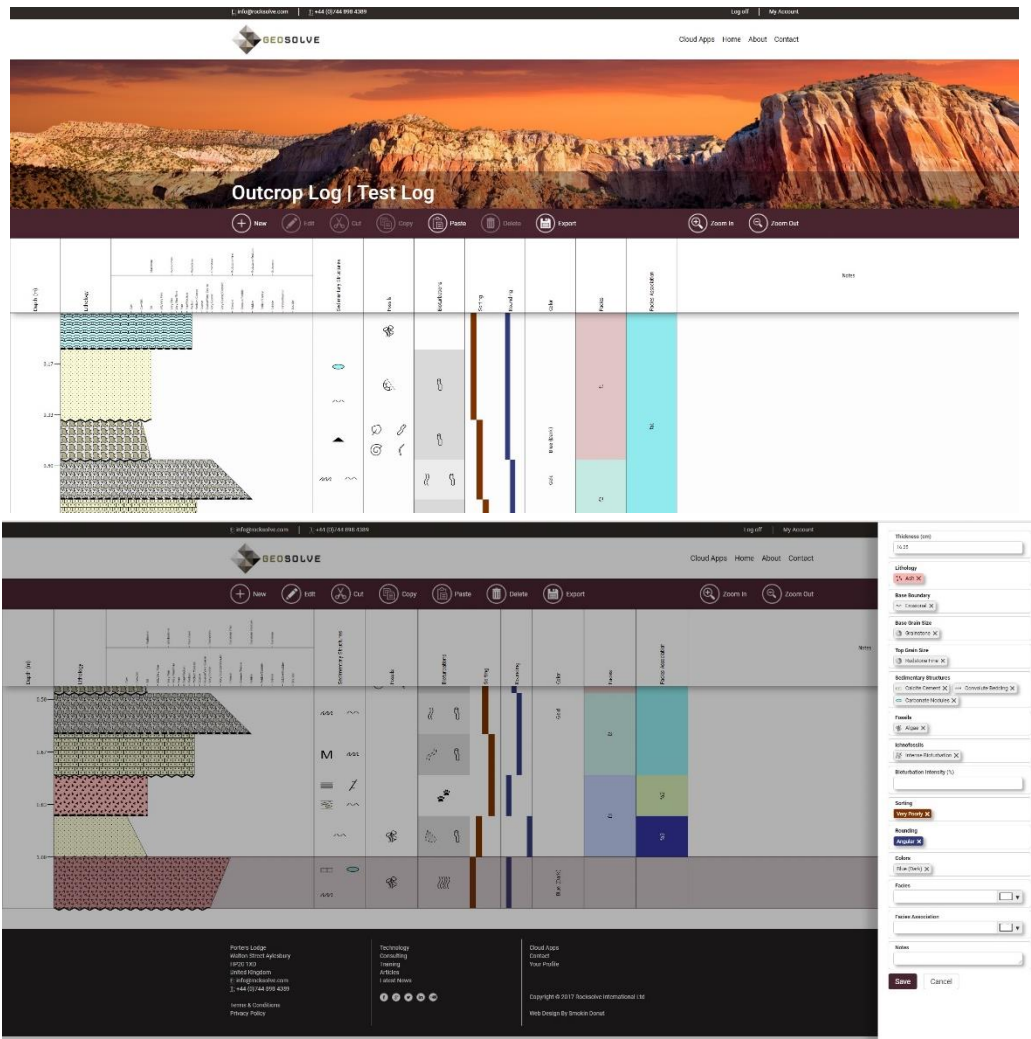


Image from working prototype of mobile Geosolve: Geological data gathering app



Images from working Web Geosolve App

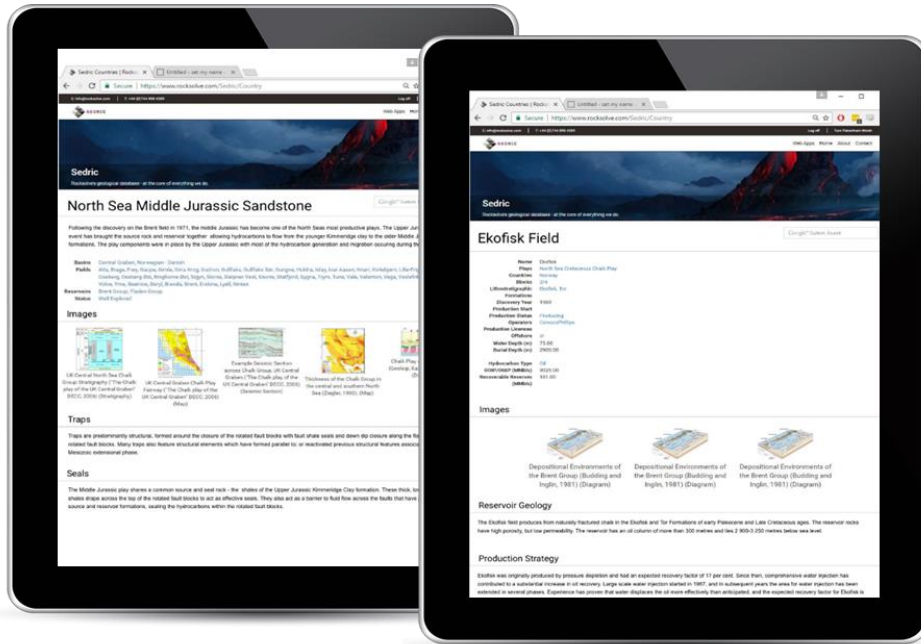
(b) **Logsolve** - an intuitive web based well log data viewer and interpreter designed to enable integration of geological data and access to expertise interpreted library. This tool will seek to apply pattern recognition algorithms to improve the user experience.

(c) **Seissolve** - a web based app for interpreting geology from Seismic images. A library of seismic facies models will be accessible enabling the application of image processing techniques to improve user experience.

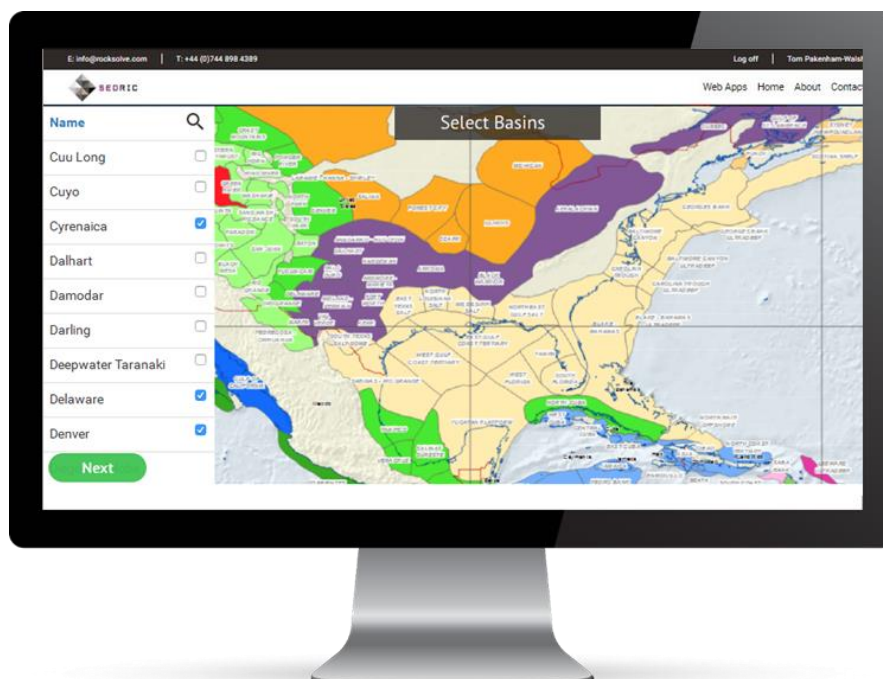
(d) **Mapsolve** - a simple intuitive web based tool for integrating all interpretation, generating surfaces and maps for use in evaluation studies.

(e) **ModSolve** – a cloud based 2D and 3D geological modelling tool for integrating and delivering earth models for improved business decisions

2. **Geotelligence** - a web based analogue, news, and database for delivering search results from aggregated data. The "Wikipedia" for geoscience. Data is combined from available sources as well as from Rocksolve's ecosystem This access to a huge amount of user collected geological data represents a valuable digital asset.



4. **Rockconnect** - a platform for geologists to interact, a forum for discussion, a portal for job and consulting opportunities. The "stack overflow" for geologists. This platform will



be powered by the “ROIN”, offering freelance geological consultants the ability to collaborate, market and sell their data analysis and interpretation to a vast network of companies. This platform will also make it easy for companies to access the specialist data & people they need instantly at a few clicks – removing some HR and Supply chain bottlenecks.

5.0 THE SIZE OF THE MARKET

The potential addressable market value of planned Rocksolve geoscience technologies is estimated to be £1Billion. There remains an array of other technologies planned for future



development. The key users of Rocksolve technology are geologists working in the energy, mining, environmental and geotechnical (construction) industries.

Department of Geology – Students and Lecturers

Geology is the science that deals with the physical structure and substance of the earth, their history, and the processes which act on them. A lot of field trips are undertaken during undergraduate and postgraduate studies. Geologists working for mining, energy, construction and environmental companies also participate in field geological mapping. Most of these field observations are presently recorded in hardback notebooks with pencils. A few mobile apps exist but mostly limited in scope and functionality Rocksolve is developing Geosolve to fill this gap and provide the necessary tools for easy and intuitive field based data gathering. Millions of

geologists are in scope as the tool will use a lot of diagram based design minimizing the need for translations. Nevertheless, the plan is to translate the tool to Mandarin, Spanish, French, Portuguese and Arabic after release to improve global usage.

Energy and Mining Company's Rock Sample Analysis

Companies acquire rock samples as they search for and seek to produce resources. Some companies maintain rock sample storage facilities while others contract this out. A lot of these samples are under-utilized and no software is presently available for describing all types of samples, cataloguing them and integrating with a major interpretation platform. ALT developed coreCAD for core description and is the oil industry preferred standard in some cases but it is limited in its integration capability and is a standalone binary format software. Rocksolve's Geosolve will be adapted for the energy and mining industry to create a solution for database creation, description of all samples (Ditch cutting and Sidewall core included). Geotelligence will also provide a database of outcrop field observation to provide analogue database for integration. Lastly, ModSolve will provide a cloud based platform for collaborative geological modelling. These products will provide new and improved access to extract the maximum information from company specific rock sample assets. Hundreds of energy companies across the international market, major International Oil Companies (IOC), small and medium independents, national oil companies and contractor rock sample management companies are all in scope for these products.

Government Regulatory Agencies

Government regulatory bodies oversee the implementation of government policies to maximize production of natural resources such as oil and gas, gold and diamond etc. Examples are the Department of Energy and Climate Change (DECC) now Oil and Gas UK, others are the Norwegian Petroleum Directorate (NPD), the Dutch TNO and the Nigerian Department of Petroleum Resources DPR. These organizations work with the relevant geological surveys of their countries but mainly with resource production companies. The objective for these institutions is usually to stimulate more exploration and improvement in production. They are usually the official custodians of rock samples and help companies to maximise the value. These

institutions now oversee the creation and management of National Data Repository's (NDR). Existing NDR's focus on seismic data, well data and cores. It is planned that Rocksolve's solutions will support the efforts of these organizations in the following areas:

- Interpretation of existing core data and the integration with other datasets.
- The organization and management of "integrated rejuvenation" workshop to stimulate the exploration of new plays and "managed collaboration" seminars to maximize recovery from existing fields

6.0 COMPETITION

The geological data and solution industry is competitive. However, most of the existing players are multinationals with multiple lines of businesses. This has resulted in the significant under investment in new technologies by these incumbents, especially regarding advances in cloud computing and decentralised networks.

Rocksolve has the advantage of being the first cloud based geological data company with integrated apps. A decentralised solution backed by ROIN also represents a value chain model that differentiates Rocksolve. A summary of major competitors and the reasons for regarding Rocksolve as a better proposition is shown below:

Competitors	How our solution is better
<i>C&C Reservoirs</i>	Cloud based project apps, more , cheaper
<i>Schlumberger - OFM</i>	Cloud based, cheaper, fit smaller ops
<i>Halliburton Landmark</i>	Web-based cloud apps, cheaper, for all
<i>WoodMac</i>	Geological focus, cheaper, cloud based
<i>WellCAD- CoreCAD</i>	Cloud based, cheaper, integrated

7.0 STRATEGY TO WIN

Rocksolve's strategy to win is based around five key areas:

1. **Innovation** - Always stay ahead of the competition by continually seeking the best technology and applying it to maintain its competitive advantage.
2. **Cost** - Keep it low and stay low. Use contract suppliers when necessary and keep the team small and lean to enable rapid adaption to meet changing market conditions.
3. **Pricing** - Something for all. Ensure our product ranges are priced to grow market share and profitability.
4. **Diversify and Growth** - Continue to seek opportunities to diversify into further markets or acquire to keep Rocksolve growing.
5. **Strategic Partnerships** - Establish partnerships to build ecosystems. Rocksolve has already established partnerships with several organisations and will keep looking to expand this number when suitable.

8.0 VALUE CREATION MODEL

We expect future rise in Roin value to come from three main sources:

1. Payment in Roin for Rocksolve's proprietary software suite (Geosolve, Logsolve, Seissolve, Mapsolve and Modsolve) to customers
 - a. Free Geosolve mobile app download on app stores for basic data gathering and viewing – IOS and Android.
 - b. Packaged enterprise access for companies paying negotiated license fees and annual maintenance fees – an example will be R5,000 per license (at Q3 2017 rates).
 - c. Hourly rates or Project based fees for consultancy.
2. Sale of 'Big Data Analytics' through the Geotelligence project, based on aggregated user input of geological information
3. Commission on sale of third party digital assets through the Rocksolve marketplace.

4. Consultancy fees for setting up, training and delivering bespoke technologies and projects

9.0 ROCKSOLVE TEAM

1. **Gideon Giwa** - Chief Executive Officer

Gideon is a geologist by training and Interned with Chevron Oil before joining Royal Dutch Shell as a geologist, new ventures explorer solving business problems. He is also active in the community as a speaker at international conferences of geologists (2 paper presentations are scheduled for London and Lagos in Q4, 2017). He resigned his appointment with Royal Dutch Shell to to start Rocksolve, after 15 years working in Shell's London, The Hague corporate headquarters and Nigeria offices.

He is responsible for developing the company vision, mission and strategy to win. He is also hands on with delivering geology based solutions, marketing and building strategic relationships. He enjoys working with people and tools but has a keen focus on delivering value to all stakeholders.

Gideon has a passion for learning and seeking new and innovative ways to solve problems. His personal motto is "providing solutions, getting things done". When not solving rock related problems, he is playing golf nearby.

2. **Chris Brown** – Chief Technology Officer

Responsible for IT infrastructure, computer resources and software development, Chris comes to Rocksolve with a wealth of digital wisdom.

Chris graduated in Chemistry from the University of Bristol then promptly embarked on a career in software engineering for corporate giants such as British Airways, Lotus/IBM and Dell. He is responsible for translating the architecture of geological insight from the team at Rocksolve into mobile responsive technology.

Professionally qualified in business management with an MBA from Ashridge and with a recently gained PGCE, Chris has a perfect perspective on translating business problems into technological solutions.

3. **Annie Penn** – Chief Communication Officer

A constantly energized Annie Penn keeps the Rocksolve team inspired with creative campaigns in bought, owned and earned marketing operations. Steeped in decades of crafting projects for independent agencies, Annie offers the group a unique understanding of how to champion talent on traditional and digital media stages.

Responsible for growing the Rocksolve brand through various international avenues means Annie co-ordinates authentic projects that reinforce the expert team as a reliable crew equipped to answer complex geological issues.

4. **Tom Pakenham-Walsh** – Project Development Geologist

Equipped with an excellent degree in Geology from Durham University and a further Master's Degree in Integrated Petroleum Geoscience, Tom joined Rocksolve at the beginning of 2016.

Working with subsurface experts in the rock and minerals industry has given Tom an expectation of future goals for geologists of today. And being technically competent on platforms other than oil rigs ideally places Tom as the one to build a solid social foundation for the Rocksolve multi-media channels.

10.0 THE ROCKSOLVE TOKEN SALE

Token Name	ROIN
Launch Date	11 th September 2017 12:00:00 UTC
End Date	30 th September 2017 12:00:00 UTC
Issuing Price (Locked)	1 ROIN = XLM 50 or \$1

Total Number Issued	60 000 000 (Final release - Issuing Account locked), 50 000 000 released during the ICO
Early Bird Discount	25% off the first 2 000 000 Roin 20% off the next 1 000 000 Roin 15% off the next 1 000 000 Roin 10% off the next 1 000 000 Roin

ROIN tokens will be offered for sale on the Stellar blockchain platform direct from Rocksolve. It will be priced against the Stellar Lumen crypto- currency (XLM) and can be bought with XLM coins or its equivalent value in USD or GBP fiat currency. It will be listed on other digital exchanges at the end of the ICO.

ALLOCATION OF COINS

Rocksolve founders = 5%

Rocksolve Operations = 10%