



# ZynerTrail

A Generic Blockchain Platform

# Product Introduction

- ▶ A generic blockchain platform to trace the origin and properties of a product in real-time
- ▶ Make use of Blockchain's properties to make data:
  - ▶ Immutable - can't be changed once created
  - ▶ Traceable - track who create/change/delete and when
  - ▶ Transparent - owned/managed by parties with permission
  - ▶ Available - de-centralized without service down-time

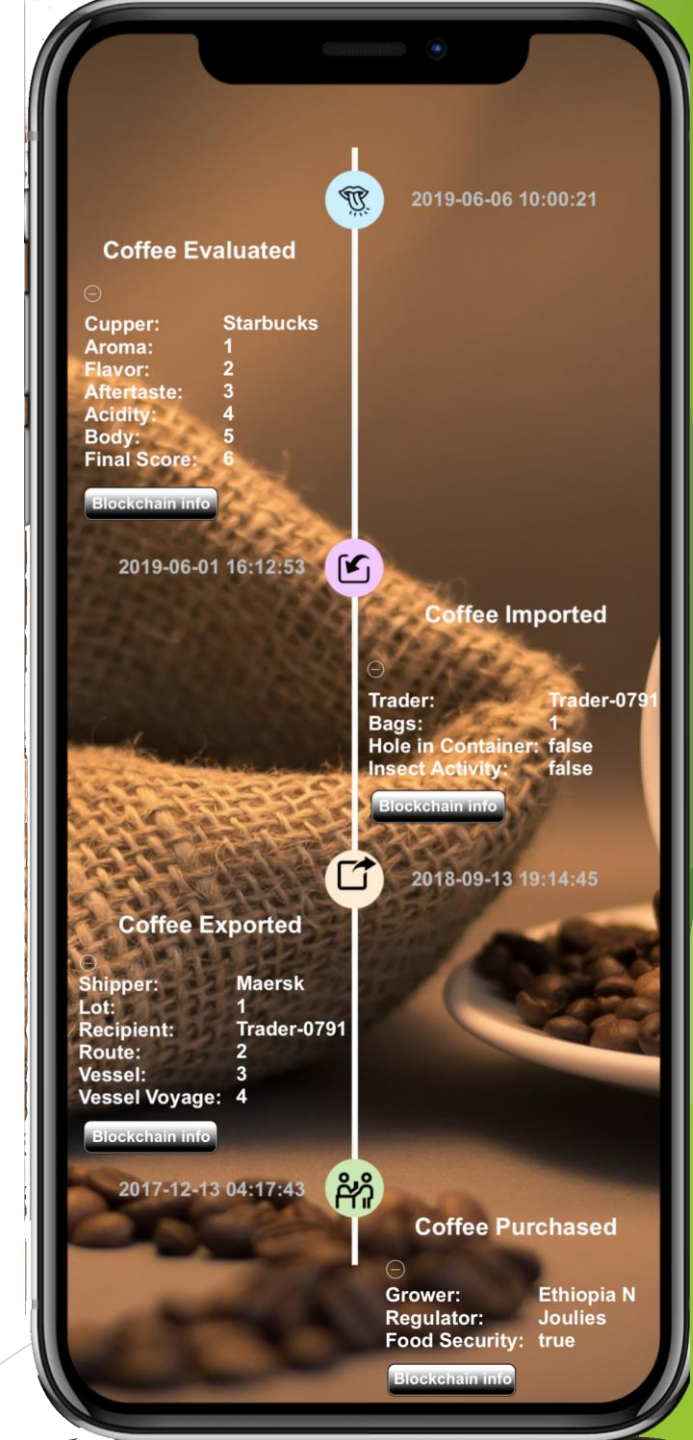
- ▶ Presentable front-end to show the history and properties of a product
- ▶ Intuitive, easy-to-use back-end to visualize blockchain status and manage data
- ▶ Customize the platform to fit any product of any industry with ease (e.g. Supply Chain, Retail & Consumer Goods, Banking & Finance, Healthcare, Education..... )
- ▶ Blockchain as a Service (BaaS) model ready to reduce your up-front investment

Presentable Front-end

# Sample Application I: Coffee

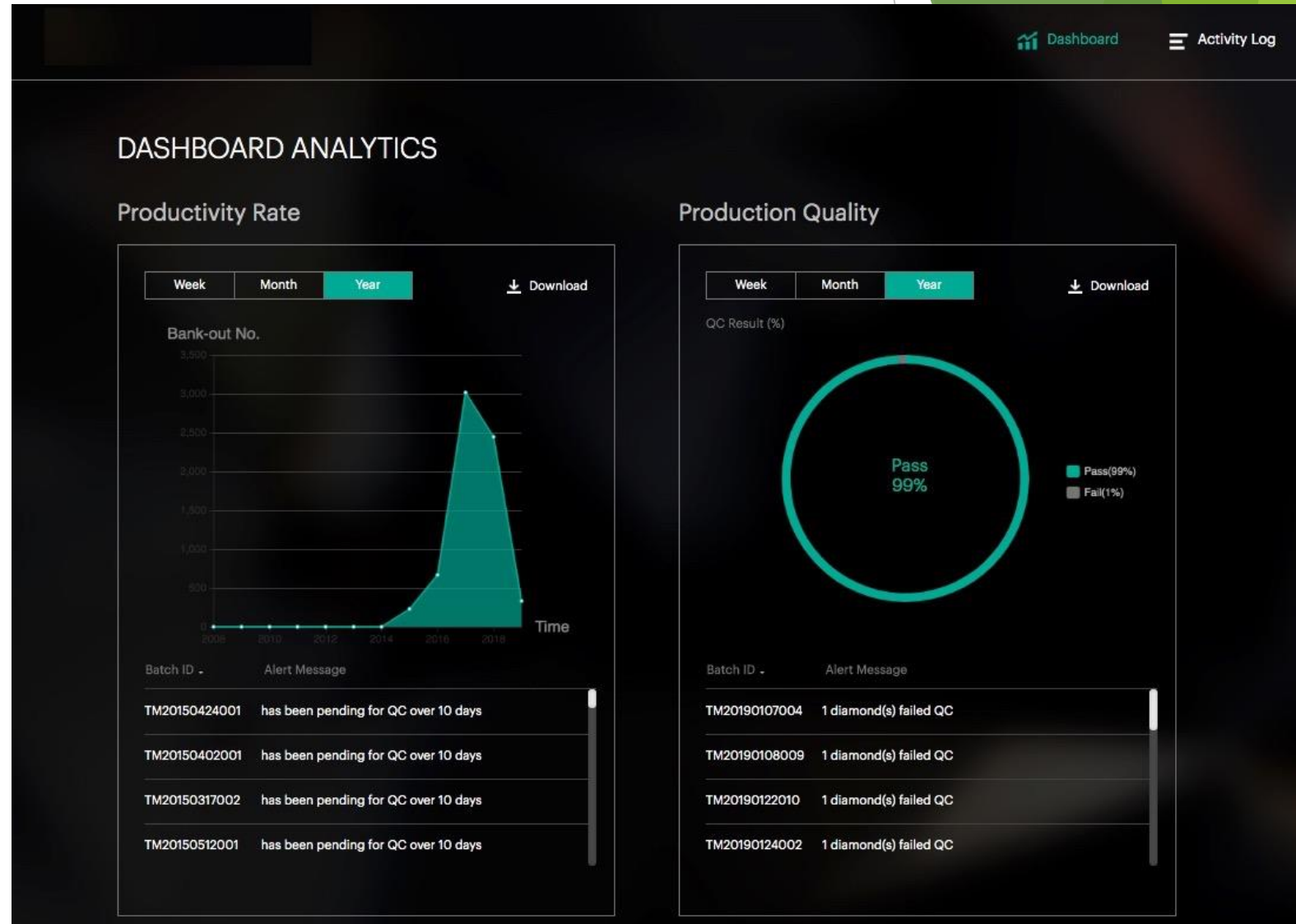


- Trace the properties and origin of coffee bean of your coffee
- Simply scan QR code printed on the cup
- Or type in the cup ID on the APP
- Information of the coffee bean instantly display
- Presented in form of timeline
- Click on section header to show details



# Sample Application II: Diamond

- Trace details of all steps of diamond processing
- Dashboard showing productivity rate and quality of diamond production
- Diamonds grouped by batches. Drill down to view batch details





- Show the overall production status of diamonds
- Function to search for a particular diamond
- Drill down to view the details of a diamond

Dashboard

Activity Log

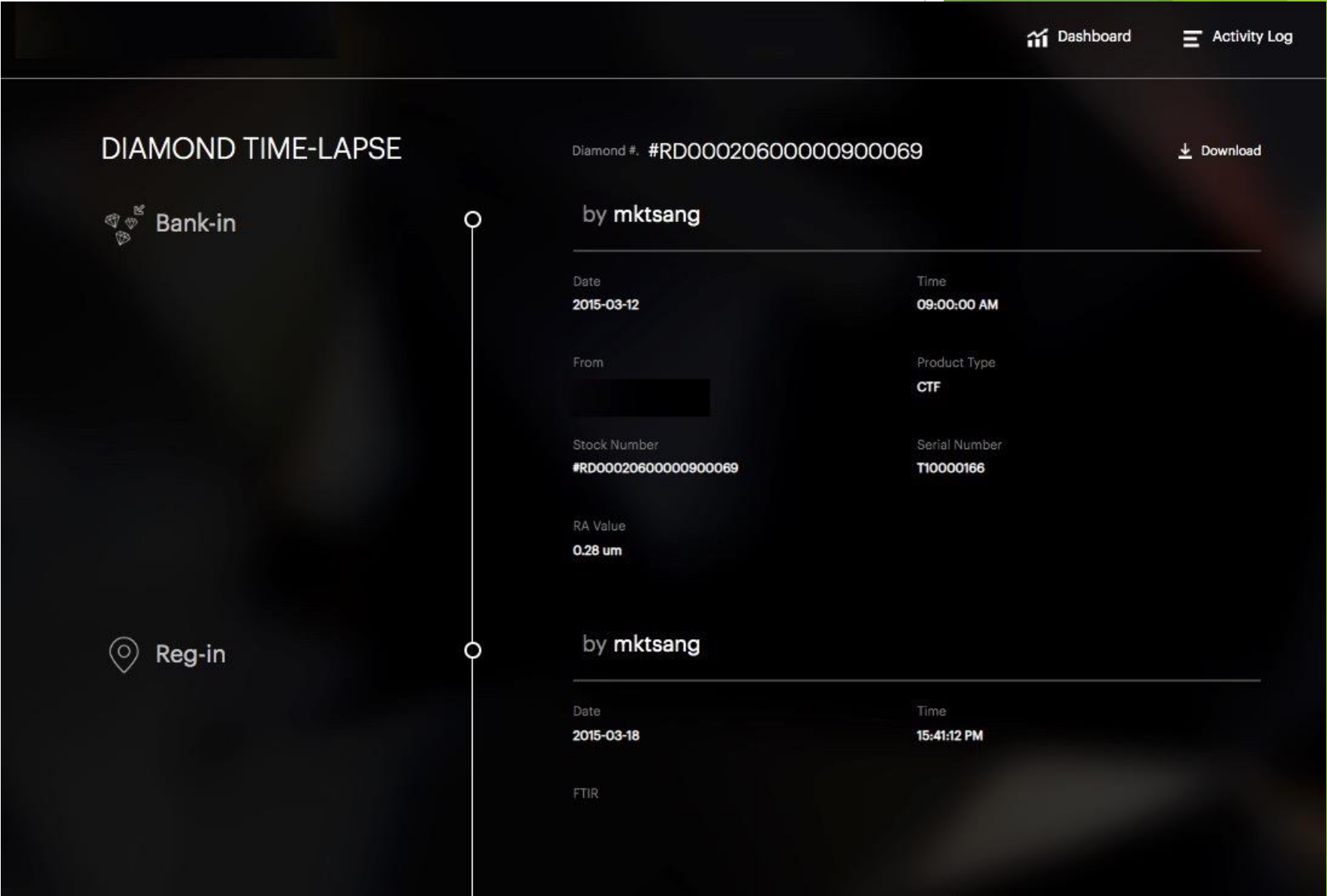
ACTIVITY LOG

Search


Download

Date & Time	Batch ID	Diamond ID	TMARK No.	Stage	Image	Operator	Details
2015-03-12 09:00:00 AM	ViewerTest	CD00005800000500372	T10000065	<div></div> Qc			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150317001	CD00005800001000048	T10000089	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150317001	CD00005800001100474	T10000092	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150317001	CD00005800001100475	T10000093	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150317001	CD00005800001100490	T10000099	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM		CD00006400000900002	T10000106	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM		CD00006500000300076	T10000112	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150317001	RD00019800000400404	T10000150	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM		RD00019800000600171	T10000159	<div></div> BankIn			<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150318002	RD00020600000900069	T10000166	<div></div> BankOut		hwang	<a href="#">View</a>
2015-03-12 09:00:00 AM	TM20150318002	RD00023300000101165	T10000180	<div></div> BankOut		hwang	<a href="#">View</a>


- Production timeline of a particular diamond
- Show the details of each production process




- Photo to record the defects of a diamond
- Record who is responsible for the processes and when they happened


 Marking


Mark Image


  
noqcimage.png

 Quality Control

Status

  
Pass

 Reg-out

 Bank-out

by **wmho**

Date  
2015-04-10

Time  
09:01:29 AM

Mark Type

Text Message

Image Message

Remarks

by **mktsang**

Date  
2015-04-13

Time  
15:09:42 PM

Status  
Pass

Defect Image

by **hwang**

Date  
2015-05-11

Time  
19:07:45 PM

by **hwang**

Date  
2015-05-11

Time  
19:07:45 PM

Intuitive Back-end

# Data Management

## - List/Add/Modify/Delete

Blockchain

Search

John Smith

+ Data Management

Cup

Batch

Member

Blockchain Explorer

Member

Member

Data Management / Member

Add

Member List

Member Id	Member Type
BrooklynRoasting	retailer
Ethiopia Nomad	grower
ICO	regulator
Joulies	regulator
Maersk	shipper
Neumann Kaffee Gruppe	shipper
Starbucks	retailer
Trader-0791	trader

<< Collapse Sidebar

[+ Data Management](#)[Cup](#)[Batch](#)[Member](#)[Blockchain Explorer](#)[⏪ Collapse Sidebar](#)

## Member

[Data Management](#) / [Member](#)

ID:

Type:

Organization:

Address-&gt;street:

Address-&gt;city:

Address-&gt;country:

[Add](#)

[+ Data Management](#)[Cup](#)[Batch](#)[Member](#)[Blockchain Explorer](#)[Collapse Sidebar](#)

## Member

[Data Management](#) / [Member](#)

ID:

Ethiopia Nomad

Type:

Grower ▾

Organization:

Africa

Address-&gt;street:

Bole

Address-&gt;city:

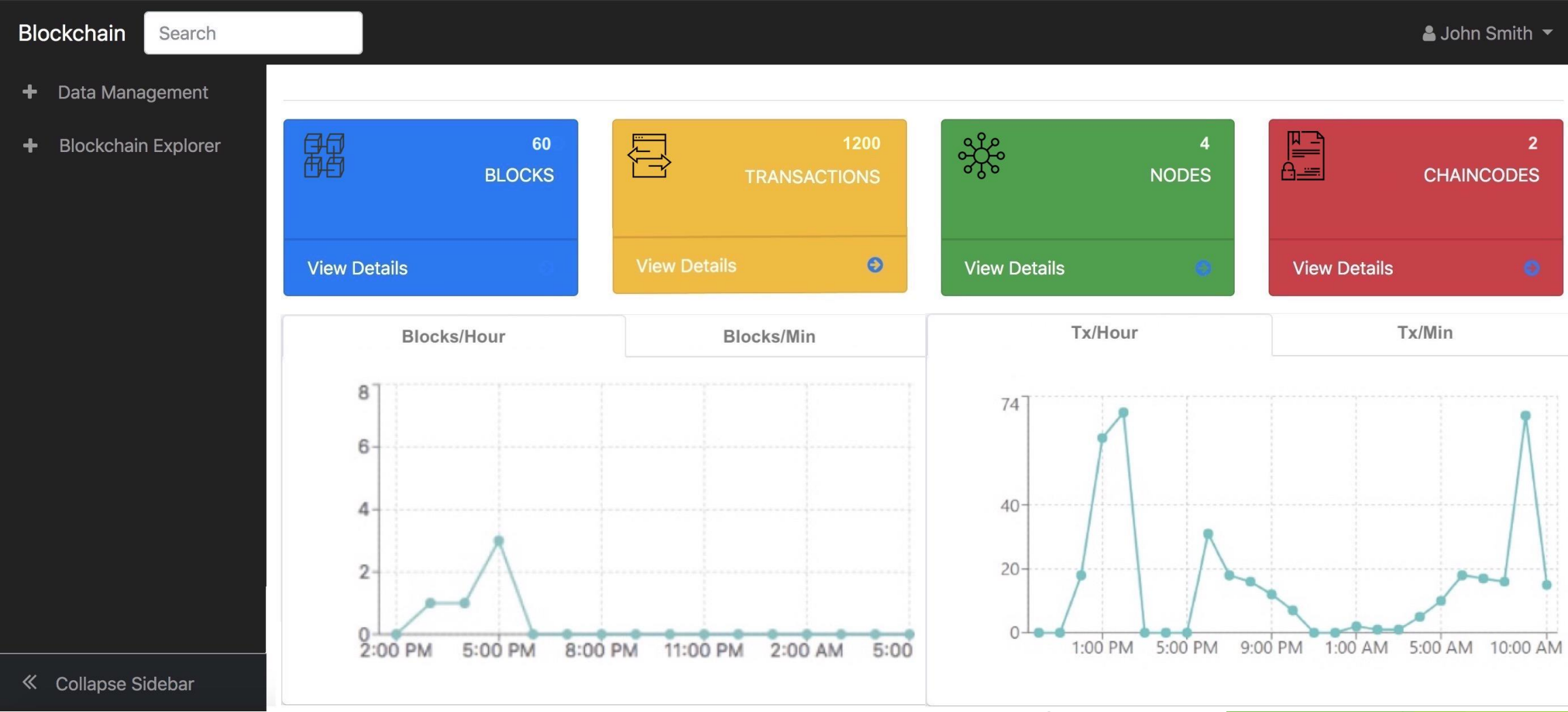
Addis

Address-&gt;country:

undefined

[modify](#)[Delete](#)

# Blockchain Dashboard





# Blockchain Explorer

Blockchain

Search

John Smith

+ Data Management

+ Blockchain Explorer

Blocks

Transactions

From

June 1, 2019 7:41 AM

To

July 2, 2019 7:41 AM

Select Orgs

Search

Reset

Clear Filter

Block Number	Channel Name	Number of Tx	Data Hash	Block Hash	Previous Hash	Transactions
653	mychannel	1	f62340 ...	013de3 ...	10b0e7 ...	38a208 ...
652	mychannel	1	053e19 ...	10b0e7 ...	0f7e5a ...	aa3518 ...
651	mychannel	1	e23fb7 ...	0f7e5a ...	7ad64c ...	66b287 ...
650	mychannel	1	450d9b ...	7ad64c ...	32aa1d ...	e747ad ...
649	mychannel	1	2a03c4 ...	32aa1d ...	627ed5 ...	4ed7de ...
648	mychannel	1	7e2d58 ...	627ed5 ...	5c1ded ...	245fac ...
647	mychannel	1	7ff7c3 ...	5c1ded ...	4cc8f3 ...	64b4b8 ...
646	mychannel	1	97a37f ...	4cc8f3 ...	696145 ...	e96035 ...

<< Collapse Sidebar

Previous

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10 rows

Next

[+ Data Management](#)[+ Blockchain Explorer](#)**Blocks****Transactions**

From  To

Block Number	Channel Name	Number of Tx	Data Hash	Block Hash	Previous Hash	Transactions
653	mychannel	1	f62340 ...	013de3 ...	10b0e7 ...	38a208 ...
652						aa3518 ...
651						66b287 ...
650						e747ad ...
649						4ed7de ...
648	mychannel	1	7e2d58 ...	627ed5 ...	5c1ded ...	245fac ...
647	mychannel	1	7ff7c3 ...	5c1ded ...	4cc8f3 ...	64b4b8 ...
646	mychannel	1	97a37f ...	4cc8f3 ...	696145 ...	e96035 ...

**Block Details**

**Channel name:** mychannel  
**Block Number** 653  
**Created at** 2019-06-29T02:42:28.708Z  
**Number of Transactions** 1  
**Block Hash** 013de312fa993a2ed847554aa56934b012f6a8081cb6d28945eefea5c1c37005  
**Data Hash** f62340365133807f7104d014fa073c4244a1befef2400bc0e81a242b4f4cc6b9  
**Prehash** 10b0e74f820474e8dae6e3e98595bfff2938baa1eb9446f1860062c2685f26ca

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10 rows ▾

[Next](#)

[+ Data Management](#)[+ Blockchain Explorer](#)**Blocks****Transactions**

From  To

Creator	Channel Name	Tx Id	Type	Chaincode	Timestamp
Org1MSP	mychannel	<a href="#">38a208...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-29T02:42:28.708Z
Org1MSP	mychannel	<a href="#">aa3518...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-29T02:42:26.546Z
Org1MSP	mychannel	<a href="#">66b287...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-29T01:30:51.008Z
Org1MSP	mychannel	<a href="#">e747ad...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-29T01:30:37.376Z
Org1MSP	mychannel	<a href="#">4ed7de...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-28T09:57:56.637Z
Org1MSP	mychannel	<a href="#">245fac...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-28T09:57:43.561Z
Org1MSP	mychannel	<a href="#">64b4b8...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-28T09:57:41.548Z
Org1MSP	mychannel	<a href="#">e96035...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-28T07:57:52.820Z
Org1MSP	mychannel	<a href="#">ea0b76...</a>	ENDORSER_TRANSACT...	blockchainbean2	2019-06-28T06:39:13.019Z

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10 rows ▾

[Next](#)

+ Data Management

+ Blockchain Explorer

Blocks

Transactions

From  To

Creator	Channel Name	Tx Id	Type	Chaincode	Timestamp
---------	--------------	-------	------	-----------	-----------

Org1MSP					2019-06-29T02:42:28.708Z
Org1MSP					2019-06-29T02:42:26.546Z
Org1MSP					2019-06-29T01:30:51.008Z
Org1MSP					2019-06-29T01:30:37.376Z
Org1MSP					2019-06-28T09:57:56.637Z
Org1MSP					2019-06-28T09:57:43.561Z
Org1MSP					2019-06-28T09:57:41.548Z
Org1MSP	mychannel	69003...	ENDORSER_TRANSACTION	blockchainbean2	2019-06-28T07:57:52.820Z
Org1MSP	mychannel	ea0b76...	ENDORSER_TRANSACTION	blockchainbean2	2019-06-28T06:39:13.019Z

## Transaction Details

**Transaction ID:** 38a20885d5cd46f973843d5c50dbe16eee18e2c481757a7862a6deaf59b99111

**Validation Code:** VALID

**Payload Proposal Hash:** 6b61e5079e89d20a315365119ada3f193eba4e4730b01e60c70e3457cb82264a

**Creator MSP:** Org1MSP

**Endoser:** {"Org1MSP"}

**Chaincode Name:** blockchainbean2

**Type:** ENDORSER\_TRANSACTION

**Time:** 2019-06-29T02:42:28.708Z

**Reads:**

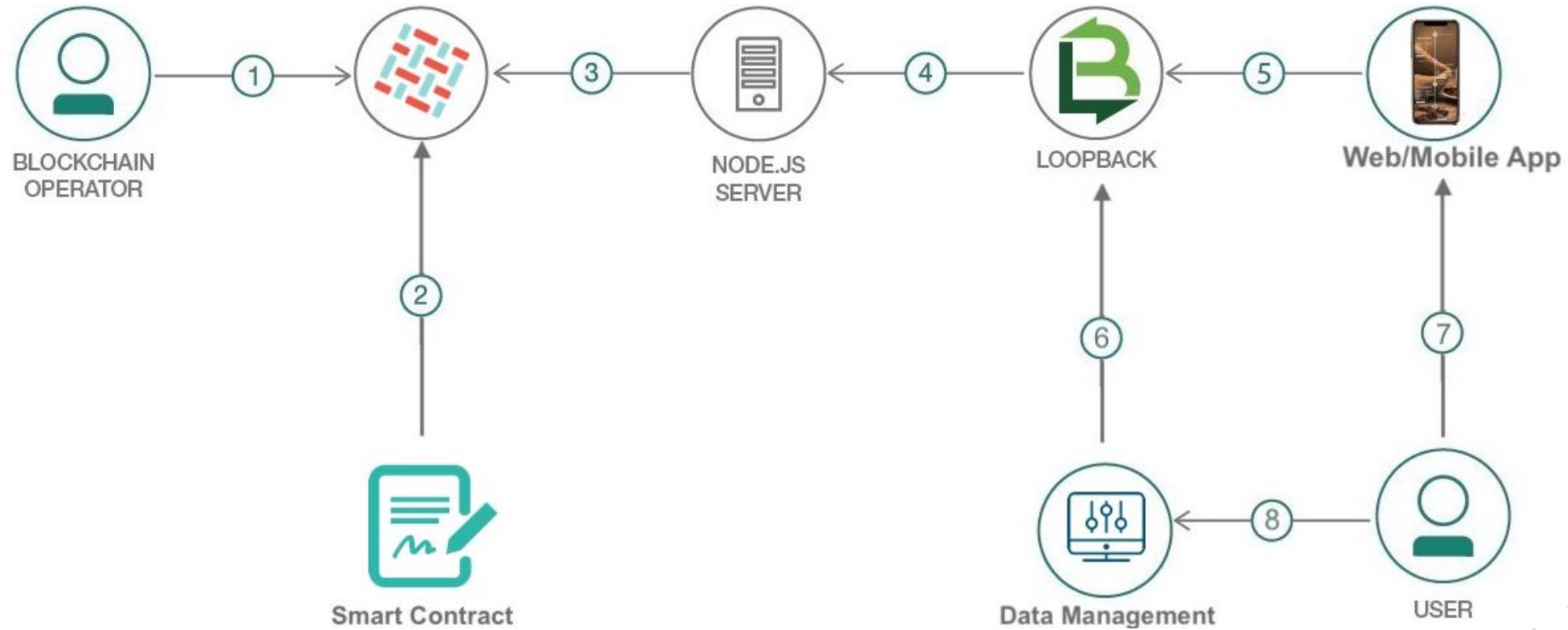
- ▼ root: [] 2 items
  - ▶ 0: {} 2 keys
  - ▶ 1: {} 2 keys

**Writes:**

- ▼ root: [] 2 items
  - ▶ 0: {} 2 keys
  - ▶ 1: {} 2 keys

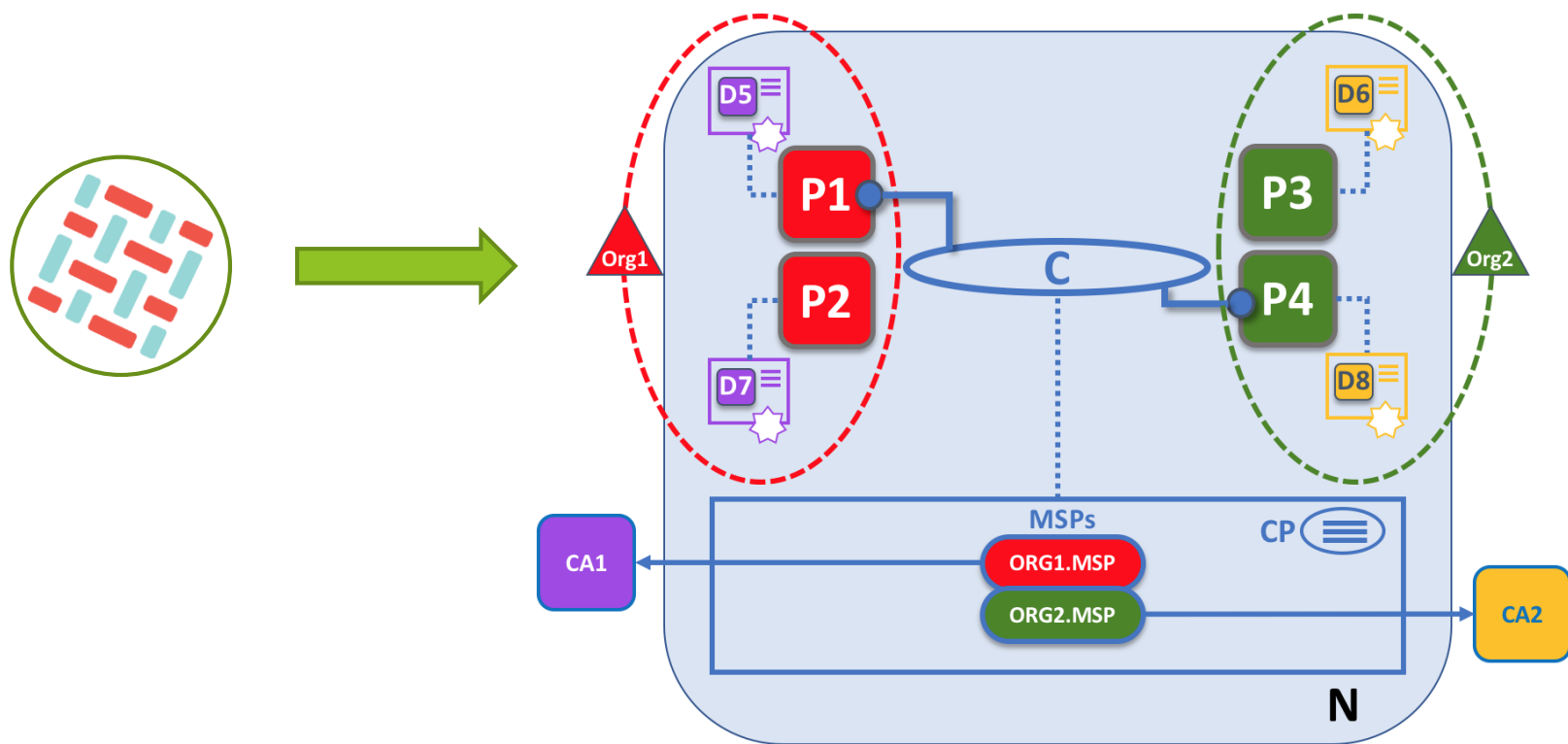
# Behind the Scene










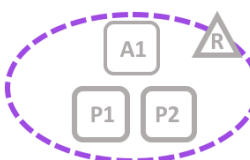

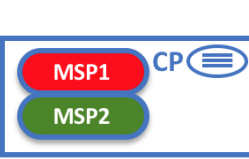
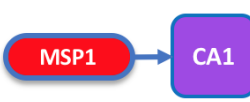
# System Components



1. Operators setup and maintain blockchain infrastructure
2. Smart Contract deployed on blockchain
3. Node.js Server acts as a gateway to interact with blockchain through smart contract
4. Loopback application provides RESTFUL API for applications and admin UI
5. Applications read data from blockchain through RESULTFUL API
6. Admin UI reads/writes data from/to blockchain through RESULTFUL API
7. End-user reads data on mobile APP or desktop Web
8. Data Admin reads/writes data on Web UI

# Sample Blockchain Infrastructure



	Blockchain Network		Peer
	Channel		Organization
	Identity		Principal PA (e.g. P1,P4) communicates via channel C.
	Channel policy		
	Certificate Authority		Membership Service Provider
		Organization R owns application A1 and peers P1, P2.	
	Channel C subject to policy CP.		Channel policy CP contains MSPs: MSP1 and MSP2.
		MSP1 selects the Certificate Authority CA1 to provide certificates for it.	

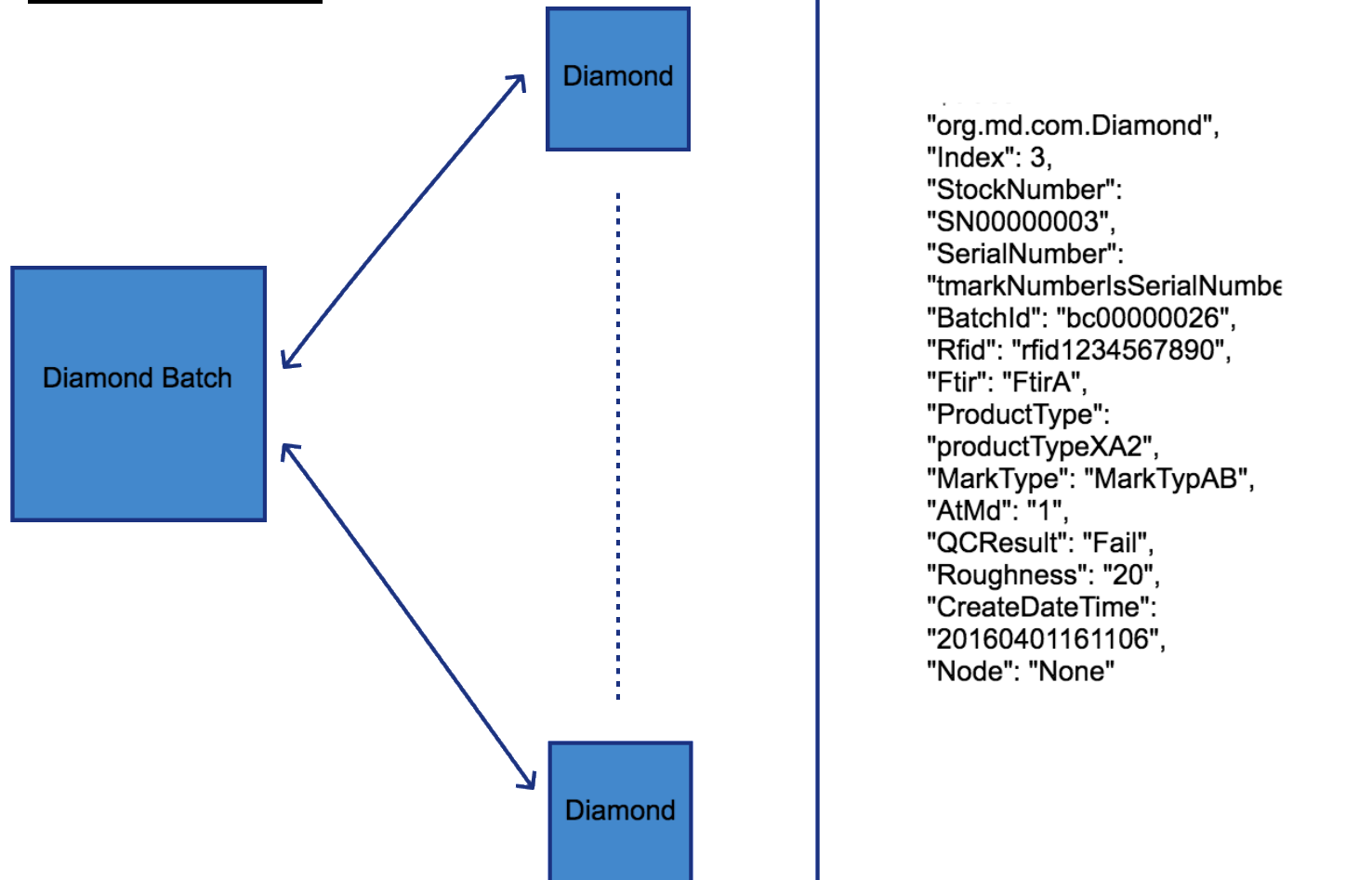


The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect. The shapes are layered, with some appearing more prominent than others, and they extend from the right side of the frame towards the center.

Customize to fit your Product  
in 3 Simple Steps

# Step 1: Define Data Model

## Diamond:



# Diamond Batch:

Bank-In

Reg-in

Marking

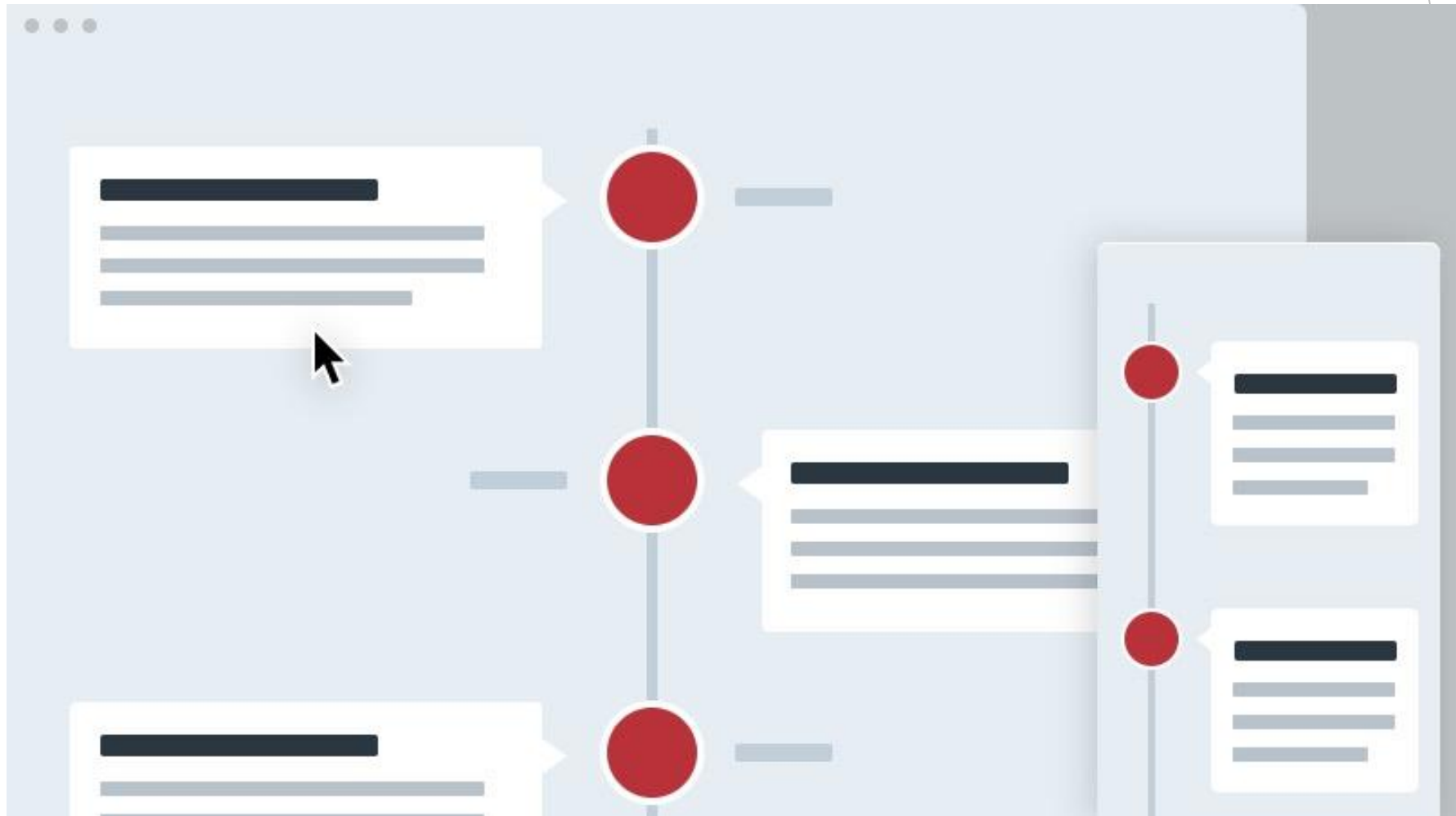
Quality  
Control

Reg-Out

Bank-Out

```
"$class": "org.md.com.Batch",  
"Index": 1,  
"BatchId": "bc00000026",  
"Status": "BankOut",  
"Diamonds": [...],  
"Records": [...],  
"QCResult": "Fail",  
"NonPass": 3,  
"Node": "Node",  
"WorkingHours": 120.72361111111111,  
"CreateDateTime": "20190315121212"
```

## Step 2: Tailor Front-end Presentation



# Step 3: Make Back-end Adaptations

The screenshot displays a modern dashboard with a dark sidebar on the left and a main content area. The sidebar contains a search bar and a list of menu items: Dashboard, Charts, Tables, Forms, Bootstrap Element, Bootstrap Grid, Component, Menu, Blank Page, and More Themes. The main content area features a top navigation bar with a search bar, a 'Download Now' button, and links for RTL/LTR, Language, and a user profile (John Smith). Below the navigation bar, there are four large colored cards representing different metrics: BLOCKS (26), TRANSACTIONS (12), NODES (124), and CHAINCODES (13). Each card has a 'View Details' button. The main content area also includes a 'Responsive Timeline' section with a card titled 'Lorem ipsum dolor' and a 'Notifications card' listing various events like 'New Comment', '3 New Followers', 'Message Sent', 'New Task', and 'Server Rebooted'.

Search

Download Now

RTL/LTR

Language

John Smith

**Dashboard**

- Charts
- Tables
- Forms
- Bootstrap Element
- Bootstrap Grid
- Component
- Menu
- Blank Page
- More Themes

**BLOCKS** 26

View Details

**TRANSACTIONS** 12

View Details

**NODES** 124

View Details

**CHAINCODES** 13

View Details

**Responsive Timeline**

**Notifications card**

- New Comment 4 minutes ago
- 3 New Followers 12 minutes ago
- Message Sent 27 minutes ago
- New Task 43 minutes ago
- Server Rebooted 11:32 AM

# Blockchain as a Service (BaaS)

- ▶ Blockchain infrastructure can be hosted on customer's data center (IDC)
- ▶ Or it can be hosted by us, pay by monthly subscription
- ▶ **Reduce customer's up-front investment** on this new technology.
- ▶ Free to choose common cloud providers





The background features a series of overlapping, semi-transparent green triangles and polygons of various shades, creating a dynamic, abstract pattern on the right side of the slide. The text "Contact Us" is positioned on the left side of the slide.

Contact Us

## Our Offices

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