Oil and Gas Supply Chain - White Paper

Purpose built protocol for supply chains in the drill waste management sectors of the oil and Gas industry based on blockchain

Putting oil and gas waste management on the blockchain

November, 2017 v16.0 Oil and Gas Supply Chain

Abstract

Increased awareness and legal enforcement of the oil and gas industry's environmental responsibilities are creating a commensurate need for effective and efficient technologies that help the industry clean the waste products their activities invariably generate.

With their cooperation, Oil and Gas Supply Chain (OILSC) is moving the supply chains and contracts of many of the world's largest companies, government departments and organisations that specialize in the waste disposal sectors of the Oil and Gas industry onto the block chain. Using bespoke smart contract GUI's that conform to the current layouts on the Oil and Gas Supply Chain platform we will make this process more time and cost effective and move this process closer to worldwide compliance and a cleaner world.

The Oil and Gas Supply Chain (OILSC) token is designed to be the medium of transaction within a smart contract between the oil and gas company itself and all the drill management and waste disposal service providers. OILSC token will be supported by major companies and organizations with years of experience in providing full services in drilling waste management, solids control and complete 'backyard' solutions to required post drilling environmental protection regulations worldwide.

Drill management/solids control/'backyard' solutions includes pumping fluid, 'mud,' into the well hole to stabilize pressure, reduce friction and to remove drill cuttings. Once topside, the drill cuttings go through a three-stage environmental process to separate the cuttings into manageable waste including removing any naturally occurring radioactive material (NORM) through thermal desorption.

Any residual petrochemicals, up to 20%, are returned to the oil company as part of an Oil and Gas Supply Chain smart contract. Any remaining solid waste is recycled and, also through an Oil and Gas Supply Chain smart contract, can be used in both private and government construction projects, for example asphalt roads, schools, hospitals and housing. The final element is clean water.

This process is well established with blue chip oil and gas operators in compliance with required international health, safety and environmental standards.

Due to the nature of our affiliations/partnerships, the OILSC token, Oil and Gas Supply Chain smart contracts and applications are designed to address the specific issues and challenges within the oil and gas industry. However, we fully believe that these solutions will be adopted as the standard for many Supply Chain needs worldwide.

## The global Oil and Gas drilling waste management market place

Rapid technological developments are improving the drilling and production capability aid exploration and production activities in the deep-water and ultra-deep-water areas across the globe. These factors are also boosting the drilling waste management market.

The global drilling waste management market is estimated to have been US$ 3.80 Billion in 2016 and is projected to reach US$ 5.08 Billion by 2020 at a CAGR of 6.0% due to stricter waste management regulations and high cost of the treatment.

The current increase in energy demand is creating a rise in oil and gas exploration and drilling activities from such regions as North America and the Middle East. This increase is causing a surge in drilling mud and cuttings waste and it is therefore very important to have suitable waste management applications for drilling purposes and safeguarding the environment. This increase in production and exploration activities provides opportunities in drilling waste management.

Drilling waste management contains three types of processes: solids control, containment and handling, and treatment and disposal. The market is further segmented by application and type of service and is again divided by onshore and offshore. The onshore application market occupies the major share of the application segment and is expected to grow at a steady rate during the forecast period.

Drill Waste Management Market, by Region 2020 (USD Billion)
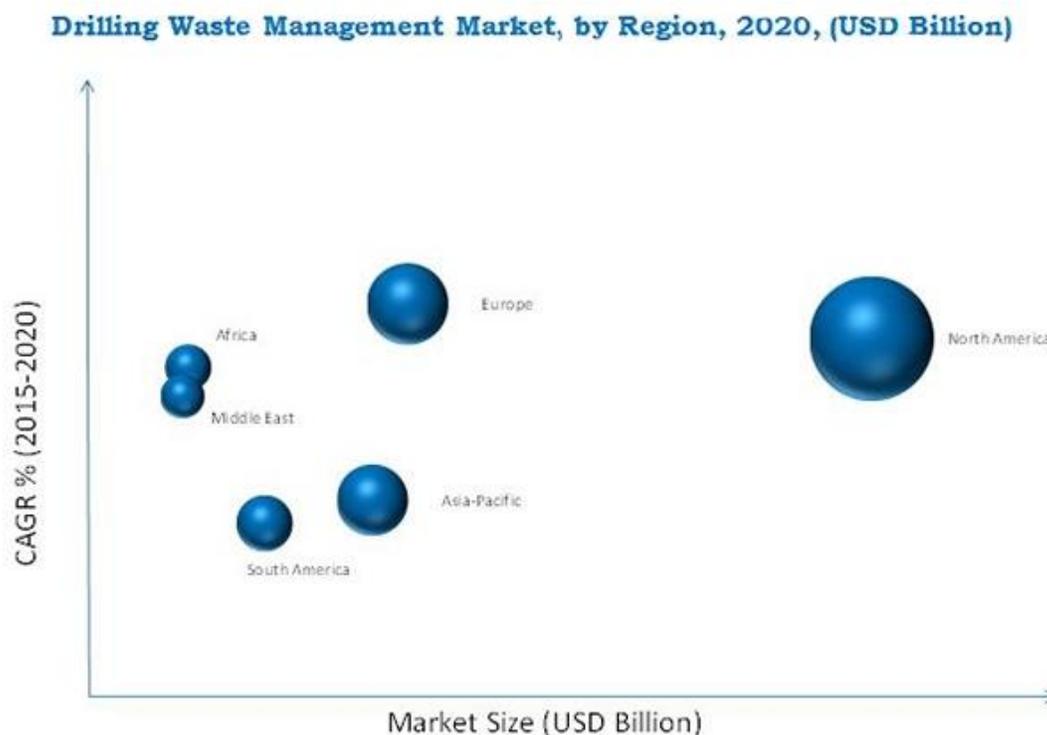
Various players in the market are focusing on contracts and agreements for their geographical expansion and surge in the customer base. For instance, Halliburton Co. waste management services are provided under the product name Baroid, which gives solutions to waste handling & transport and waste treatment & disposal.

Oil and Gas Supply Chain - Smart contracts for the H_2O sector.

IMAGINE | ◊ | H_2O

Most people outside the energy industry don't know that the average onshore oil well produces ten times the volume of water as oil, all day, and every day. In fact, the cost of dealing with this 'produced water' is the primary cost of operating an oil or gas well. Moving, treating and disposing of the water is half to two-thirds of the total cost of producing each barrel of oil.

While energy production requires water as an input, the industry is a net generator of surface water. By tapping into prehistoric water that has been trapped for eons below impermeable rock, the production process generates water without depleting groundwater stocks—something no other industry does.

In California, the production process creates a thousand times more water than the energy industry uses. Most of the produced water goes right back down the well for enhanced oil recovery. But it doesn't have to – it could be treated and reused on the surface. We are not the only ones to notice this: at the Global Water Summit in Abu Dhabi, the Executive Editor of The Economist, David Franklin, said that the world's largest company in 2050 could be "ExxonHydro."

Oil and Gas Supply Chain can implement smart contracts on its platform; an efficient water marketplace is going to lead to more recycling, more conservation, and more investments into water treatment technologies. Not limited to the energy sector, a marketplace model has the potential to improve sustainability for every major off-grid user including agriculture and industry. With an effective system in place, all kinds of water, not just freshwater, can be appropriately valued, traded, and put to its best use.

This will allow Oil and Gas Supply Chain great opportunities to scale into other industries.

The Oil and Gas Supply Chain block chain, smart contract and application adds value to all inter-dependent partners within the oil and gas Supply Chain by providing such benefits and efficiencies as:

- Allowing IT providers within the oil and gas industry to easily set up blockchain supported data
- Enabling transparency and tracking beyond the "one step down, one step up" principle
- Protecting brands from fraudulent behavior
- Driving efficiencies for all stakeholders
- Connecting IT systems of different stakeholders in multi-organisation supply chains
- Ensuring integrity of data
- Publicly decentralizing performance, cost and scalability
- Providing a tailored system for Supply Chain data based on blockchain
- Creating various Supply Chain applications using the described protocol

Incorporating third party technology providers (Supply Chain software companies, ERP providers, IoT providers, software development companies) or in-house Supply Chain technology teams

- Authenticating product data
- Establishing product journey visibility
- Improving recall efficiency, custody and accountability
- Supporting CSR activities
- Mapping and optimizing the trading network
- Managing inventory
- Increasing alert systems
- Assuring Supply Chain compliance
- Optimizing the customs, audit and regulations process
- Automating data connectivity and interoperability
- Standardizing data formats

Why the OILSC token?

For most people, the first introduction to crypto-currencies and its applications was the popularity of Bitcoin. OILSC tokens are similar to Bitcoin in that they are secure, instant and cost less compared to traditional payment processes. Oil and Gas Supply Chain smart contracts ensure automatic payments at time of delivery and are executed in an efficient and transparent manner.

The Oil and Gas supply Chain aims to operate on a smart contract hub, offering secure and thoroughly tested contract templates for companies that are tailor fitted for the oil and Gas industries and use cases, including Supply Chain management, telecommunications, IoT, social networking, sub-contracting and many more, this allows the supply chains in the oil and Gas sectors to operate more securely, efficiently and cost effectively on the Ethereum network using Oil and Gas Supply Chain tokens (OILSC) as the payment gateway.

It is now possible to execute smart contracts through an ecosystem for making fast and safe deals on the Ethereum blockchain. It requires no programming skills and features a user-friendly interface for creating complex smart contracts. In case of disputes, parties can have them resolved through qualified arbitration.

Oil and Gas Supply Chain is a unique solution allowing IT providers in supply chains to set up blockchain supported data sharing in multi-organizational environments. It helps them build transparency beyond the "one step down, one step up" traceability principle. Furthermore, it improves the integrity of product data and drives efficiencies for stakeholders. The Oil and Gas Supply Chain solution is being developed and tested by our Dev team Simform. It is also being discussed regarding deployment with long established drill management companies such as DCDC in the USA and Oil and Gas supply companies including BDC and SADP in The Kingdom of Saudi Arabia. Please visit our website http://oilsc.io for further details.

Several major energy firms are already partnering on a new blockchain-based trading platform. BP, Shell and Statoil are backing the platform which represents the latest application of the tech to the energy space. The consortium of firms built around the platform also includes ING, ABN Amro and Societe Generale, as well as trading firms, Gunvor, Koch Supply & Trading, and Mercuria. (SOURCE Commodity Trading Consortium).

After the full development, deployment and implementation of the system in the Oil and Gas Supply Chain sector we will roll the system out into other sectors

Only 180,000 million OILSC tokens will ever be created.

130 million OILSC tokens will be offered in the pre-ICO and ICO sales. 50 million OILSC tokens will be held by Oil and Gas Supply Chain for future expansion and development rewards, marketing, incentives and back office.

The Pre-ICO will start on the 10th December 2017 GMT. The pre-ICO sale price is 3,850 tokens for every 1 ETH, the minimum contribution is 0.1 ETH (385 tokens) and ALL participants in the pre-ICO will receive an additional 100% allocation, doubling your tokens.

After the pre-ICO, the remaining OILSC tokens will be offered in the full ICO sale on 10th January 2018 GMT and will last for 6 weeks. The ICO sale price is 3,850 tokens for every 1 ETH. Contributors of three (3) Ethereum or more will receive a further 25% allocation and Contributors of five (5) Ethereum or more will receive a further 40% allocation of tokens.

Token Contract Address: **0x907f3d093b6a3d599ac940c8f3ce21b4858f3618**
Token symbol: **OILSC**
Decimals: **18**

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1.   **What is the Blockchain Technology?**

Blockchain – a term that has been growing in use for a while now. Blockchain technology and is frequently described with words like 'game changer' or 'revolution'. But what is Blockchain exactly, and what role will it play in the future logistics or Supply Chain management?

In essence, Blockchain is a technology for decentralized storage of transactional data. The storage of a transaction is organized in so-called blocks, while following transactions are stored in new blocks, the sum of several blocks makes up a chain; a logical sequence of transactions. Every transaction contains a timestamp and is secured by a cryptologic process. This chain works like a database which is updating information continuously, with the difference that the chain is stored on every hard drive or computer that is part of the Blockchain network. All changes are recorded and encrypted, in real-time and in an audit proof way. Additionally, the changes are authenticated based on the consensus principle. This means that all members of the network can verify transactions at any time.
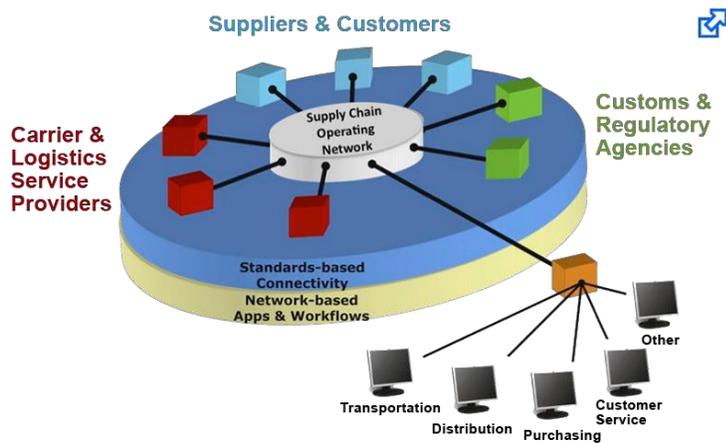
2.   **Supply chain challenges**

With the globalization of trade there is increasing complexity in supply chains. This, in turn, increases the amount of information asymmetry - such that information is unevenly distributed among participating stakeholders within a supply chain. When these stakeholders have misaligned incentives, such as the case in which participating stakeholders are different companies, there is no incentive to provide complete information which contributes further to information asymmetry.

As a result, end-buyers of products have no economical way of authenticating what they are purchasing, which creates ideal conditions for moral hazard and fraudulent behavior.

2.1.   **Fragmentation of data and opacity of supply chains**

The current state of Supply Chain data management solutions involves a number of localized information systems, ERP systems and custom solutions. In order for them to communicate, custom integrations need to be implemented. Often referred to as "data silos", these centralized systems lack a common technical environment, security, and exchange protocols to facilitate data sharing.

3.   Oil and Gas Supply Chain- Purpose built cryptocurrency for supply chains based on blockchain
Oil and Gas Supply Chain is a solution allowing IT providers to easily set up blockchain supported data sharing in supply chains. It enables building transparency and tracking beyond the "one step down, one step up" principle, protecting brands from fraudulent behavior and driving efficiencies for all stakeholders.

Oil and Gas Supply Chain brings:
1.   Seamless and automatic data connection and interoperability between IT systems of different stakeholders in multi-organisation supply chains, with consensus mechanisms for ensuring integrity of data.

   2. A public decentralized solution for performance, cost and scalability issues by providing a tailored decentralized system for Supply Chain data based on blockchain. Direct users of the Oil and Gas Supply Chain are therefore developers creating various Supply Chain applications using the described protocol. Users can be third party technology providers (Supply Chain software companies, ERP providers, IoT providers, software development companies) or in-house Supply Chain technology teams. Applications where Oil and Gas Supply Chain's protocol delivers value are:

● Product authentication
● Product journey visibility
● Product recall efficiency
● Product freshness for perishables
● Chain of custody with accountability
● CSR activities support
● Supply chain mapping and optimization within the trading network
● Inventory management
● Alert systems (exception management)
● Supply chain compliance assurance
● Customs, audit and regulations process optimisation
● And any other Supply Chain application that requires transparent Supply Chain as a starting point

   3.1   **Automatic data connection and interoperability** beyond the "one step back, one step forward" principle

Oil and Gas Supply Chain protocol enables exchange of different data sets between multi-organisation supply chains no matter its complexity while ensuring data quality and integrity. Input and sharing data with Oil and Gas Supply Chain is based on a common set of data standards which allow multiple organizations (companies involved in production, distribution of equipment and services) to exchange data beyond the "one step back, one step forward" principle.

3.1.1. **Data interoperability format**
In order to provide for uniform data flow, all information must be standardized within the ecosystem. While the XML with SQL support is a widely adopted file format for data exchange, content within the

file must be also standardized. Supply chain can span across the globe, where each member has its own local standards. For example, date and time formats are very different even in neighboring countries. Date 01/10 can be the first of October in one system, and the 10th of January in another. This defines the challenge that data sent to Oil and Gas Supply Chain must be standardized, and vice versa. This requires standardization not only the attributes and nodes within attributes of XML files, but also content.

Oil and Gas Supply Chain supports data such as, but not limited to:
● Master Data
● Transaction Data
● Visibility Data

3.1.2. Data consensus check as a tool for trustworthiness

When receiving information from stakeholders, Oil and Gas Supply Chain protocol performs a "consensus check" that verifies there are no discrepancies between data provided by different stakeholders. The check is performed in several steps:

Step 1. Each stakeholder has to be approved by the previous and the following Supply Chain stakeholder, creating a chain of accountability.

Step 2. Matching of dynamic batch information is verified, including the crucial information of batch identifiers, appropriate timestamps and transactional data. As this step involves company private data (e.g. quantities of sales), a Zero Knowledge Proof6 mechanism implementation will provide a way to check that private information matching is provable without revealing the information itself. Other dynamic data may include data collected from sensors and compliance data.

Step 3. As an additional layer of credibility, auditing and compliance organisations can validate data by supplying their confirmations. In cryptography, a zero-knowledge proof or zero-knowledge protocol is a method by which one party (the prover) can prove to another party (the verifier) that a given statement is true, without conveying any information apart from the fact that the statement is indeed true. This ensures the entire Supply Chain is in accordance with that batch of products.

3. 2. Oil and Gas Supply Chain Decentralized Network

In order to provide the optimal solution we implement the Oil and Gas Supply Chain protocol that runs on an off-chain decentralized peer to peer network, called the Oil and Gas Supply Chain Decentralised Network (ODN). It enables peers on the network to negotiate services, transfer, processes and retrieve data, verify its integrity and availability and reimburse the provider nodes. This solution minimizes the amount of data stored on the blockchain in order to reduce cost and inefficiency.

Oil and Gas Supply Chain supports many different blockchain implementations. The current version of Oil and Gas Supply Chain utilizes Ethereum blockchain to provide proof of concept and initial implementation. The fully developed solution will provide interfaces to many different blockchains.

There are multiple reasons for adopting this principle:

• Competing blockchain solutions will evolve in unexpected ways, which will influence the pricing of blockchain usage,
● More advanced blockchain solutions in the future could be integrated,

● Supply chain stakeholders already using blockchain solutions for various purposes will be able to use the same blockchain for Oil and Gas Supply Chain with an implemented method to use legacy chains

It is important to note that Oil and Gas Supply Chain uses a blockchain layer which presents an independent system and thus adds additional cost depending on the chosen underlying blockchain for some Oil and Gas Supply Chain functionalities. In case of Ethereum being the underlying blockchain, this means that a small amount of Gas (Ether) is also needed to store the necessary hashes on Ethereum for storage operations.

Read operations are also compensated with Oil and Gas Supply Chain TOKENs (OILSC). An exception where read can be free of cost is if certain conditions are met: if one has access to i.e. an Ethereum node for free reads from Ethereum (or another chosen blockchain from the blockchain layer), and if they hold a local Oil and Gas Supply Chain node which contains the necessary graphs.

The amount of tokens to be awarded for the nodes providing the service is a function of supply and demand between nodes and users. Data creators will not be required to pay any additional arbitrary fees apart from what they agree to pay to the nodes. On the other side, nodes will receive full payment of what they have agreed with and provided to the user.

The OILSC TOKEN is implemented as an ERC20 compatible token on Ethereum. This ensures interoperability with wallets and other tokens on Ethereum. The Oil and Gas Supply Chain smart contract handles all transactions and balances in a secure and trusted manner.

4.   What is a smart contract

A smart contract is a piece of software that contains rules and regulations for negotiating the terms of a contract. It automatically verifies the contract and then executes the agreed upon terms.
And when this smart contract's centralized code is made decentralized for execution purposes on the Ethereum blockchain, it becomes a smarter contract.
Coding and executing smart contracts on the Ethereum blockchain makes them immutable and independent from centralization.

Smart Contract's Characteristics on Ethereum
A smart contract has the following characteristics:

- Self-executing
- Immutable
- Self-verifying
- Auto-enforcing
- Cost saving
- Can remove third parties or escrow agents

  How Do Smart Contracts Work on

  Ethereum?

Developers write the code of smart contract using the native language of Ethereum called Solidity. These contract codes can be of many forms, such as the transaction of money when certain conditions are met, or the exchange of goods between parties.

Once the code is written, it is uploaded on the EVM- Ethereum Virtual Machine, which you can say is a universal runtime compiler or browser to execute the smart contract's code.

Now once the code is on the EVM, it will be same across each Ethereum node.
And each node will try to run and see whether the conditions are met or not.
A contract of Ethereum will involve two or more parties which will be fueled by the digital asset (Ether). Once the contract is executed successfully, the digital asset will be distributed or re-distributed according to the logics defined in the code.

4.1.   Why Trust an Ethereum Smart Contract?

As every transaction history and history of every executed code is stored on the blockchain, you can trust and verify everything when needed.

Even in the case of Harry's smart contract, Harry can't cheat Bob. Because once Bob has done his work, it will be verified by the blockchain and recorded onto it. Anyone, including Harry, can inspect the blockchain, hence resolving the conflict or protecting against cheating.

Moreover, Harry can't stop or manipulate this contract as the execution of this contract is no longer dependent on one single party or node. As Harry's contract is running on an EVM of the Ethereum blockchain, it is resistant to damage caused by a single point of failure. On the other hand, if these conditions are not met, then Bob will need to continue the work until the appropriate result is met.

4.2.   Blockchain Technology = Perfect for Supply Chain Management

Blockchain technology is all about the distributed public general ledger. This is what makes it perfect for Supply Chainmanagement. In a recent article for Harvard Business Review, you can read about how well blockchain works when it comes to the supply chain.

One of the biggest problems faced by companies with complex supply chains is a lack of transparency. Sometimes, if you have multiple suppliers across multiple states and countries, it can be hard to keep track of everything. Pinpointing issues can be difficult because of all the moving parts. This is where something like blockchain can shine.

Because of the way transactions are recorded and tracked using blockchain technology, it makes it much easier to see everything happening in real time. It's possible to monitor transactions, and the distributed ledger means that you get updates and see what's happening every step of the way.

Members of the network can see what's going on as it happens. Plus, this system helps keep all those involved accountable for their end of the bargain. It's a great way to get the whole picture, as well as drill down to individual aspects of the supply chain.

4.3.   Smart Contracts and Using Blockchain Supply Management

One of the reasons blockchain technology is so great for Supply Chain management has to do with the fact that smart contracts are a major part of the system.

With smart contacts, all the interested parties can see the terms of the agreement. On top of that, the agreements enforce themselves. In order to move forward, certain expectations have to be met. When the signatories meet those expectations, the contracts can be fulfilled.

This is a great way to enhance your Supply Chain management. With the use of smart contracts, you can make sure different suppliers are meeting their obligations. You can see deliveries at multiple locations, and track shipments based on the fulfillment of smart contract terms.

And, because it's all managed with a public distributed ledger, it's easy to see what's going on. In many cases, current supply chains still operate using reams of paper.

While some things are tracked in computers, you often need humans to go in and update systems before you can see what's happened. The combination of paper and the need for someone to update information in a system can mean that you might not have the most recent transactions. It might take hours — or even days — before a system is updated.

Smart contracts help eliminate some of that uncertainty and lag. Smart contracts are autonomous and automatic. That reduces the potential for human error and increases your access to timely and valuable information.

4.4.   Integrating Payment with Blockchain Technology

For most people, the first introduction to blockchain applications was the popularity of Bitcoin. And financial transactions are still one of the bonuses of working with blockchain technology.

Blockchain transactions are secure and instant. On top of that, they often cost less. Traditional payment processors charge fees and it can take multiple business days to complete a transfer of funds.

It's possible to upgrade Supply Chain management with the help of blockchain. Smart contracts could be arranged to take care of payment automatically, at the same time deliveries are made. The whole thing becomes part of the same transaction that is executed in an efficient and transparent manner.

If required you can create a distributed ledger that is more private. You still have access to the information and can make smart contracts, but the distribution is limited. You only have it sent to the interested parties.

Drilling Waste Management Ecosystem

ENGAGEMENT MODE

5.5   Engagement/development of the App/Platform

Development of the Oil and Gas Supply Chain App and platform for the Oil and Gas supply chain sector

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CURRENT DEVELOPMENT PROCESS IN GENERAL

PHASE 1: WIREFRAME

Wireframe is an essential step to start any project as it is the foundation for the end product. Wireframe is developed to make sure that we cover all the features and do not miss out anything before we move forward.

Project manager will analyse the requirements and will identify each screen as well as features to be shown on that screen. AXURE or BALSAMIQ tool will be used to create wireframe for each screen. These wireframes will be grey scale and will NOT be polished in terms of UI.

PHASE 2: UI DESIGN

When the wireframes have been finalized, we'll use the updated visual identity as a jumping off point and begin to flesh out the overall look of the App.

Our background colours, and created styles for paragraphs, headers, links, and any other visual information will be consistent throughout the App.
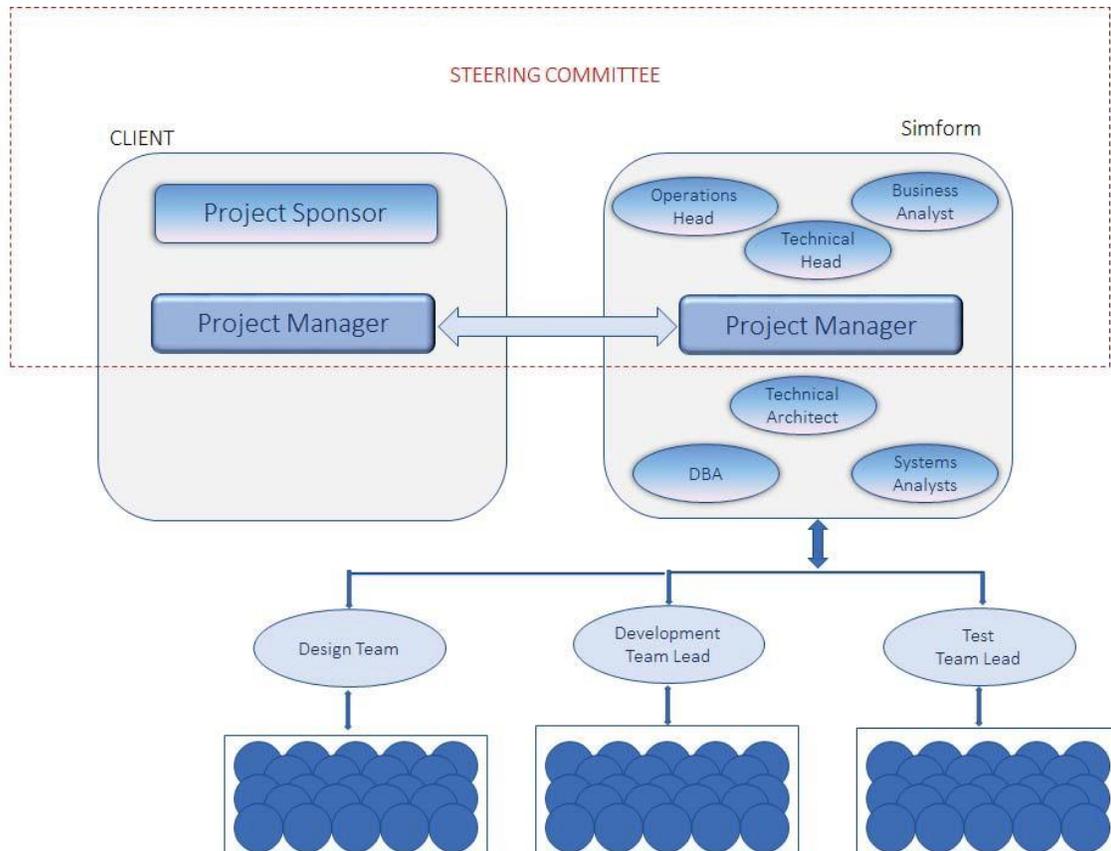
PHASE 3: SPRINT DEMOS

Once the design mock-ups have been completed, the Project Manager will divide the development phase into multiple parts called Sprint demos and create a plan which will include the required number of sprint demos, features to be implemented in each.

We use AGILE Development methodologies so that the users are active participants during each development sprint.

PHASE 4: DEPLOYMENT

Once we're sure all is as it should be, double-checked everything, and we have the final build, we will upload the site/app for its official launch.

PROJECT CHARTER

STEERING COMMITTEE

CLIENT

Simform

Project Sponsor

Operations Head

Business Analyst

Technical Head

Project Manager

Project Manager

Technical Architect

DBA

Systems Analysts

Design Team

Development Team Lead

Test Team Lead

CLIENT - TEAM COLLABORATION

1} iOS, Android and Web developers will work concurrently to ensure quick development 2} We use the following tools for collaboration during project

ACTIVITIES	TOOLS
Project tracking and management	Zoho PMS
Design & Wireframes	Invision, Photoshop, Sketch, Balsamiq, Axure
Testing	Appium
Build Release	Testflight, Crashalytics, Fastlane
Source Code Management	Bitbucket
Other Communication	Skype, Slack, Email

COLLABORATION TOOLS

Simform's development process is designed in such a way that after each development phase the Oil and Gas Supply Chain is provided a demo and asked for feedback based on which continuous iteration is done.

The following Collaboration and Communications Tools are used for this purpose, Zoho PMS, Skype, Slack, Join.Me, Go to Meeting, UberConference, invision, Github & Bitbucket.

Invision

Invision app will be used to share the design mockups with the Oil and Gas Supply Chain and for discussing the feedback on designs. It will work as a clickable version application and clients can use it like an actual app to navigate through different screens.

OILGT can also share their views and feedback on different screens through the Invision

Zoho PMS

Zoho project management systems will be used for project management and tracking. All project related documents like the project plan, schedule, milestones and dependencies will be uploaded and managed in Zoho as project progresses.

Access will be provided from the beginning of the project so we can track the daily updates and real time progress of the project using Zoho.
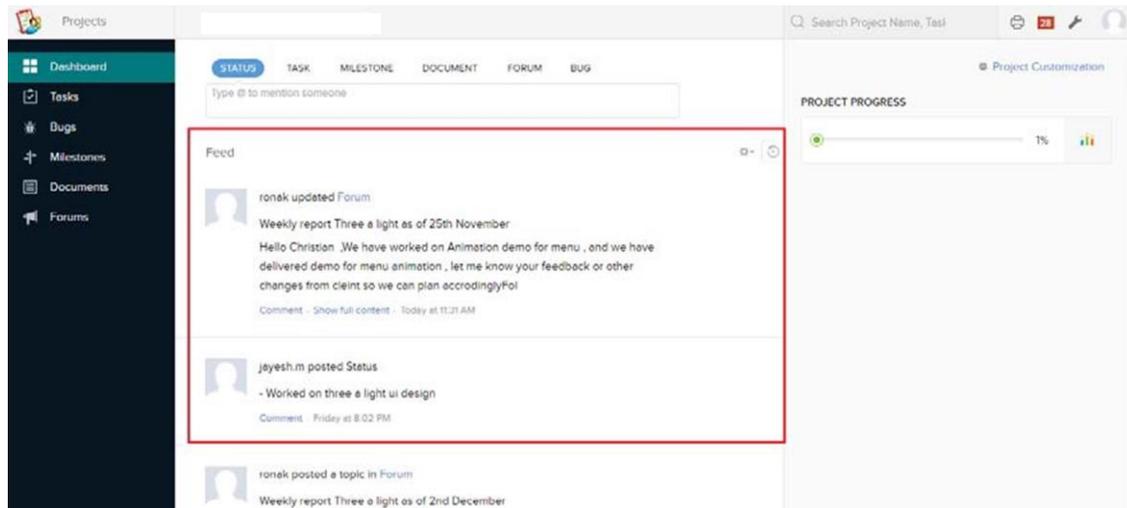
We will be able to assign new tasks to the team and track the progress on the task.
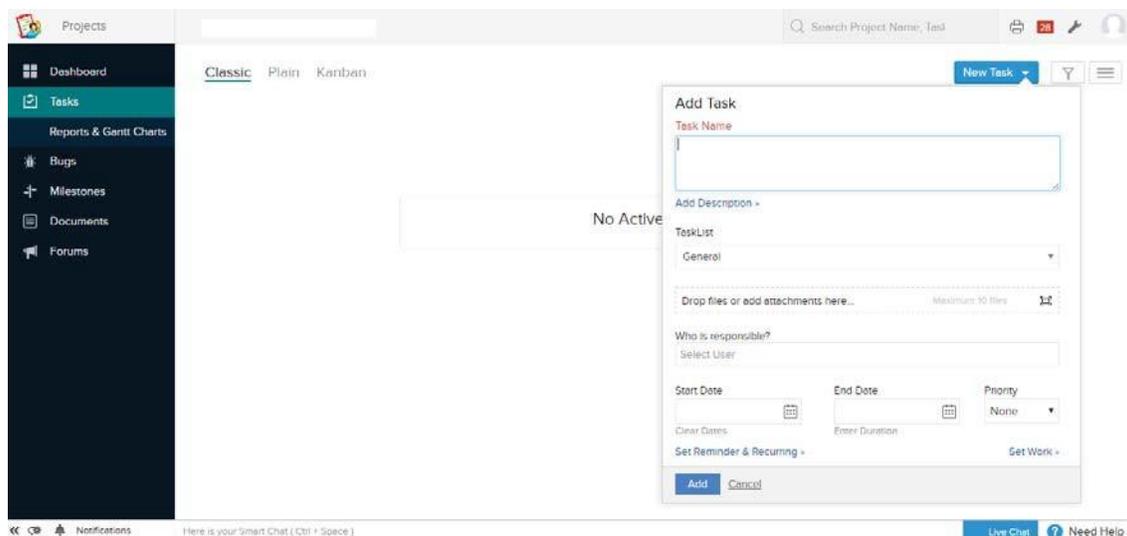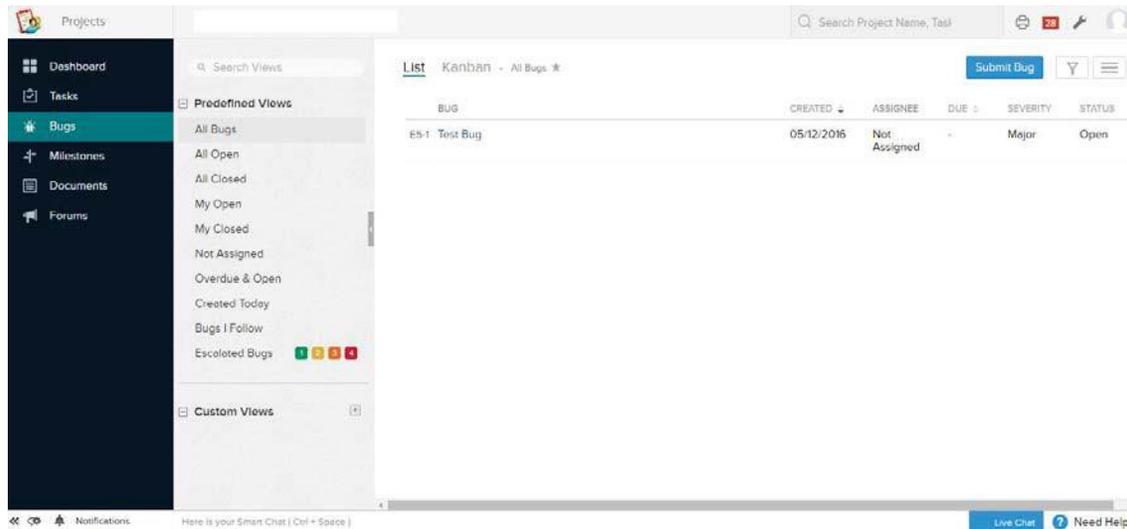

Also we will be able to share their views and report bugs using the Zoho platform and can check the status of issues daily.

Bitbucket

Bitbucket will be used for source code and version control management. It will also be used to share the source code with the Oil and Gas Supply Chain.

Bitbucket Pipeline will be used for continuous delivery

The forum can be used to start discussions with the entire development team and check the weekly reports and other updates made by the development team in the forum.
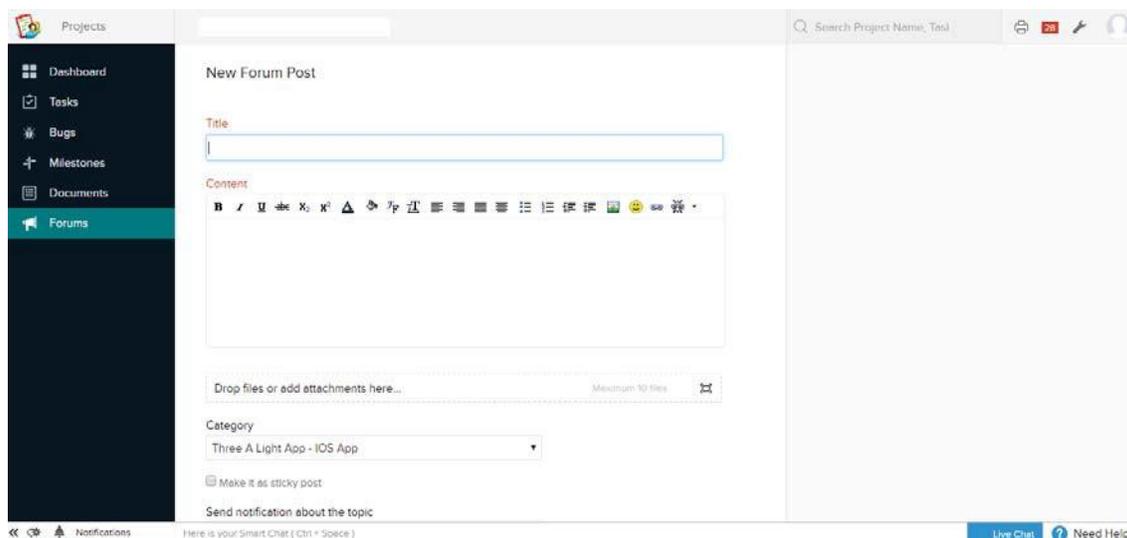
An email notification will be sent to all participants for the forum discussions.

Testflight, Crashalytics, Fastlane

Fastlane will be used for automating the build releases after each sprint. We will be using Testflight for releasing the iOS builds and Crashalytics will be used for releasing Android sprint demos to the beta users.

Crashalytics and Testflight provides deep and actionable insights, even the exact line of code your app crashed on

REPORTING

Project Plan
The PM will share the project plan once the design phase is approved. The project plan will have Sprint - wise feature breakup and the delivery date for each Sprint.

Weekly Reports
The PM will share weekly reports with the clients every Friday. The weekly report will have work done in the current week and the work planned for following week.

Release Notes
The PM will share release notes with every Sprint demo highlighting the features implemented in that Sprint.

Project Documentation At different stages of the project, we will create and share the following documents as a part of project service:

A. Discover
   a. Scope of Work document
B. Design
   a. Mockups
   b. Design Theme
   c. Design Files
   d. Sliced Assets
C. Develop
   a. Project Plan
   b. Test Plan Document (Test Cases}
D. Deploy
   a. Commented Source Code
   b. Deployment Document

POST GO LIVE SUPPORT

1. Post Go Live Support will be provided for a period of one month after completion of testing.

2. The contact points for post go live support with respect to any development, testing and bug fixing will be the same Project Manager with his/her team (who developed the application}. Support will include any bugs / issues, upgrades in accordance with Apple/ Google operating systems, implementation of fixed/upgraded versions of apps and answering client queries.

Maintenance Contract
After the end of Post Go Live Support, further support will be extended by agreeing on a maintenance plan.

Engagement with Oil and Gas Supply Chain and their clients:

MODEL	PROJECT SCALE	PROJECT SCOPE	PROJECT DURATION	PROJECT DURATION
Dedicated Team	All	Flexibility to Change	Ongoing Long Term Milestone	Resource Based
Time & Material	All	Flexibility to Change	Ongoing Long Term Milestone	Effort Based
Milestone Driven	Medium to Large	Clear Definition for Later Phases	Ongoing Long Term Milestone	Initially Resource Based Then Milestone Based
On going	Medium to Large	Clear Articulated Scope, Less Flexibility in Scope Changes	Ongoing	Milestone Based