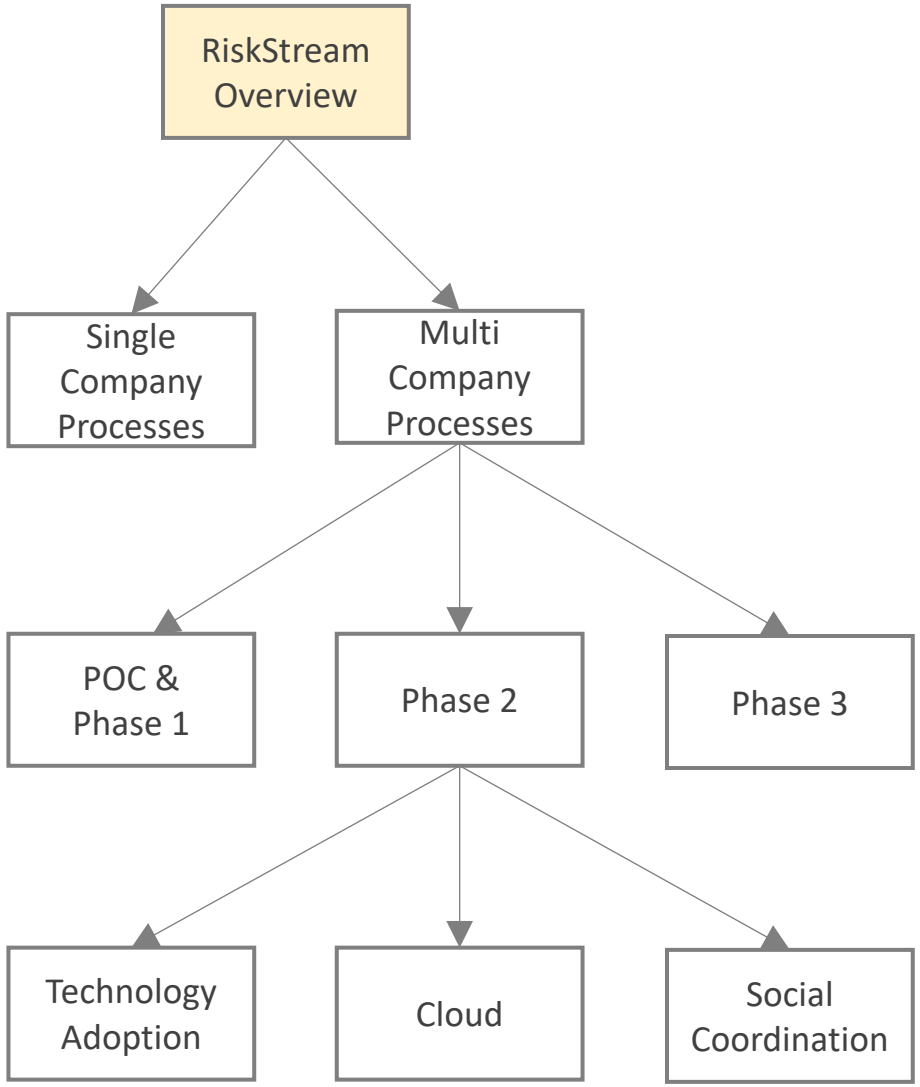
The Institutes RiskStream Collaborative

February 2021

The Institutes
RiskStream Collaborative™

Agenda

- Introduction
  - Patrick Millar :: millar@theinstitutes.org
- Brief overview of RiskStream
- Problem Review
- Overview of some of the challenges we have been working through



- Disclaimers:
  - We will be discussing anecdotal trends. These are not the result of an exhaustive study.
  - These are trends and issues seen primarily in North America. YMMV.

2020 RiskStream Members & Participant Categories

P&C Members
- Brokers
- Carriers
- Reinsurers

L&A Members
- Brokers
- Carriers
- Reinsurers

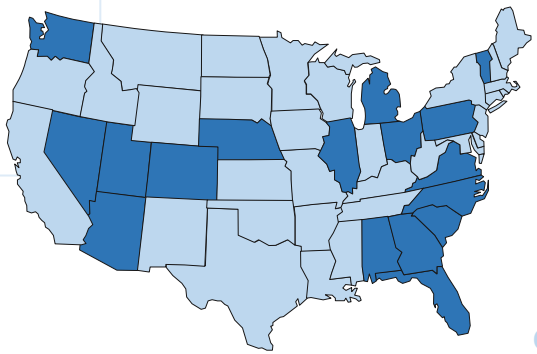
Non-Profits
- Associations
- Consortia
- Academia

Providers
- Builders
- Connectors
- Enablers

Collaborators
Non-insurance entities that work with the insurance industry

…to be announced soon

Civics
- Regulators
- DOI
- Government



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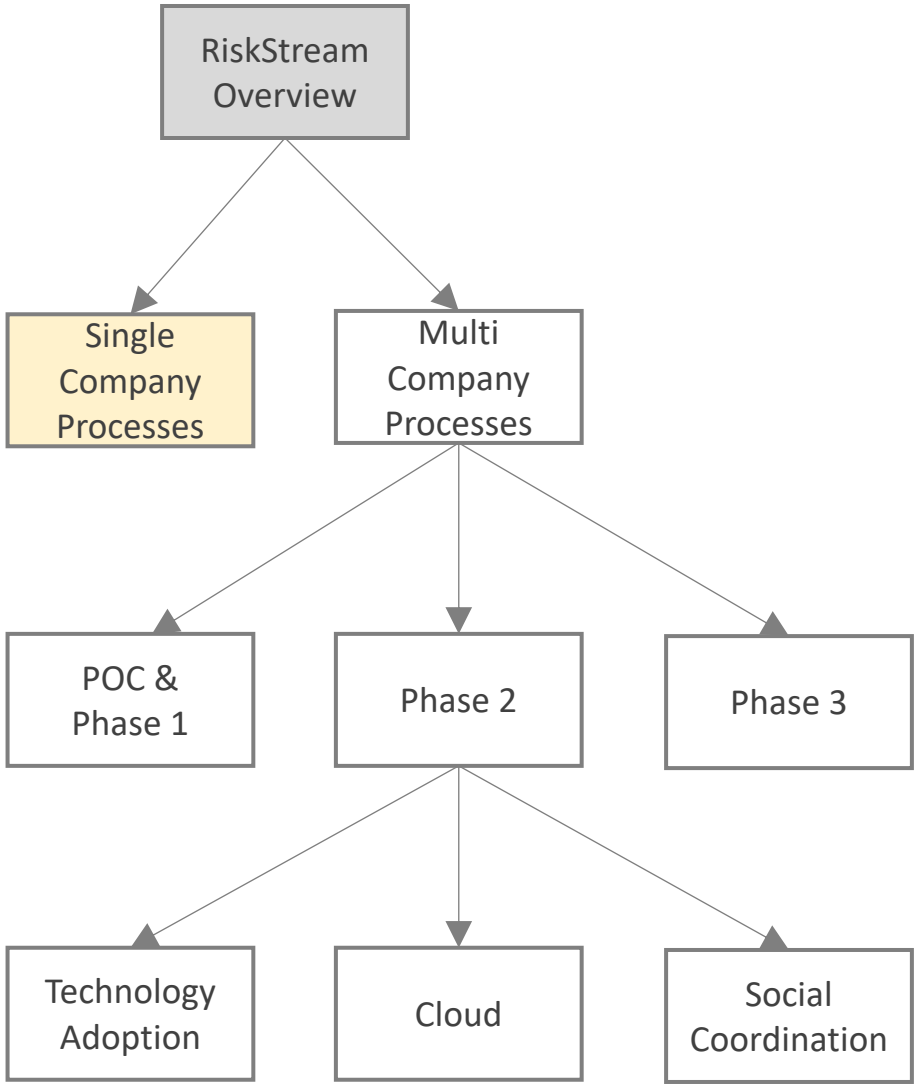
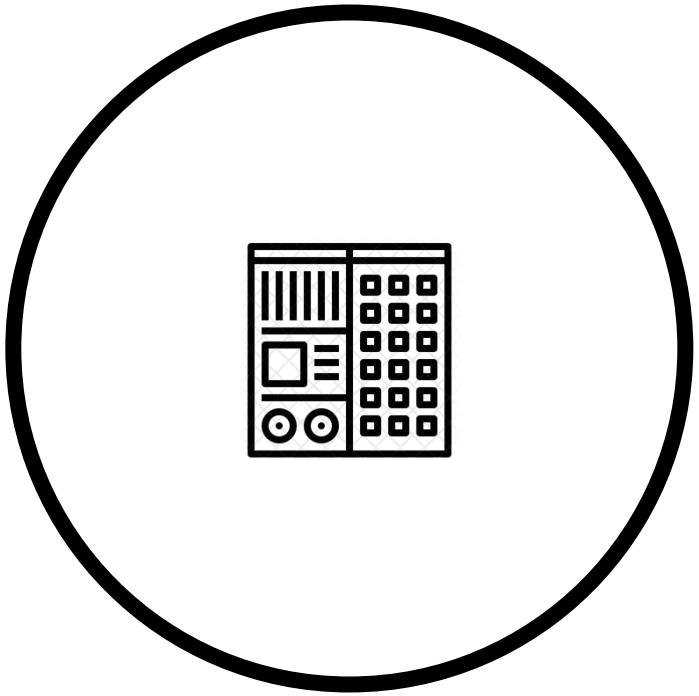


The Evolution of Digital Islands

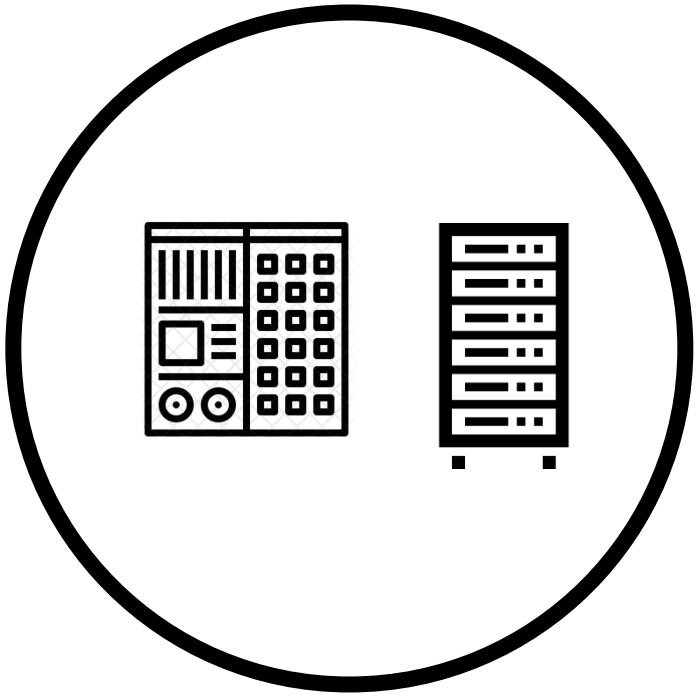
Agents

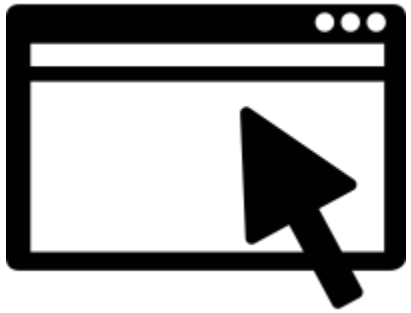


Direct Marketing

The Evolution of Digital Islands

Agents





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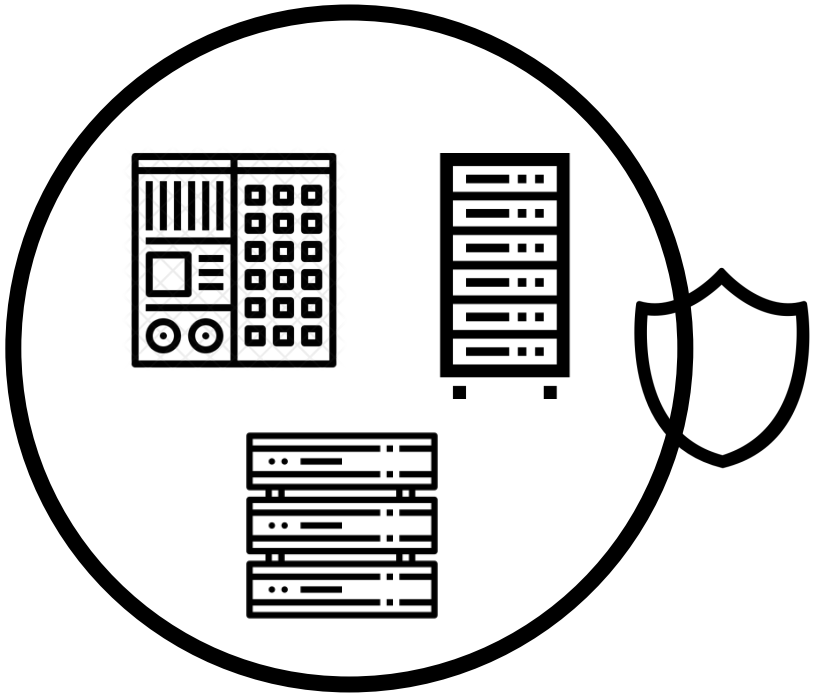
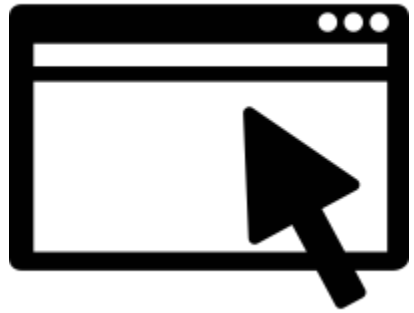
Direct Marketing

The Evolution of Digital Islands

Agents





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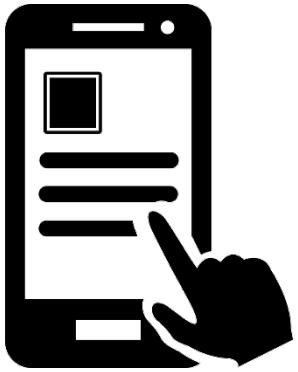
Apps

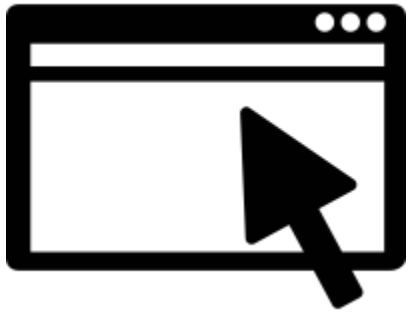


Direct Marketing

The Evolution of Digital Islands

Agents

Core System Renewal
or Consolidation



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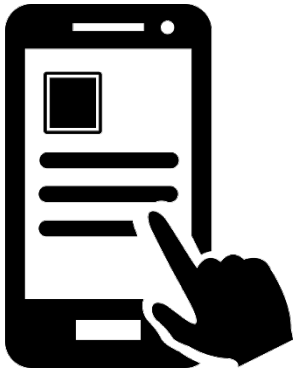
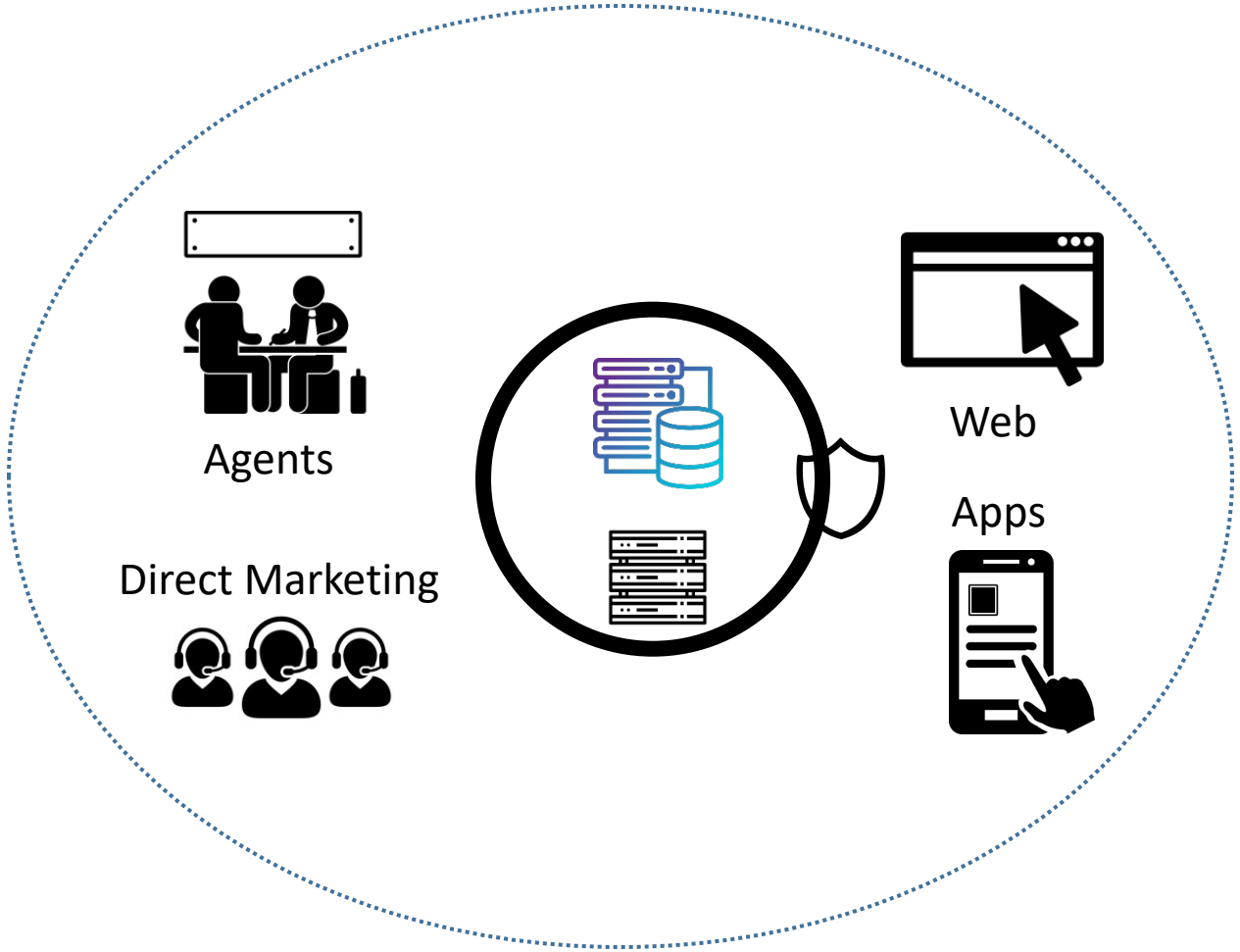


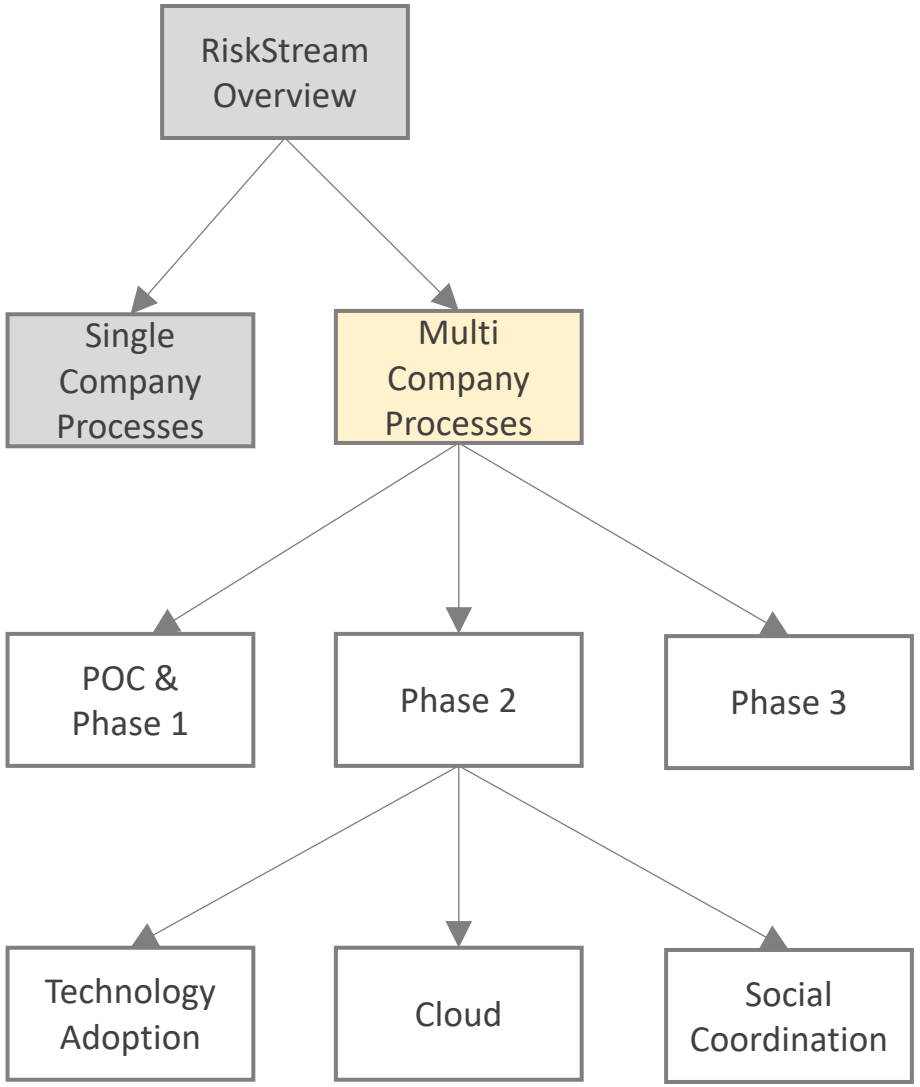
Direct Marketing

The Evolution of Digital Islands



- Each Carrier has developed a complex set of processes to support their businesses
- Automation within a Carrier is a huge challenge on its own
- What about processes that span Carriers?

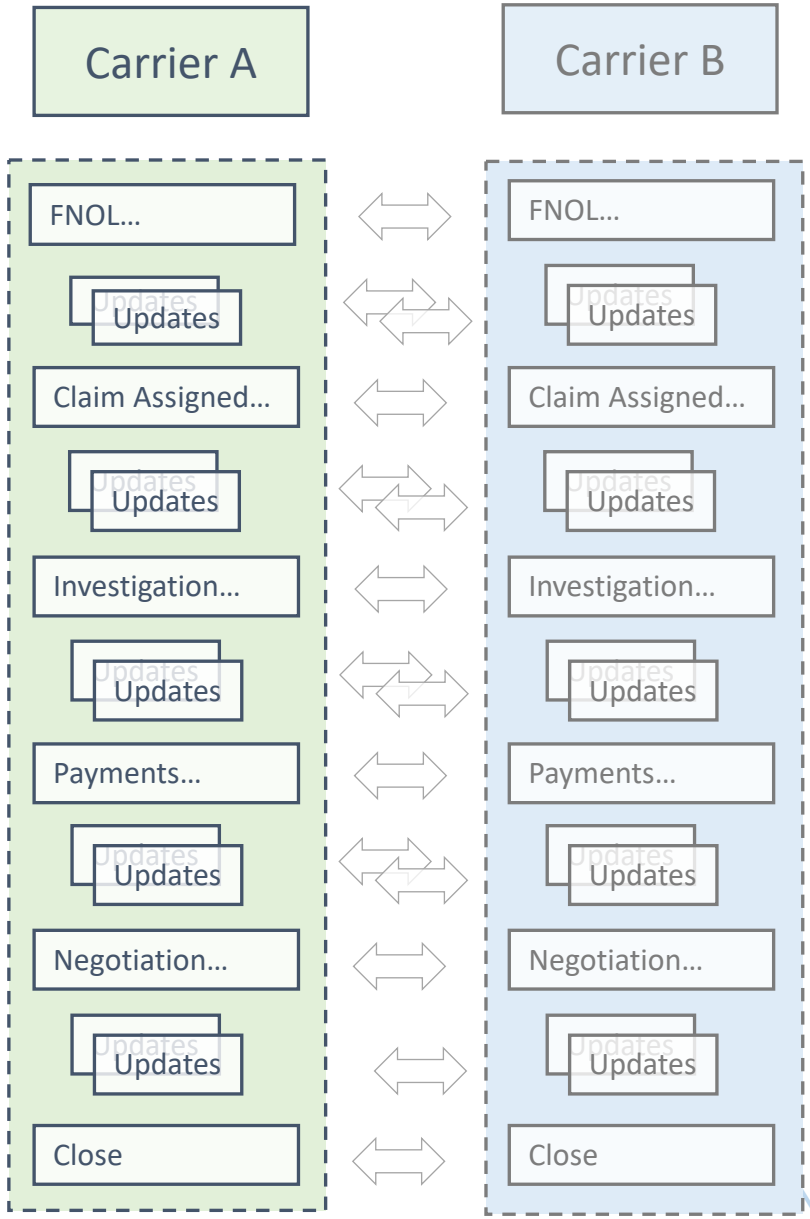
Agenda



Cross-Carrier Process Example: Characteristics of a Claim

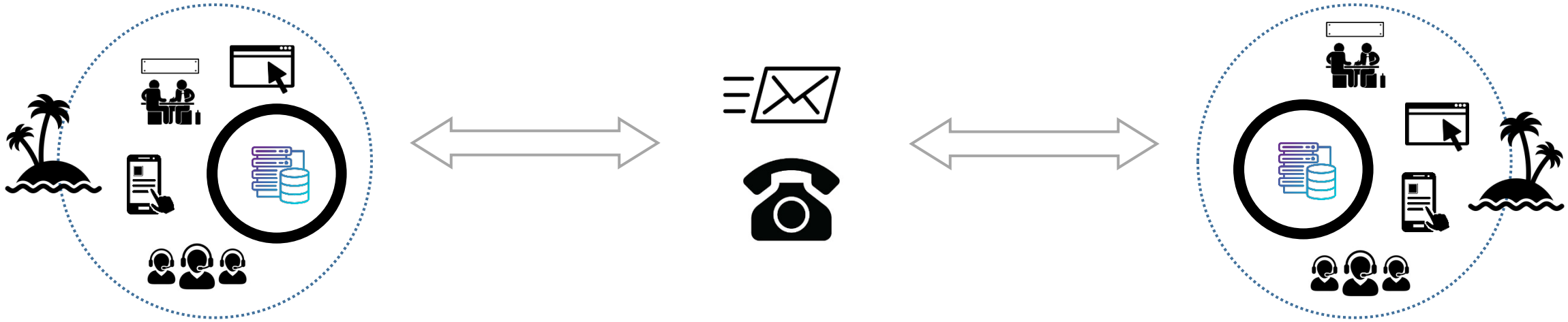
- Consider the interactions of two insurance Carriers when their policy-holders are involved in an accident

- The claims process consists of a series of interactions between the companies:
  - Starts with First Notice of Loss (FNOL)
  - Completes after negotiation of payments between Carriers

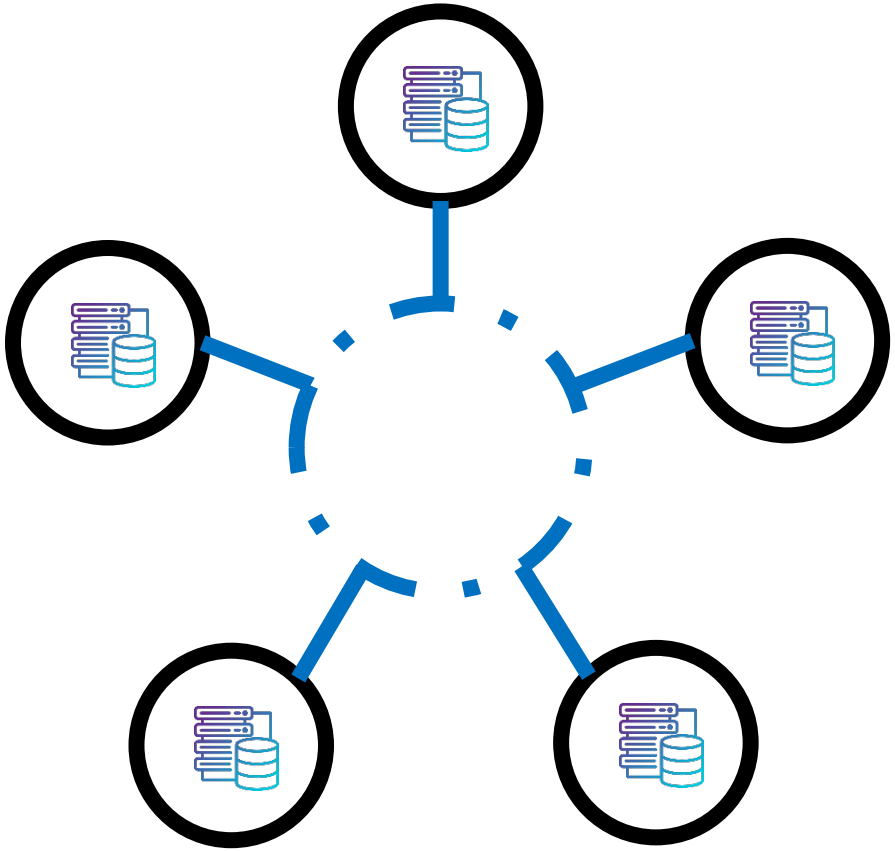


The Evolution of Digital Islands

- Problem: Carriers are largely digital islands (McKinsey)
- Connecting the islands represents a great opportunity for the industry
- Many (most?) business processes still rely on telephone calls and email for communicating vital data
- Not just a technical problem : these islands are separate **trust domains**



Connecting the Digital Islands - Benefits



Efficiency ↑

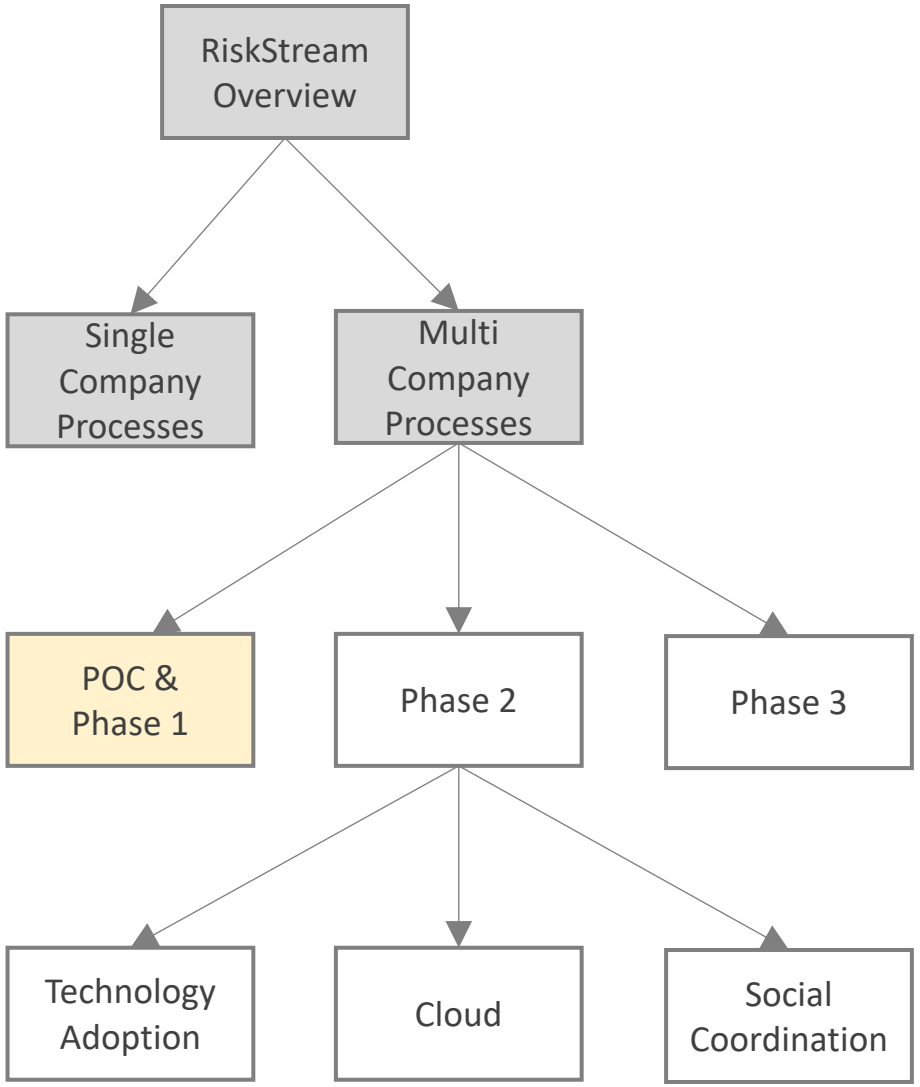
Security ↑

Costs ↓

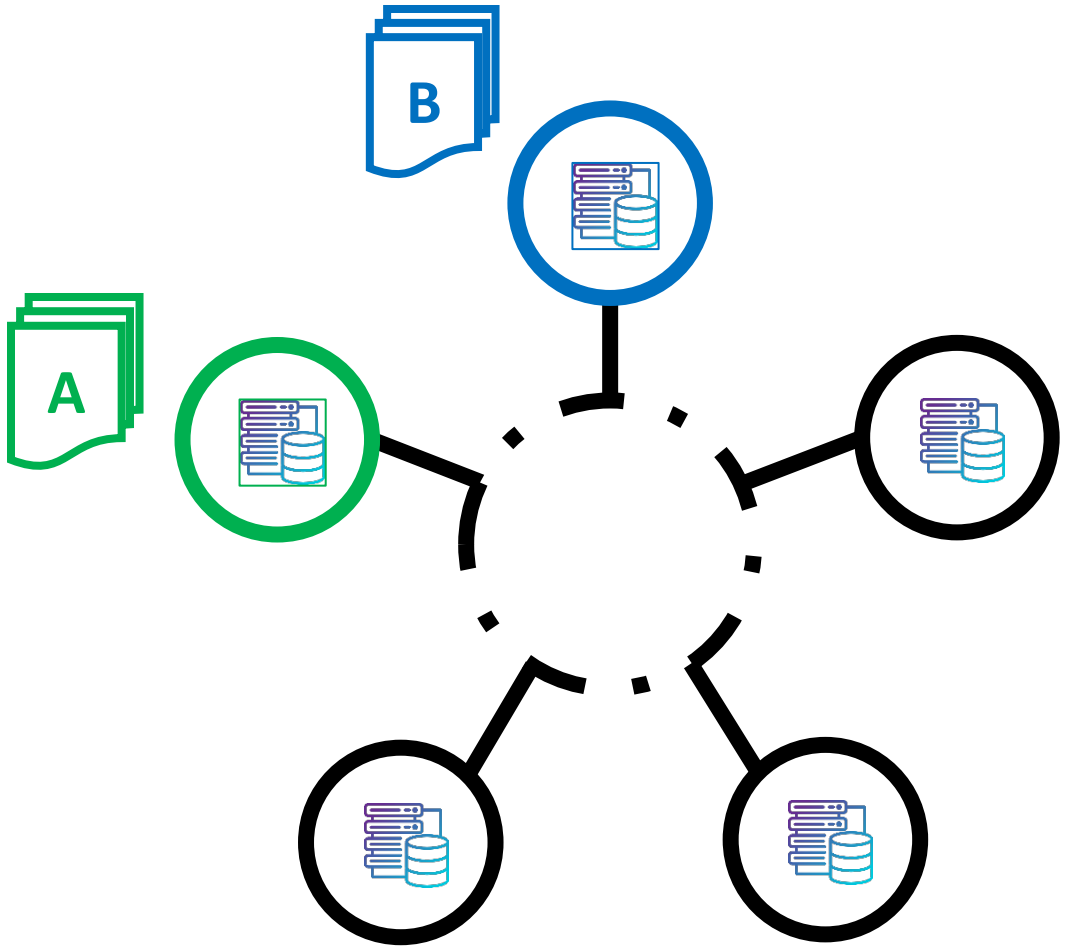
Customer Experience ↑

Remember this slide – we will come back to it!

Agenda

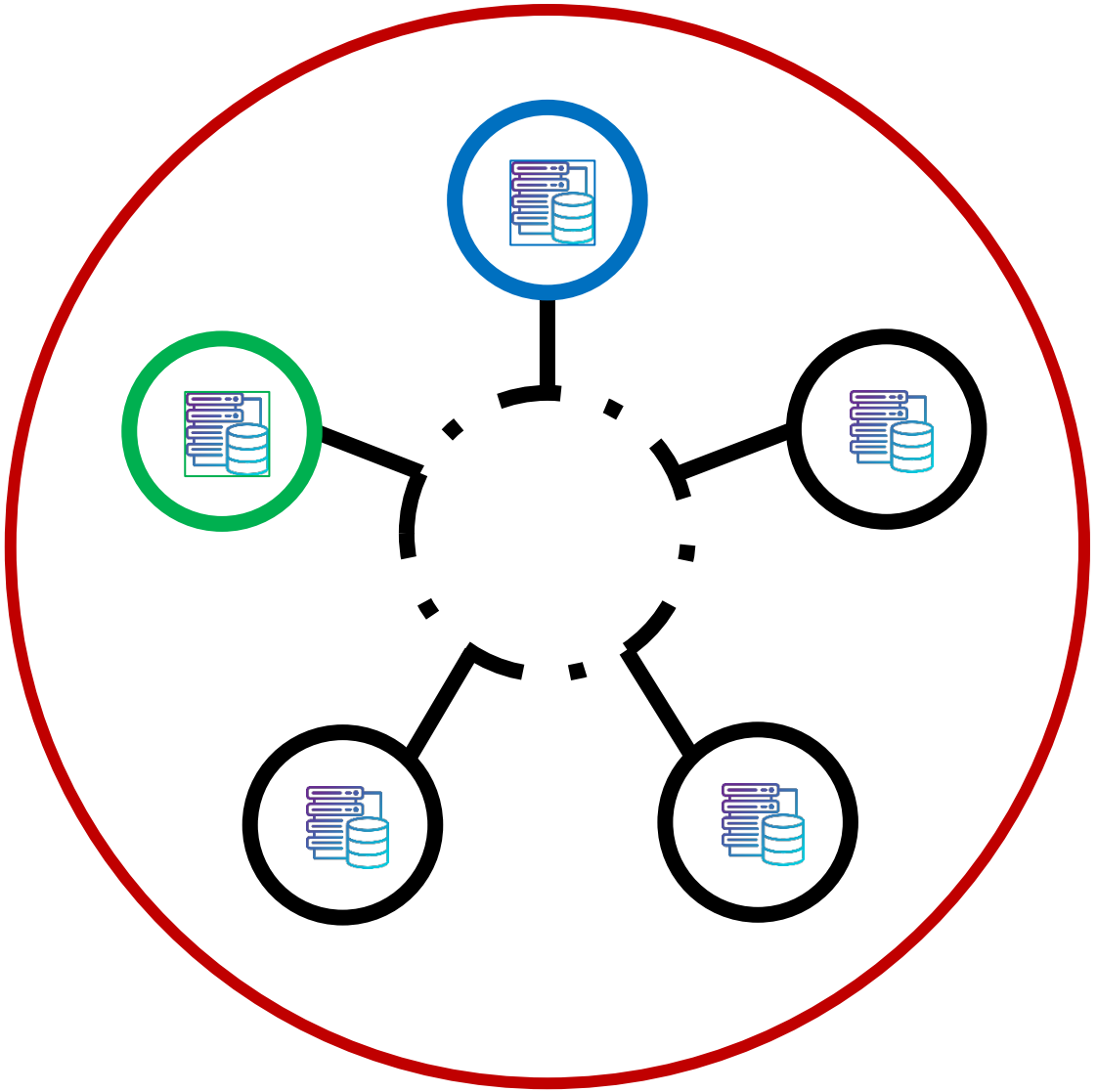


Connecting the Digital Islands – Phase 1 Challenges



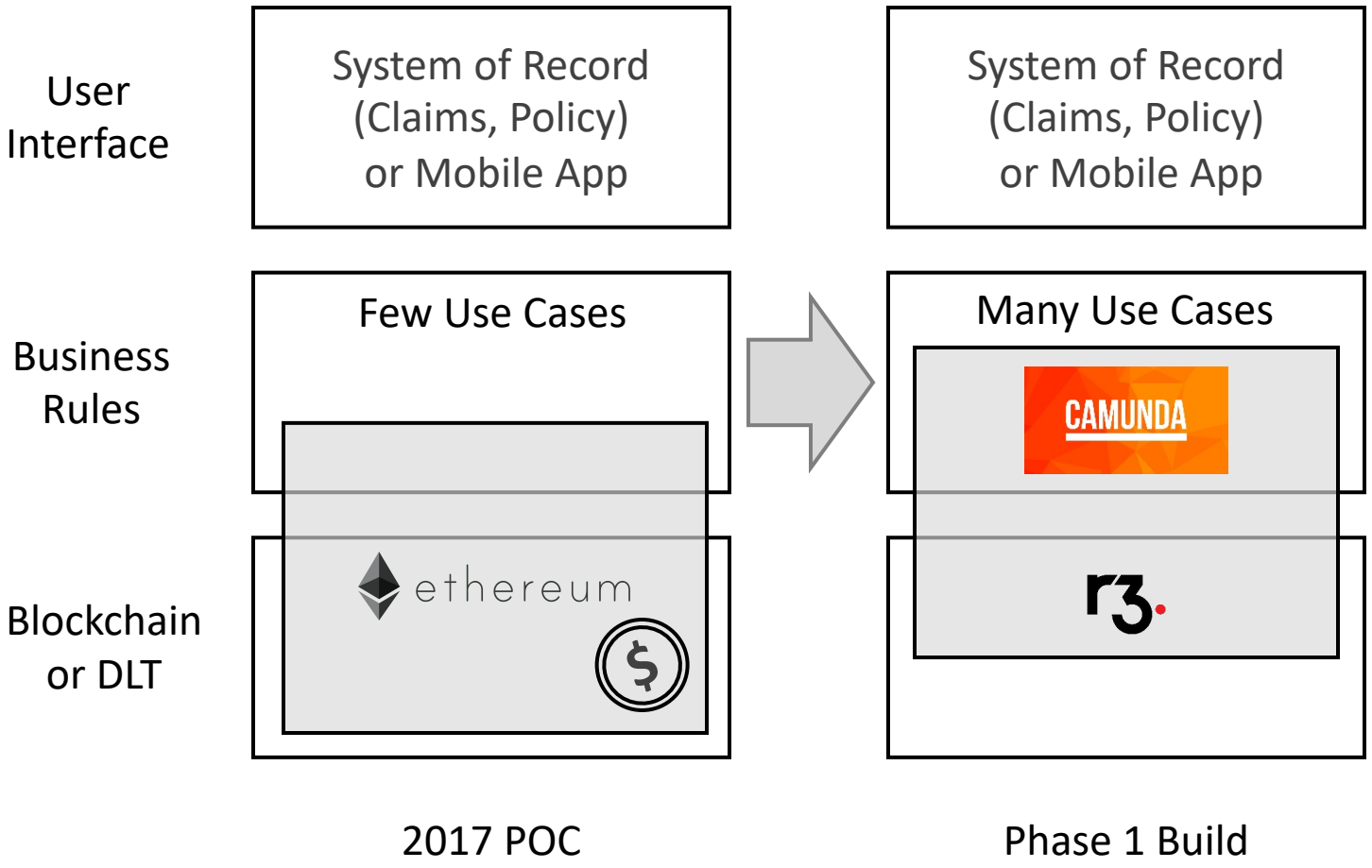
- Data has to be trusted:
  - What I See Is What You See (WISIWYS)
  - A and B must see the same data for process automation to be trusted
- Data must be secure:
  - Claims data may include PII
- Why blockchain or Distributed Ledger?
  - Foundation for a secure distributed network
  - Reduces or eliminate reliance on a central 3rd Party
- A desire to solve these in the industry, for the industry

Connecting the Digital Islands – Phase 1 Challenges … additional



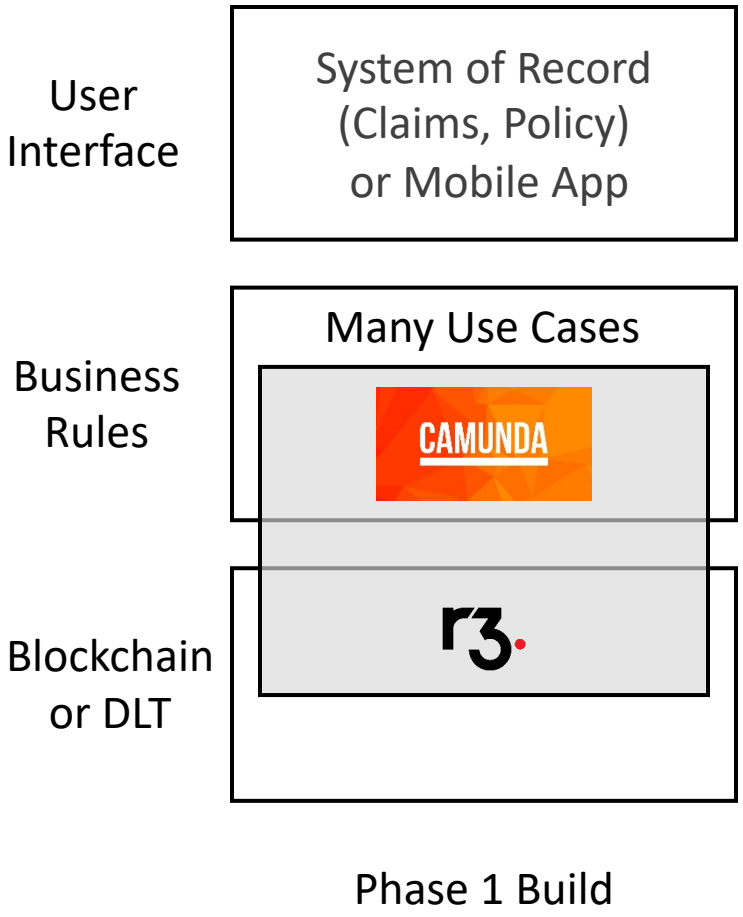
- Insurance is a regulated industry
- The network must be private:
  - Invitation only
- There are at least hundreds of potential use cases that could be automated

Architectural Evolution – POC to Phase 1



- 2017 POC was closer to the original, fully-distributed vision for blockchain
- Practical feedback from Members led us to realize the many possible use cases

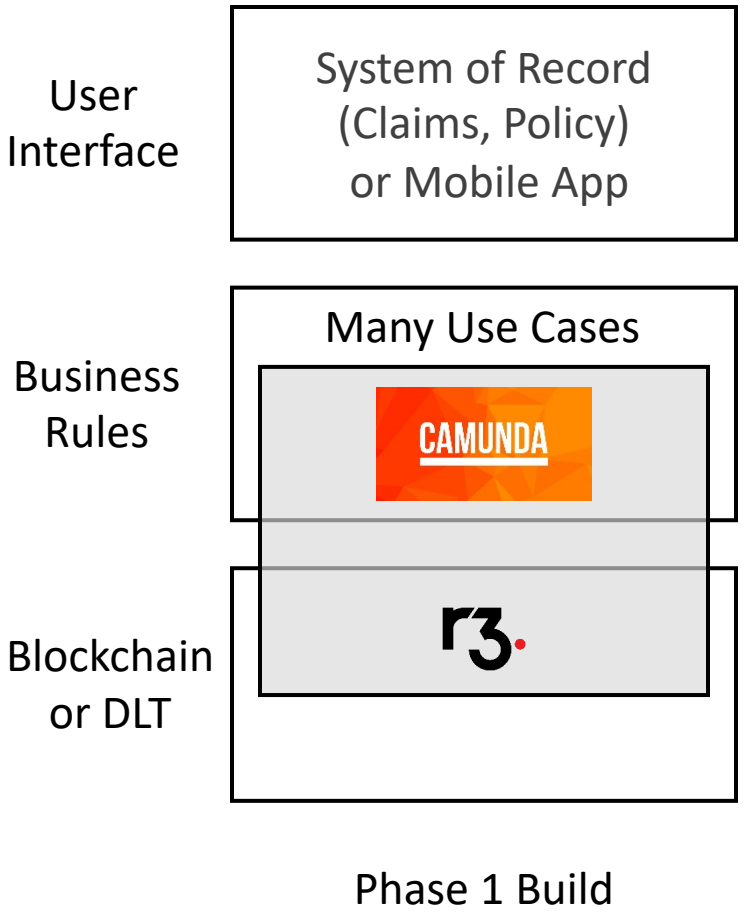
Architectural Evolution – Phase 1



Phase 1 Build

- RiskStream was a first-mover in shifting the center-of-gravity of the business rules up from the blockchain tier in response to consortium member requirements
- Reasons for making this shift included:
  - Interoperability – abstraction from proprietary blockchains
  - Improved handling of portfolios of business rules
  - Reluctance to implement complex rules in a new architecture
  - Security concerns with the new programming paradigm
- While this did represent a small step away from the broader vision for distributed applications on the blockchain, it was a necessary milestone.
- Note that “tokens” of value were also eliminated in this iteration due to member concerns.

Architectural Evolution – Phase 1



Phase 1 Build

- We've made great progress, but evolution continues.
- What's next?

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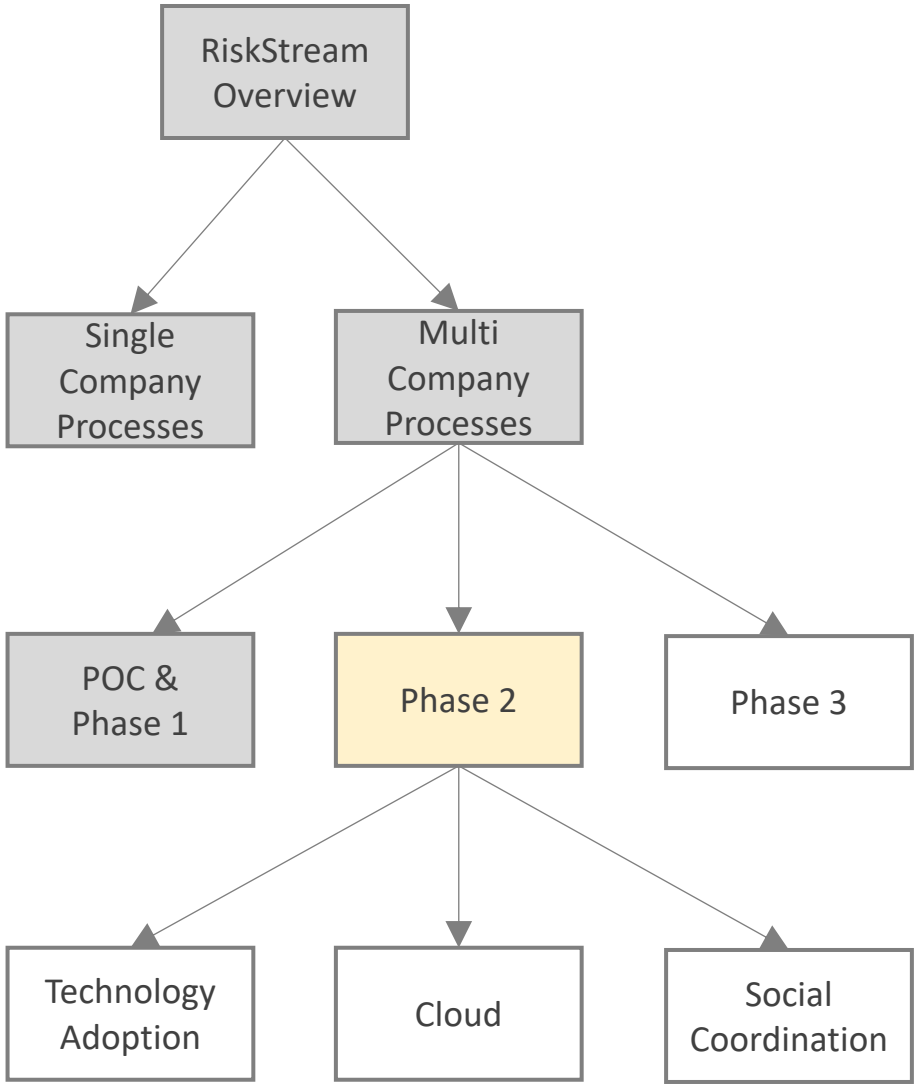
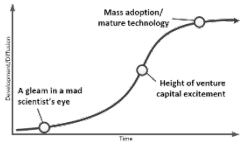


Architectural Evolution – Why?

Three of the major trends shaping Phase 2:

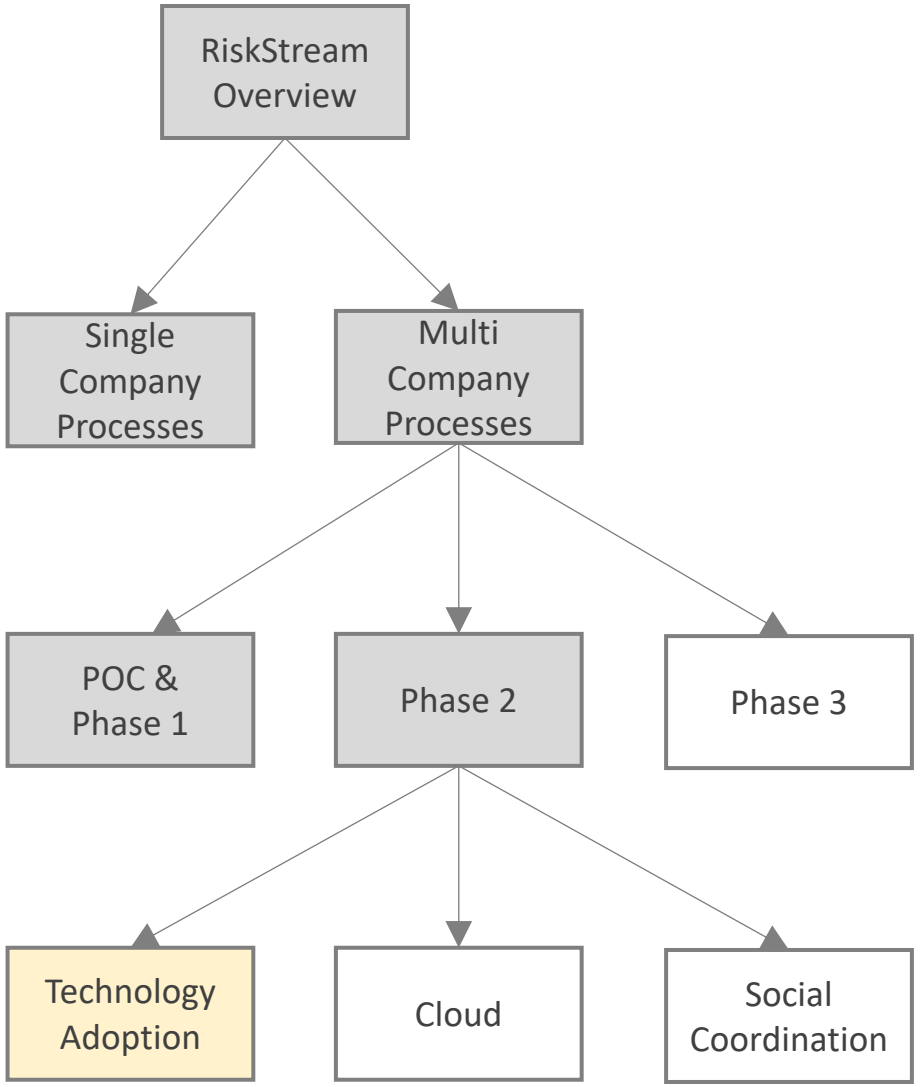


1. Technology Adoption

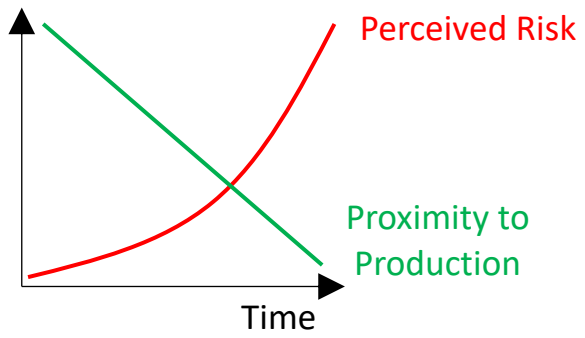
2. Cloud

3. Social Coordination

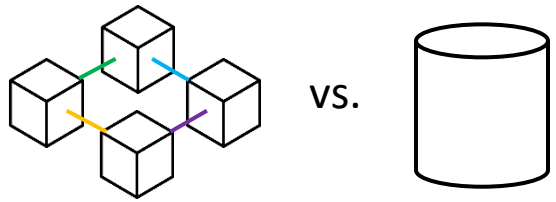
Agenda



Trend 1 : Technology Adoption Issues



- Closer proximity to production deployment
  - Amplifies perceived risk of new technologies
  - Slows down project velocity
  - **Requires greater executive sponsorship**



- Continued concerns about privacy legislation
  - GDPR and CCPA compliance
  - Simpler mechanisms to remove data required
  - **Pushes more data off the blockchain / ledger on to RDBMS**

- Caution around security of emerging technologies
  - Companies still in the midst of understanding cloud
  - Approving on a component-by-component basis
  - **More education needed for security teams**

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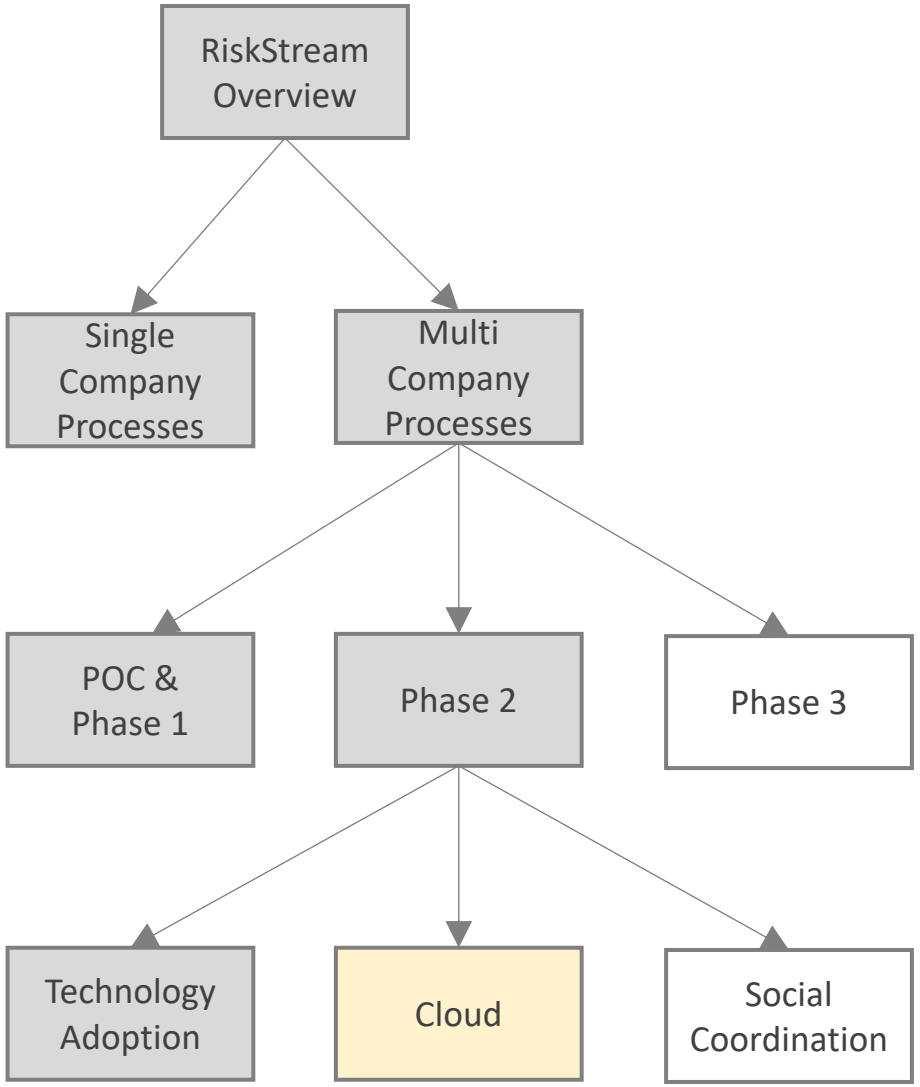
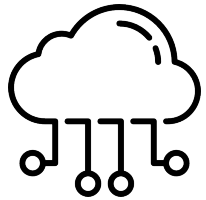
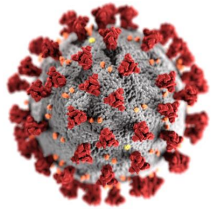
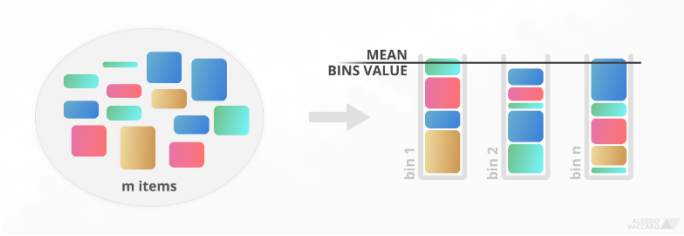
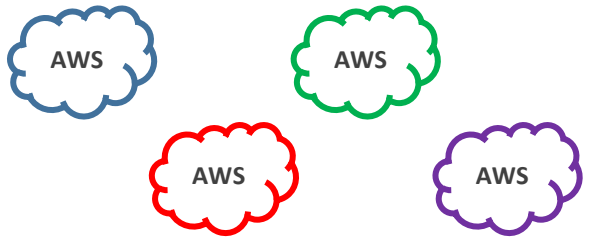


Trend 2 : Cloud



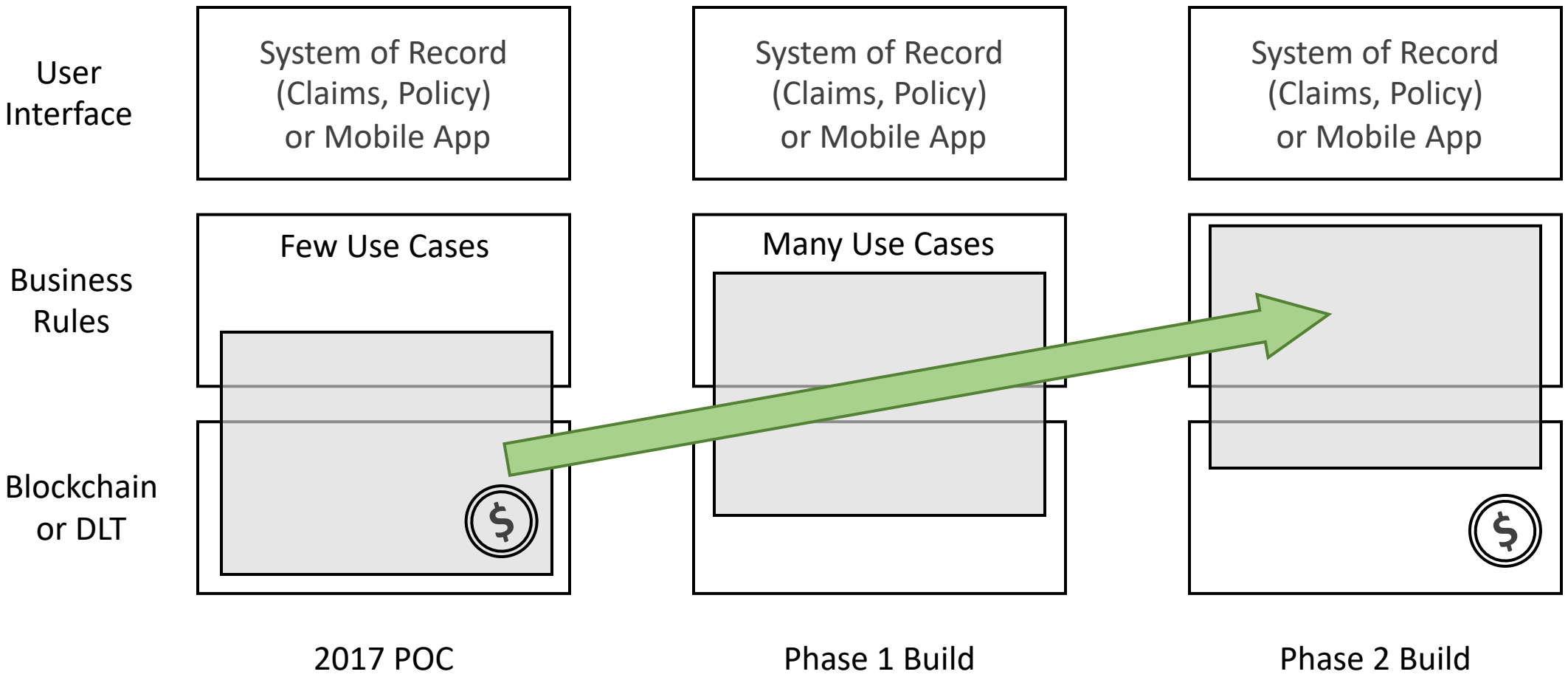






- Availability of experienced infrastructure staff
  - COVID has stretched available cloud engineers thin supporting remote work options
  - Overall cloud experience is patchy within organizations
  - **Pushes towards preference for SaaS type deployments**
- Improvements in cloud infrastructure
  - Much **faster to deploy** whole networks in a managed cloud (Blockchain as a Service)
  - Improved density of cloud deployments due to technologies like container orchestration help to **reduce cost**
- Lack of consistent cloud architectures
  - Consistency of cloud infrastructure is low, even on the same cloud provider. IAM and network engineering biggest issues.
  - Causes challenges when deploying to member clouds, even with Infrastructure as Code / containerization technology
  - **Pushes to SaaS model…**

Architectural Evolution – POC to Phase 1 to Phase 2



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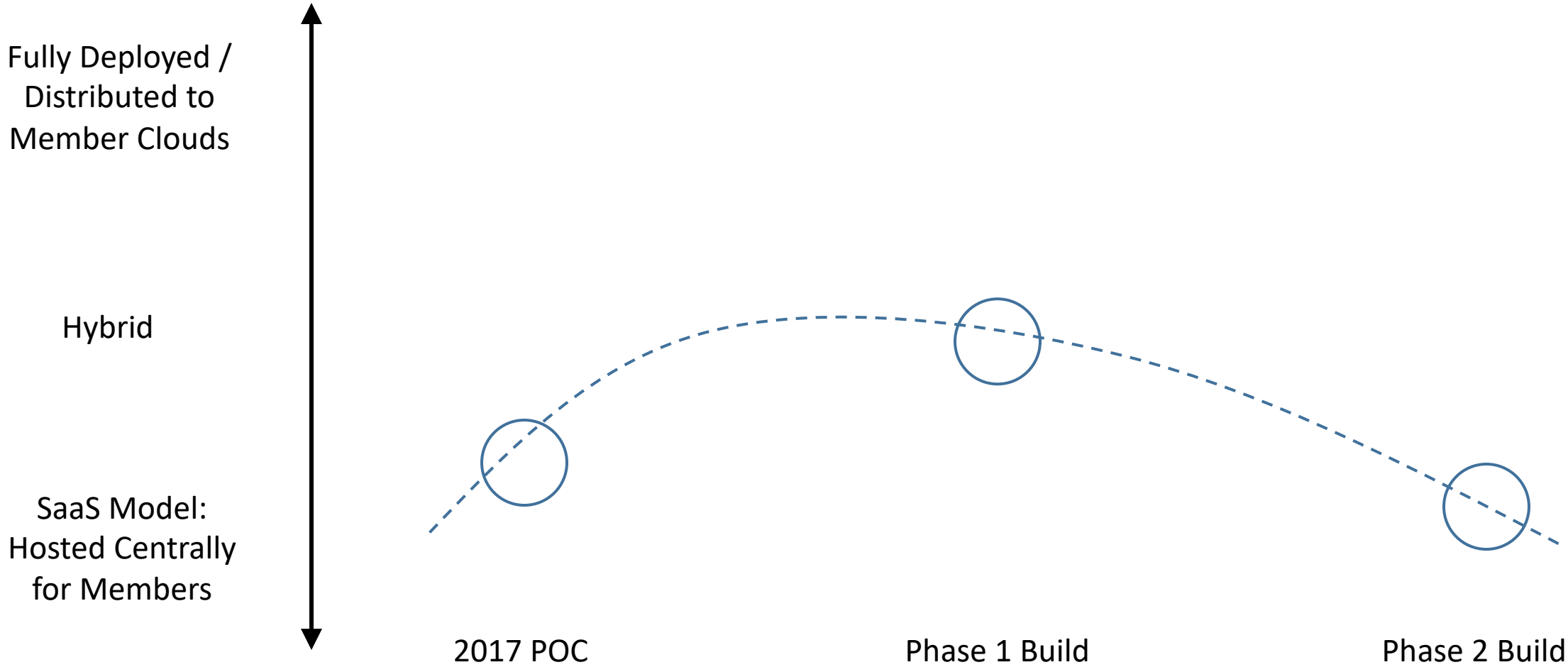

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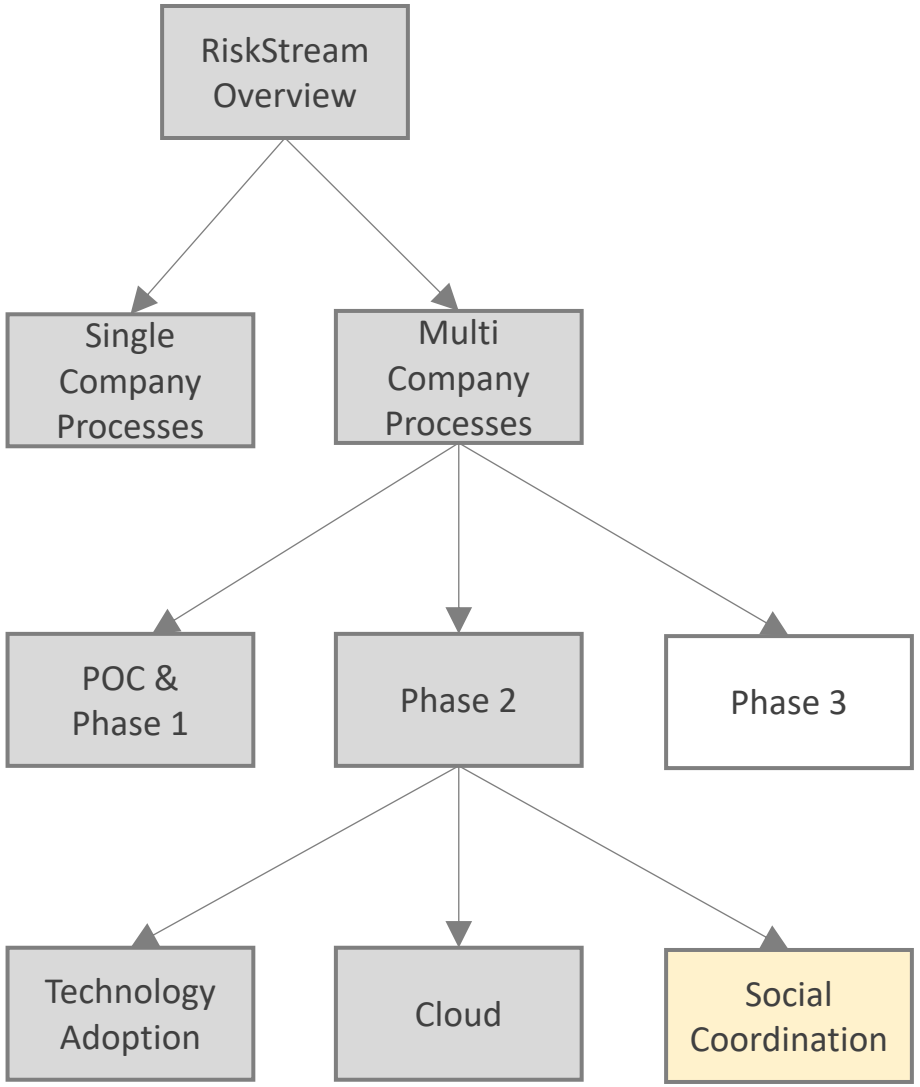


Trend 3 : Social Coordination

Let’s talk about adoption…

- How do we encourage use of the network?
- How do we develop “good society” on network?
- *noun*:
  1. the aggregate of people living together in a more or less ordered community.
  2. an organization or club formed for a particular purpose or activity.

Trend 3: Social Coordination … the original belief about adoption

- The original belief was that if the distributed network was built, potential participants would see the value and join

- As you have seen earlier in the presentation, this has its own challenges technically and with the adoption of new technology

- There is also a "social coordination" problem, to borrow the term from Vitalik Buterin:

> *"…complex forces are what will lead to blockchains and cryptocurrencies being useful. It's easy to say that any application can be done more efficiently with a centralized service, but in practice social coordination problems are very real, and unwillingness to sign onto a system that has even a perception of non-neutrality or ongoing dependence on a third party is real too. And so the centralized and even consortium-based approaches claiming to replace blockchains don't get anywhere"*[1]

- RiskStream is not completely neutral by Buterin's description, but we are as close to neutral for the industry as possible – the "Switzerland" of the insurance industry.

[1] End Notes 2020: https://vitalik.ca/general/2020/12/28/endnotes.html

Trend 3: Social Coordination … which blockchains are seeing adoption…

Let's take a look at the range of blockchains in use and their progress towards adoption…

- Simpler blockchains…
- Best suited for simpler applications like payments
- Solved the "double spend" problem
- Best known = Bitcoin

Higher Adoption

- More sophisticated blockchains
- Support complex "Distributed Applications" or Dapps, CorDapps etc.
- Suitable for automating shared business processes
- Best known = Ethereum

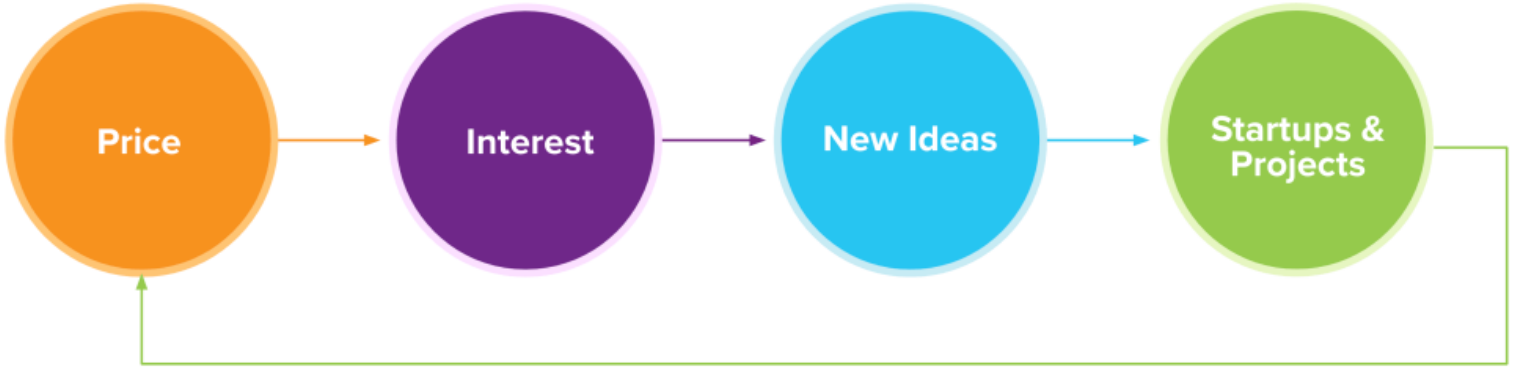
Lower Adoption

Trend 3: Social Coordination … is there evidence of progress?

- Andreesen – Horowitz (a16z) believe we are in the fourth cycle of “crypto innovation”
  - Each cycle separated by a “crypto winter”

- As the technology proves itself and prices increase, so does interest in the next round of innovations

- Bitcoin, as an example, has moved from a fringe cryptocurrency to one that is attracting major purchases from companies like Tesla, MetLife, Microstrategy



https://a16z.com/2020/05/15/the-crypto-price-innovation-cycle/

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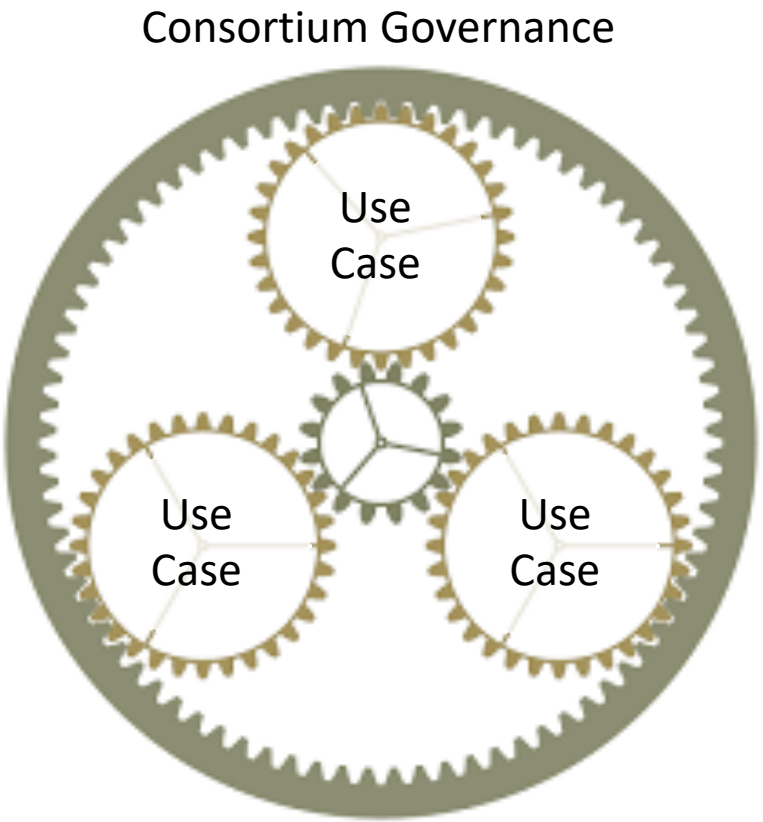
Lower Adoption

Trend 3: Social Coordination … summarizing

- What can we do to solve the Social Coordination problem?

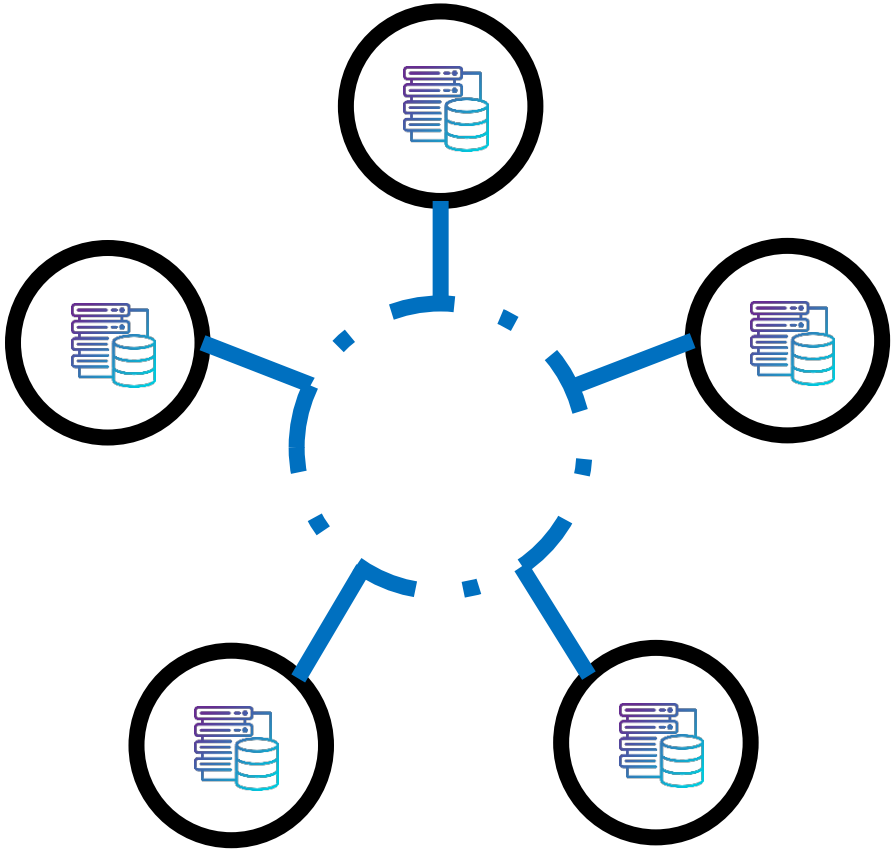
- At the governance level:
  - Organizations like RiskStream with industry neutrality
  - Continue to bring together interested stakeholders to work on new use cases e.g. almost 300 parties on a call this week to discuss Surety Bonds

- At the use case level:
  - Implement incentive tokens to neutralize “anti-social” behavior?
    - Leverage the success and acceptance of Bitcoin etc.
  - Possibly increase participation by balancing the competing forces at play in certain use cases



[1] End Notes 2020: https://vitalik.ca/general/2020/12/28/endnotes.html

Recall: Connecting the Digital Islands - Benefits



Efficiency ↑

Security ↑

Costs ↓

Customer Experience ↑

These factors can exert antagonistic pressures

Example: Antagonistic Dynamics in the Network (highly simplified)

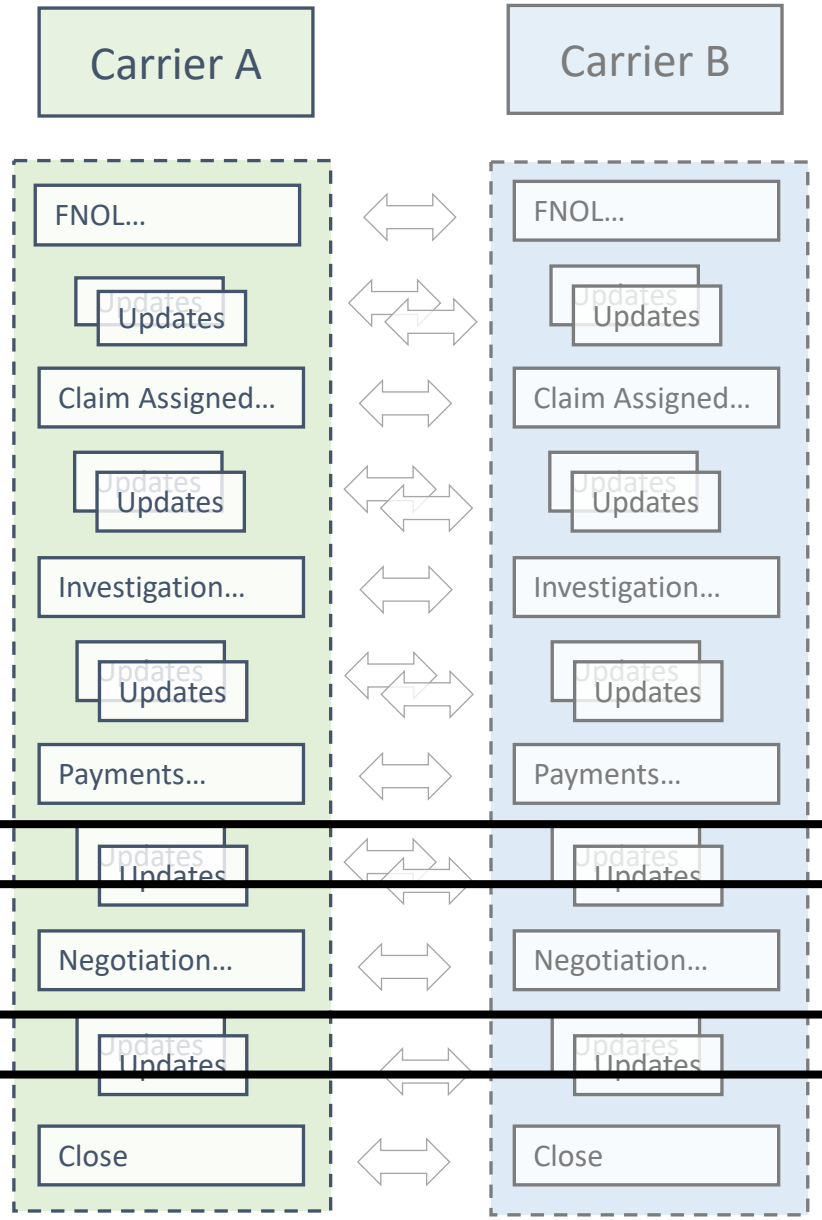
Motivation: **Best Customer Experience**

- Collects information from all participants
- Retrieves police report, if applicable
- Solicits pictures of the incident from all parties
- Clarifies details of location of incident, all parties involved and their stories

- **Carrier A incurs the costs of the above work…**

Resolves Claim

Time



Motivation: **Lowest Cost Provider**

Collects minimum information for First Notice of Loss

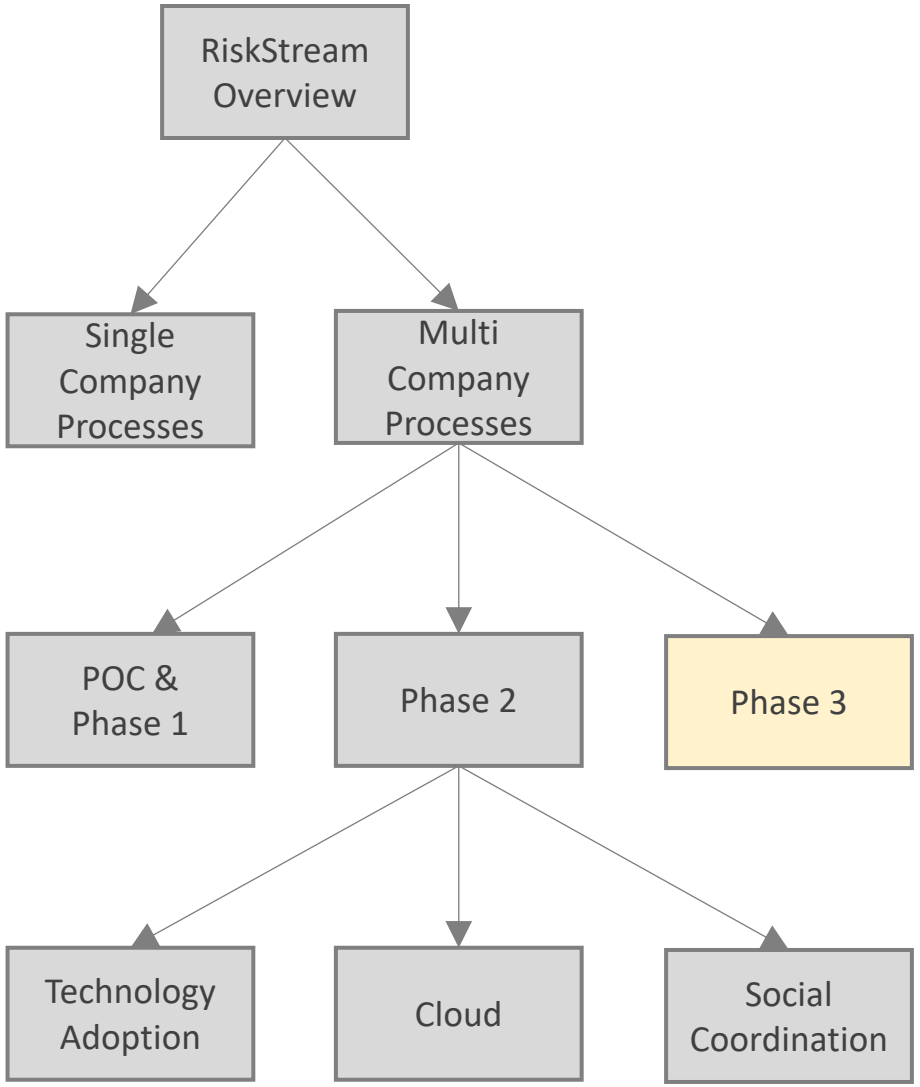
Waits for Carrier A To investigate

(Carrier B avoids costs…)

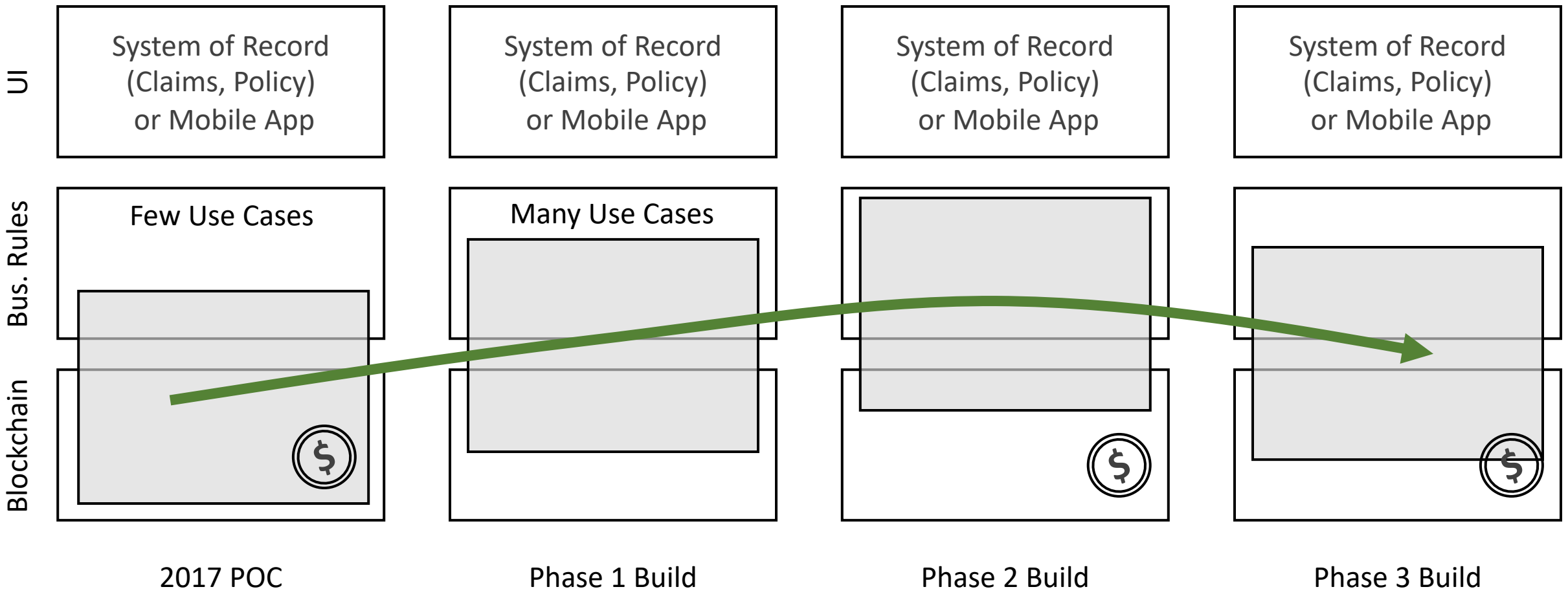
Requests details from Carrier A

Resolves Claim

Agenda



Architectural Evolution – POC to Phase 1 to Phase 2 … to Phase 3?



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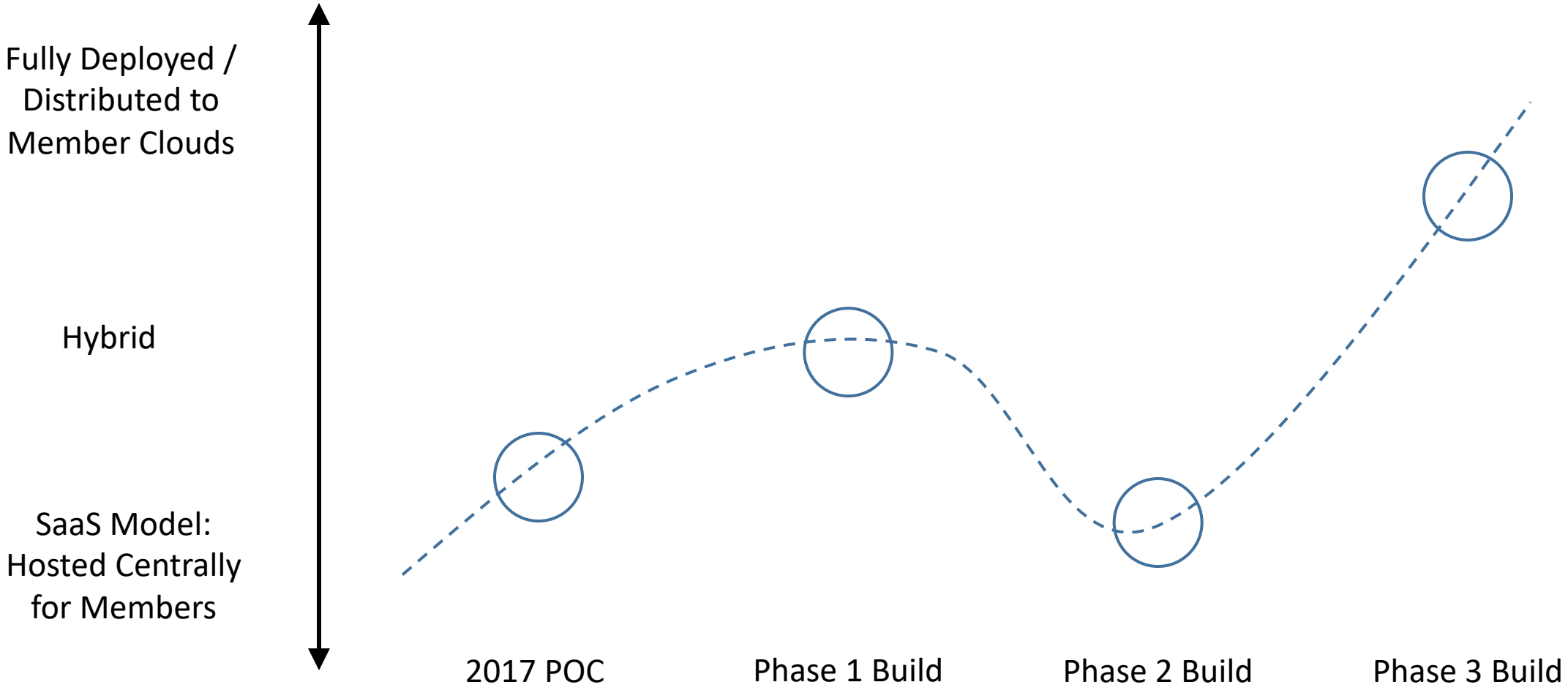

To be continued…