



Blockchain Revolution

*Has the time for the insurance industry
finally come?*

PLATFORM
ReVolution



CANADIAN
INSURANCE
CONFERENCE

Intros



Moderator

Manisha Dias, *FCIA, FSA, CERA, RYT*
Director & Actuary, Business Development
SCOR Canada



Speaker

Helen Duzhou, *FCIA, FSA, CERA*
Consultant, Financial Services
Oliver Wyman, New York



Speaker

Sven Roehl
EVP msg global Canada & Co-Founder Cookhouse Lab



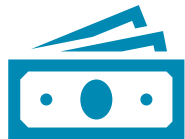
Agenda



What is a Blockchain?



Mechanics of Blockchain



Blockchain & Insurance



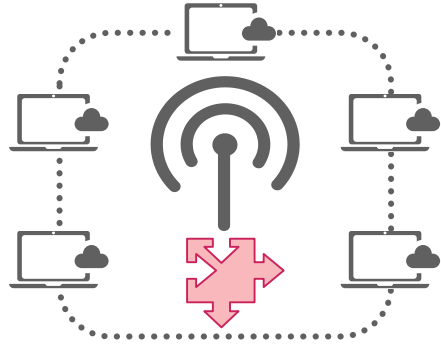
Questions

Section 1

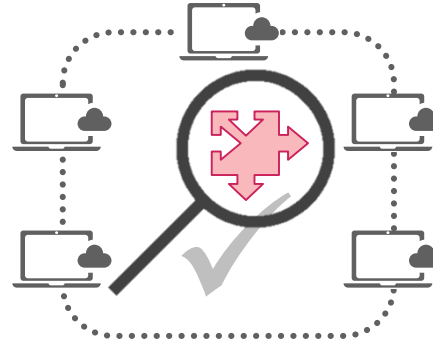
What is a Blockchain

What is a Blockchain?

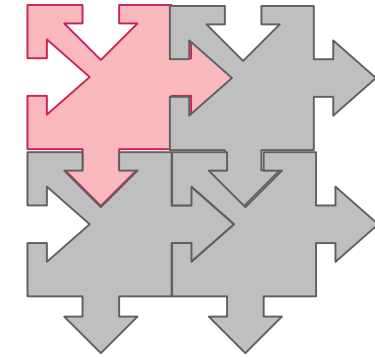
In simplest terms, Blockchain works like...



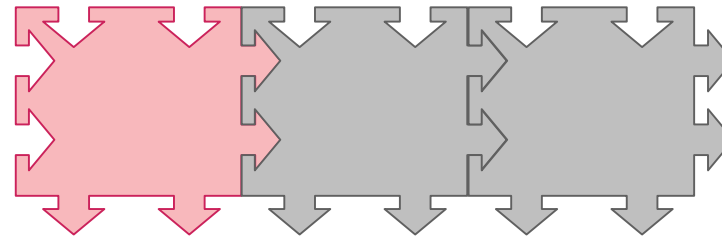
1 **Broadcast:** A transaction is submitted and broadcasted to all participants on the network



2 **Validation:** participants use algorithms to confirm that the submitted transaction is valid



3 **Block formation:** the verified transaction is combined with other verified transactions to form a block



4 **Hashing:** the block is attached to the previous chain of blocks ('hashing') in a manner that is both permanent and immutable

What is a Blockchain?

How does Blockchain achieve these key properties?

TRUST



Immutability

- Safe and secure ecosystem providing tamper-free environment
- Transaction contains a digital finger print generated through *hash* function for all prior transactions



Decentralization

- Power to update the blockchain lies with all participants, not a single party
- Participants validate updates through *hashing* and updating their ledgers



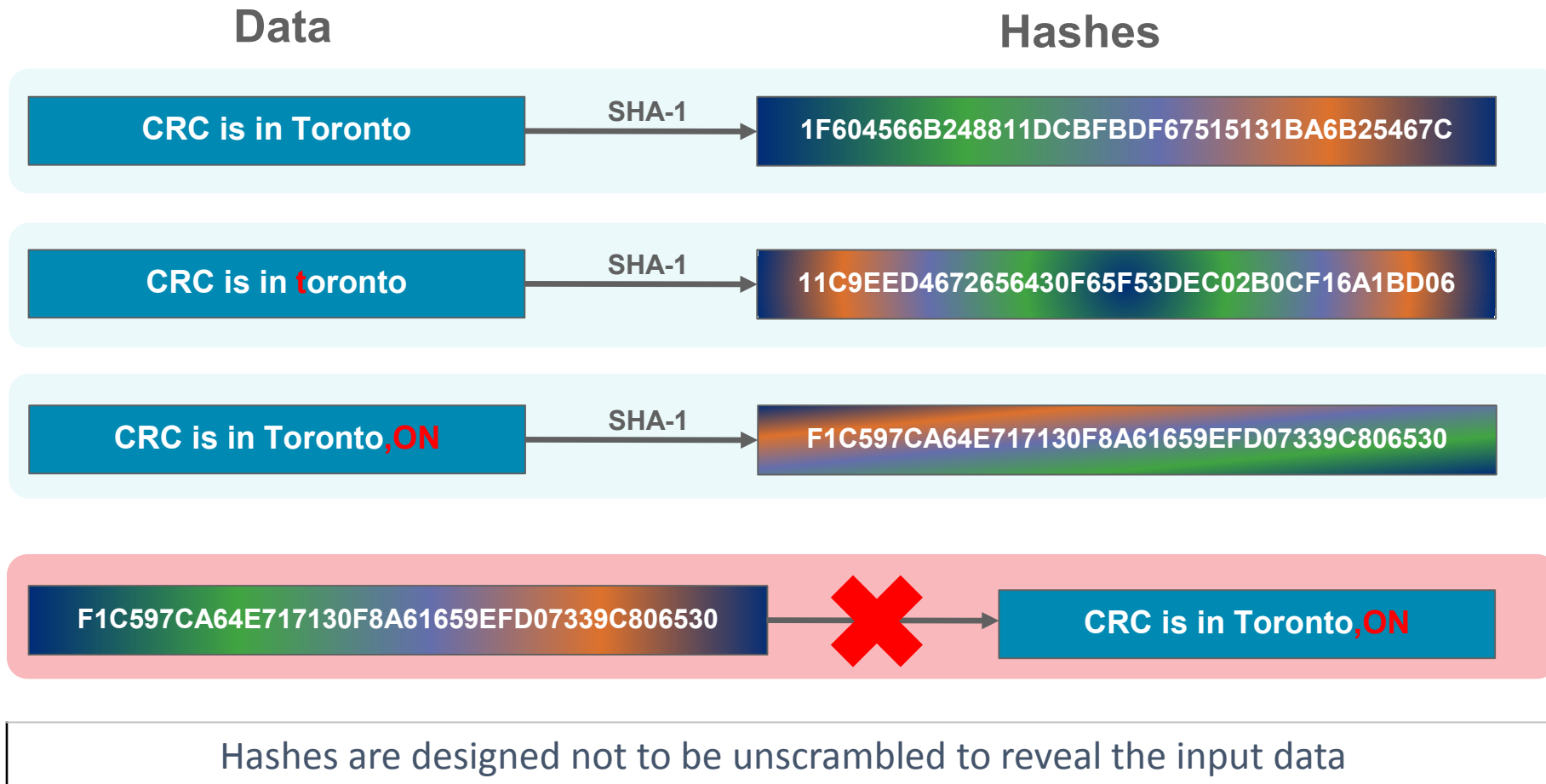
Anonymity

- Verifiable by public yet anonymous
- Public and private digital signatures allow the network to verify updates using public knowledge through asymmetric *hashing*

All key features of Blockchain rely on cryptographic hashes

What is a Blockchain?

What is a cryptographic hash function?

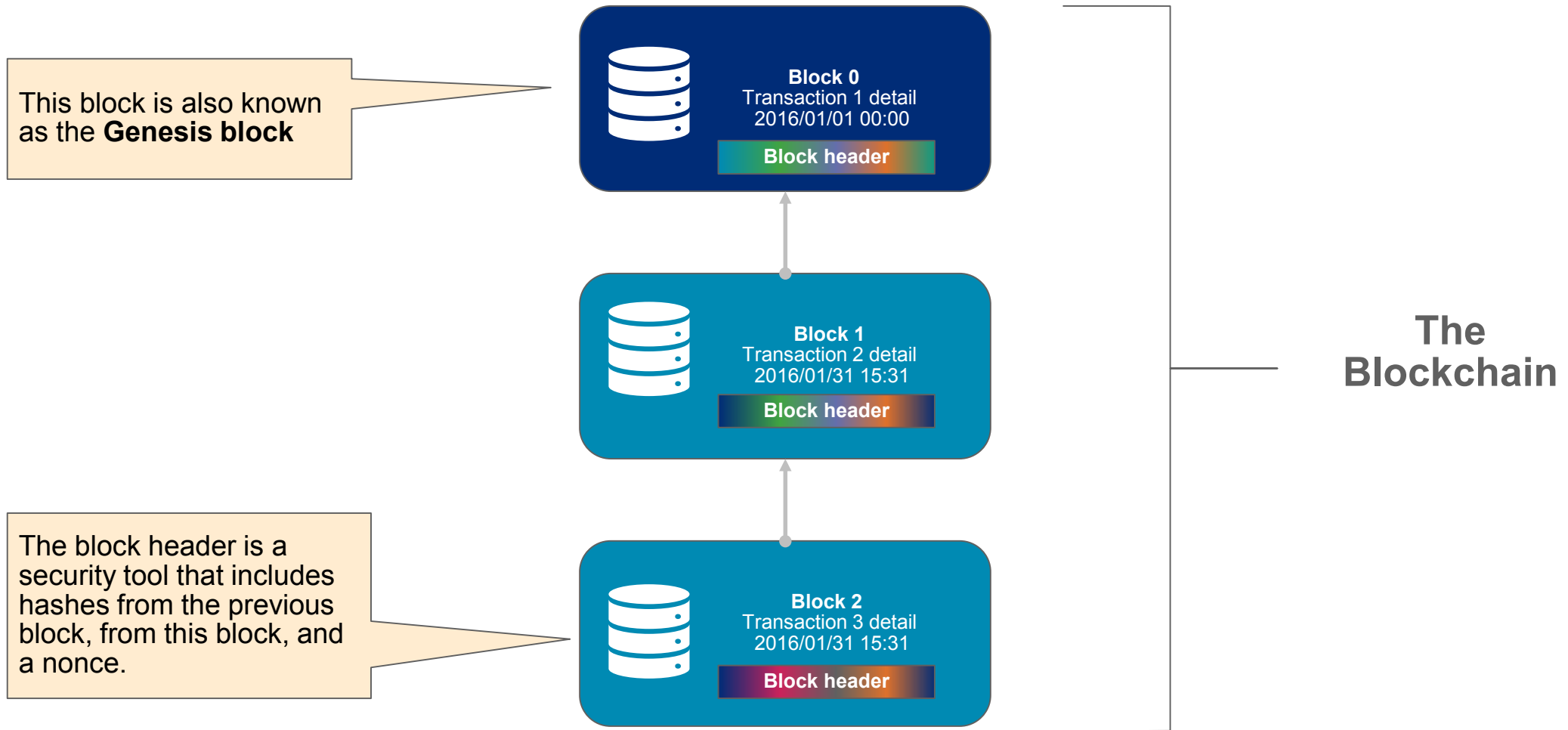


Section 2

Mechanics of Blockchain

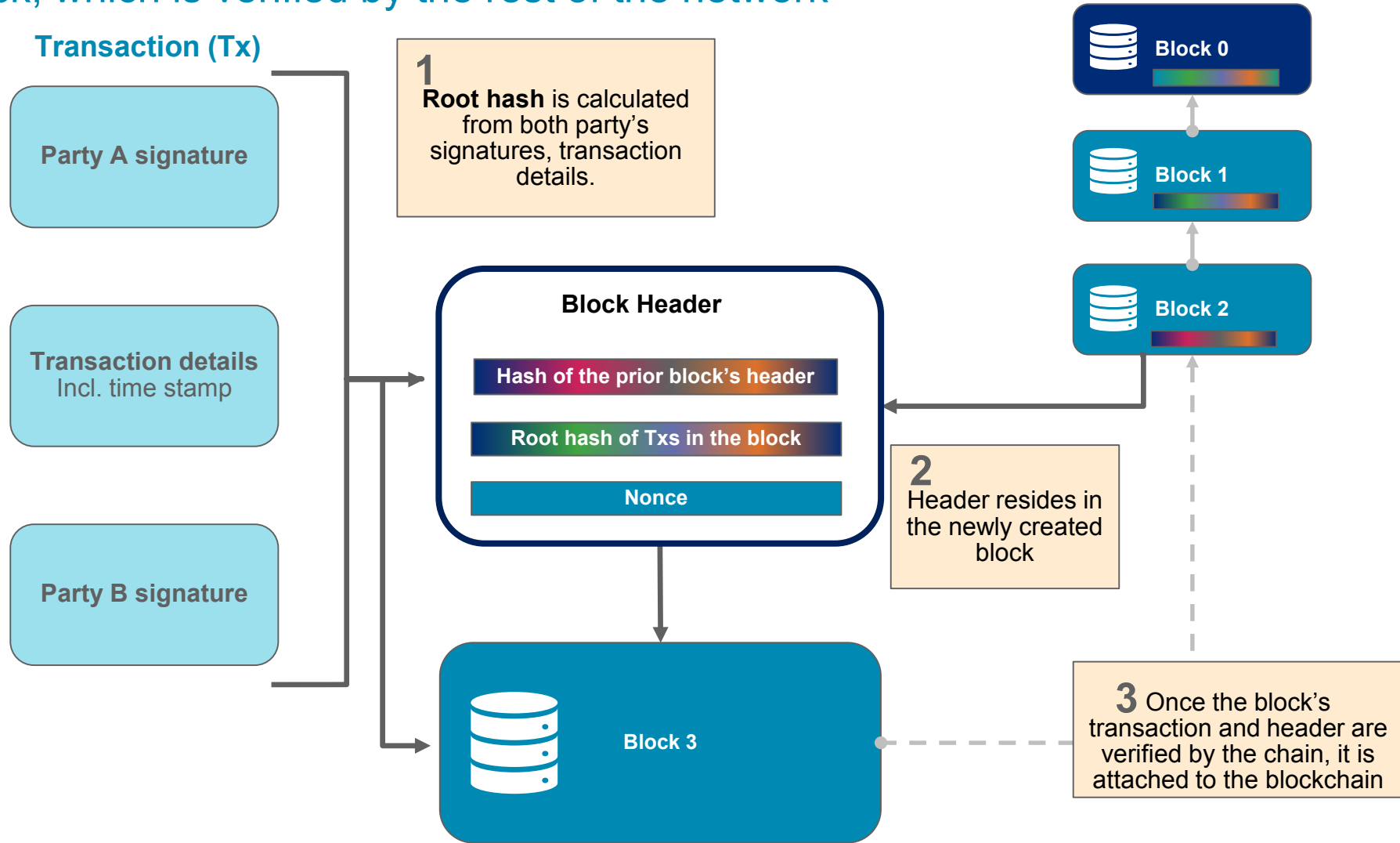
Mechanics of Blockchain

A blockchain is made up of blocks, that each point to the preceding parent



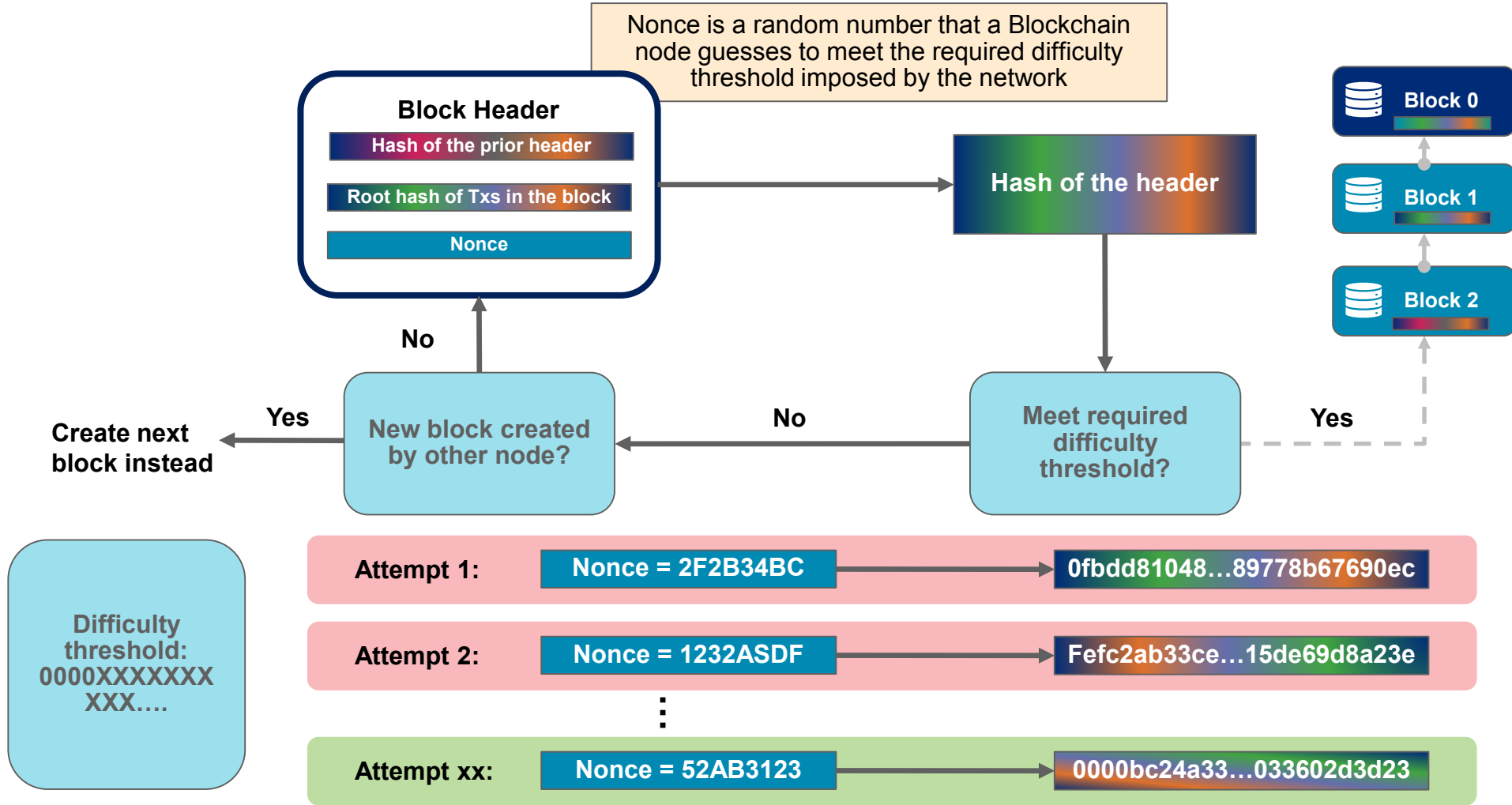
Mechanics of Blockchain

To add transactions to a blockchain, cryptographic hashes are calculated for the new block, which is verified by the rest of the network



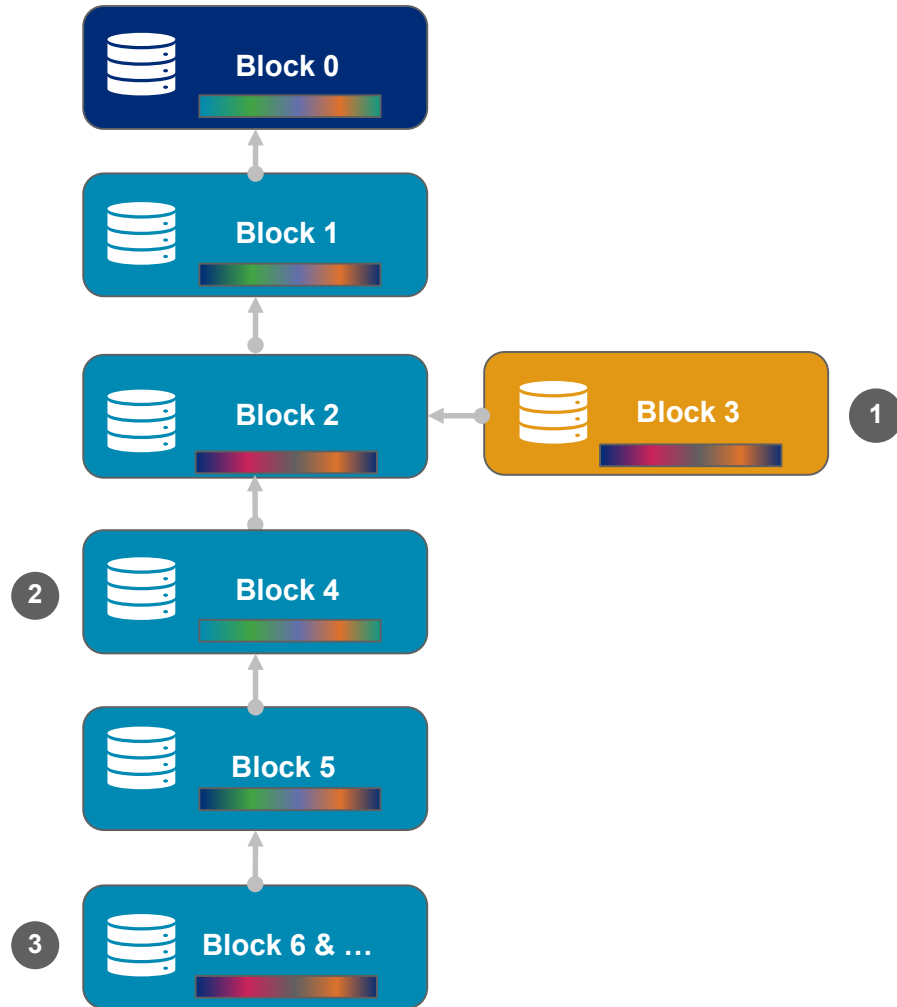
Mechanics of Blockchain

The iterative process, called “mining”, creates collective memories by distributing the chance to update based on the computation power



Mechanics of Blockchain

Case study: how Blockchain prevents fraudulent transactions through collective memories of the network



- 1 Manisha created a fraudulent transaction (**Block 3**) by sending 100 dollars that she does not own to Helen
- 2 Due to the distributed network, there is a higher chance for people to verify the right chain (**Block 2**)

They append verifiable blocks to Block 2. (**Block 5**)
- 3 With several iterations, Block 3 become part of the orphaned chain, which eventually gets truncated from everyone's memory. (**Block 6 and onwards**)

Section 3

Blockchain & Insurance

Blockchain & Insurance



PROBLEM

What is **Blockchain** and how can it be used to **improve insurance**?

The project team learned from experts how blockchain works and then defined, tested and evaluated use cases where this technology can improve existing insurance processes.

15

Empathy Maps

34

Use Case Ideas

1

Selection Methodology

3

Selected Categories

6

Selected Use Cases



Blockchain & Insurance

WEEK 1



Understanding Blockchain

Industry Lectures



WEEK 2



Customer and Business Problems

Identifying current industry pain points through surveys and research

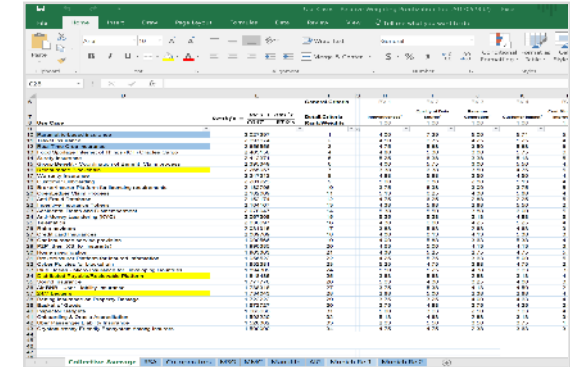
WEEK 3



Use Case Development

Define blockchain use cases using Design Thinking

WEEK 4



Use Case Selection and Finalization

Develop a selection model and identify the "Top 3" use cases for blockchain

Identified Use Cases for Blockchain

1. Parametric insurance (e.g. crop insurance)

5. Surety insurance

8. Broker/ Insurer platform for licensing confirmation

14. IOT enabled Personal Property Insurance

3. Group Benefit - Coordination of Benefit Claim process

7. Warranty Insurance

12. Accidental Death and Dismemberment Insurance

15. Robo Advisors

2. Travel Delay/ Cancellation Insurance

4. "Cargo/Food Spoilage IOT Insurance - Marine Insurance

9. OpenLedger Claim Process

11. Insurance Incentive Tokens

6. Real time (24/7) Insurance/ Reinsurance Business

10. Anti Fraud Dataase

13. Know-Your-Customer/Anti-Money Laundering (KYC/AML)

Selection Process

The team selected one of **Karl Wieger's Agile prioritization techniques** called "Relative Weighting"

$$\text{Rank (fn)} = \frac{BV \times RNT}{COST \times RTO}$$

Variables

Business Values (BV)

- Innovativeness
- Quality of Source
- Revenue Generation
- Customer Impact
- Cost Min/Process Improvement

Risk not to implement (RNT)

- Hedgeyness

Self-evident (COST)

- Cost

Risk to implement (RTO)

- Complexity
- Barriers to Entry

Group Benefit Coordination Today



Cathy got a message



“So much work and such a complicated task”



Prepare Documents

Insurance 1:
70% (her own)

Insurance 2:
100% (husband)



INSURANCE 1



Check and response

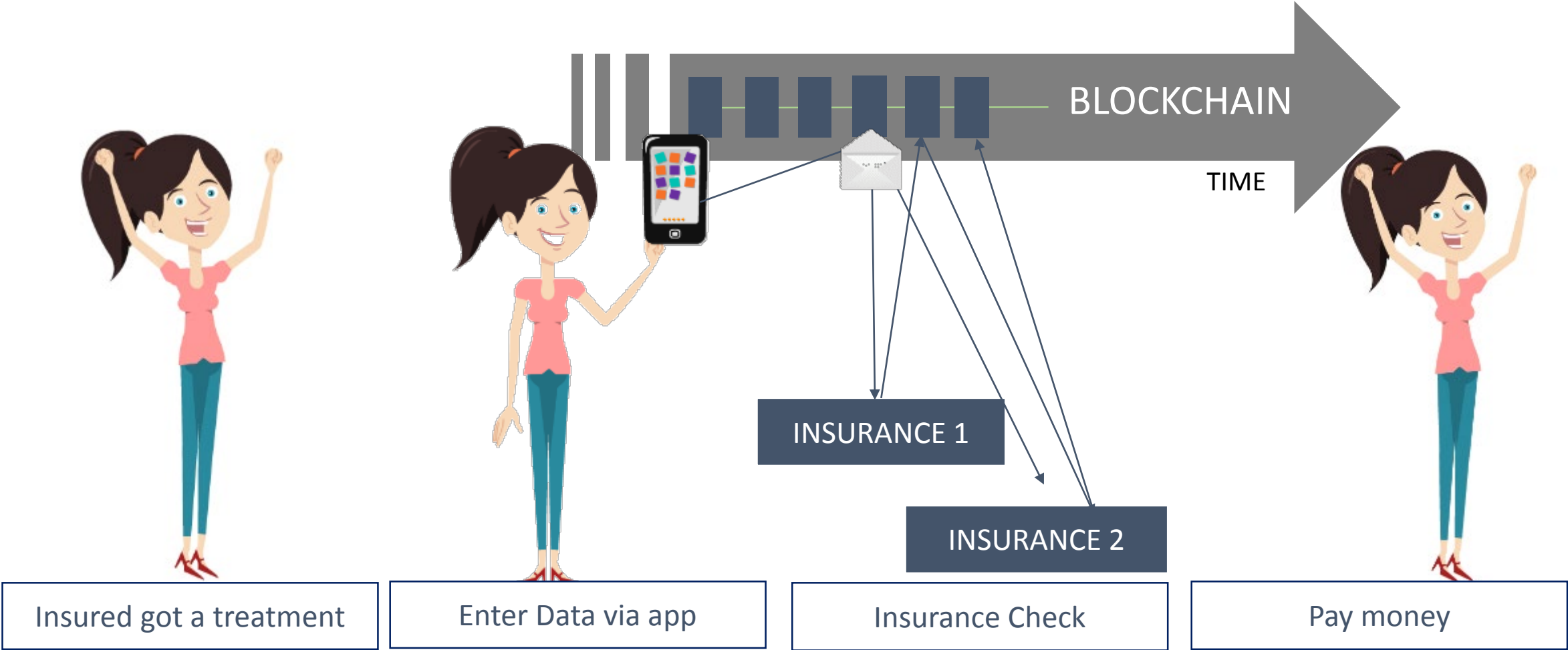


INSURANCE 2



Check and response

Group Benefit Coordination with Blockchain



Save
your
Life



Health
Insurance



Travel
insurance



Travel
insurance

Senior
Insurance



Business
insurance



INSURANCE

Senior
Insurance



Business
insurance



Car
insurance



Children's
Health
Insurance



Travel
insurance





Questions?

