



DOMAIN
DRIVEN
DESIGN
EUROPE

Residuality:

Real World Comparative Case Studies

Andrea Magnorsky
Chris Simon

**"CASE STUDIES
ARE BORING."**

- Barry O'Reilly

Creator of Residuality



Who are we?



Andrea Magnorsky

Architect Consultant / Trainer
Creator of Bytesize Architecture
Sessions



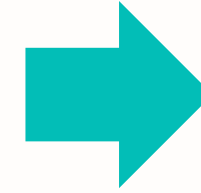
Chris Simon

Former CTO
DDD Consultant/Trainer
Contextive Founder

Agenda

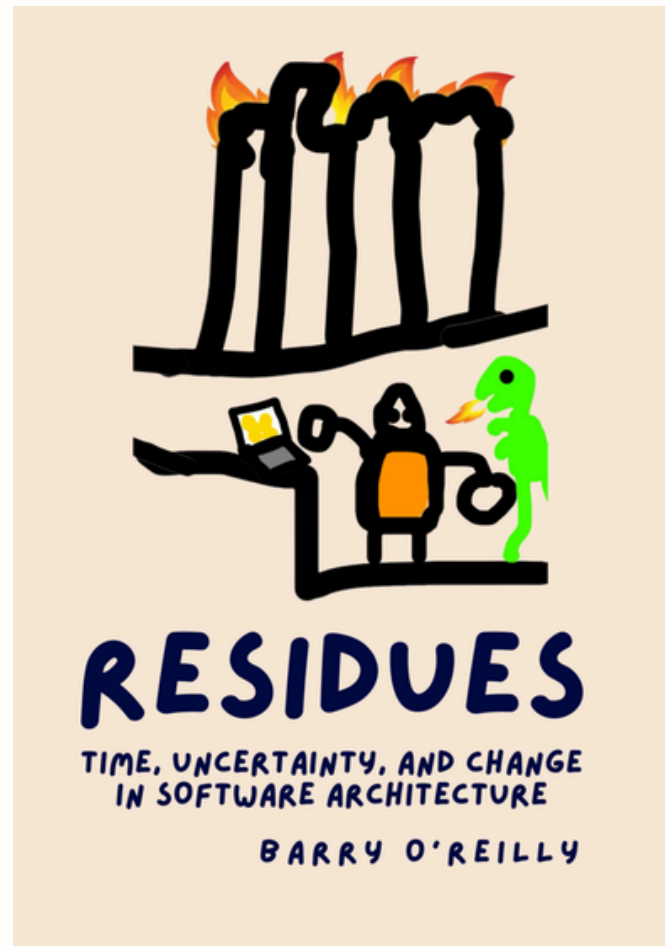
1. Residuality Overview
2. Motivation
3. Outcomes & Organisations
4. Case Study 1 - Contextive
5. Case Study 2 - Lexer
6. Conclusion

Agenda



1. Residuality Overview
2. Motivation
3. Outcomes & Organisations
4. Case Study 1 - Contextive
5. Case Study 2 - Lexer
6. Conclusion

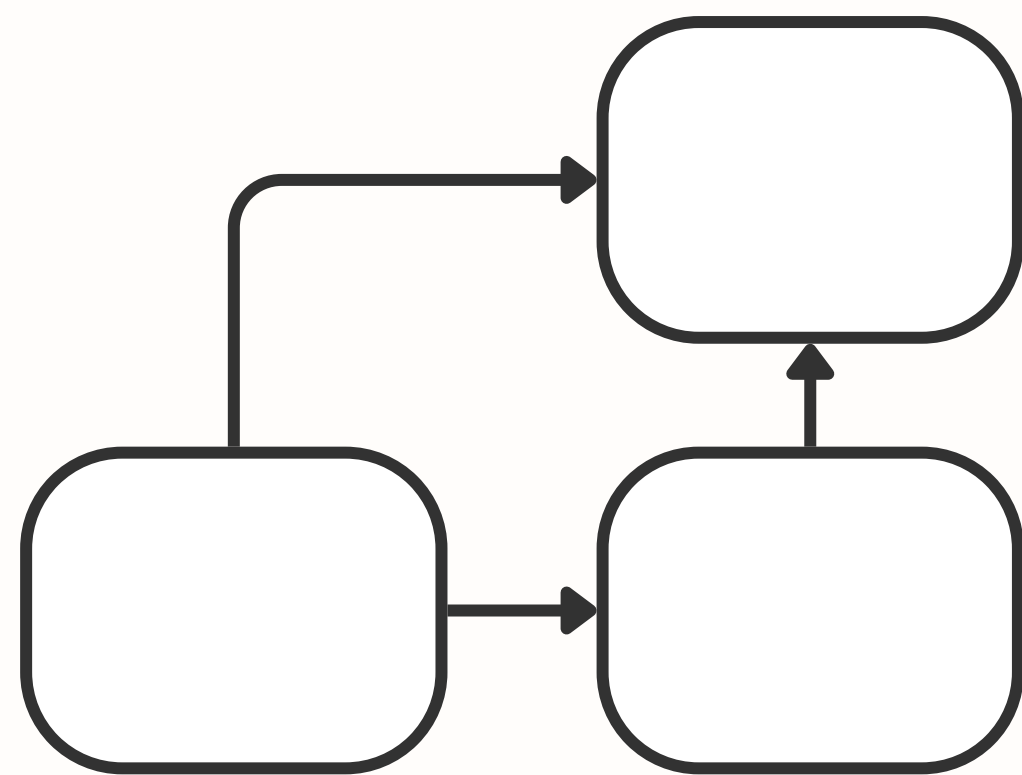
What is Residuality?



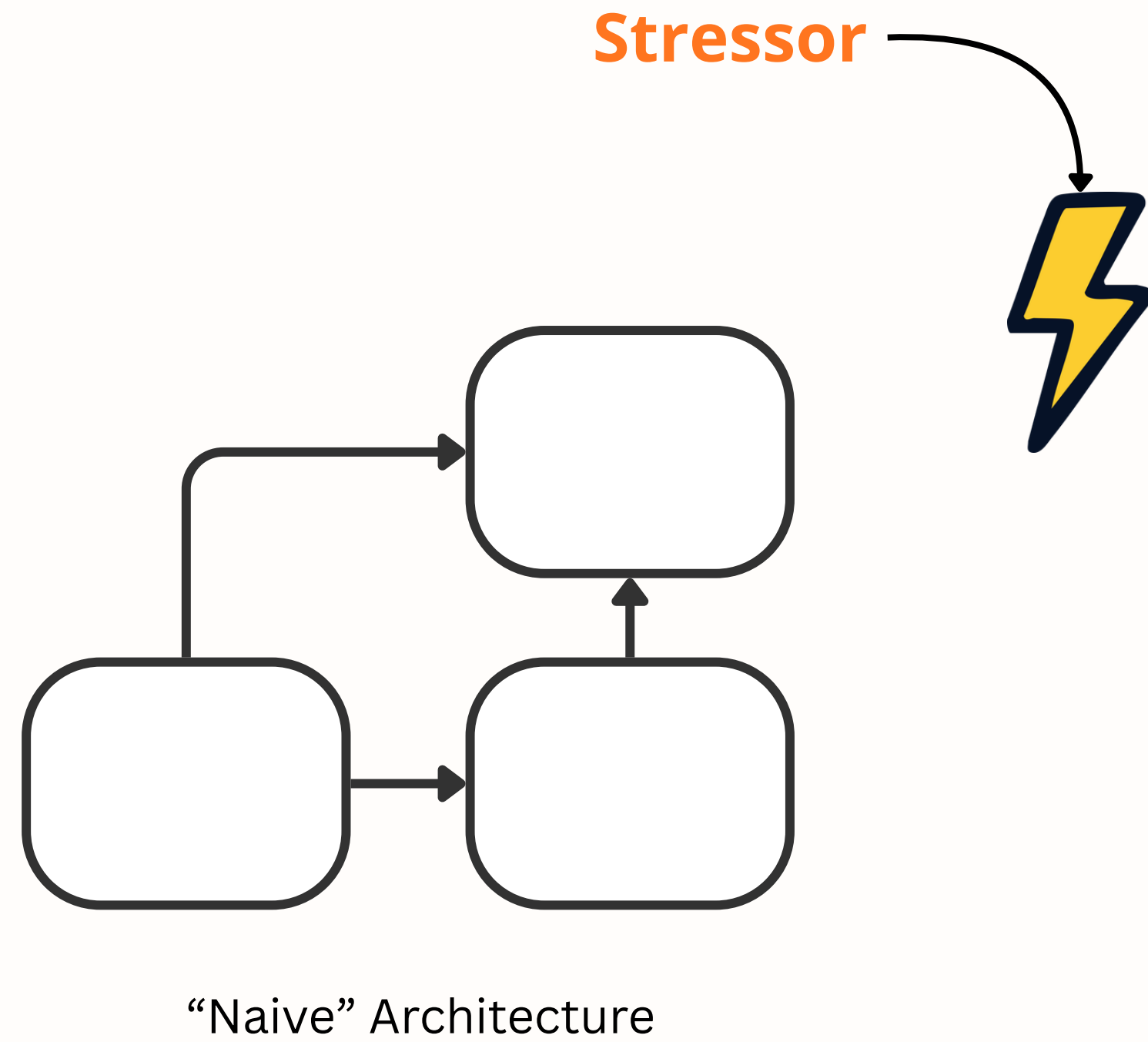
"A RANDOM SIMULATION OF STRESS IS A BETTER WAY OF GENERATING A SOFTWARE ARCHITECTURE THAN PREDICTION, REQUIREMENTS ANALYSIS, REUSE OF PATTERNS, OR REACTIVE CHANGE MANAGEMENT BY CODING."

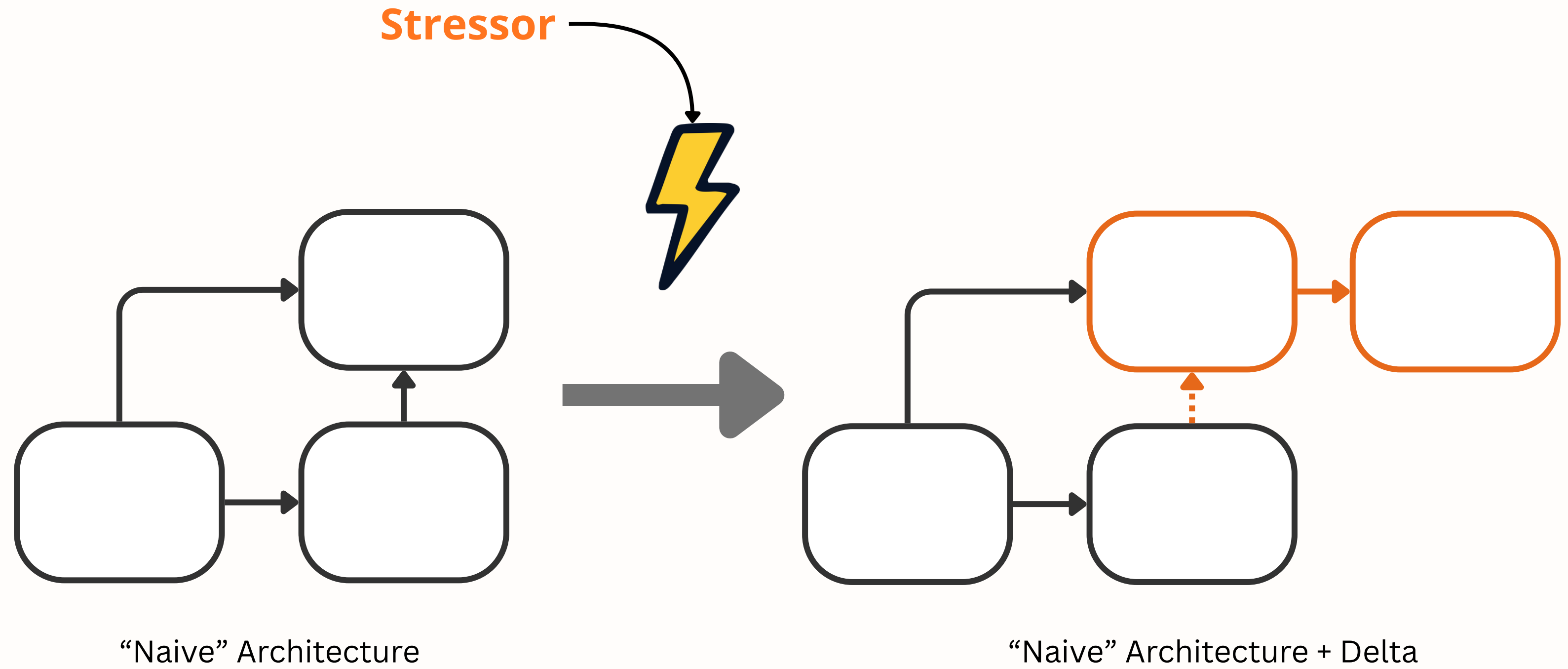
- Barry O'Reilly

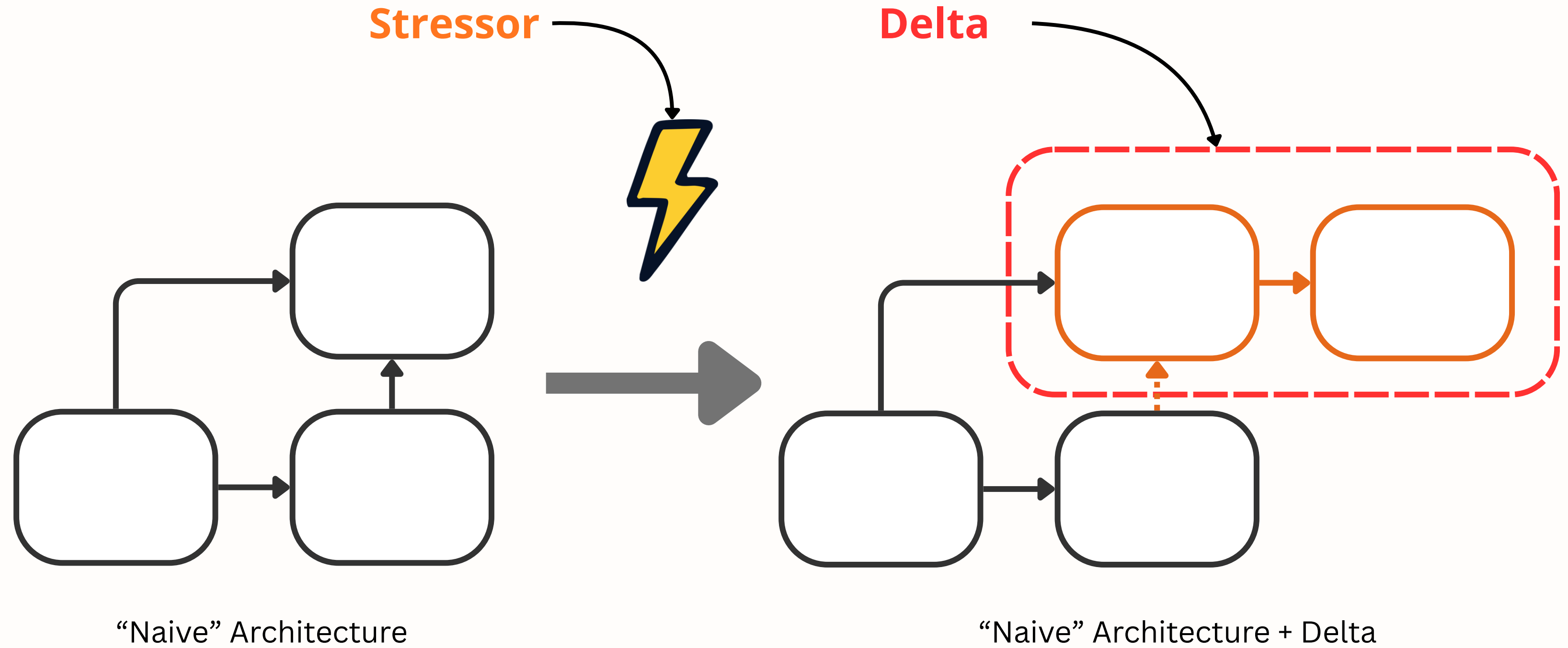




“Naive” Architecture

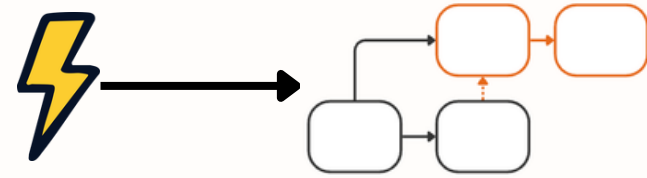






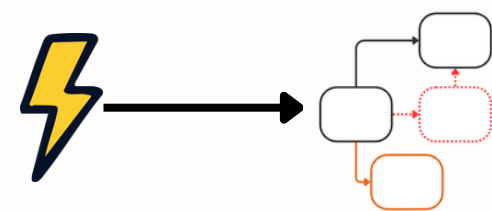
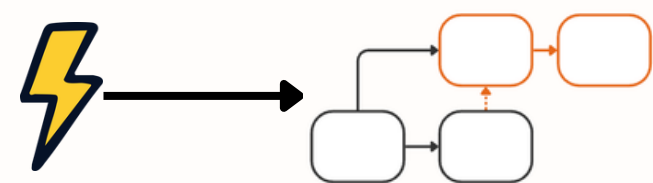
Stressor

Deltas



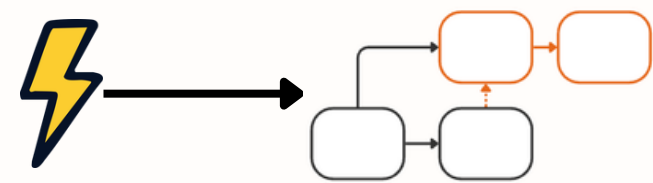
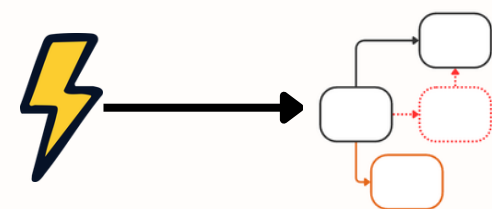
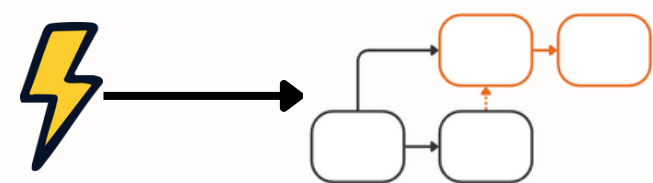
Stressor

Deltas



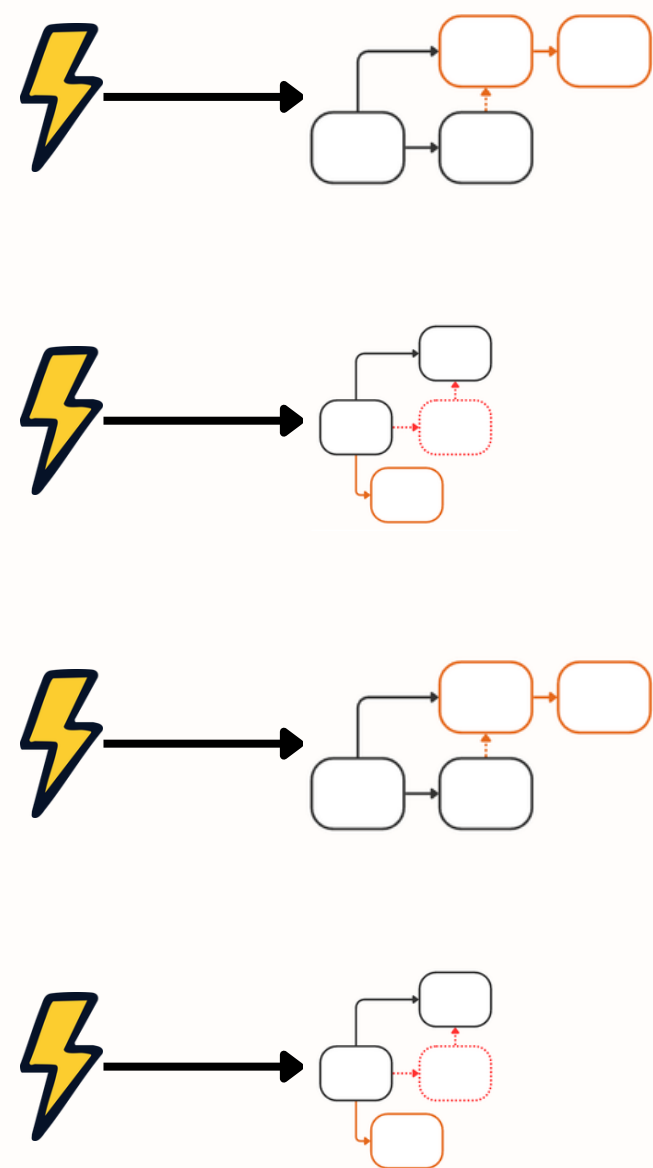
Stressor

Deltas



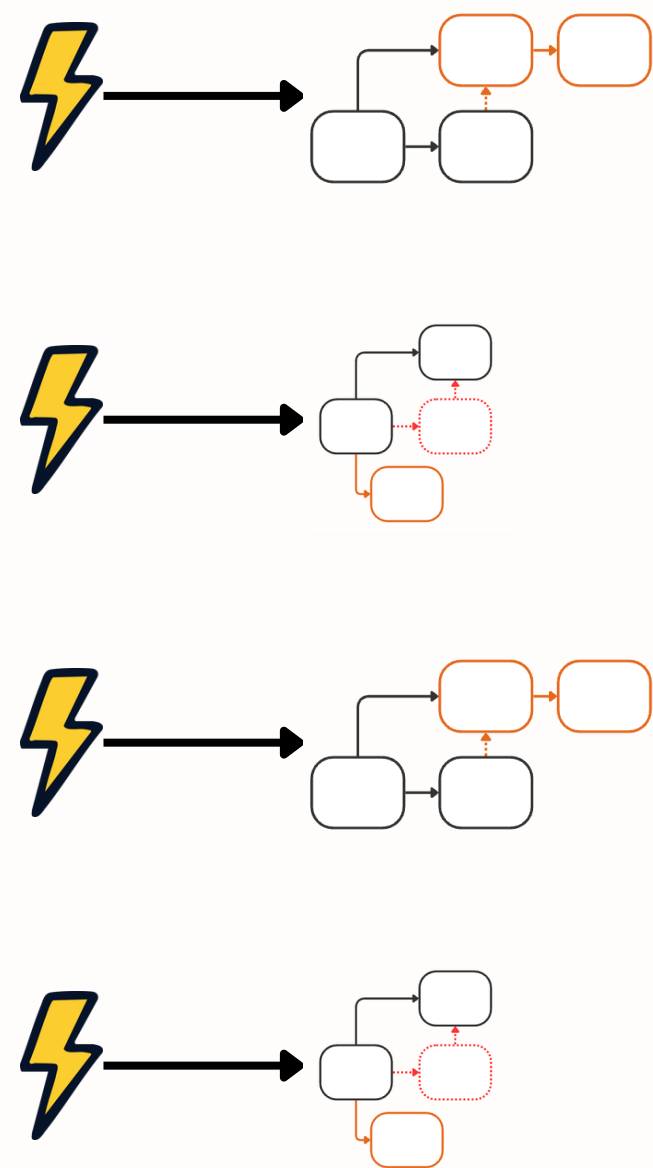
Stressor

Deltas

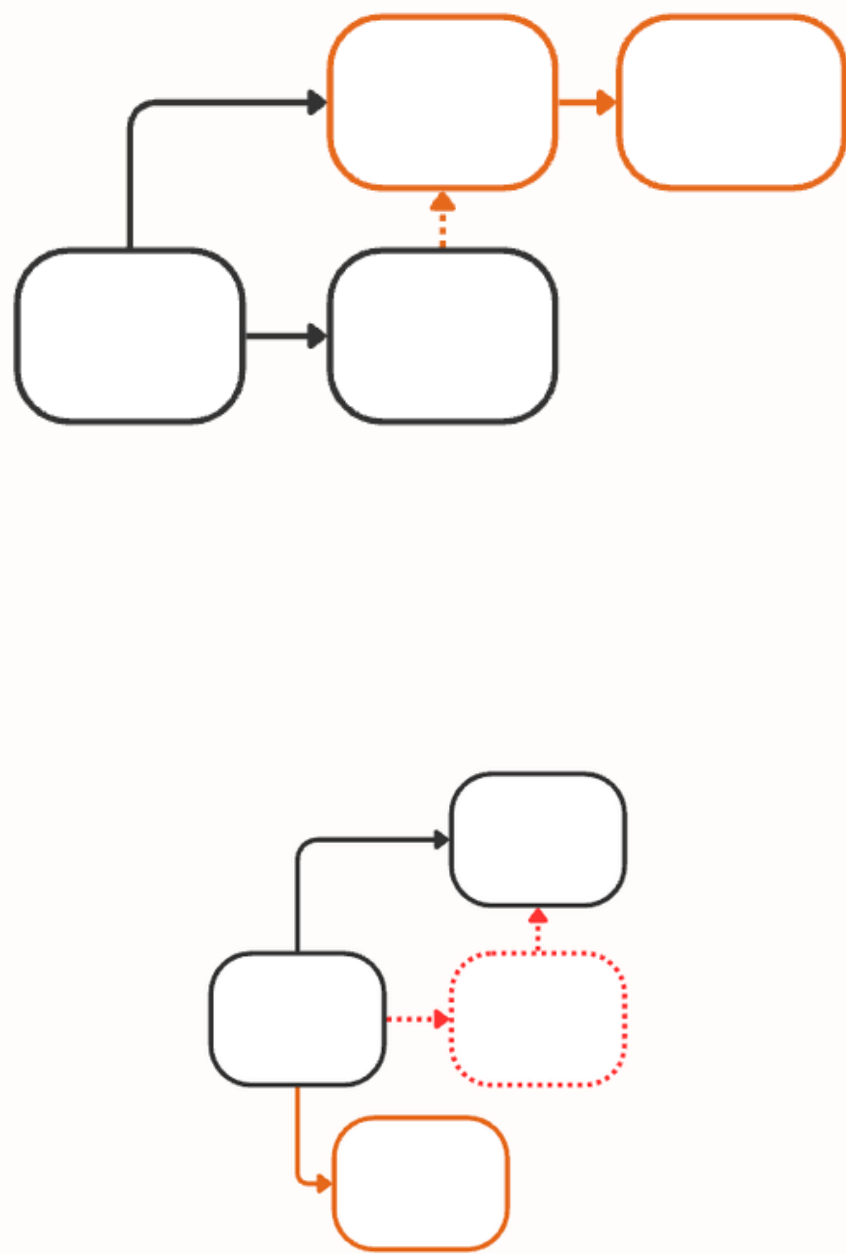


Stressor

Deltas

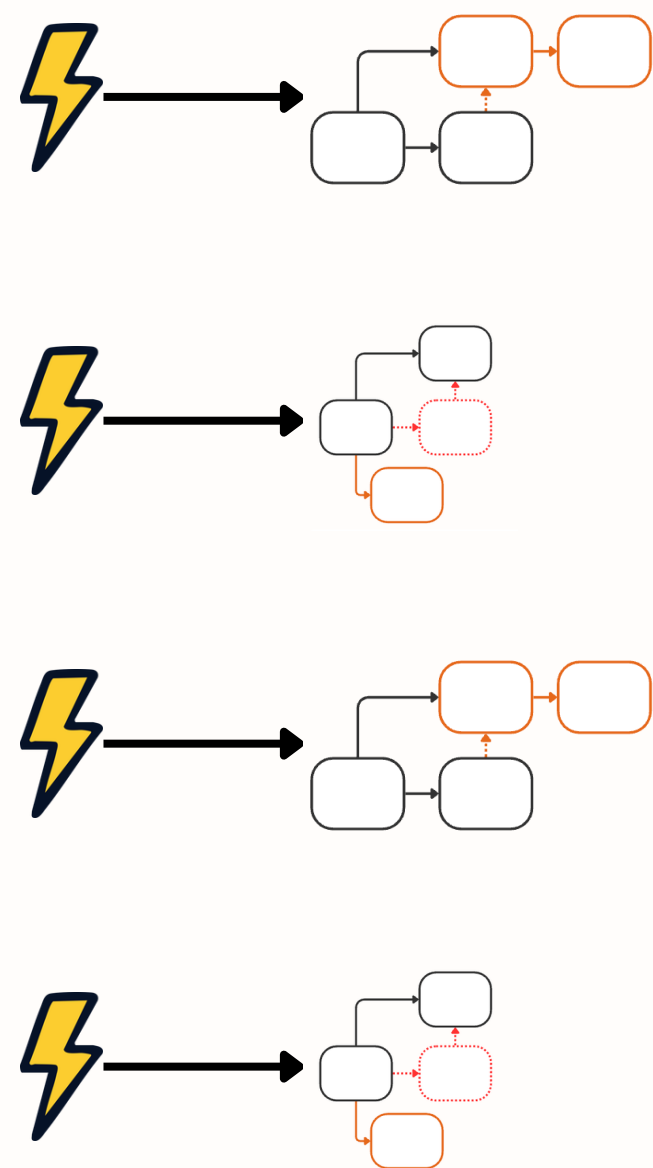


Distinct Deltas

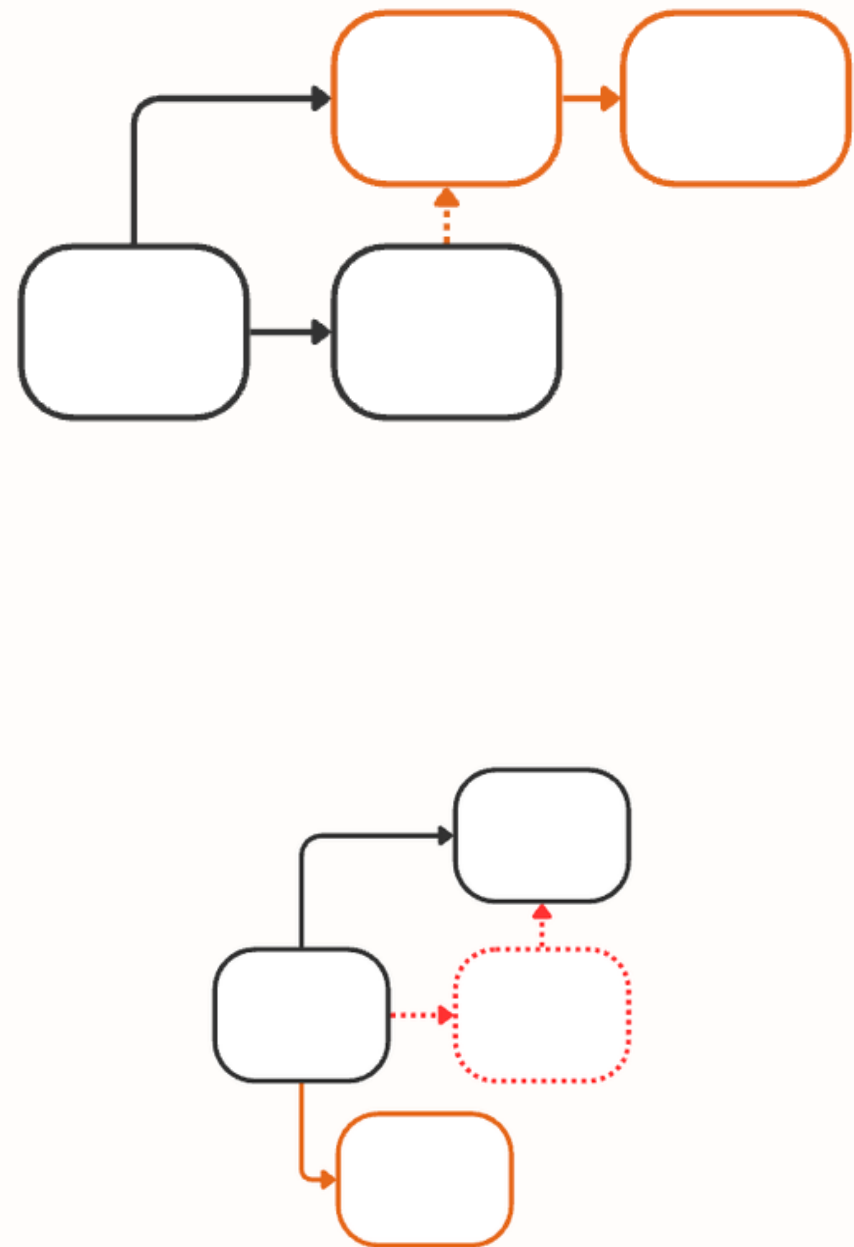


Stressor

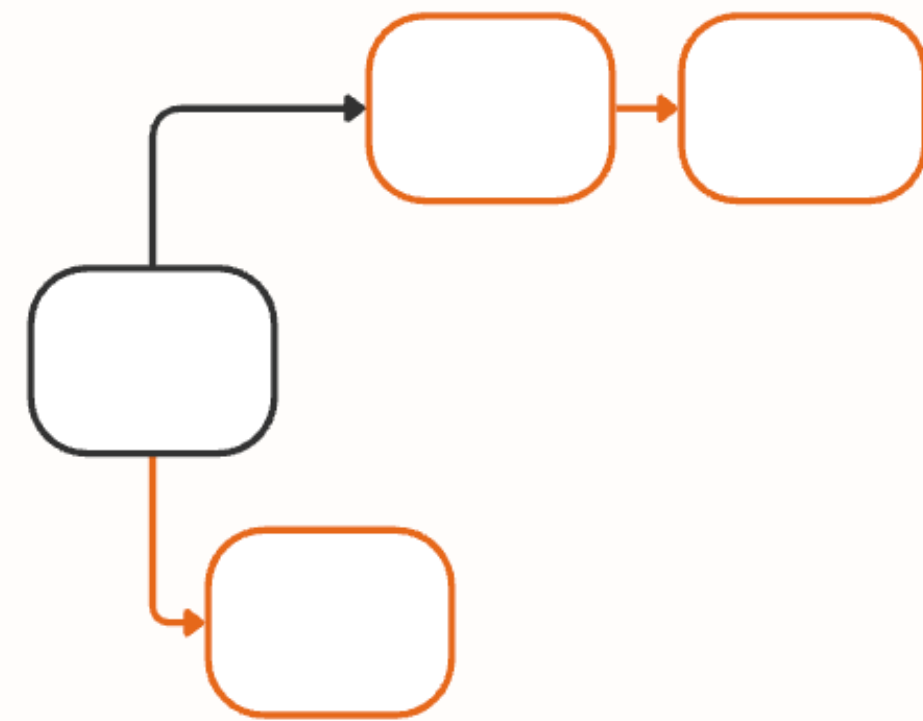
Deltas



Distinct Deltas

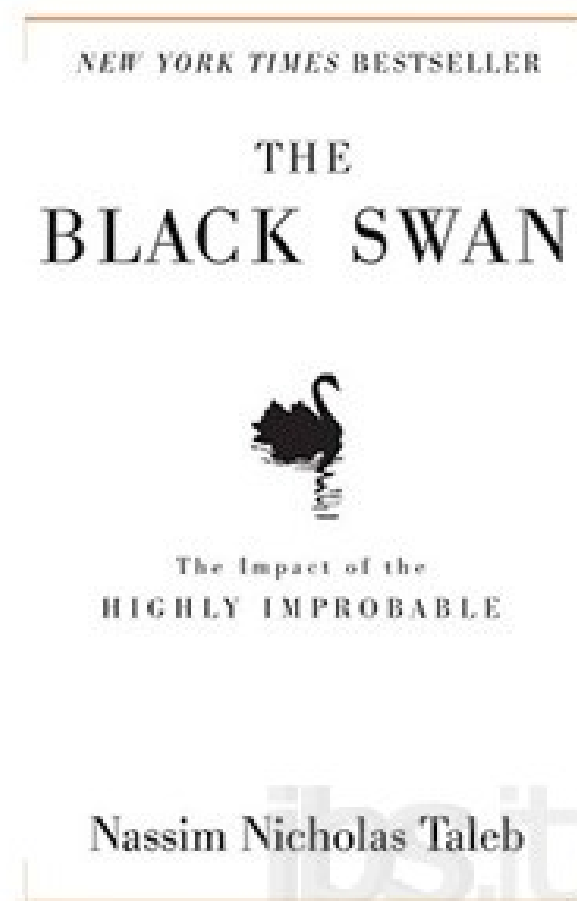
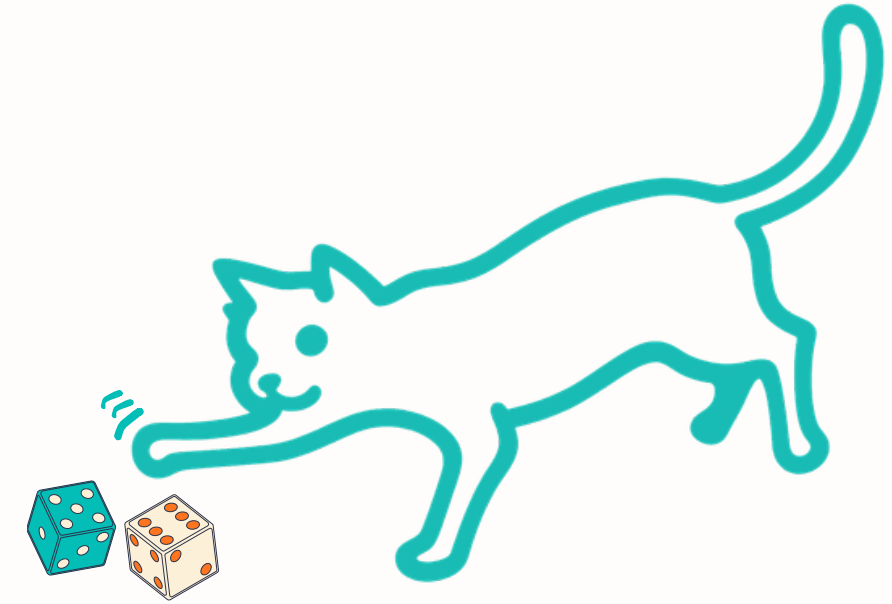


Residual Architecture



Randomness

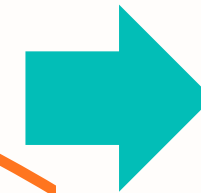
Cats, a good source of randomness*



The Black Swan: The Impact of the Highly Improbable by Nassim Nicholas Taleb

*<https://proofof.cat/>

Agenda



1. Residuality Overview
2. Motivation
3. Outcomes & Organisations
4. Case Study 1 - Contextive
5. Case Study 2 - Lexer
6. Conclusion

Does it actually work?

Is DDD still relevant?

Can we still collaborate?

What is a good stressor?

What is a good delta?

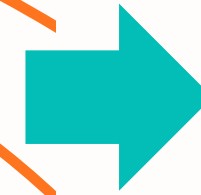
How to prioritise/sequence deltas?

What if the business strategy is unclear?

Motivation

***"You have to
ride a bicycle
to learn to ride
a bicycle"***

Agenda



1. Residuality Overview
2. Motivation
3. Outcomes & Organisations
4. Case Study 1 - Contextive
5. Case Study 2 - Lexer
6. Conclusion

Does it actually work? Yes

Is DDD still relevant? Yes

Can we still collaborate?

Yes and solo work too

What is a good stressor?

A collection of stressors needs to be random enough

What is a good delta? It is specific and clear (not always detailed)

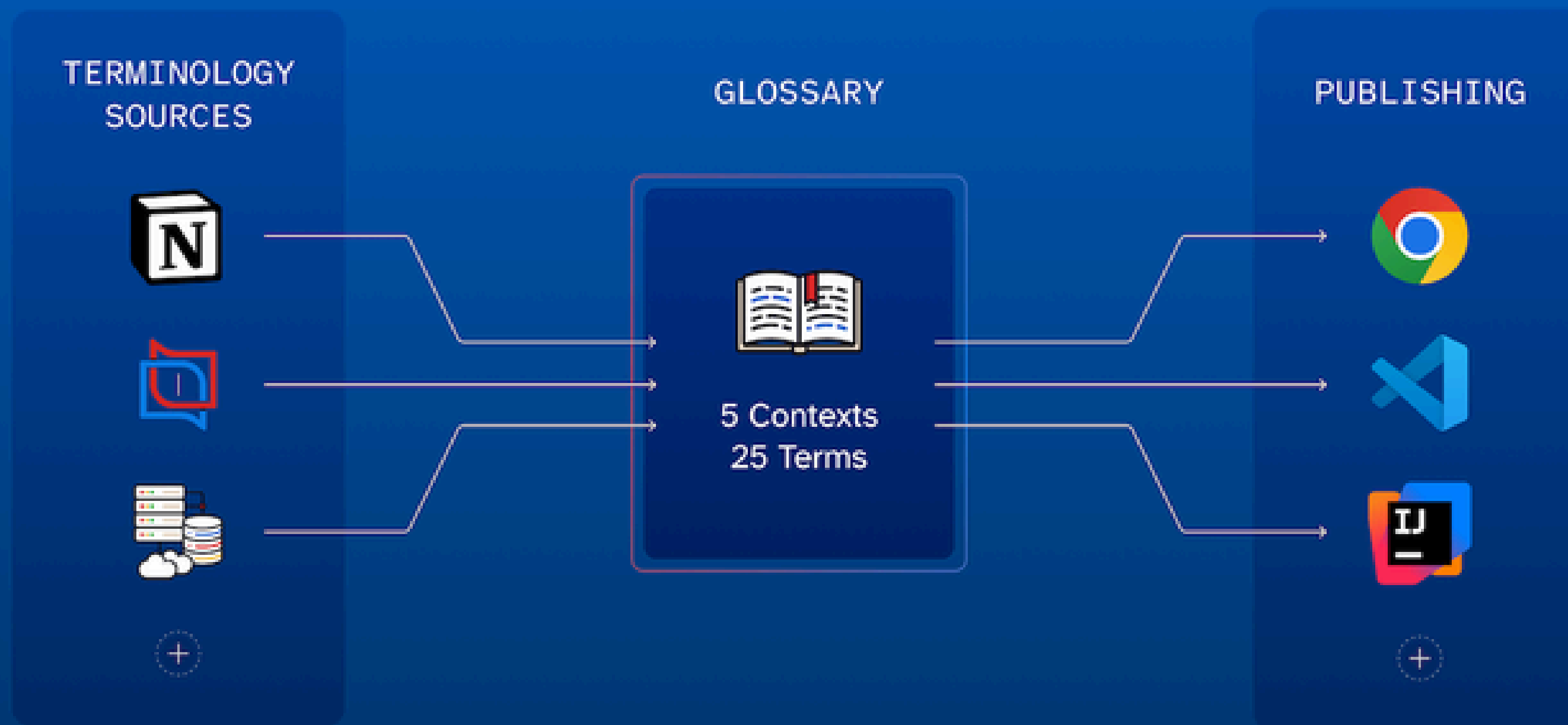
How to prioritise/sequence deltas? Up to you

What if the business strategy is unclear? It will be exposed

Case Study Organisations

Get on the same page

Distribute your critical domain knowledge to the places its needed



Case Study Organisations

[Why Lexier](#)[Solutions](#)[Platform](#)[Resources](#)[Client stories](#)[Get started](#)[Login](#)

THE CUSTOMER DATA PLATFORM

Know every customer. Grow the ones that matter.

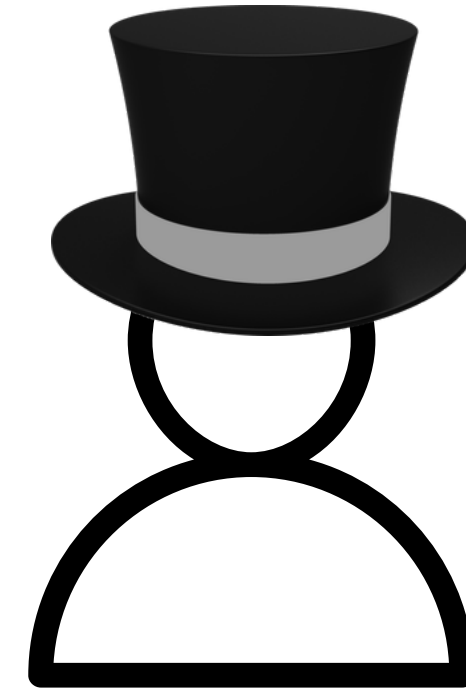
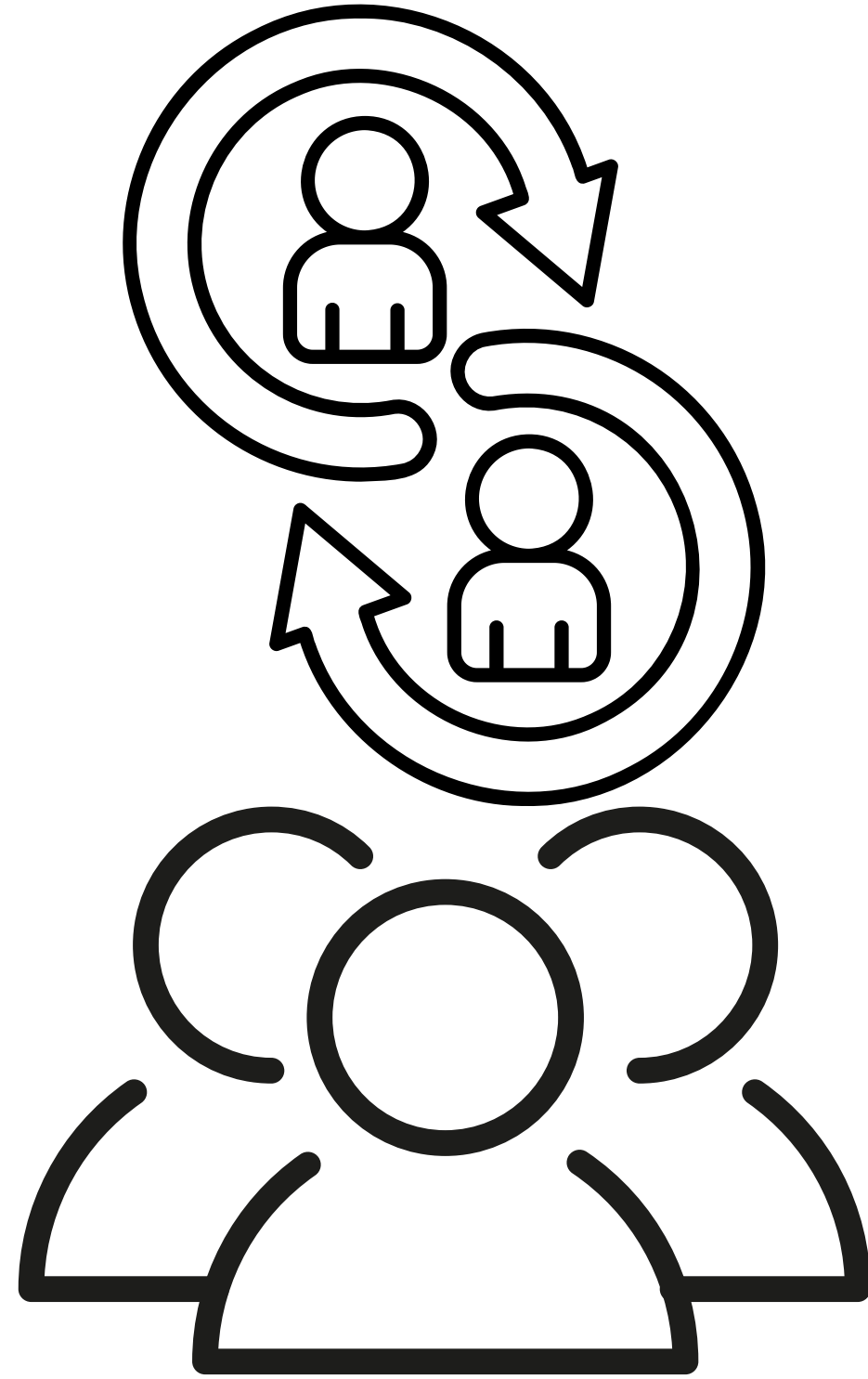
Lexier unifies your customer data across every channel and touchpoint, so you always know who to retain, reward, and grow.

[Book a demo](#)

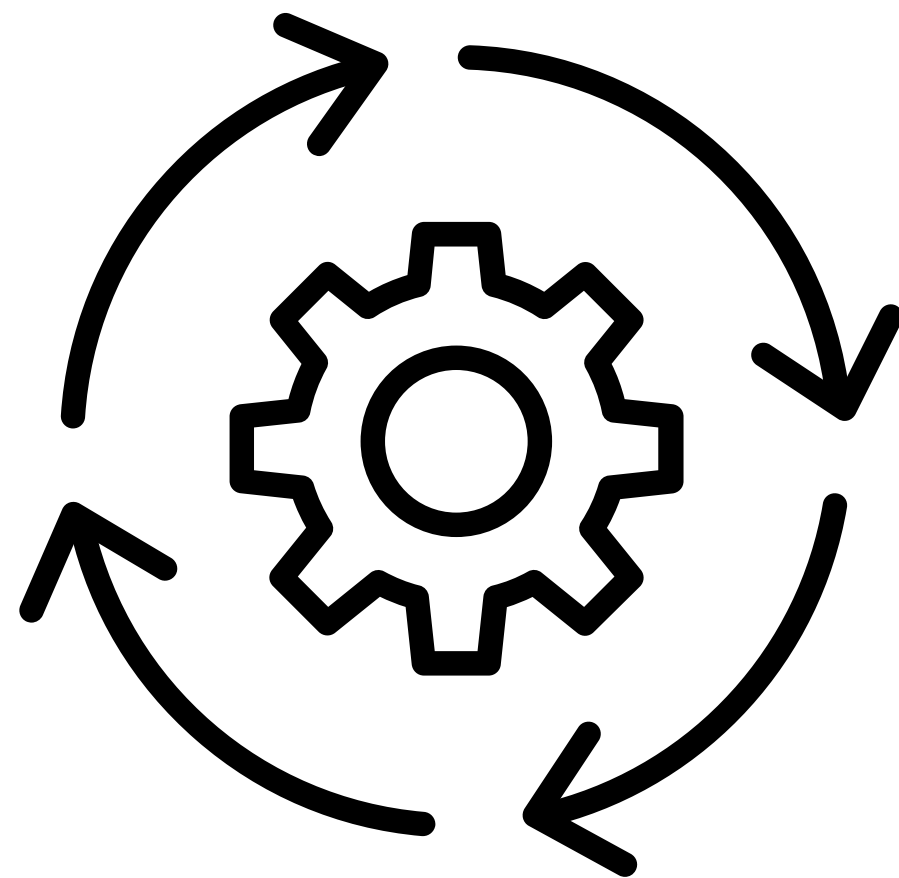
lexier

Case Study Organisations

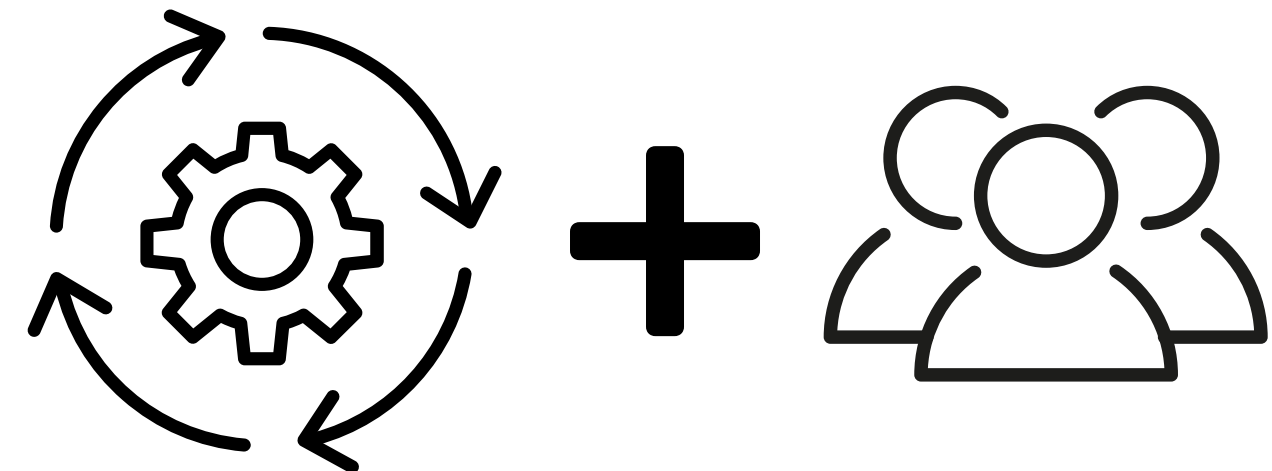
lexer



Case Study Organisations



Single developer,
solopreneur
1 year old



62 in company
20 in Engineering
16 years old

TL;DR: - Results

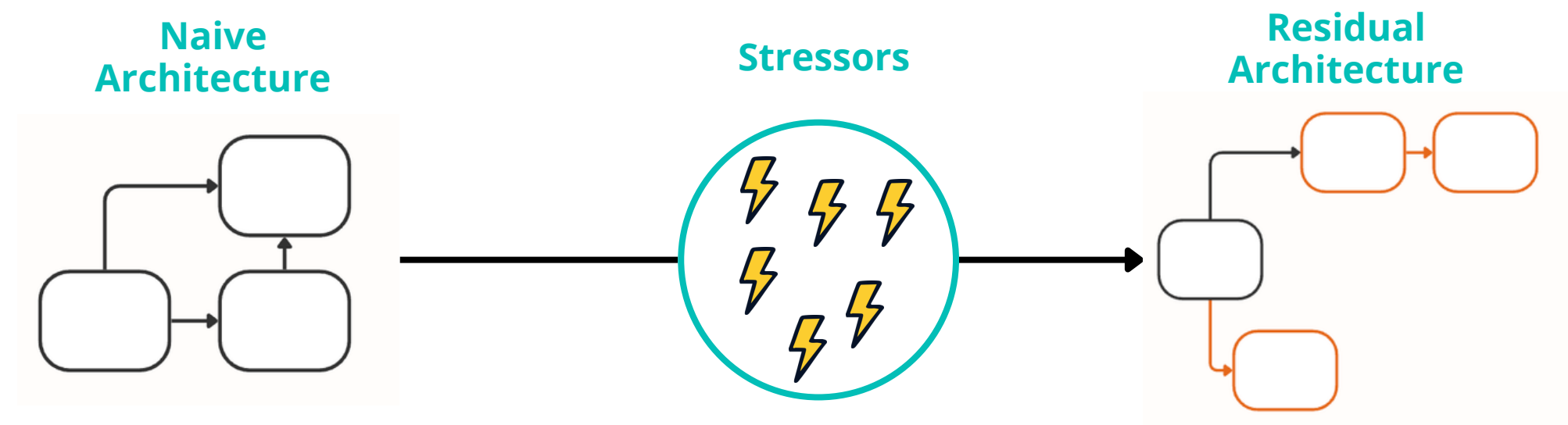


Drove major changes to
architecture, UX and
Pricing updates



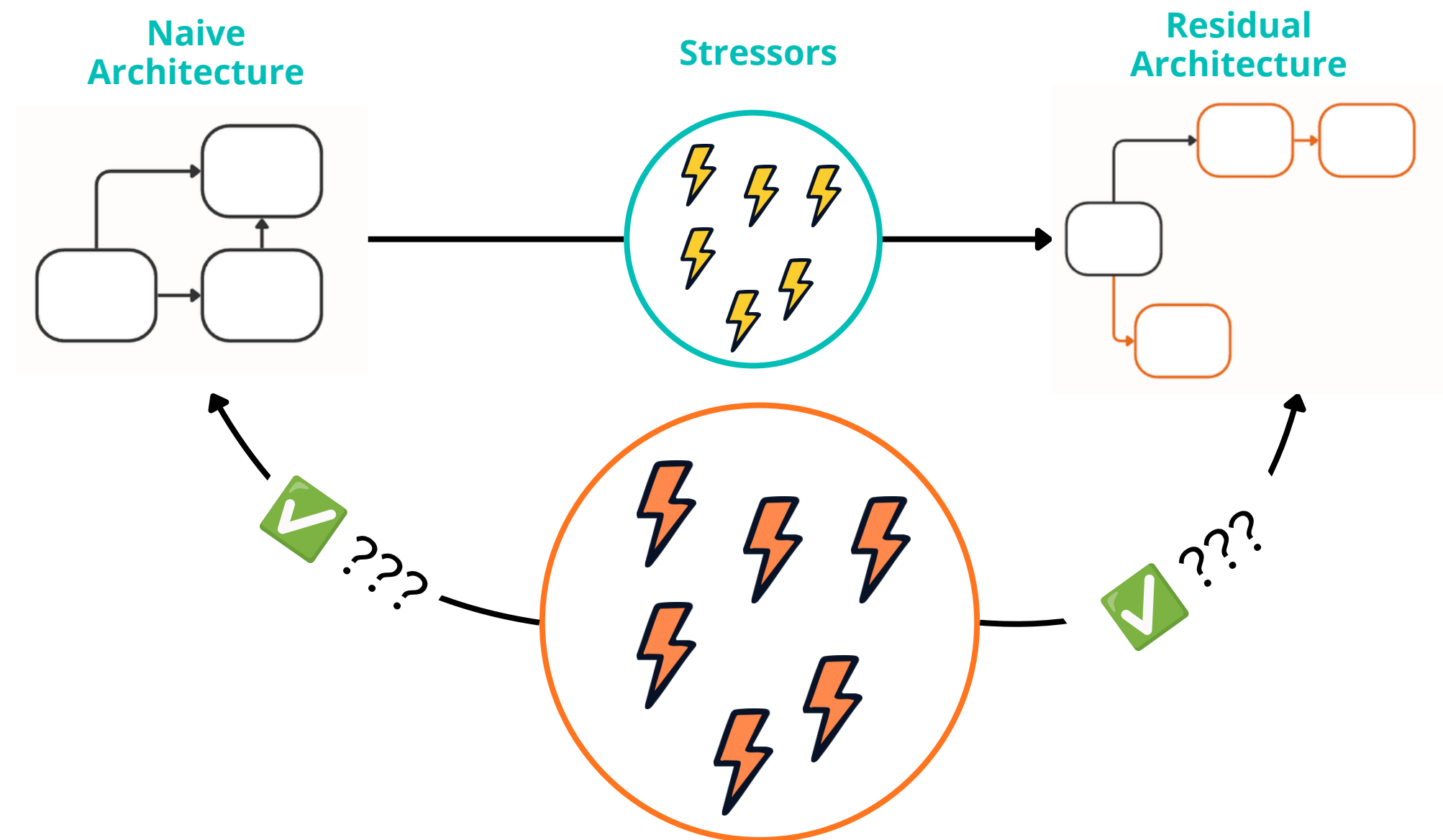
Made the case for a full
rebuild over a slow rewrite.
Executing safely through a
strangler pattern

TL;DR: - Results



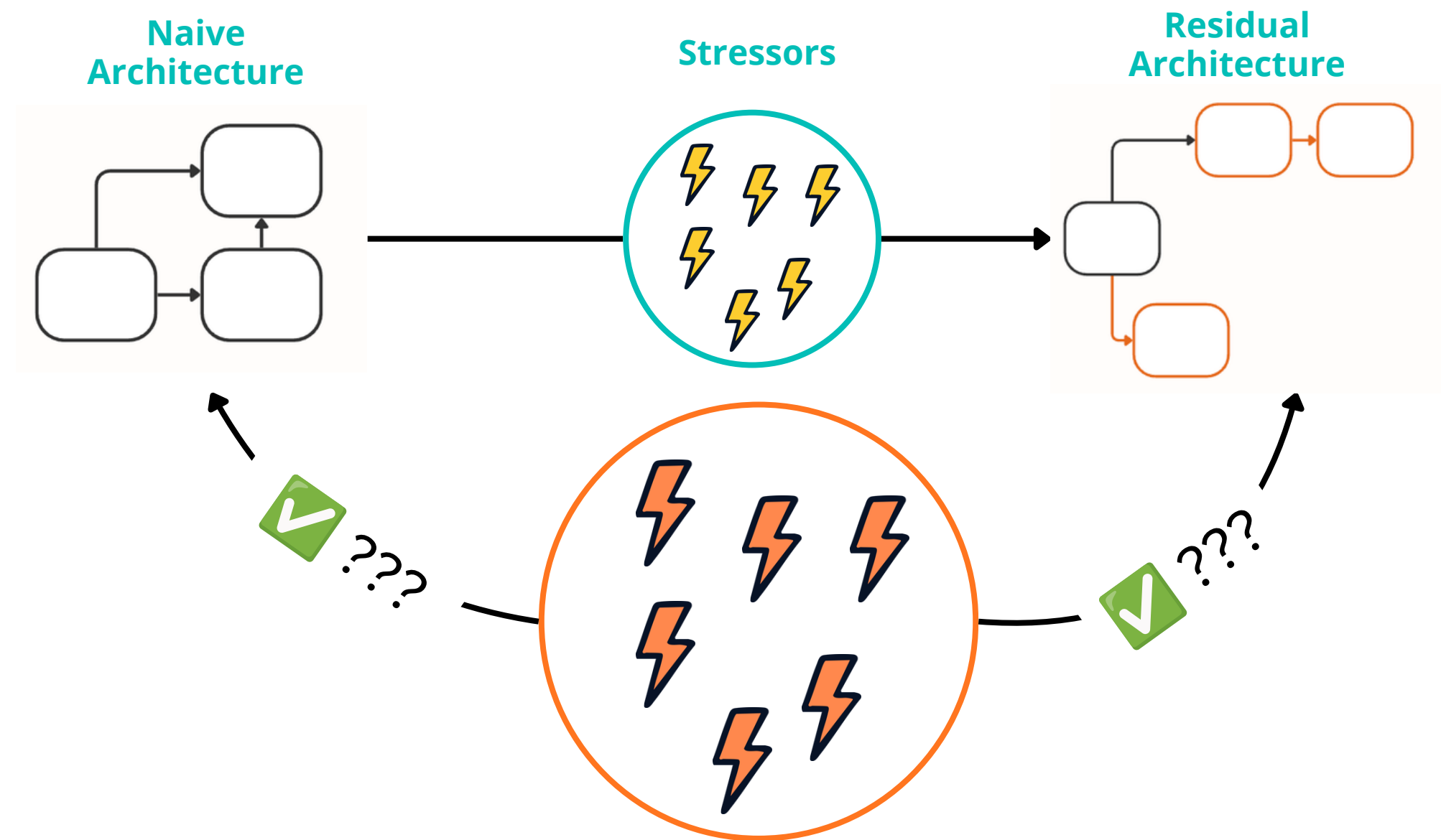
Analyse the naive architecture with stressors (yellow lighting bolts) to obtain a new residual architecture

TL;DR: - Results

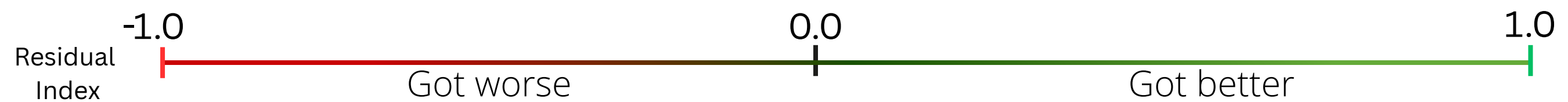


Given a **not yet evaluated** random selection of stressors analyse both naive architecture and residual architecture

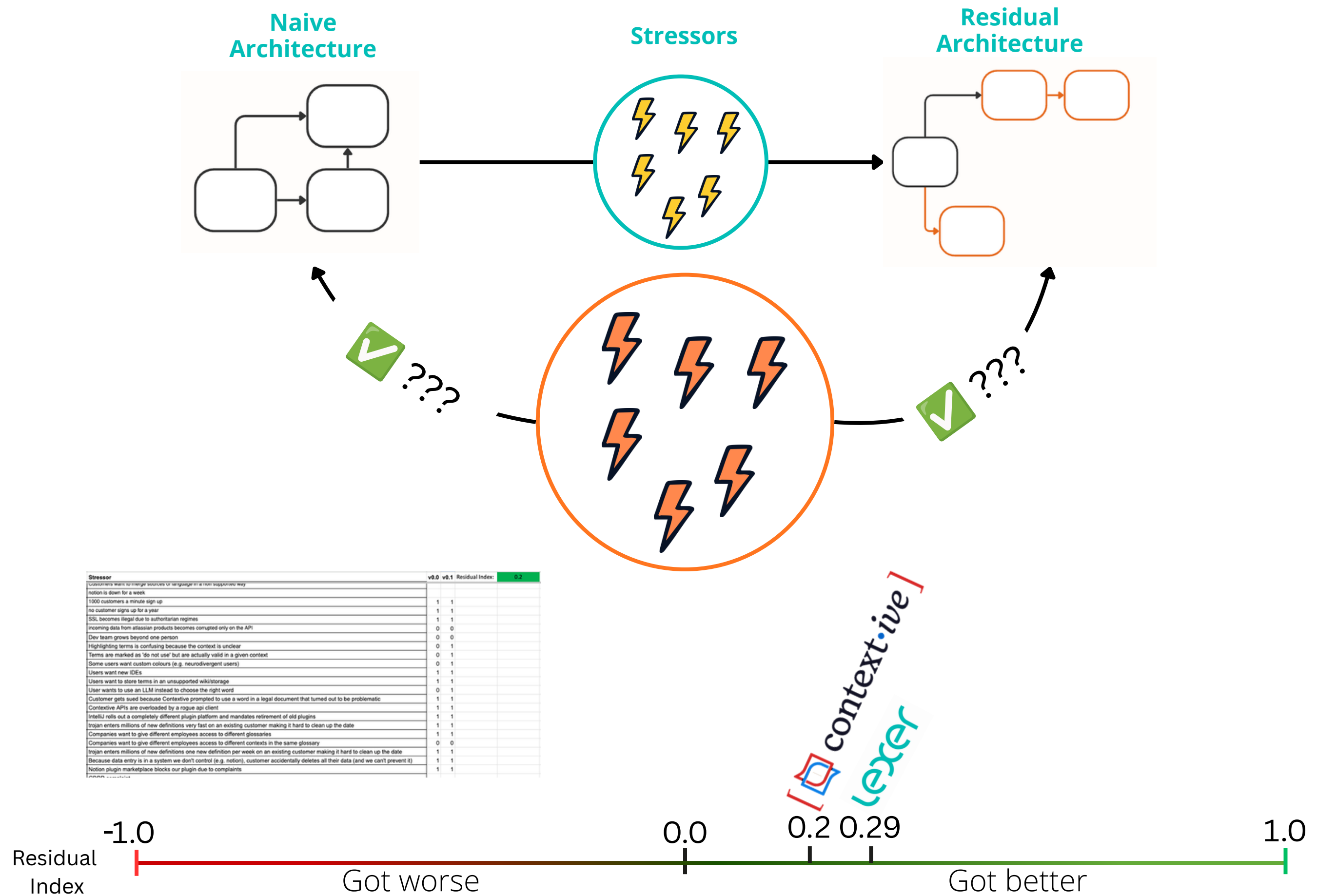
TL;DR: - Results



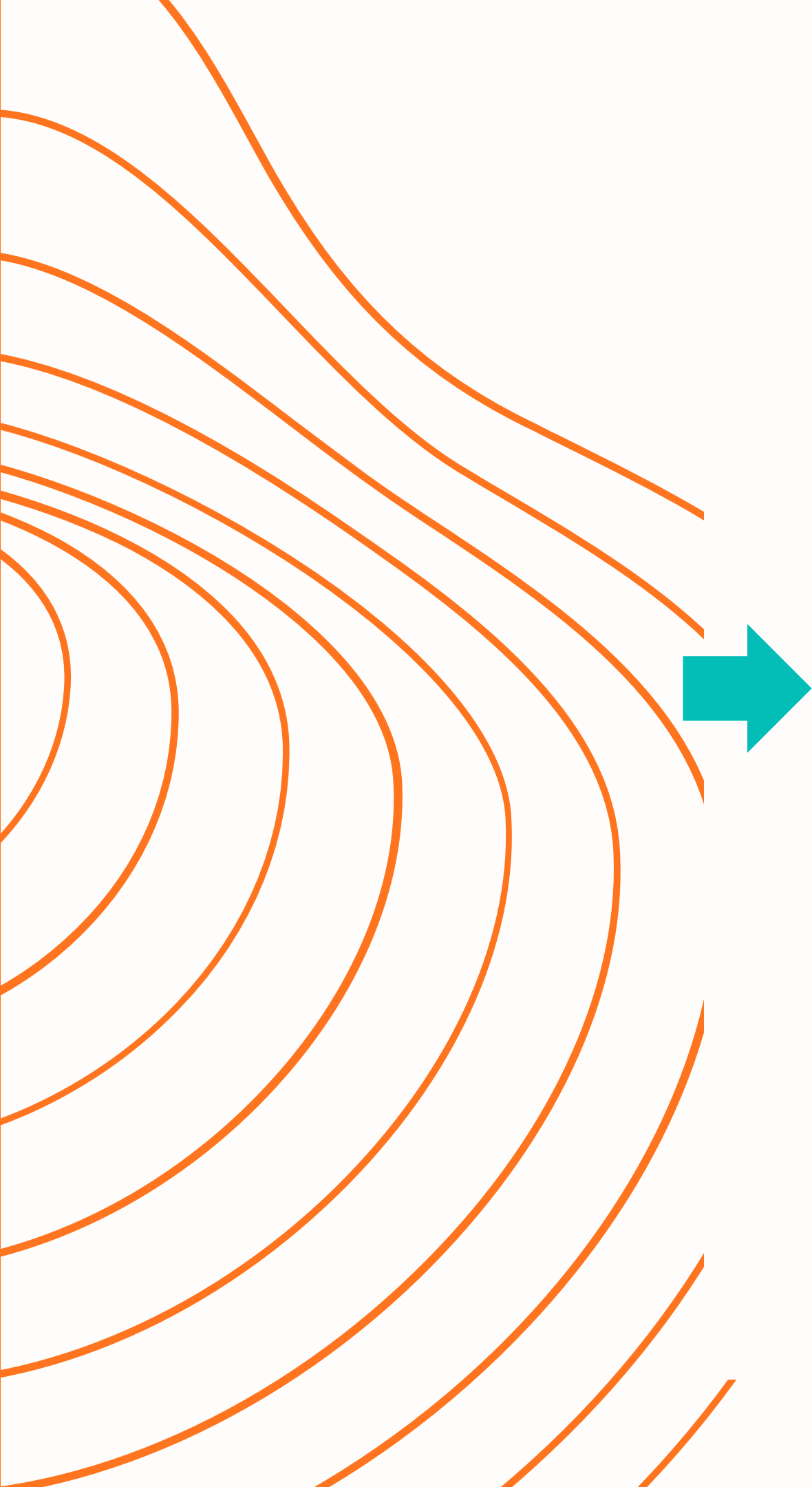
Calculate how both naive and residual architecture perform.



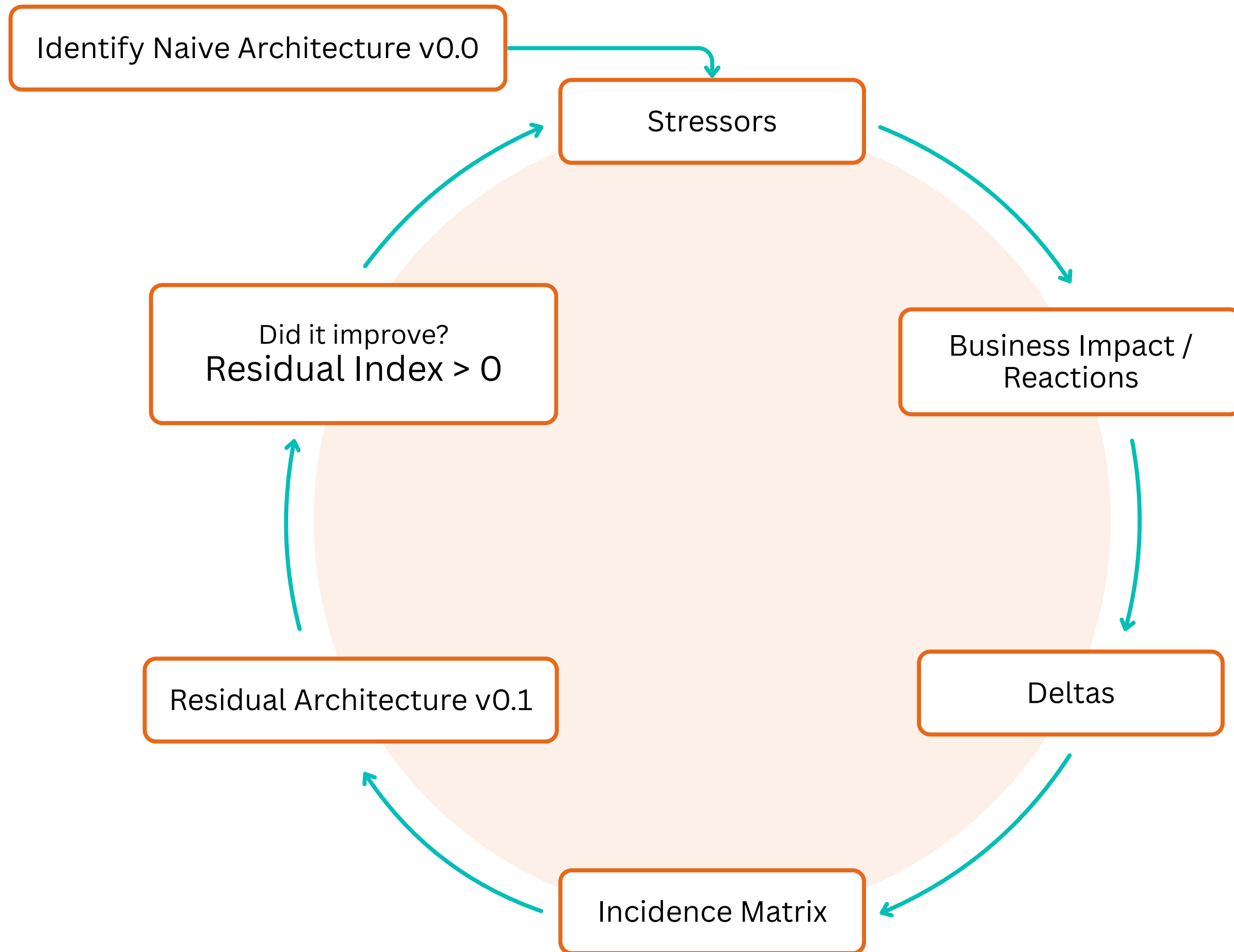
TL;DR: - Results



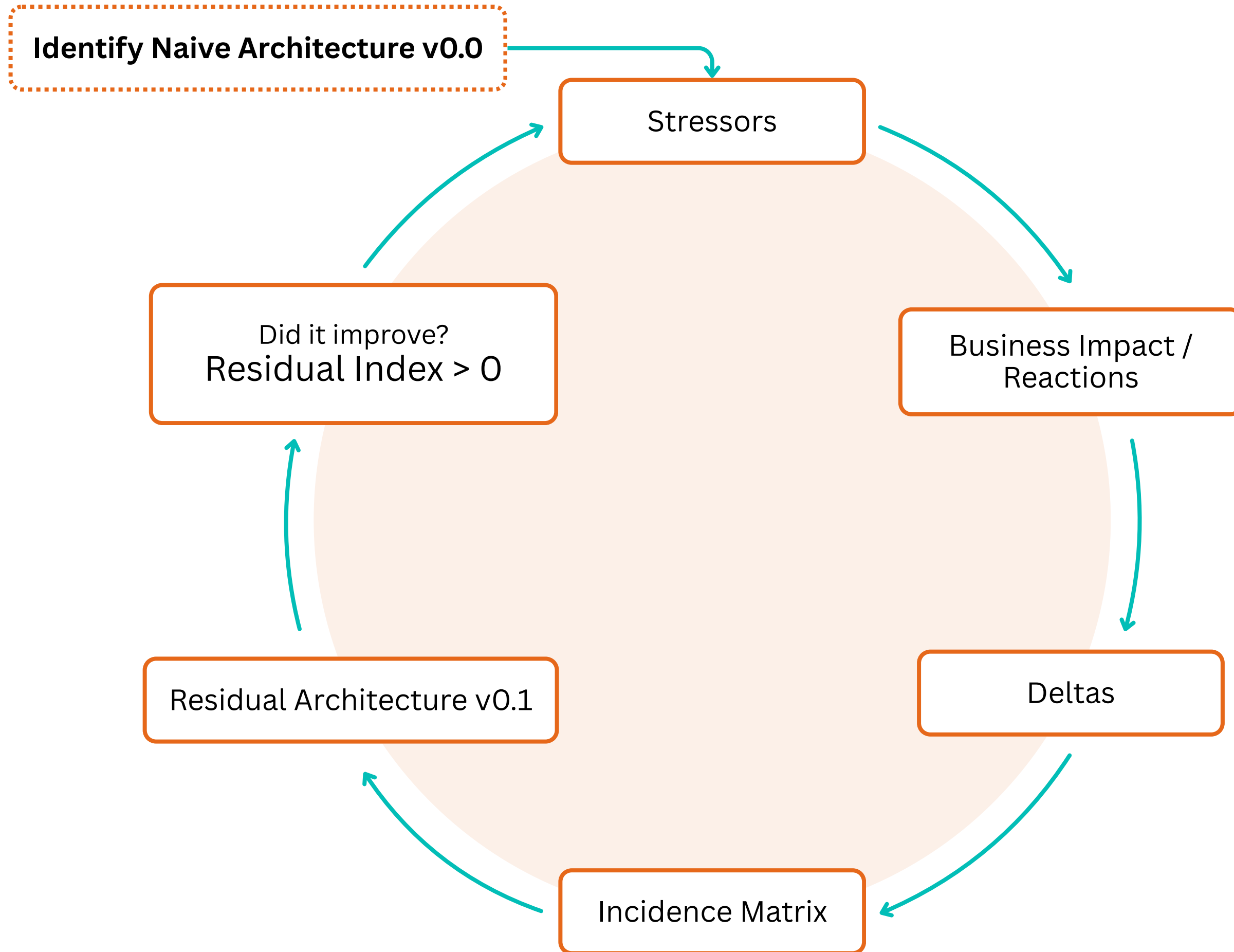
Agenda

- 
1. Residuality Overview
 2. Motivation
 3. Outcomes & Organisations
 4. Case Study 1 - Contextive
 5. Case Study 2 - Lexer
 6. Conclusion

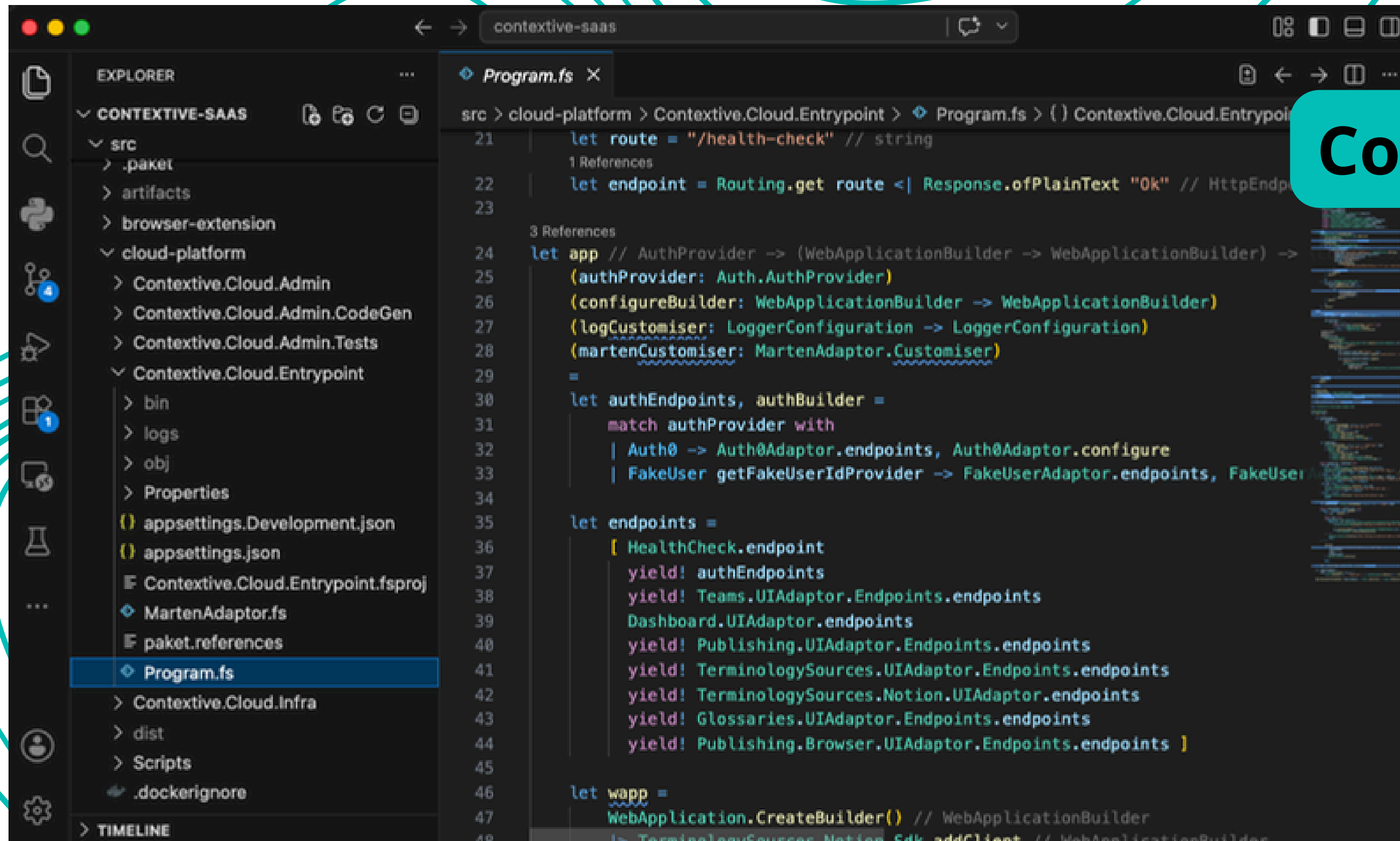
Methodology



Methodology - Naive



Code Review



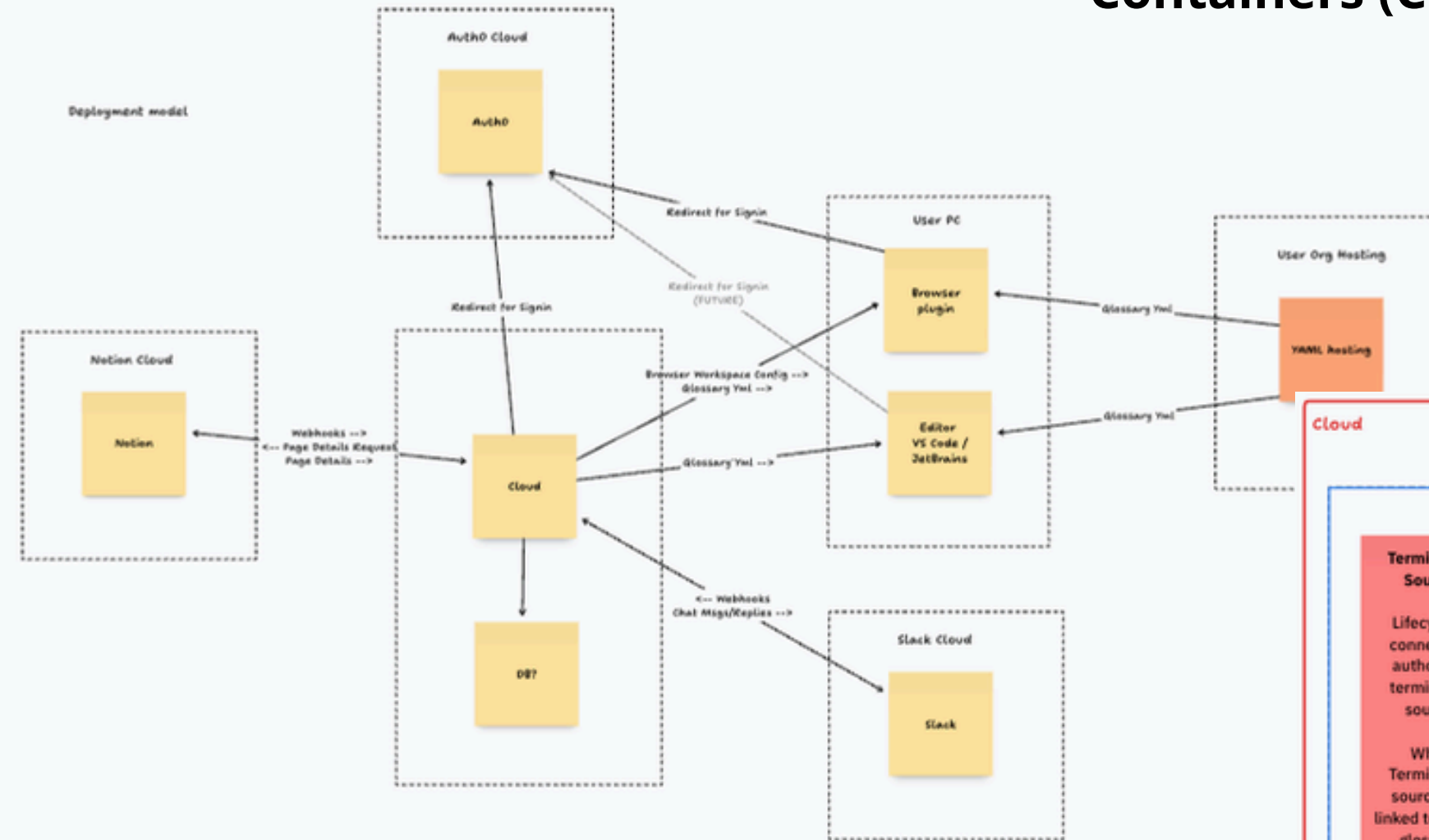
The screenshot shows the Visual Studio Code interface with the 'contextive-saas' project open. The Explorer sidebar on the left shows the project structure, with 'Program.fs' selected under 'Contextive.Cloud.Entrypoint'. The main editor displays the code for 'Program.fs', which includes a health check endpoint, authentication setup, and a list of endpoints. The code is written in F# and uses the 'let' keyword for variable declarations. The file explorer on the left shows the following structure:

- CONTEXTIVE-SAAS
 - src
 - .paket
 - artifacts
 - browser-extension
 - cloud-platform
 - Contextive.Cloud.Admin
 - Contextive.Cloud.Admin.CodeGen
 - Contextive.Cloud.Admin.Tests
 - Contextive.Cloud.Entrypoint
 - bin
 - logs
 - obj
 - Properties
 - appsettings.Development.json
 - appsettings.json
 - Contextive.Cloud.Entrypoint.fsproj
 - MartenAdaptor.fs
 - paket.references
 - Program.fs**
 - Contextive.Cloud.Infra
 - dist
 - Scripts
 - .dockerignore

The main editor shows the following code for 'Program.fs':

```
21 let route = "/health-check" // string
22 let endpoint = Routing.get route <| Response.ofPlainText "Ok" // HttpEndp
23
24 let app // AuthProvider -> (WebApplicationBuilder -> WebApplicationBuilder) ->
25 (authProvider: Auth.AuthProvider)
26 (configureBuilder: WebApplicationBuilder -> WebApplicationBuilder)
27 (logCustomiser: LoggerConfiguration -> LoggerConfiguration)
28 (martenCustomiser: MartenAdaptor.Customiser)
29 =
30 let authEndpoints, authBuilder =
31 match authProvider with
32 | Auth0 -> Auth0Adaptor.endpoints, Auth0Adaptor.configure
33 | FakeUser getFakeUserIdProvider -> FakeUserAdaptor.endpoints, FakeUser
34
35 let endpoints =
36 [ HealthCheck.endpoint
37 yield! authEndpoints
38 yield! Teams.UIAdaptor.Endpoints.endpoints
39 Dashboard.UIAdaptor.endpoints
40 yield! Publishing.UIAdaptor.Endpoints.endpoints
41 yield! TerminologySources.UIAdaptor.Endpoints.endpoints
42 yield! TerminologySources.Notion.UIAdaptor.endpoints
43 yield! Glossaries.UIAdaptor.Endpoints.endpoints
44 yield! Publishing.Browser.UIAdaptor.Endpoints.endpoints ]
45
46 let wapp =
47 WebApplication.CreateBuilder() // WebApplicationBuilder
48 > TerminologySources.Notion.Sdk.addClient // WebApplicationBuilder
```

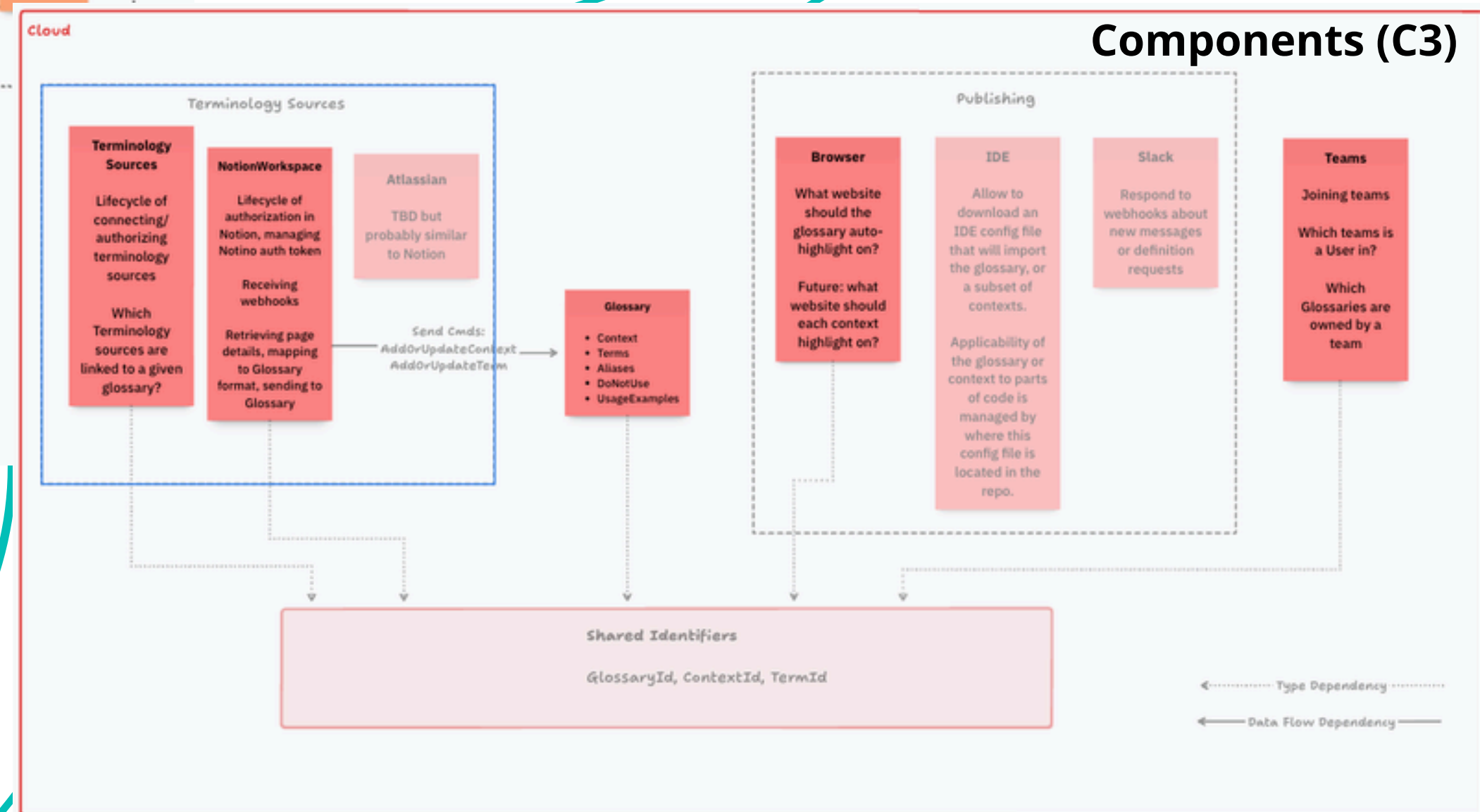
Containers (C2)



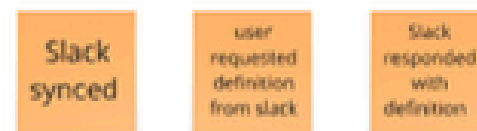
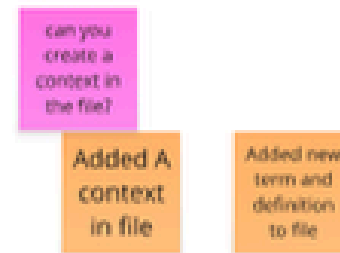
c4model.com

C4 Modelling

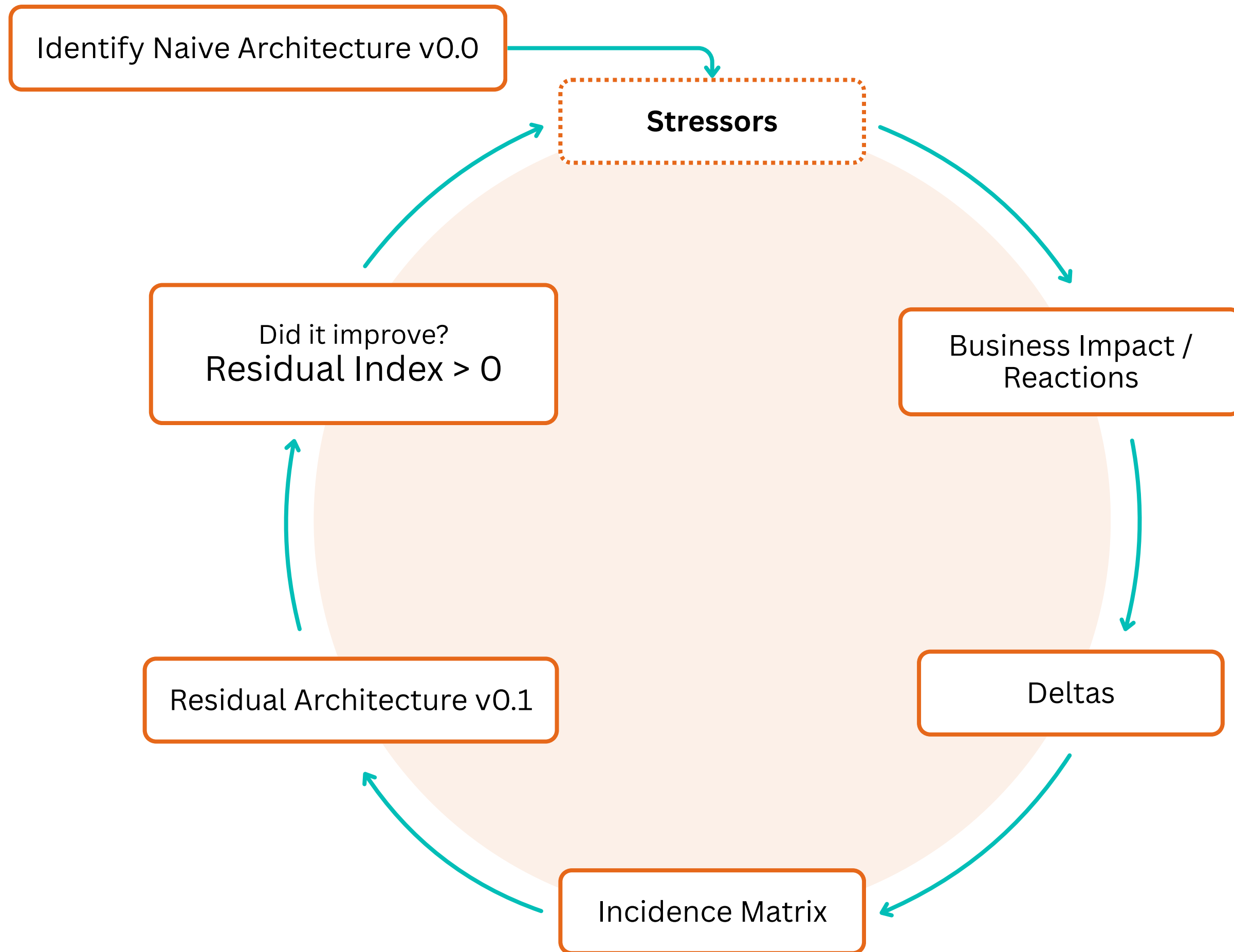
Components (C3)



Event Storming



Methodology - Stressors



A	B
ID	Stressor Name
1	a competitor LLMs a copy of contextive
2	a person within a company builds a copy of contextive
3	notion starts charging extra to use a plugin
4	
5	
6	notion starts charging to publish a plugin
7	
8	
9	
10	People don't see the value of DDD anymore
11	
12	
13	
14	People believe AI/LLMs mean no need for shared understanding/context - context in a shape L
15	can't rely on aws / gcp etc due to wars, etc
16	People want to use contextive mostly from their AI based tool (which has a high cost)
17	The browsers don't allow you / charge you a lot to update content
18	
19	
20	
21	Browser js turned off by user
22	Browser js turned off by enterprise
23	
24	Users find the underlines disconcerting and distracting
25	slack wants a percent of your income from using their api
26	
27	
28	Customer is the government, but users are disjoint sections of particular public sector. Think Dept of Transport but you only get people that use in fixing the roads dept and bus ticket sales
29	Language server model changes licence
30	Latin becomes lingua franca
31	Customers use languages without space or punctuation delimiters
32	Wolfram becomes Lingua Franca, highly specialised so no one is confused any more
33	Customers want to merge sources of language in a non supported way
34	notion is down for a week
35	1000 customers a minute sign up
36	no customer signs up for a year
37	SSL becomes illegal due to authoritarian regimes
38	incoming data from atlassian products becomes corrupted only on the API
39	Dev team grows beyond one person
40	Highlighting terms is confusing because the context is unclear
41	Terms are marked as 'do not use' but are actually valid in a given context
42	Some users want custom colours (e.g. neurodivergent users)
43	Users want new IDEs
44	Users want to store terms in an unsupported wiki/storage
45	User wants to use an LLM instead to choose the right word
46	Customer gets sued because Contextive prompted to use a word in a legal document
47	Contextive APIs are overloaded by a rogue api client
48	IntelliJ rolls out a completely different plugin platform and mandates retirement of old
49	trojan enters millions of new definitions very fast on an existing customer making it ha
50	Companies want to give different employees access to different glossaries
51	Companies want to give different employees access to different contexts in the same
52	trojan enters millions of new definitions one new definition per week on an existing cu
53	Because data entry is in a system we don't control (e.g. notion), customer accidentally
54	Notion plugin marketplace blocks our plugin due to complaints
55	GDPR complaint

Stressors

82 Stressors

3rd Party Dependencies

Security

Pricing Model

User Confusion

Organisational Changes

Competitor Activity

Functional Errors

[context·ive]

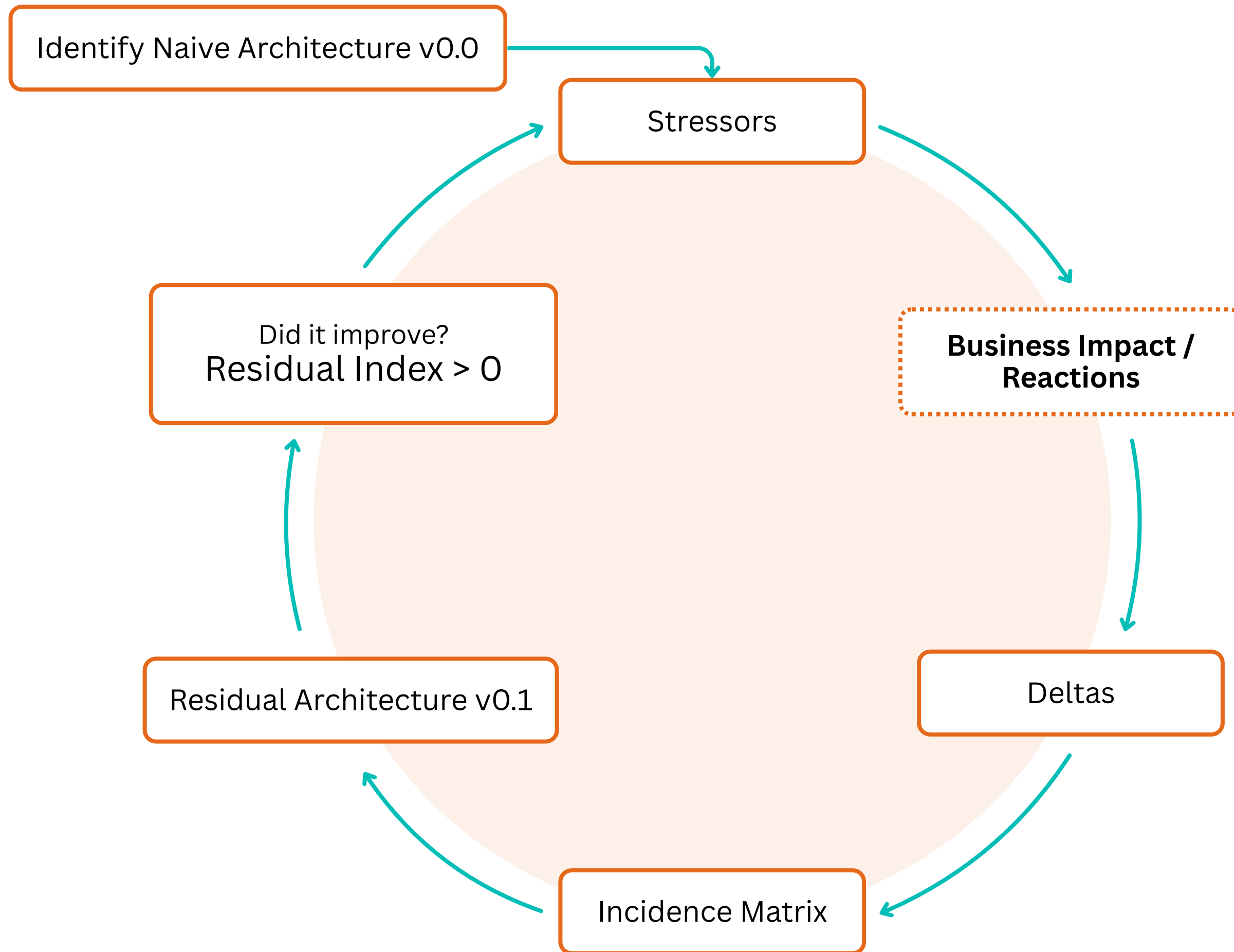


Browser js turned off by enterprise

Stressors

Example

Methodology - Reactions



I	E
Attractor - Business Impact	Attractor - Business Reaction
Losing to competitor who can offer cheaper (no dev costs)	Open source everything - focus on things where there is still a cost and opp to add value
Reduced revenue due to customers self-hosting	Open source everything - focus on things where there is still a cost and opp to add value
Customer increased Total cost of ownership	Integrate with where clients move to (if they move)
	Validate that no competitive advantage lost (i.e. affects all competitors equally)
	Contextive as the source of truth becomes more cost effective
Our costs increase	Increase pricing if it affects margins too much
	Change pricing model to be more 'opt-in' per integration
	Validate that no competitive advantage lost (i.e. affects all competitors equally)
Customers with a DDD focus stop signing up, start churning	Focus on customers with non-DDD motivations - e.g. product designers, multi-language
Customers don't see value, stop signing up, start churning	Build LLM integrations/MCP etc. so Contextive becomes the source of semantic context for LLMs
Availability/offline, lost data	Local first / peer-to-peer architecture
Customers don't see value, stop signing up, start churning	Build LLM integrations/MCP etc. so Contextive becomes the source of semantic context for LLMs
Browser experience not viable	Focus on non-browser experiences (slack, IDE)
	Build own browser
	Build local proxy service that embeds highlighting by intercepting requests to page (https://contextive.tech/page/https://original.url (security implications??))
	Support side panel with dynamic content, instead of modifying page content
User can't use contextive but boohoo	Do nothing - enterprise won't treat an individual refusing to the tool as an issue?? Depends on how many?
Browser experience not viable	Focus on non-browser experiences (slack, IDE)
	Build enterprise self-hosted proxy
	Support side panel with dynamic content, instead of modifying page content
Our costs increase	Increase pricing if it affects margins too much
	Change pricing model to be more 'opt-in' per integration
	Offer enterprise contracts with multiple teams/glossaries
Potential cost increase	Stick with last known MIT / CC license, don't use features in more recent editions
	Need to support mathematical characters/geometry of the language - symbols become meaningful

Business Impact / Reactions

33 Reactions

Pricing Model

Strategic Changes

New Functions



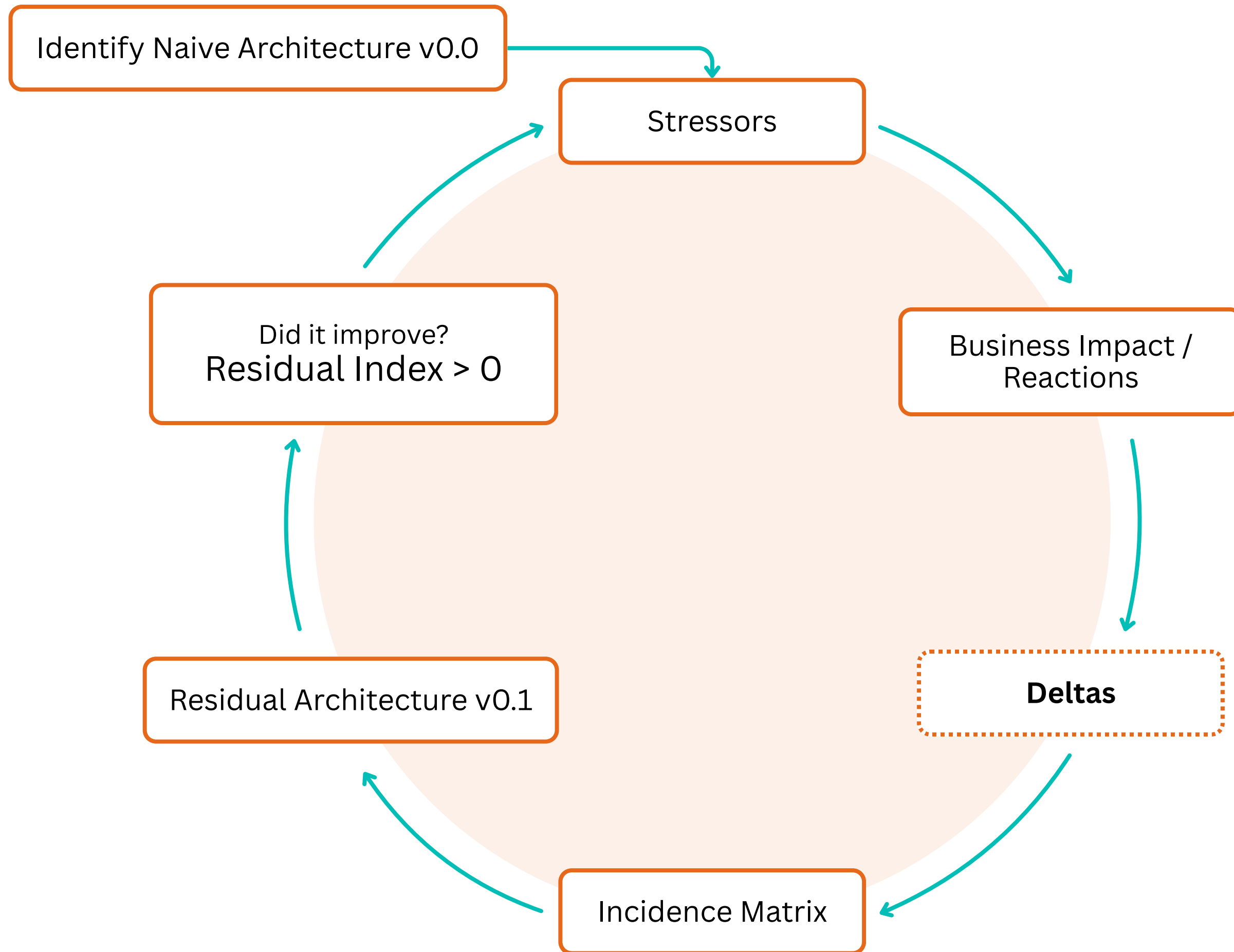
Browser js turned off by enterprise

Impact: Browser experience not viable

Reaction: Offer enterprise self-hosted proxy

Example

Methodology - Deltas



Deltas

15 Deltas

New Components

Functional Changes

Splitting Components

	F	G	H
Residue (delta)			
New terminology sources developed			
Contextive self-managed terminology source			
Pricing component needs to support 'opt-in' module pricing			
feature/module based upgrade pathways embedded in UI			
Updating core glossary to track language-code against terms/contexts		Can it be possible to define a resk	
Updating browser extension to select current language			
Updating IDE extension to configure user preferred language			
Refactor code-base to encapsulate logical 'glossary' as a context boundary, with multiple components that get deployed to different processes/runtimes		Residue Description - inspired by	
Allow user to nominate preferred language (s) - browser extension config			
MCP Server			
MCP Server			
Slack Integration			
Local Proxy Service			
Modify Browser Extension			
Slack Integration			
Self-hosted Proxy Service			
Modify Browser Extension			
Pricing component needs to support 'opt-in' module pricing			
feature/module based upgrade pathways embedded in UI			
Support for independent signup per dept level and consolidation - abstraction between team (operations) and company (billing) so different tes			
Create bespoke abstraction for new features that aren't included in the MIT edition of LSP			
Affects IDE Language Server and browser extension and chat response bot -> need for shared library for text parsing/delimiting?			
Affects IDE Language Server and browser extension and chat response bot -> need for shared library for text parsing/delimiting?			

[context·ive]

Deltas



Browser js turned off by enterprise

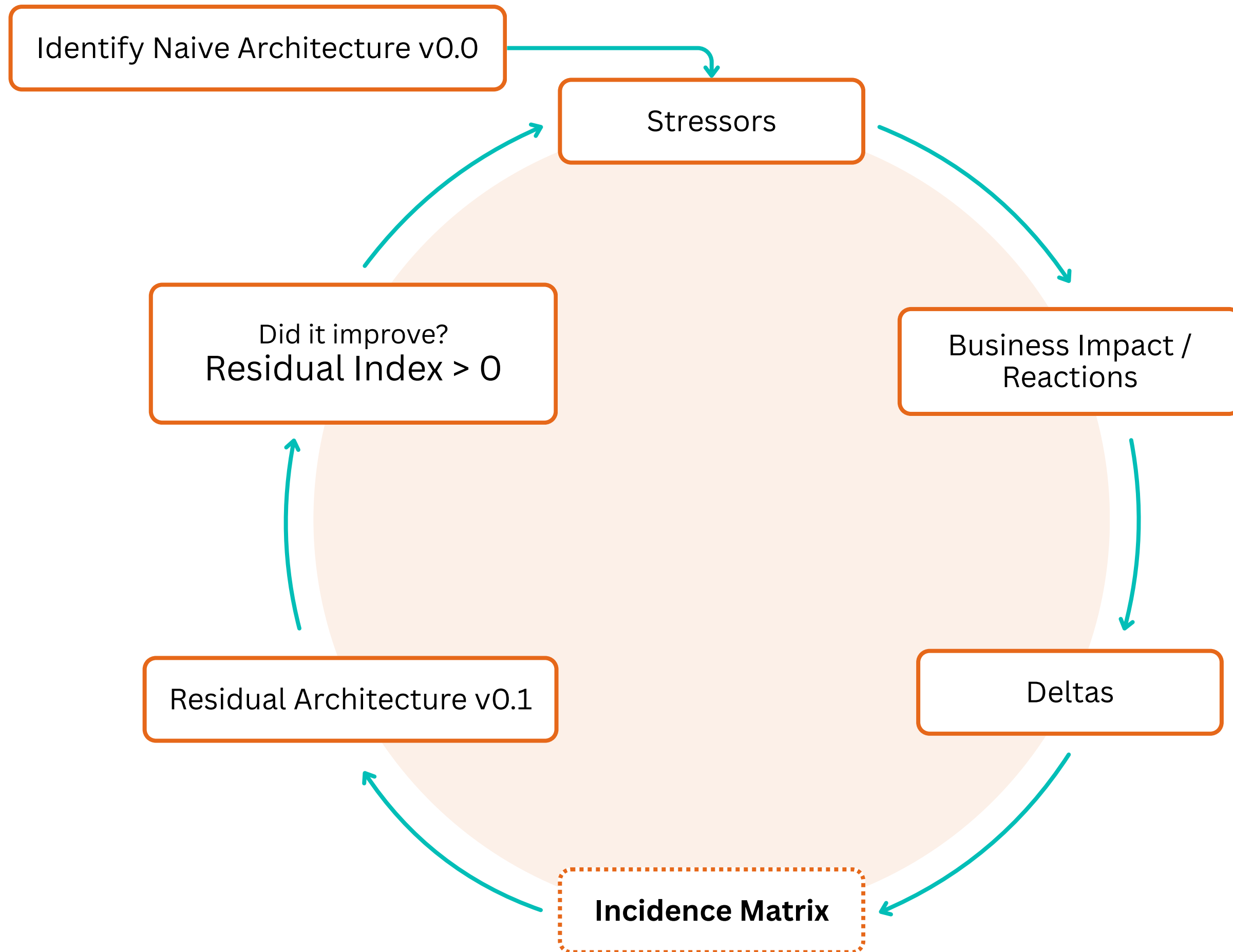
Impact: Browser experience not viable

Reaction: Offer enterprise self-hosted proxy

**Self-hosted proxy to inject glossary overlays;
refactor renderer to work with arbitrary HTML -
not just the current tab**

Example

Methodology - Incidence Matrix



Incidence matrix

New architecture, decomposed into components

Stressors

								
	1	1						2
				1		1		2
				1				1
				1				1
				1	1			2
	1	1						2
					1		1	2
	1	1						2
	3	3	0	4	3	1	2	

Coupled components

Vulnerable component

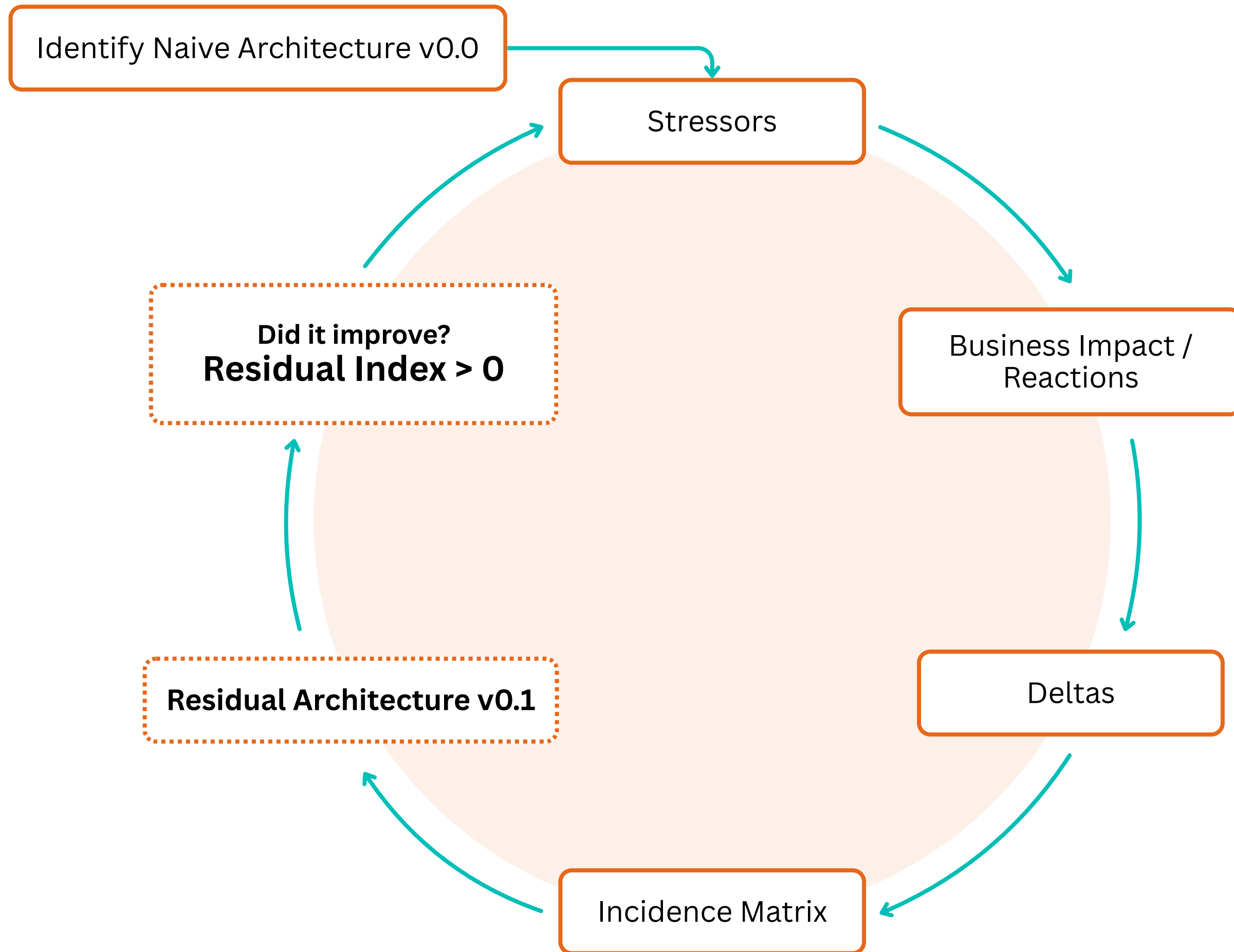
Logical View

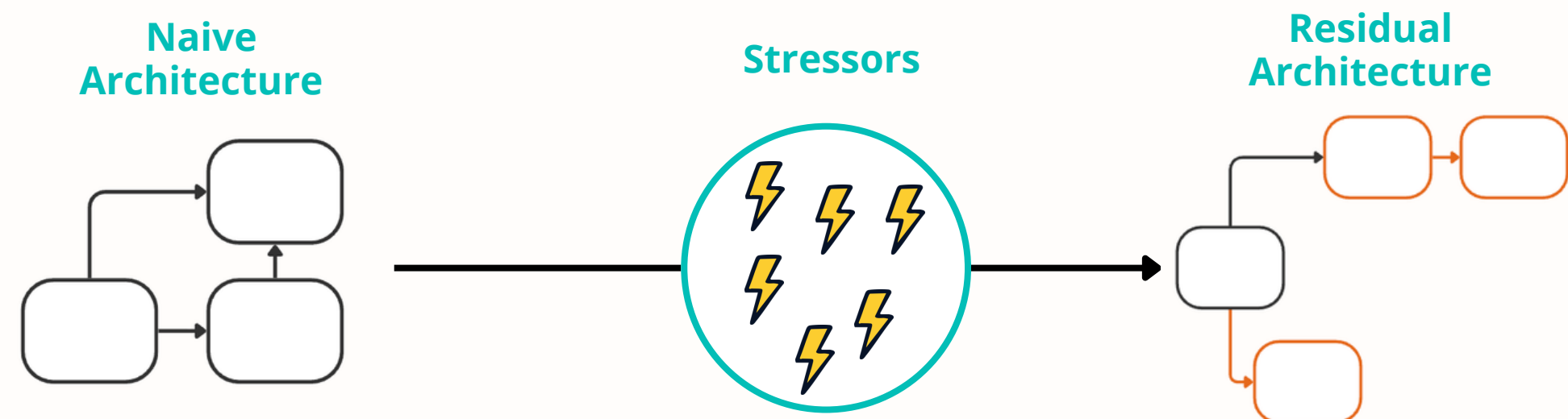
ID	Stressor Name	Detection	Attractor - Business Impact	Attractor - Business Reaction	Residue (delta)	Terminology Sources	Terminology Source - Nelson	Terminology Source - Confluence	Terminology Source - Contextive	Glossary	Teams	Browser Publishing	Chatbots	Chatbots - Slack	IDE Publishing	Billing	MCP Server	Self-hosted Proxy	Local Proxy	
1	a competitor LLMs a copy of contextive		Losing to competitor	Open source everything - focus on things where there is still a cost and opp to add value																0
2	a person within a company builds a copy of contextive		Reduced revenue	Open source everything - focus on things where there is still a cost and opp to add value																0
3	notion starts charging extra to use a plugin		Customer increased	Integrate with where clients move to (if they move)	New terminology sources developed	1														1
4				Validate that no competitive advantage lost (i.e. affects all competitors equally)																0
5				Contextive as the source of truth becomes more cost effective	Contextive self-managed terminology source			1												1
6	notion starts charging to publish a plugin		Our costs increase	Increase pricing if it affects margins too much																0
7				Change pricing model to be more 'opt-in' per integration	Pricing component needs to support 'opt-in' module pricing											1				1
8					feature/module based upgrade pathways embedded in UI											1				1
9				Validate that no competitive advantage lost (i.e. affects all competitors equally)																0
10	People don't see the value of DDD anymore		Customers with a DDD	Focus on customers with non-DDD motivations - e.g. product designers, multi-language	Updating core glossary to track language-code against terms/contexts Updating browser extension to select current language Updating IDE extension to configure user preferred language				1											1
11					Refactor code-base to encapsulate logical 'glossary' as a context boundary, with multiple components that get deployed to different processes/runtimes															0
12					Allow user to nominate preferred language (s) - browser extension config				1											1
13																				0
14	People believe AI/LLMs mean no need for shared understanding/context - context in a shape LLM suited		Customers don't	Build LLM integrations/MCP etc. so Contextive becomes the source of semantic context for LLMs	MCP Server												1			1

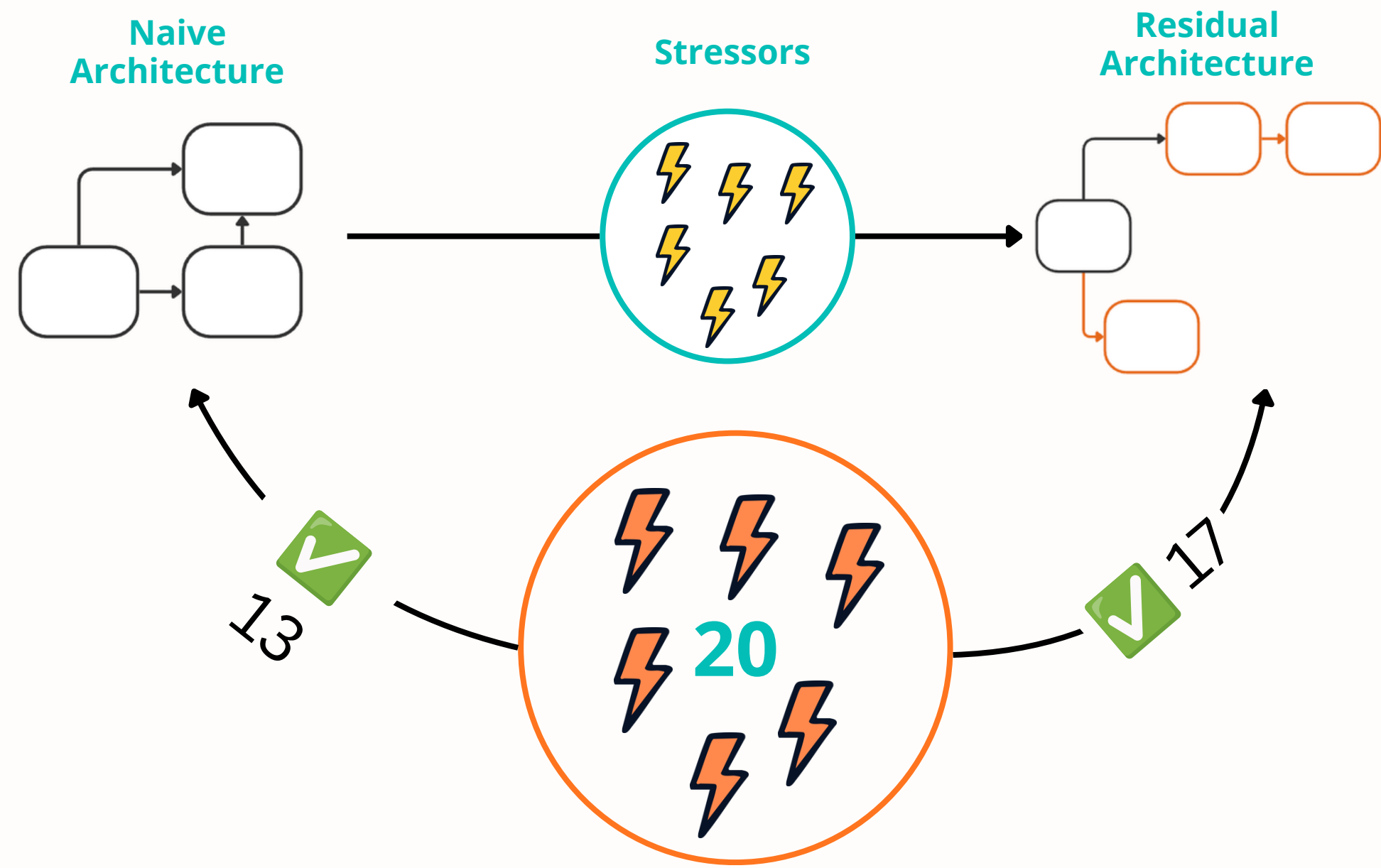
Process View

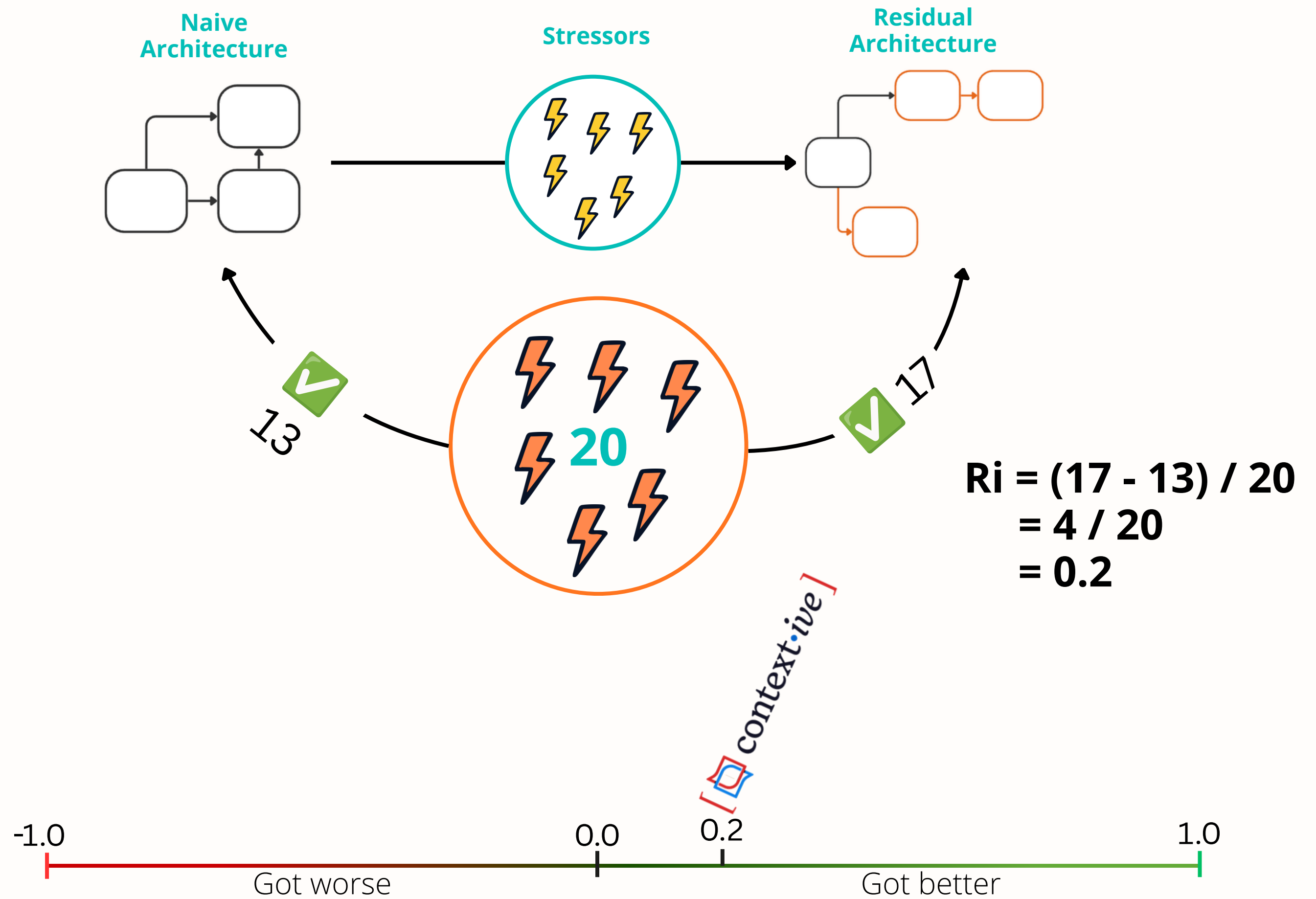
ID	Stressor Name	Detection	Attractor - Business Impact	Attractor - Business Reaction	Residue (delta)	Contextive Cloud	Contextive Cloud DB	LSP	IntelliJ Plugin	VSCode Extension	Browser Extension	Local Proxy	Self-hosted Proxy	
1	a competitor LLMs a copy of contextive		Losing to competitor w	Open source everything - focus on things where there is still a cost and opp to add value										0
2	a person within a company builds a copy of contextive		Reduced revenue due	Open source everything - focus on things where there is still a cost and opp to add value										0
3	notion starts charging extra to use a plugin		Customer increased T	Integrate with where clients move to (if they move)	New terminology sources developed	1	1							2
4				Validate that no competitive advantage lost (i.e. affects all competitors equally)										0
5				Contextive as the source of truth becomes more cost effective	Contextive self-managed terminology source	1	1							2
6	notion starts charging to publish a plugin		Our costs increase	Increase pricing if it affects margins too much										0
7				Change pricing model to be more 'opt-in' per integration	Pricing component needs to support 'opt-in' module pricing	1	1							2
8					feature/module based upgrade pathways embedded in UI	1	1							2
9				Validate that no competitive advantage lost (i.e. affects all competitors equally)										0
10	People don't see the value of DDD anymore		Customers with a DDD	Focus on customers with non-DDD motivations - e.g. product designers, multi-language	Updating core glossary to track language-code against terms/contexts Updating browser extension to select current language Updating IDE extension to configure user preferred language	1	1	1		1				4
11					Refactor code-base to encapsulate logical 'glossary' as a context boundary, with multiple components that get deployed to different processes/runtimes	1	1	1		1				4
12					Allow user to nominate preferred language (s) - browser extension config	1	1			1				3

Methodology - Residual Index









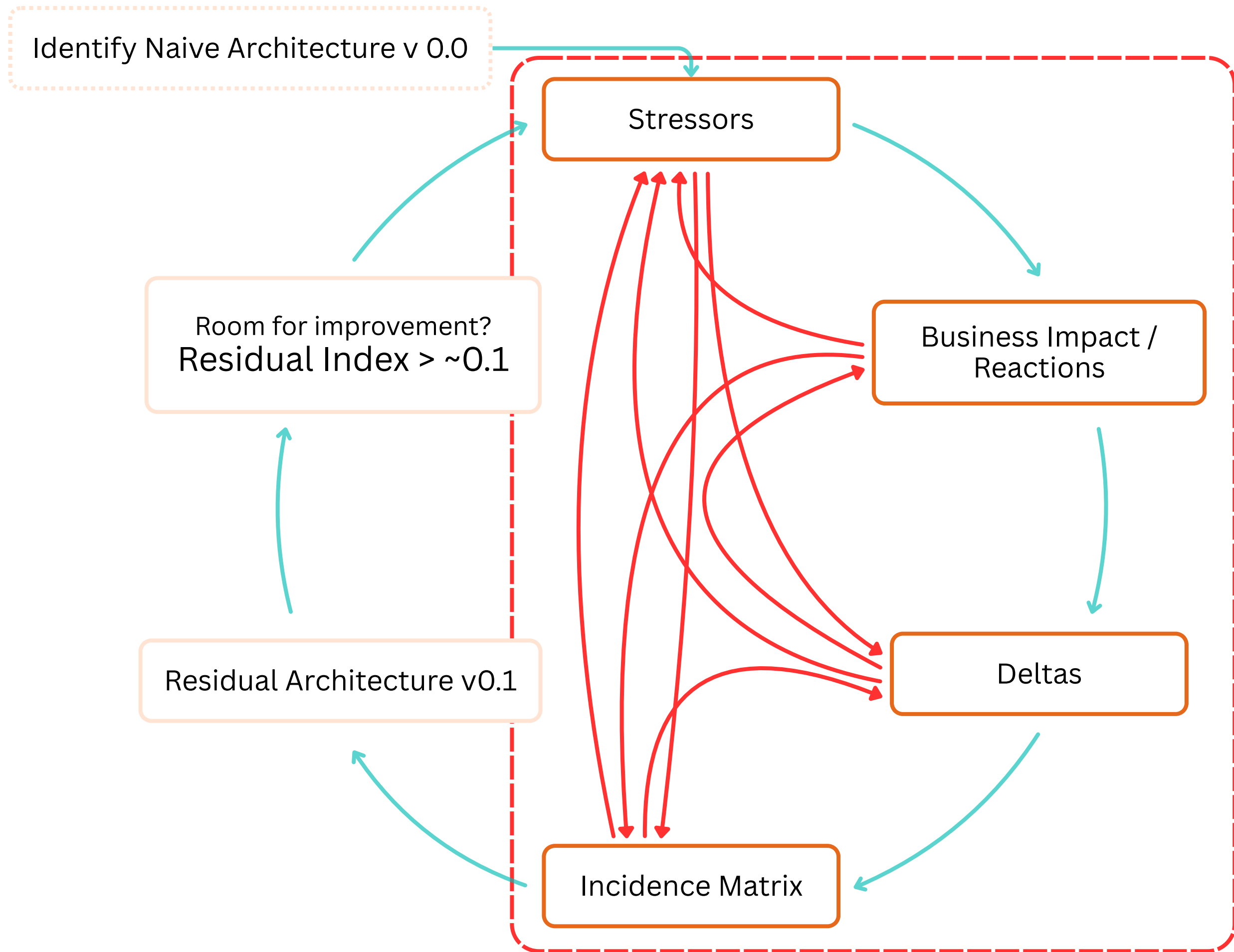
Residual Index

Stressor	v0.0	v0.1	Residual Index:
Customers want to merge sources of language in a non supported way			0.2
notion is down for a week			
1000 customers a minute sign up			
no customer signs up for a year			
SSL becomes illegal due to authoritarian regimes			
incoming data from atlassian products becomes corrupted only on the API			
Dev team grows beyond one person			
Highlighting terms is confusing because the context is unclear			
Terms are marked as 'do not use' but are actually valid in a given context			
Some users want custom colours (e.g. neurodivergent users)			
Users want new IDEs			
Users want to store terms in an unsupported wiki/storage			
User wants to use an LLM instead to choose the right word			
Customer gets sued because Contextive prompted to use a word in a legal document that turned out to be problematic			
Contextive APIs are overloaded by a rogue api client			
IntelliJ rolls out a completely different plugin platform and mandates retirement of old plugins			
trojan enters millions of new definitions very fast on an existing customer making it hard to clean up the date			
Companies want to give different employees access to different glossaries			
Companies want to give different employees access to different contexts in the same glossary			
trojan enters millions of new definitions one new definition per week on an existing customer making it hard to clean up the date			
Because data entry is in a system we don't control (e.g. notion), customer accidentally deletes all their data (and we can't prevent it)			
Notion plugin marketplace blocks our plugin due to complaints			

Residual Index

0.2

Lessons Learned - Contextive



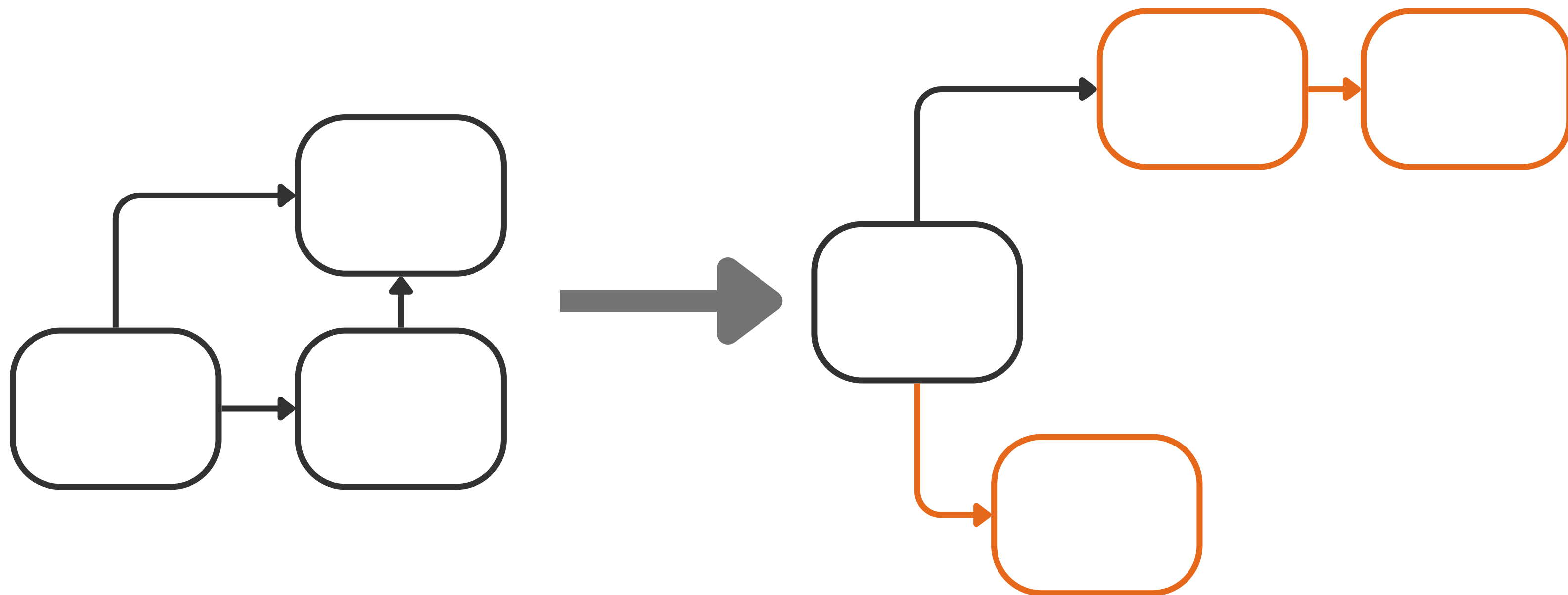


Discovery



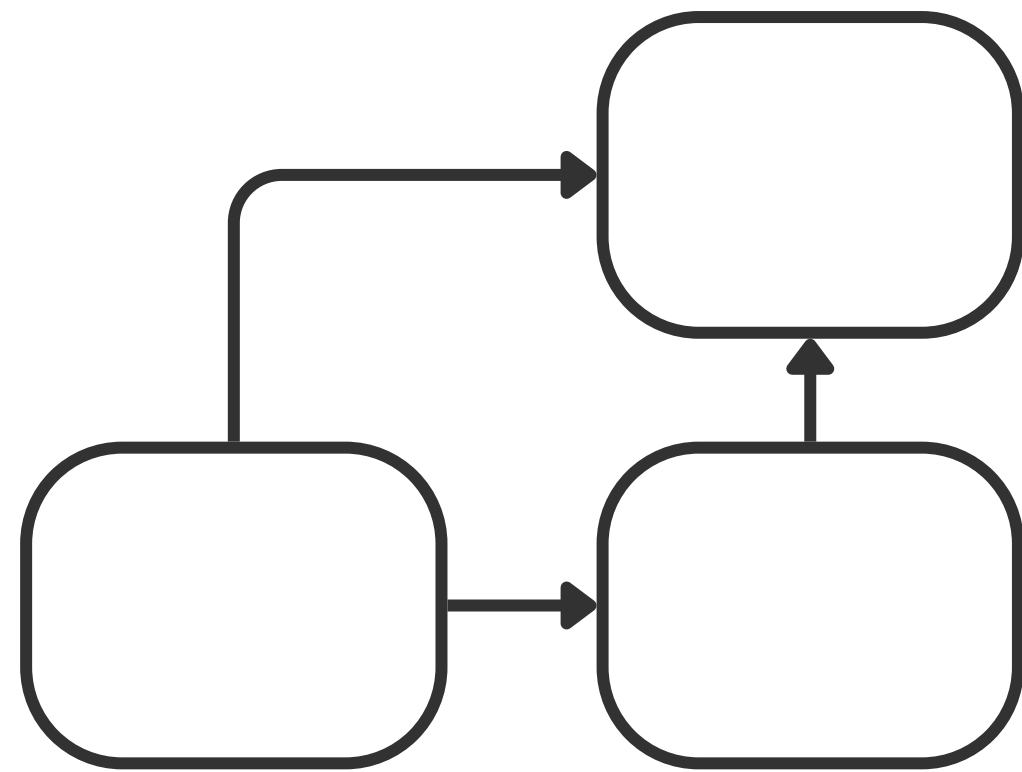
Design



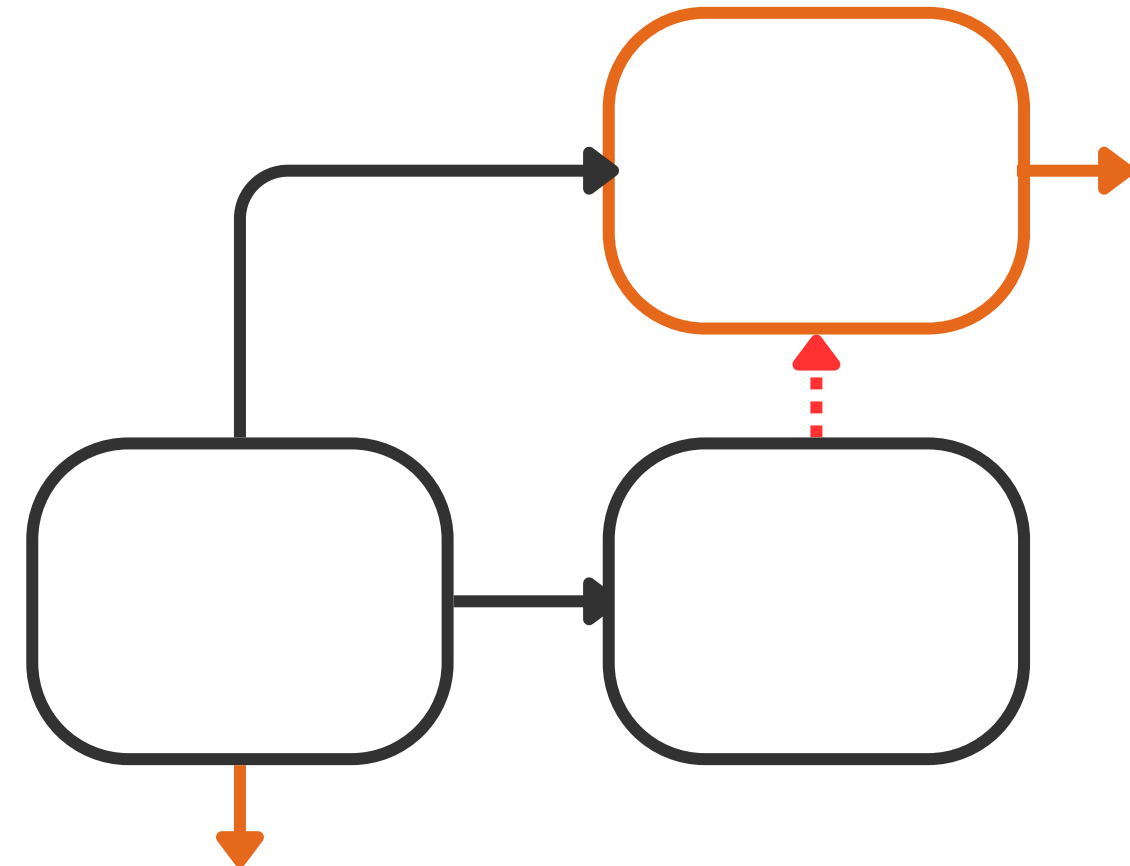


Naive Architecture

Residual Architecture



Naive Architecture



First Implementation Step

[context·ive]



Browser js turned off by enterprise

Impact: Browser experience not viable

Reaction: Offer enterprise self-hosted proxy

**Self-hosted proxy to inject glossary overlays;
refactor renderer to work with arbitrary HTML -
not just the current tab**

Example

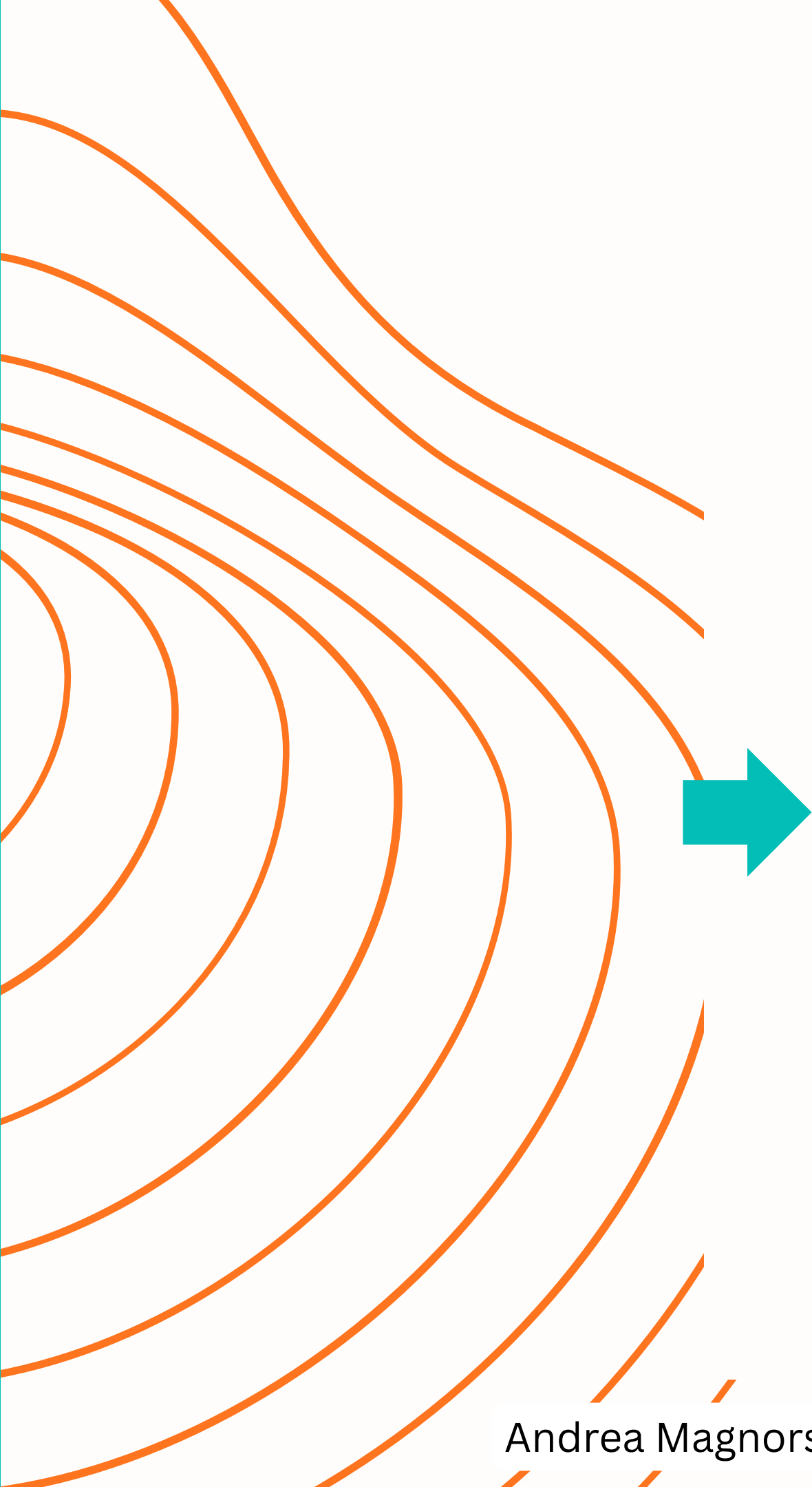
solved by...



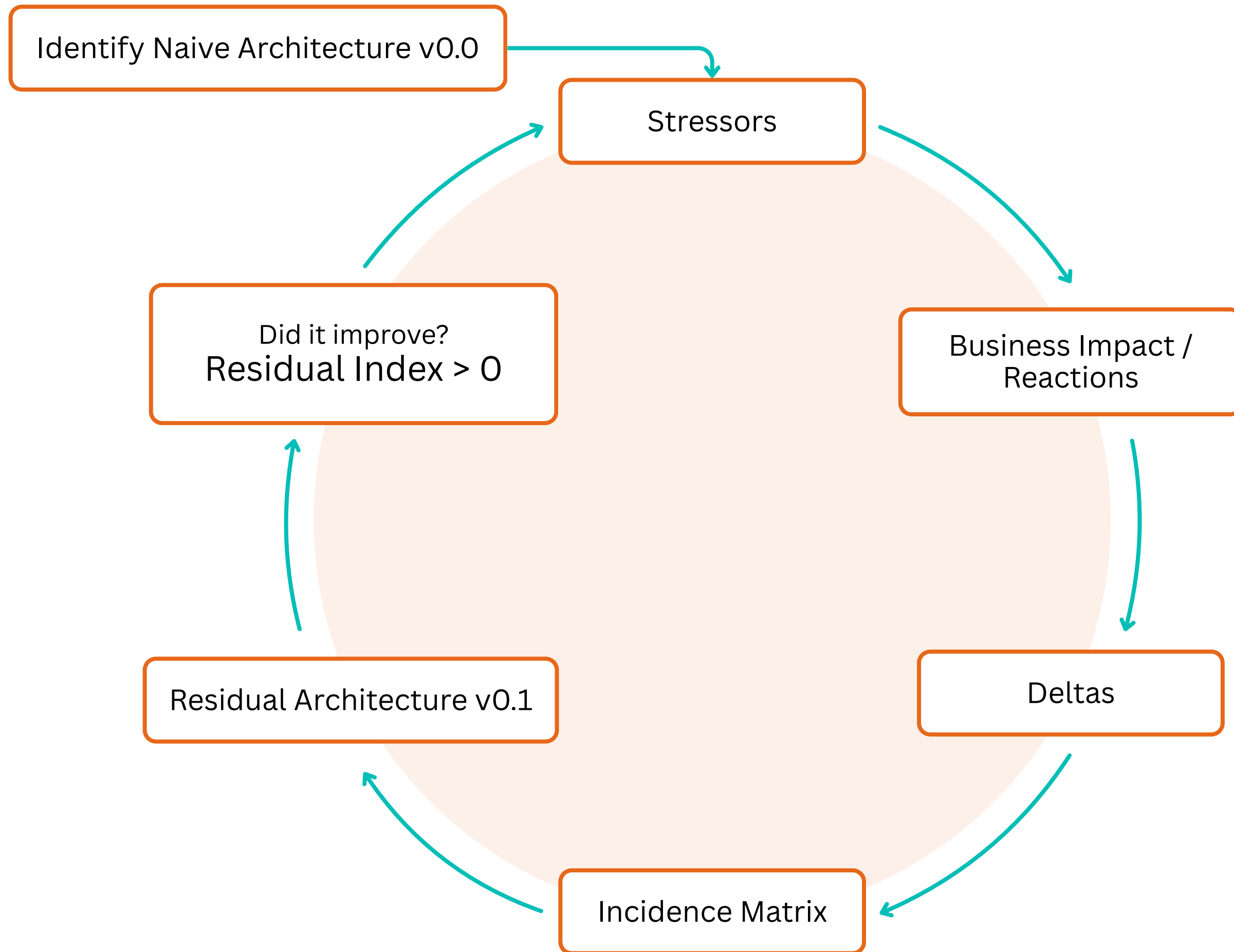
Real
Stressor!

**Some customers want to render the glossary
underline/hover experience as part of website
publishing**

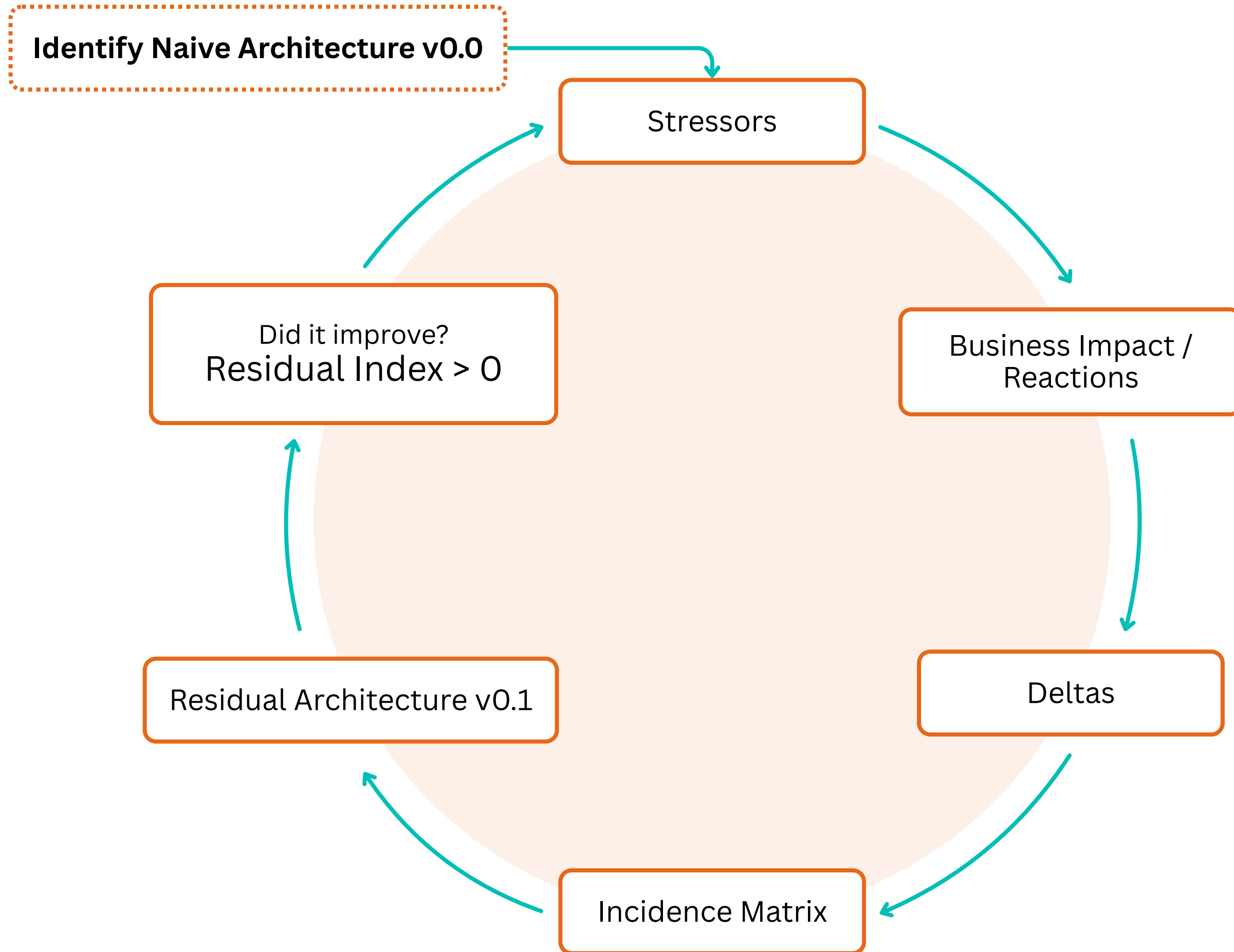
Agenda

- 
1. Residuality Overview
 2. Motivation
 3. Outcomes & Organisations
 4. Case Study 1 - Contextive
 5. Case Study 2 - Lexer
 6. Conclusion

Methodology



Methodology - Naive

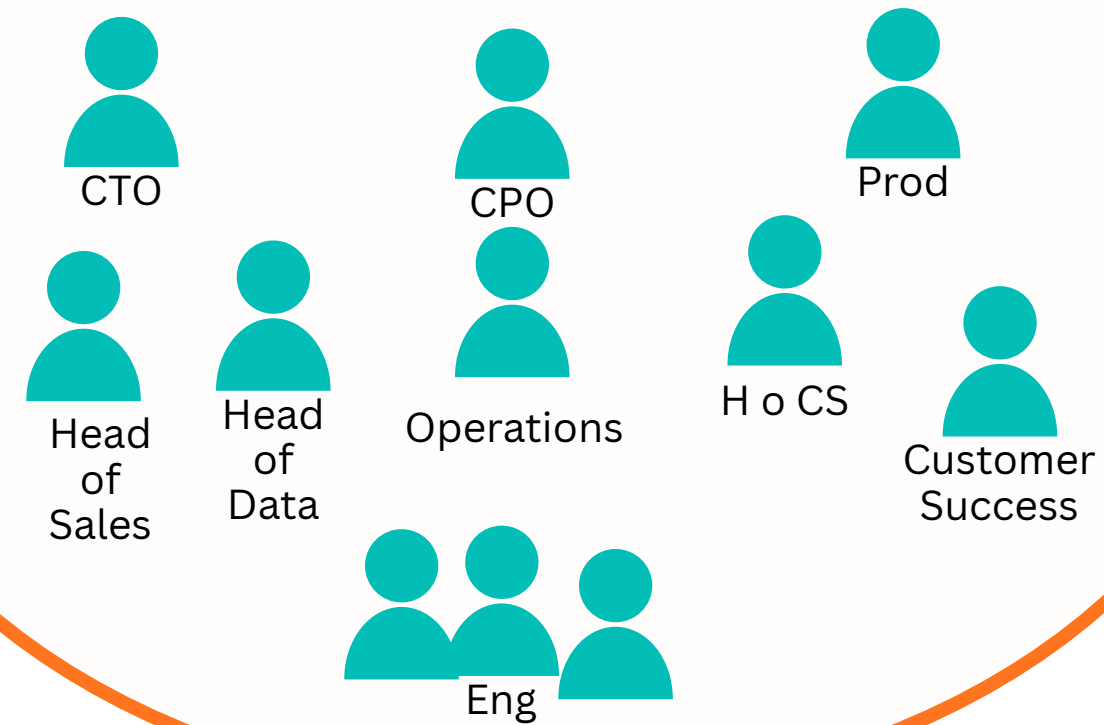


Event Storming

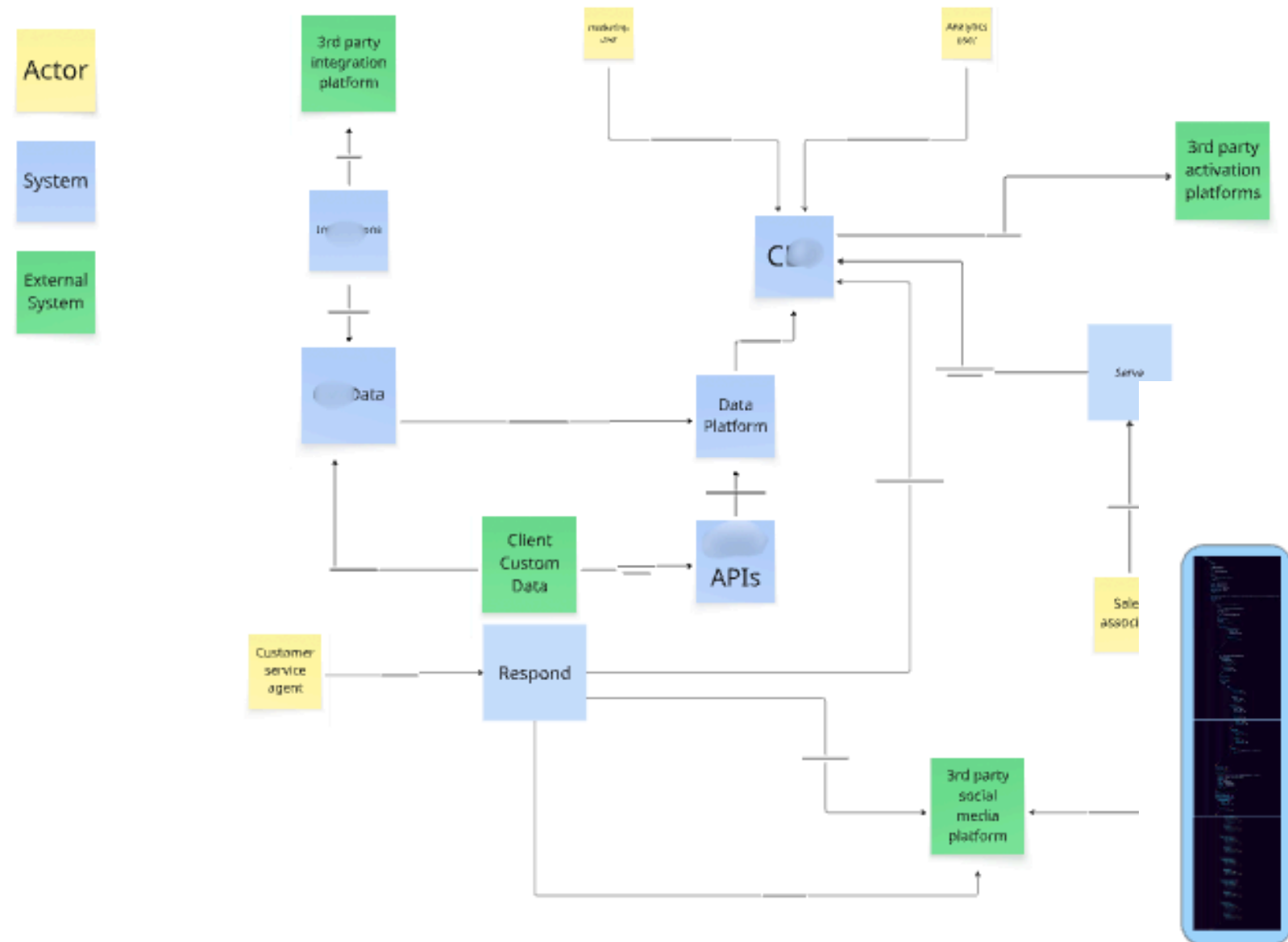
Identify Naive Architecture v 0.0



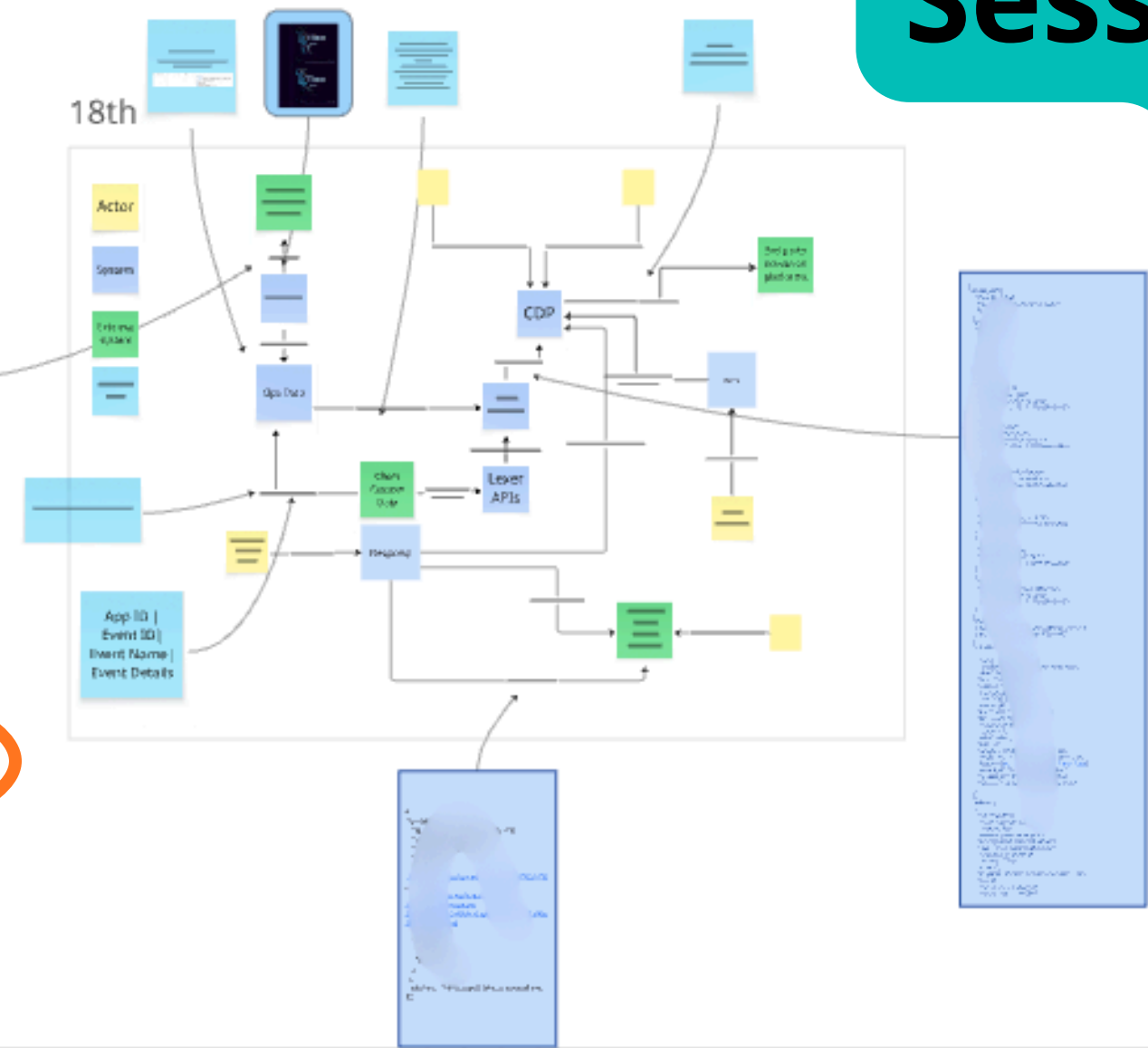
In person - Single group

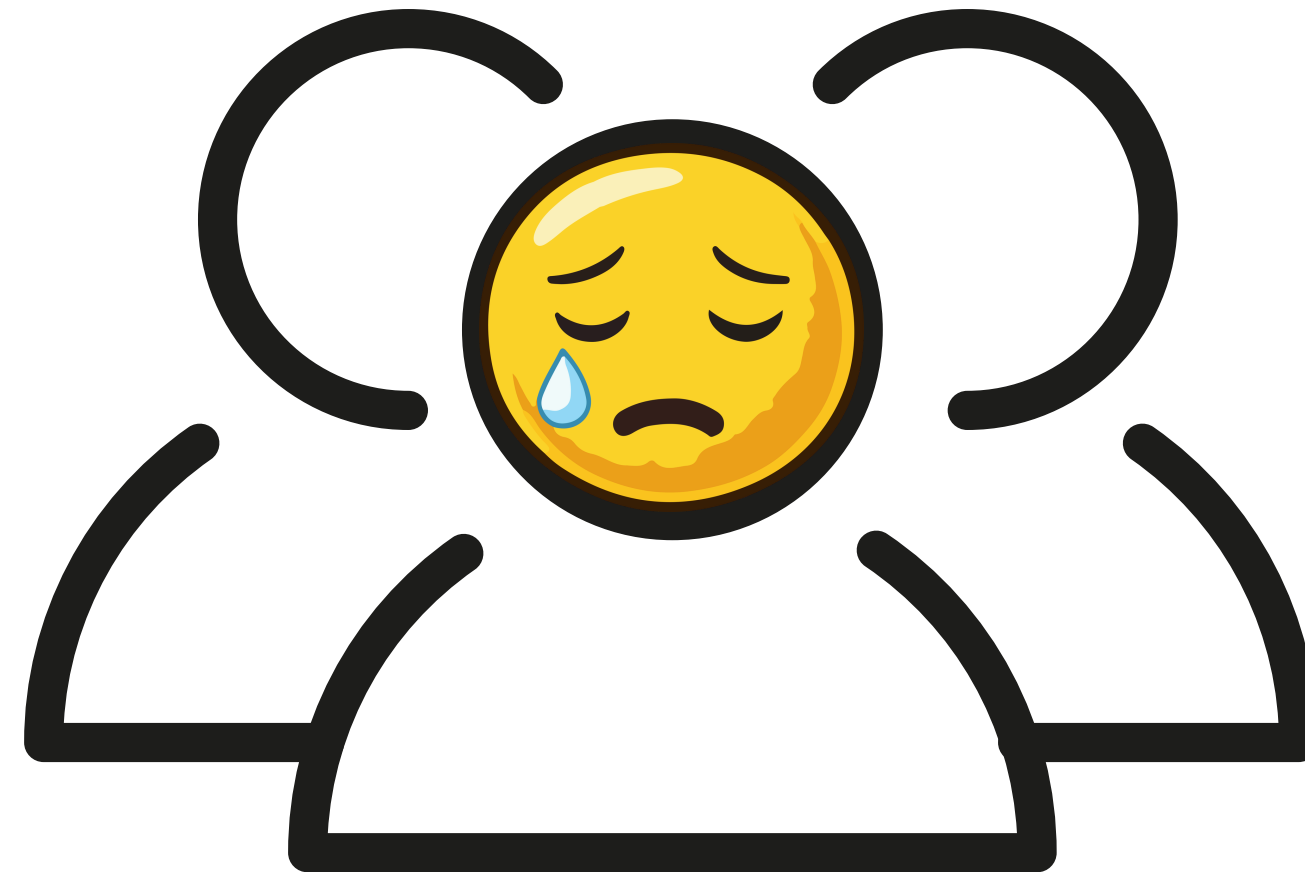
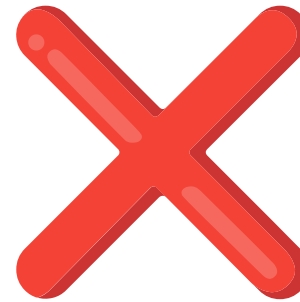
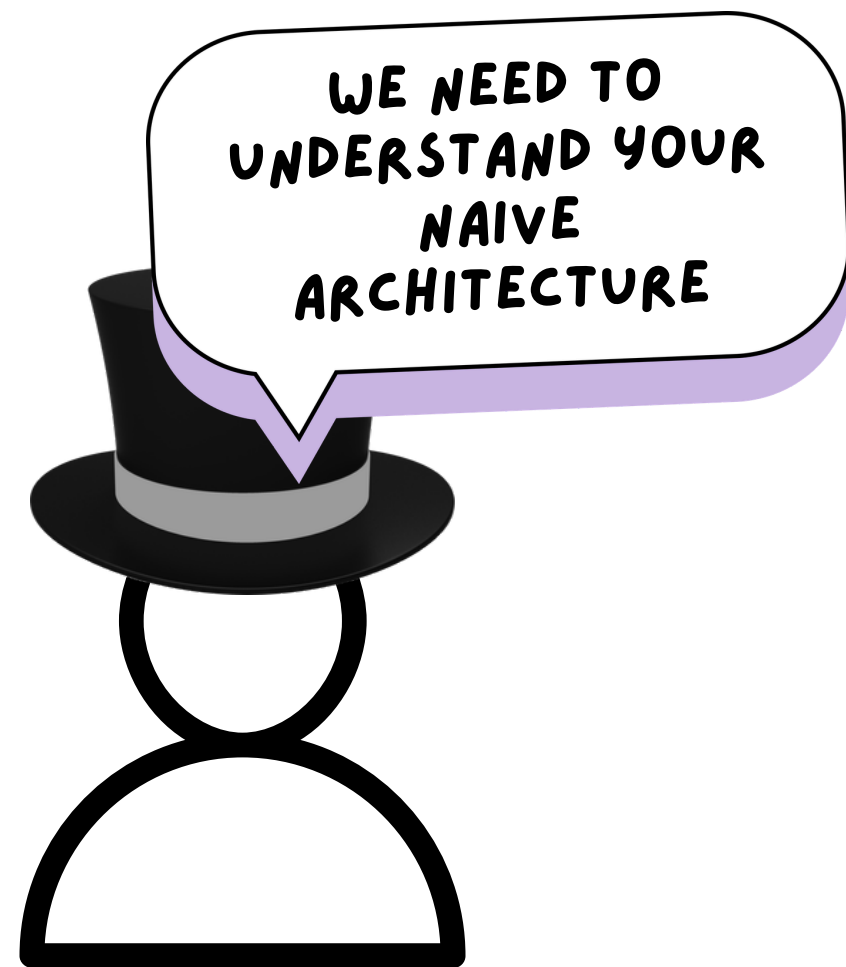


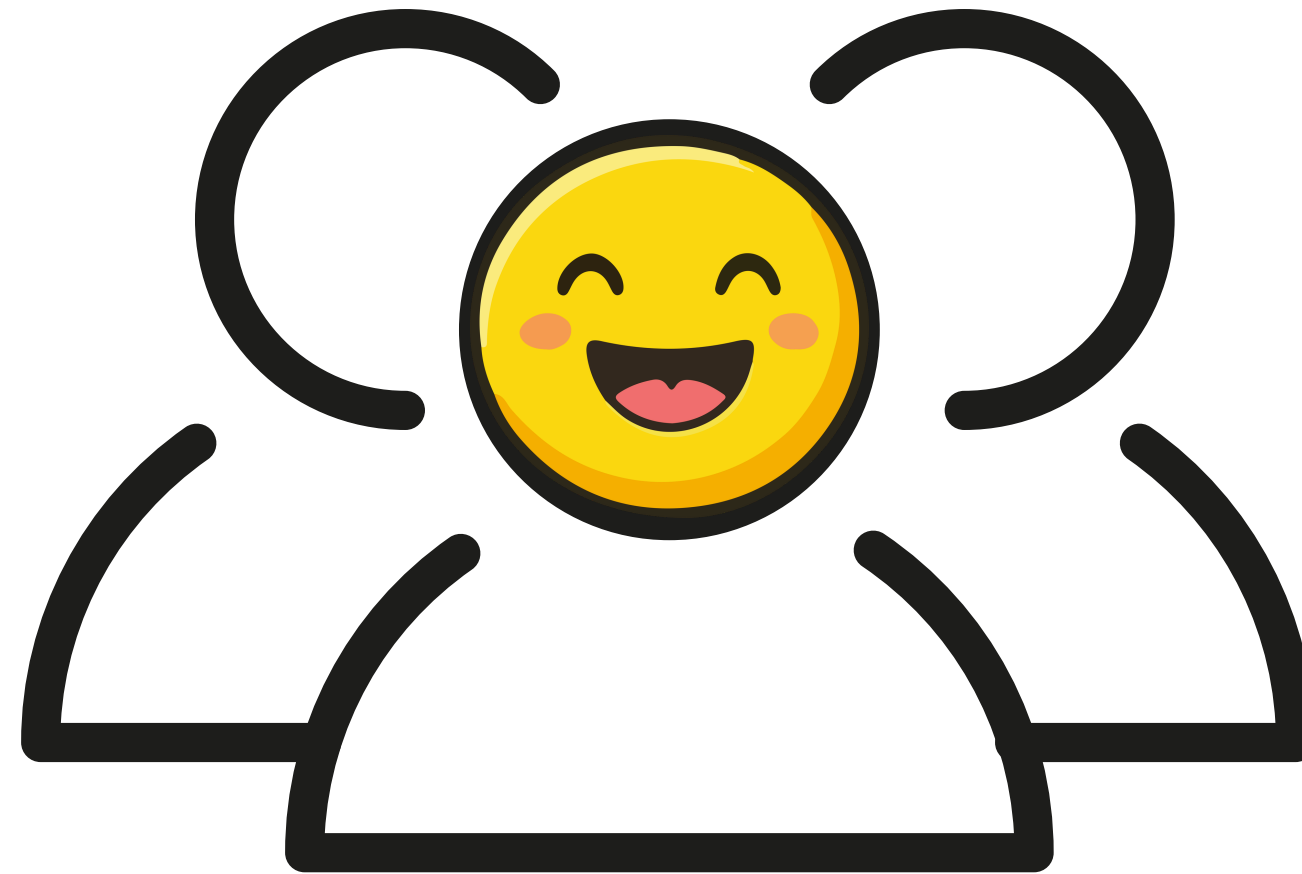
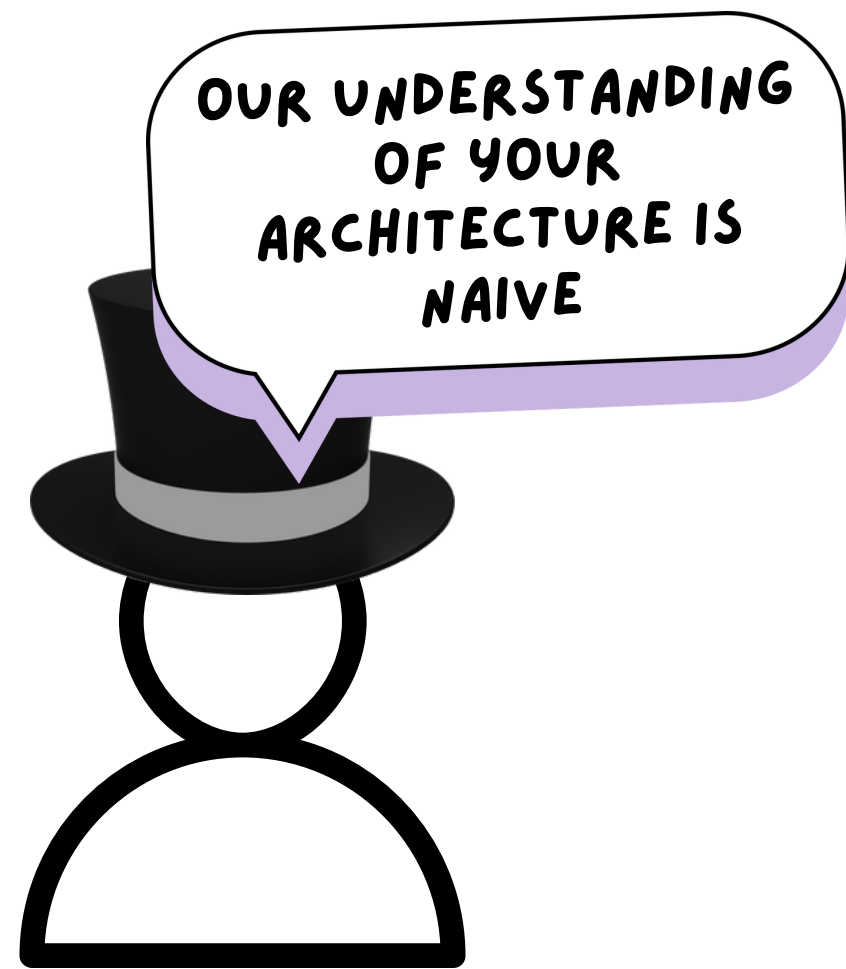
Bytesize
Architecture
Sessions with
C4



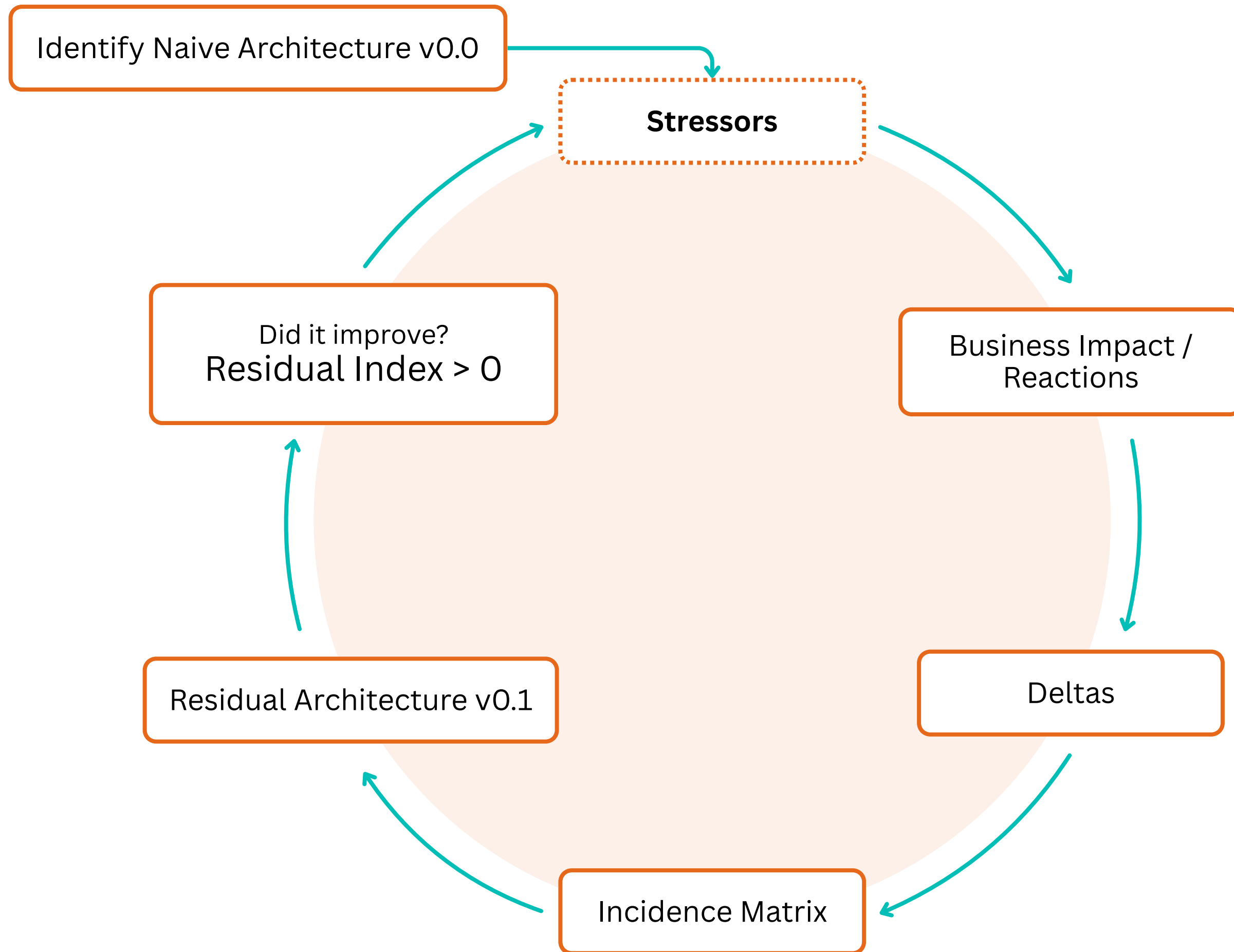
In person + Online







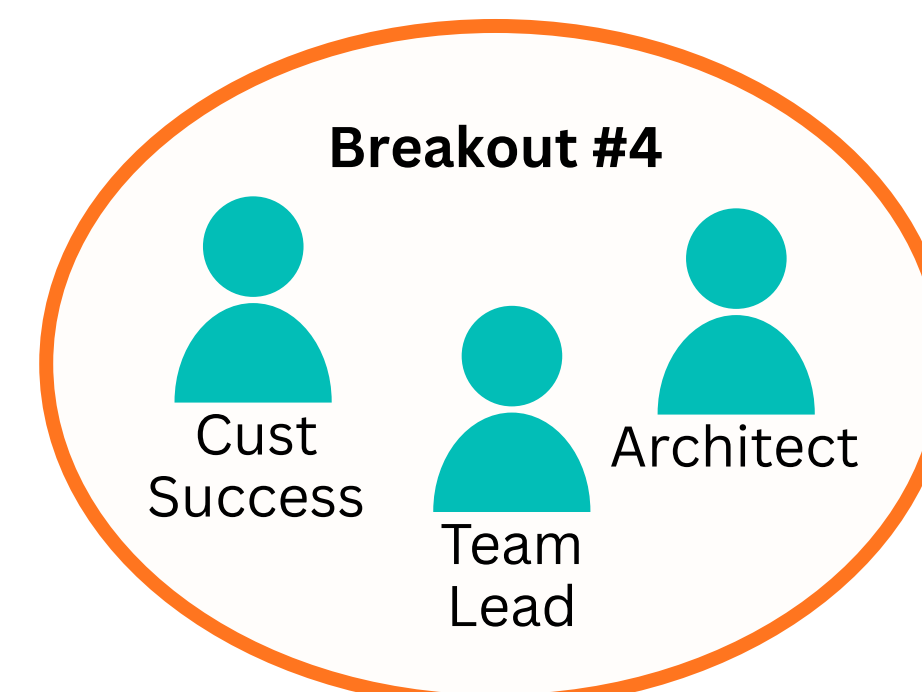
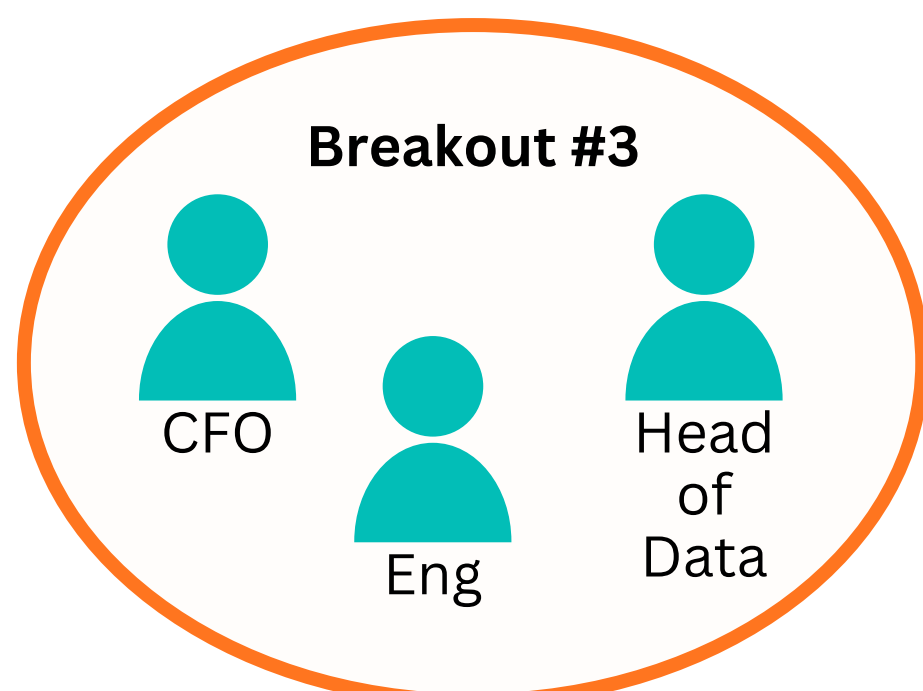
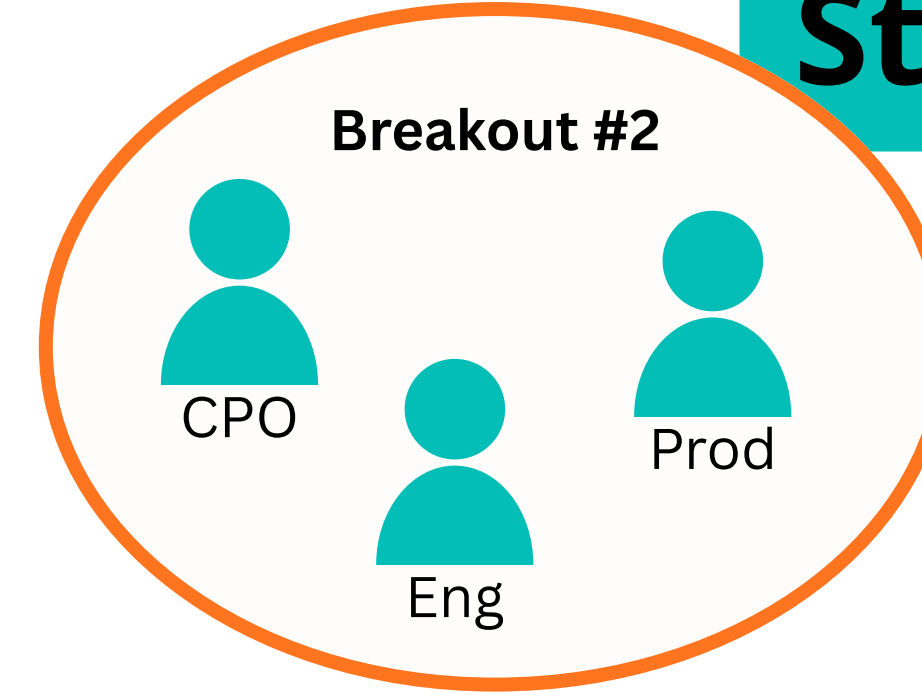
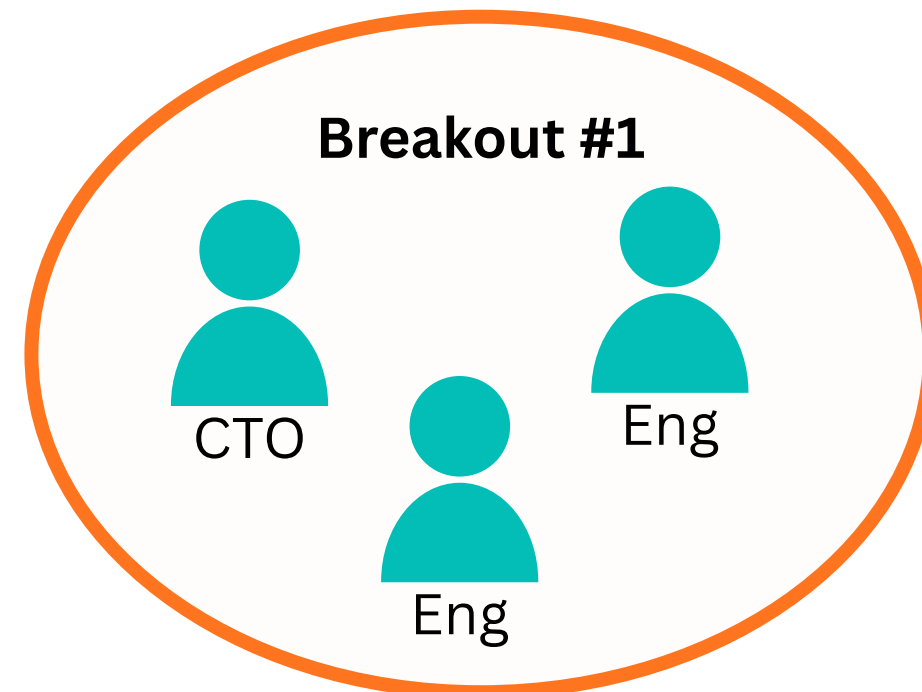
Methodology - Stressors



lexer

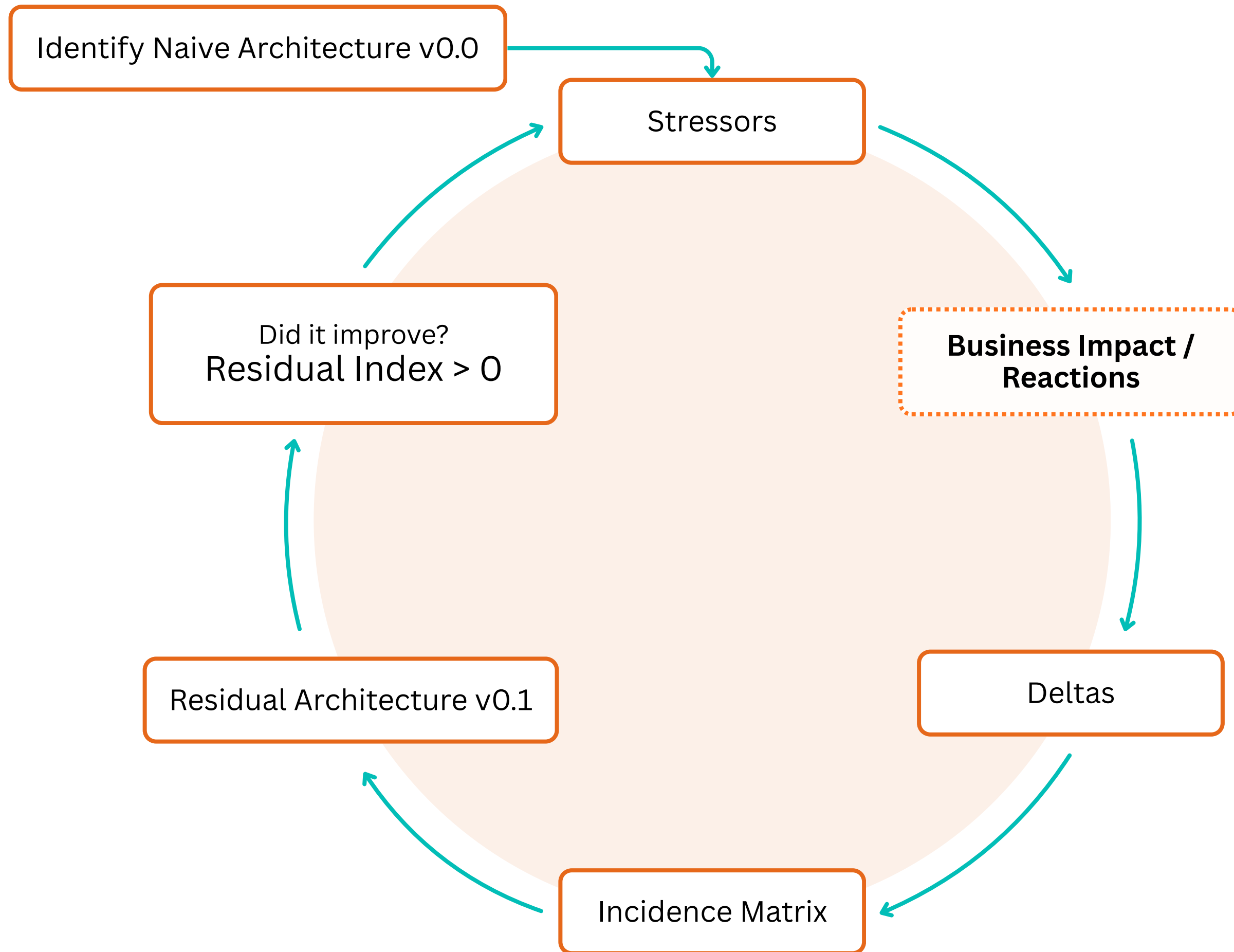
Stressors

143
Stressors



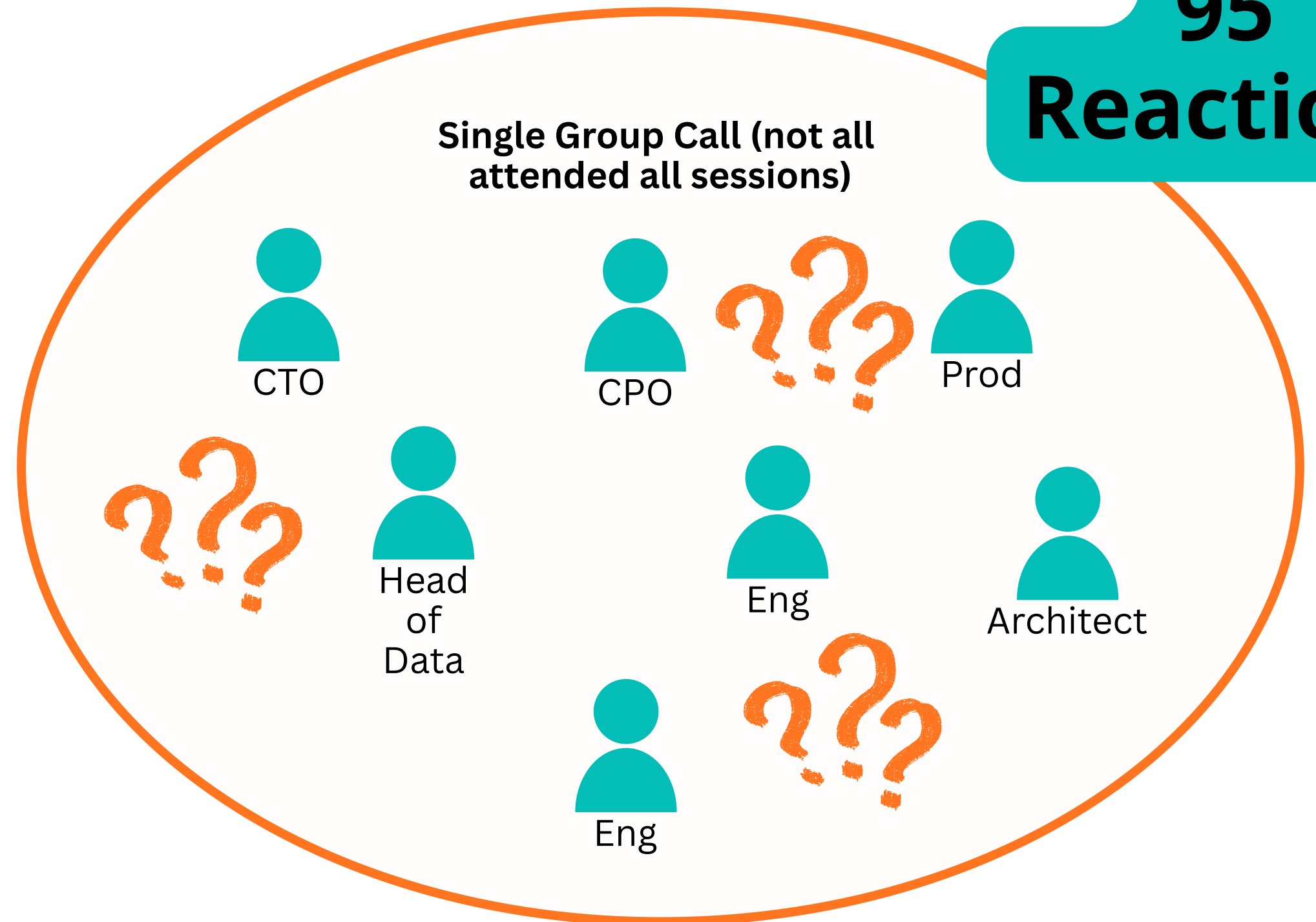
Andrea Magnorsky - roundcrisis.com | Chris Simon - chrissimon.au

Methodology - Reactions

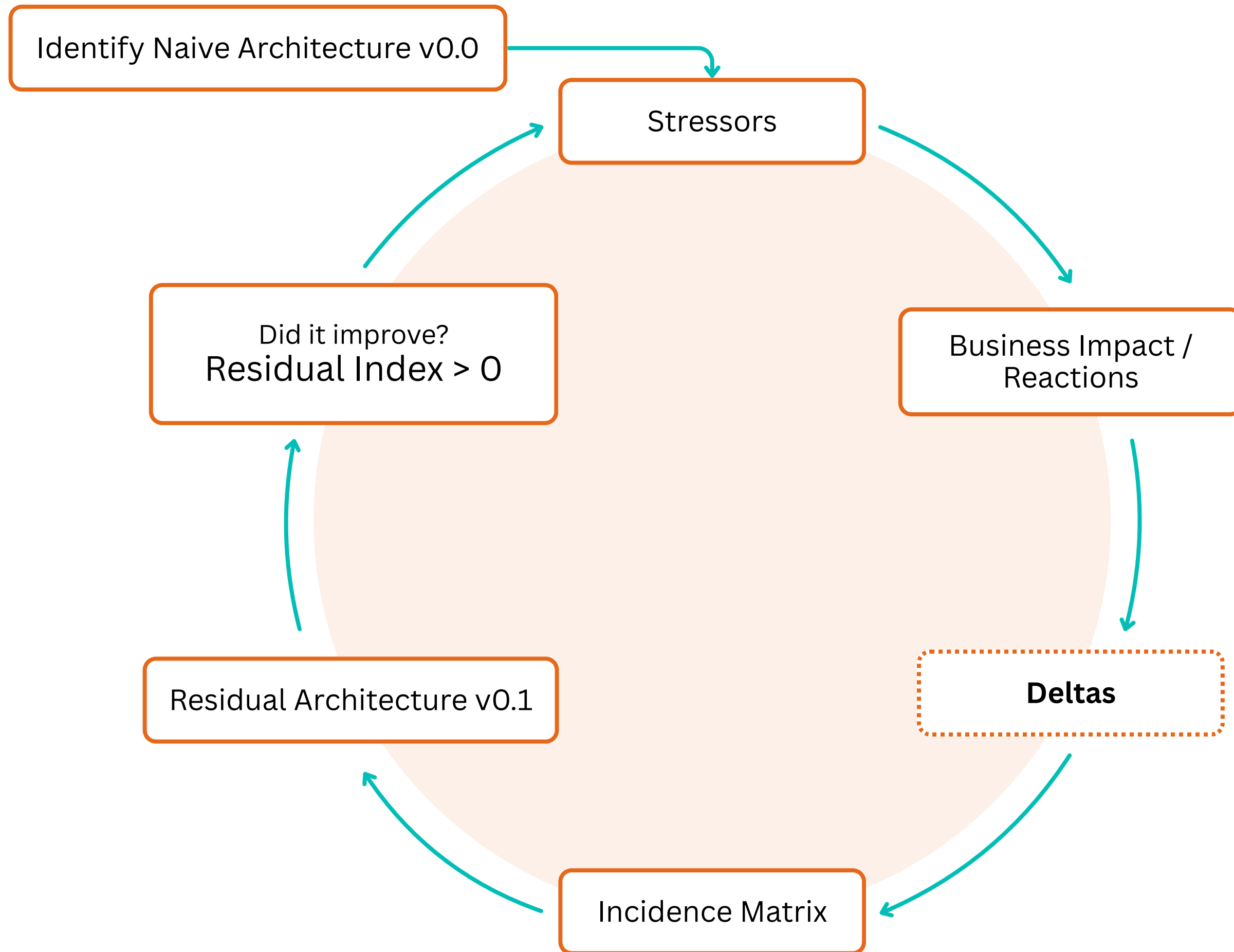


95
Reactions

Q	A
Attractor - Business Impact	Attractor - Business Reaction
Looking to competitor who can offer cheaper (or free) code	Open source everything - focus on things where there is still a cost and opp to add value
Reduced revenue due to customers self-hosting	Open source everything - focus on things where there is still a cost and opp to add value
Customer increased Total cost of ownership	Integrate with where clients move to if they move
	Validate that no competitive advantage lost (i.e. affects all competitors equally)
	Competitive as the source of truth becomes more cost effective
Our costs increase	Increase pricing if it affects margins too much
	Change pricing model to be more 'up or per integration'
	Validate that no competitive advantage lost (i.e. affects all competitors equally)
Customers with a 1000 lines stop signing up, start churning	Focus on customers with non-1000 motivations - e.g. product designers, multi-language
Customers don't see value, stop signing up, start churning	Build tool integrations/API etc. so Customers become the source of semantic content for us
Availability/offline, lost data	Local first - peer-to-peer architecture
Customers don't see value, stop signing up, start churning	Build tool integrations/API etc. so Customers become the source of semantic content for us
Browser experience not viable	Focus on non-browser experiences (slack, IDE)
	Build own browser
	Build local proxy service that unifies highlighting by intercepting requests to page (https://localhost:3000/https://original.url) (security implications??)
	Support side panel with dynamic content, instead of modifying page content
User don't use collaborative tool features	Do nothing - enterprise won't trust an individual referring to the tool as an 'asset'?
	Depends on how many?
Browser experience not viable	Focus on non-browser experiences (slack, IDE)
	Build enterprise self-hosted proxy
Our costs increase	Support side panel with dynamic content, instead of modifying page content
	Increase pricing if it affects margins too much
	Change pricing model to be more 'up or per integration'
Potential cost increase	Offer enterprise contracts with multiple team/organisations
	Stick with test runner API / CLI framework, don't use features to make recent editions
	Need to support mathematical characteristics of the language - symbols become meaningful



Methodology - Deltas



Deltas

**20
Deltas**

Single Group Call



CTO



CPO



Prod



Head
of
Data



Eng



Architect



Eng

Technical change or Residue (delta)	
Ingestion components compute integrity scores per record & attribute	
Query engine moves to Data Platform, to support reporting on aggregate integrity	
New LLM based self-healing component - reacts to low integrity triggers and pushes 'fix P10s'	
Probably needs decent raw data of problem records (from data platform & opts data/integrations) to propose the fix - still need an abstraction for that - perhaps event notification of issue could include 'pointers'/endpoints for where to obtain more raw data	
Timezone absence or affects integrity score - see residue 1 integrity score	
Data records need both timestamp (With original timezone) and a resolved date (Without time) - necessary contract shift across all components	
Hub able to 'time-shift' records that were ingested with the wrong timezone	
New API surface. Refactor Hub UI to use the new API as well. New API integrates with backend, data platform and attribute manager. Need to consider evolution rates of change between an API that supports Hub UI evolution rate, while being stable for external consumers	
Data platform - update to capture data about unification decisions made - sources, decisions, how and why?	
UI/API experiences to surface that data - want to trace forwards (start with source data, which profile did it get unified into?) and backwards (starting with a profile, which source data was unified into it?)	
Elasticsearch indexes need format/schema changes	

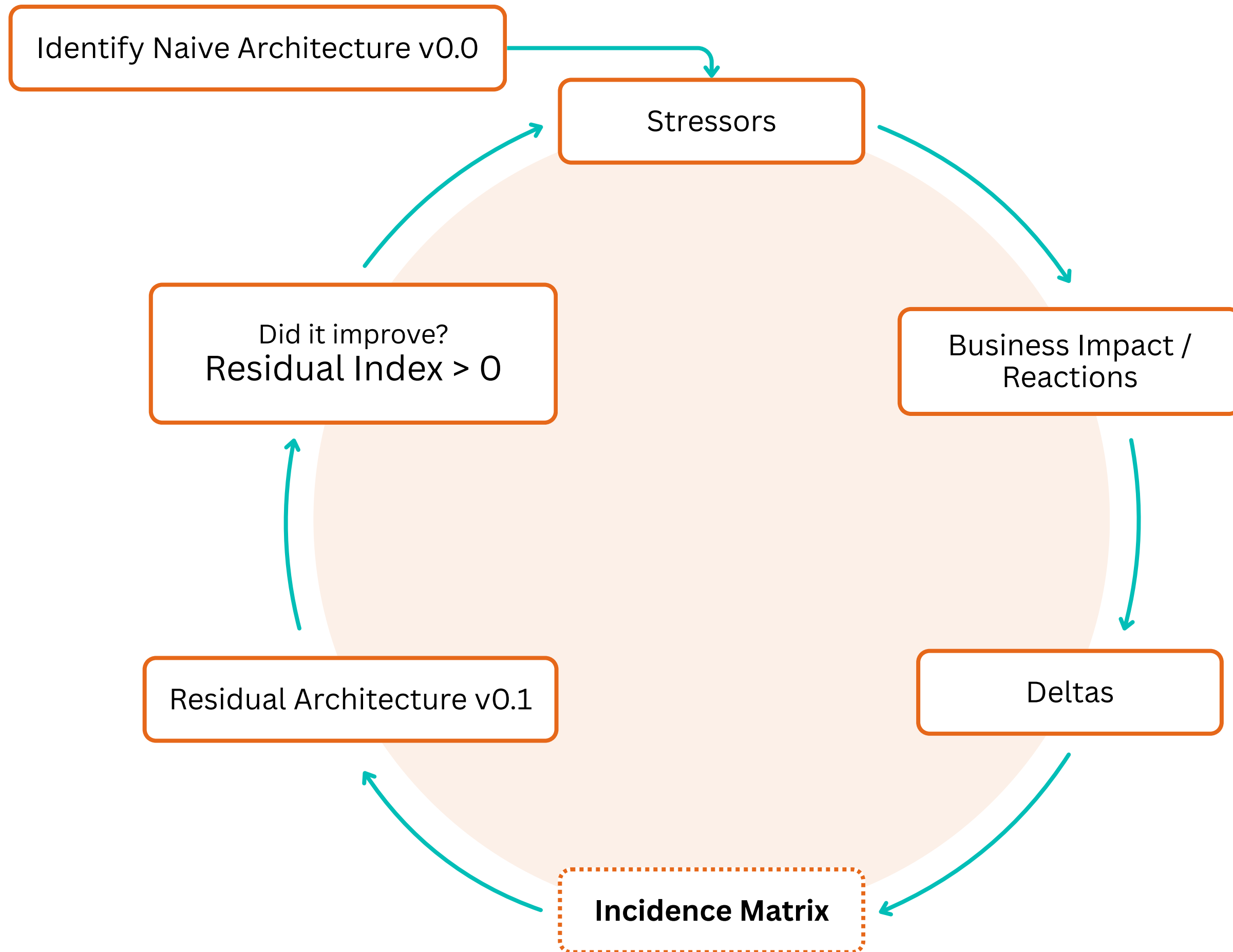
Environmental Changes

Move to Stream Aligned teams

Work on Beta version started

Andrea now Fractional Architect

Methodology - Incident Matrix



Incidence matrix

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
ID	Stressor Name		On Data	Integrations	Data Platform	Customer Data Platform	Hub/Intend	Hub Backend	Hub Database	Analytics Manager	Hub APIs	Query Engine	Learn	LLM/Gen AI/Healing	Learn Forms	Serve	
	... the system	residue 1 integrity score	1	1	1	1	1	1	1		1	1					1
		Data records need both timestamp (With original time) - resolved without timing - necessary context shift across all components	1	1	1	1	1	1	1		1	1					9
		Hub able to "resurrect" records that were ingested with the wrong timezone															
22	All makes all UI obsolete/completely headless - you deal with a general interface like Google, and never see a screen UI	New API surface. Reference Hub UI to use the new API to deal. New API integrates with hub data platform and analytics manager. Need to consider evolution from change between an API that supports Hub UI evolution rate while being stable for external consumers					1			1	1						3
																	0
25	Client doesn't trust the insights shared - Data is not traceable/reliable	Data platform - update to capture data about unified data decisions made - sources, decisions, how and why? UI/API - update to surface that data - want to trace forwards (start with data, which profile did it get unified into?) and backwards (starting with a profile, which source data was unified into it?) Client/Server - update to format/schema changes			1		1	1	1								4
																	0
26	... data cannot be facilitated (in or out of platform)	... integration / ... flows / ... resume flows ... data ... - Remove ... from the Data Platform and put them in the Query Engine Local, which distributes?	1	1	1	1				1							5

Incidence matrix

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
ID	Stressor Name		On Data	Integrations	Data Platform	Customer Data Platform	Hub	Backend	Hub Database	Analytics Manager	Tooling APIs	Query Engine	Learn	LLM from self healing	Learn Forms	Serve	
	the system	residue 1 integrity score	1	1	1	1	1	1	1	1	1	1	1				9
		Data records need both timestamp (With original time) - necessary context shift across all components	1	1	1	1	1	1	1		1	1					9
		Hub data is timestamped records that were ingested with the wrong timezone															
22	API makes all UI obsolete/completely useless - you deal with a general database like Google, and never see a UI	New API surface. Refactor Hub UI to use the new API in 2024. New API integration with external data platform and analytics manager. Monitor evolution from change between API that supports Hub UI evolution rate while being stable for external consumers					1			1	1						3
																	0
25	Client doesn't trust the insights shared - Data is not traceable	Data platform - update to capture data about unified data decisions made - sources, decisions, how and why? UI/UX - to surface that data - want to trace forwards (with which data, which profile did it get unified with) and backwards (which with a profile, which source was unified into it?) Client-side updates to format/schema changes			1		1	1	1								4
																	0
26	Data cannot be facilitated (in or out of platform)	Analytics Integration / Data flows / Integration with the tech. resource flows - the data platform - Remove data from the Data Platform and put them in the Customer Local, who distributes?	1	1	1	1				1							5

For Beta version

Logical View

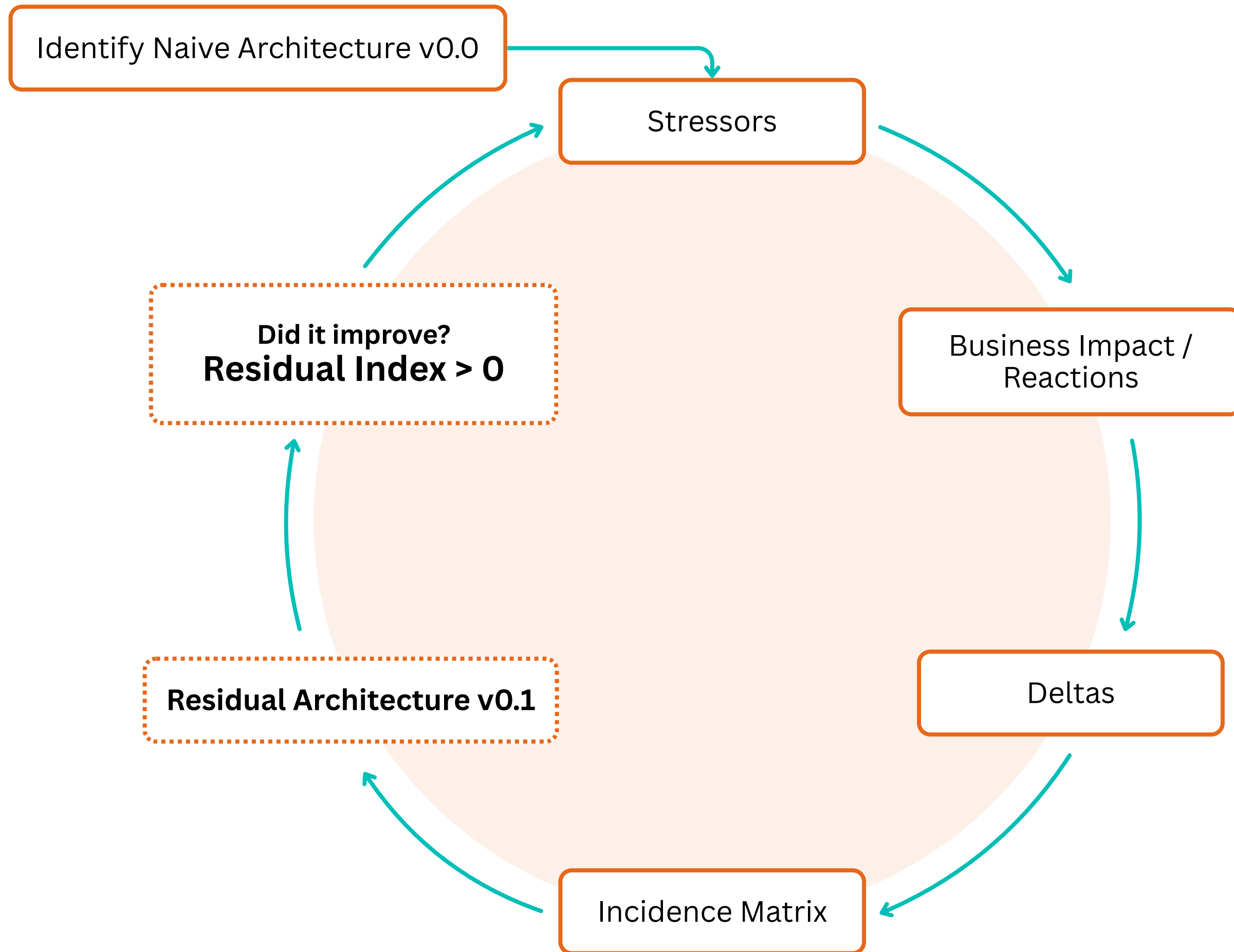
[illegible]

Process View

Stressor Name							user management		UI	api	LLM component	Data Component	DB	Datalake	Catalogue	Existing api	Existing	Liegacy	Realtime Collector	Self-healing schemas	Lexer MCP	total
1	your stressor description		Ch	Im	Inc	int	sci					1			1	1	0		1			4
			Di																			0
			im	Ne	Ne	Int													1	1		2
4	your stressor description		Da	Di	Tir	int	Da					0					0		1			1
			Us	Qu	Da	Qu	Da			1	1				1	1		1				5
22	your stressor description		Lo	Mi	Ne	Hu	Mc			1											1	2
			Cr																		1	1
25	your stressor description		Cu	Ch	Da	Op	Alk															0
			Gr			Tr																0
	your stressor description				Up					1			1	1	1							4
48	your stressor description		Al	de	- F	- k	e.g					1			1	1	1	1		1		6
			Cl	Re		2.									1	1						2
	your stressor description				Ne					1					1	1	1	1				5
26	your stressor description		Cl	Inc		Wl																0
119	your stressor description		Cl	cre	- F	- S				1		1			1	1	1		1			6
					Hc	Da	Da			1		1			1	1	1	1				7

*Beta version due late June

Methodology - Deltas



For Beta work

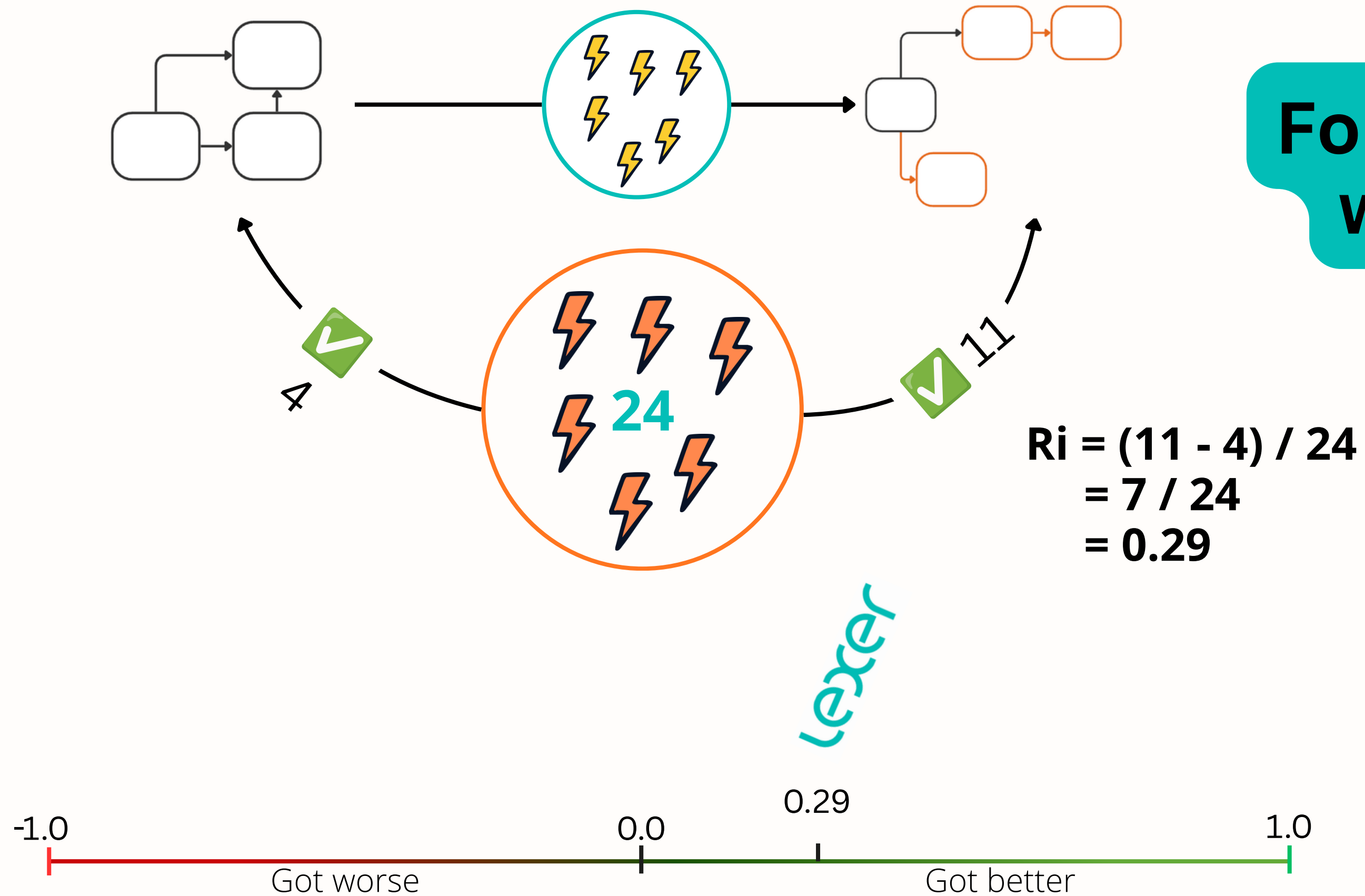
-	Stressor Name	Legacy	GC Init	Residual Index	0.291666667
79	your stressor description		0	1	
81	Okta compromised				
83	users should get more guidance when getting errors				
85	we somehow compromise client SSO				
86	your stressor description		0	0	
87	your stressor description		0	1	
114	your stressor description		0	1	
115	your stressor description		1	0	
117	your stressor description		1	0	
118	your stressor description		1	0	
120	your stressor description		1	0	
121	your stressor description		0	0	
122	your stressor description		0	0	
123	your stressor description		0	1	
124	your stressor description		0	0	
125	your stressor description		0	1	
126	your stressor description		0	0	
127	your stressor description		0	0	
128	your stressor description		0	1	
129	your stressor description		0	1	
130	your stressor description		0	0	
131	your stressor description		0	1	
132	your stressor description		0	0	
	your stressor description				
141			0	1	

Residual Index

0.29

Residual Index

**For Beta
work**



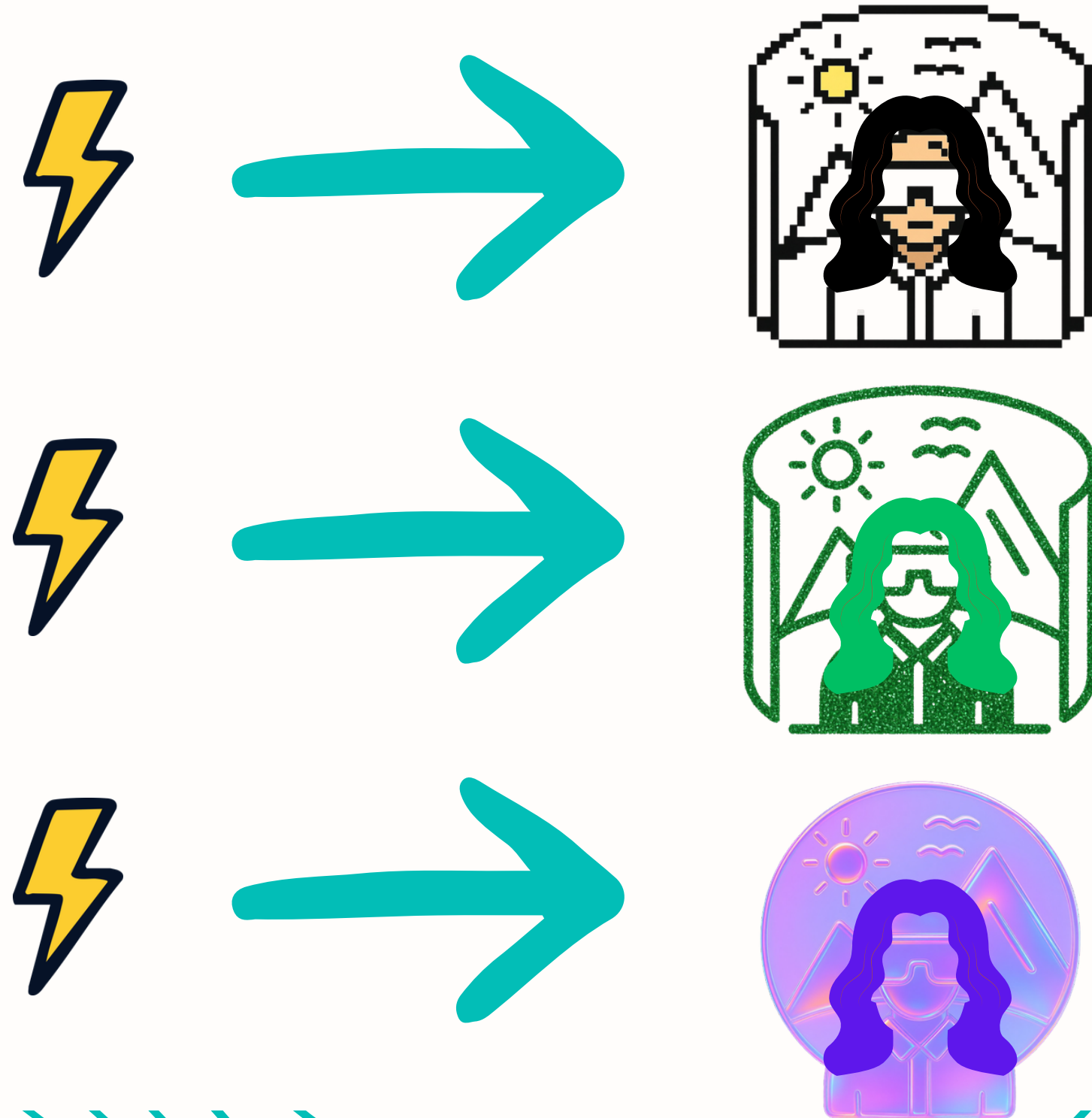
lexer

Delta Design

**Hard to create deltas
when there are too many
options**

**Shared language and
naive architecture will evolve
during the process**

Forcing function?



Incidence Matrix



Incidence Matrix

The collaborator solo work guilt

**How do to share these
new insights in a useful way?**

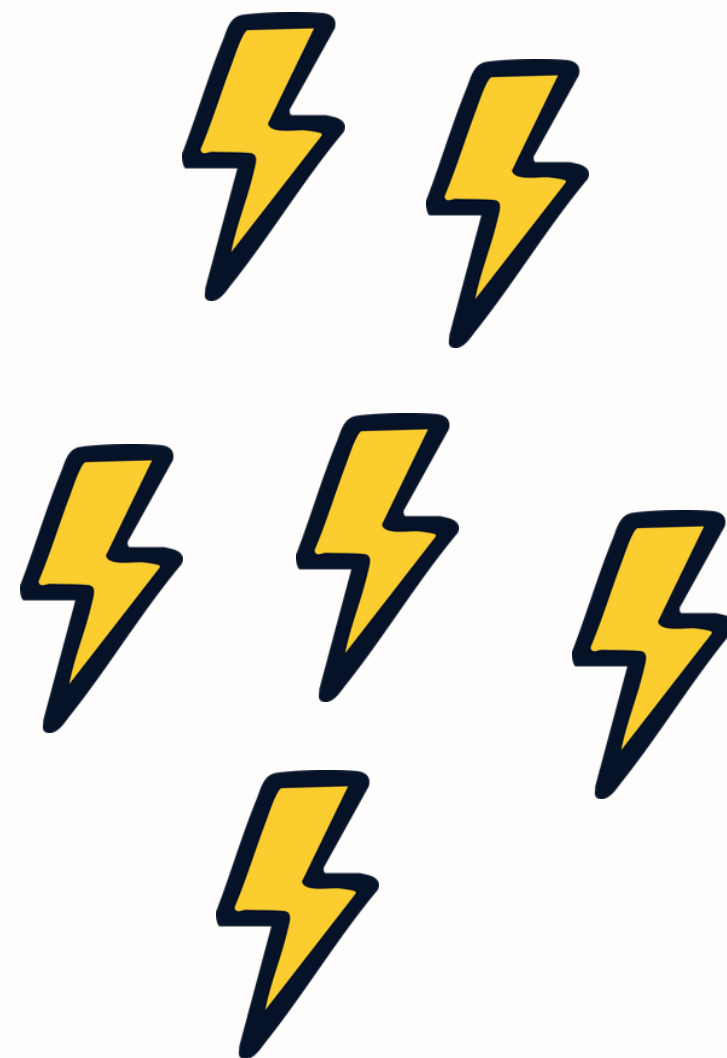
Adapt ES to incorporate Residuality

Event Storming

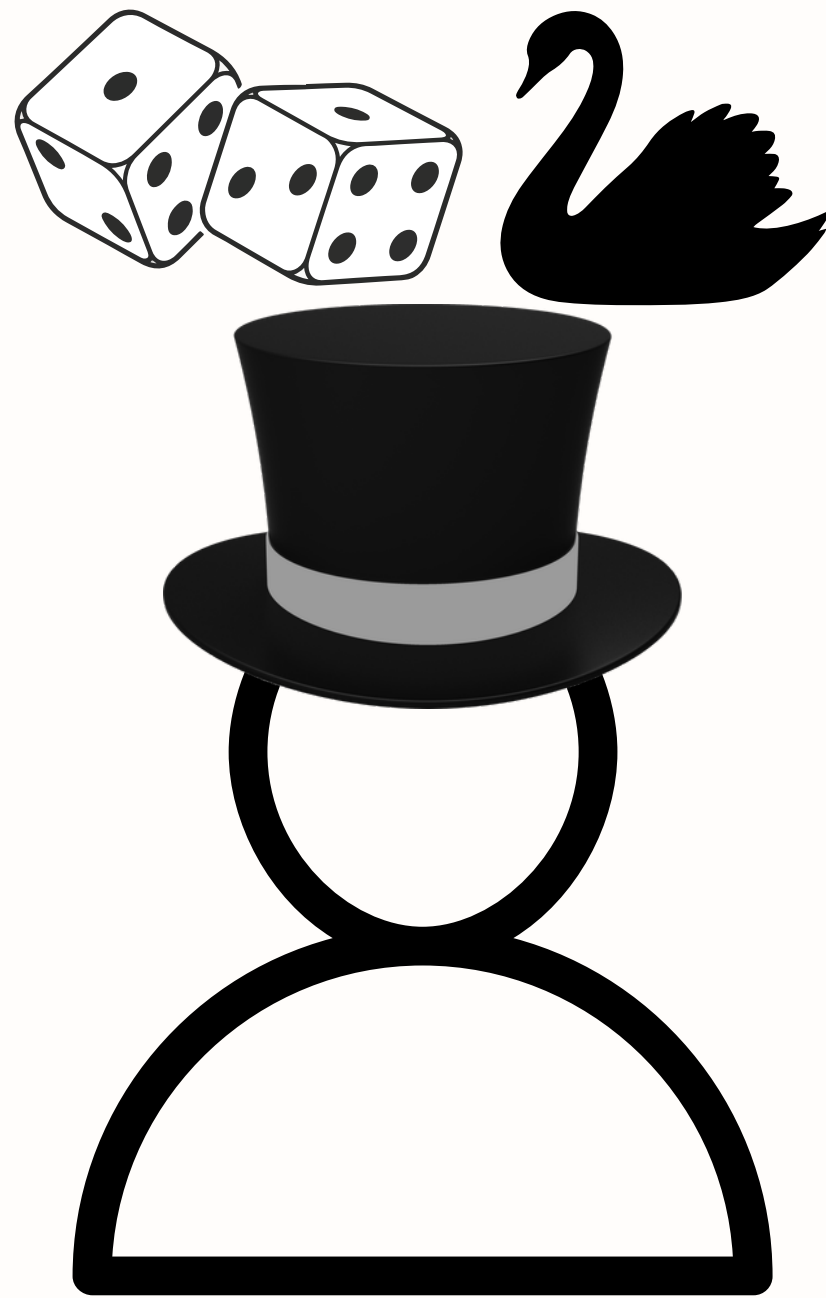
Opportunities

Hot Spots

Alternative Swimlanes

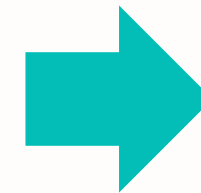


External Sources of Randomness



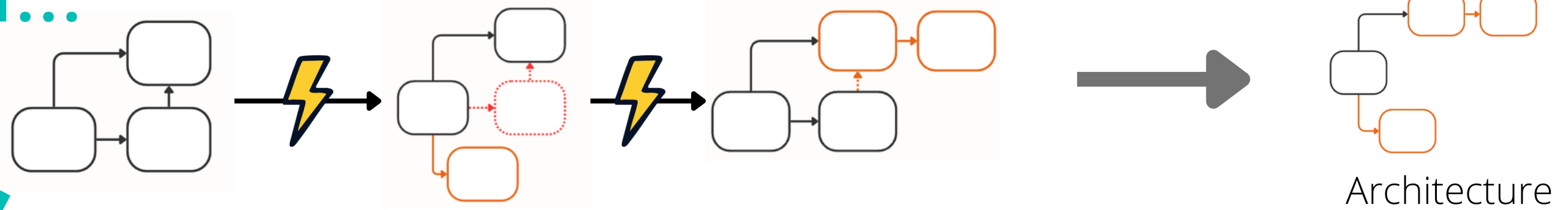
Agenda

1. Residuality Overview
2. Motivation
3. Outcomes & Organisations
4. Case Study 1 - Contextive
5. Case Study 2 - Lexer
6. Conclusion



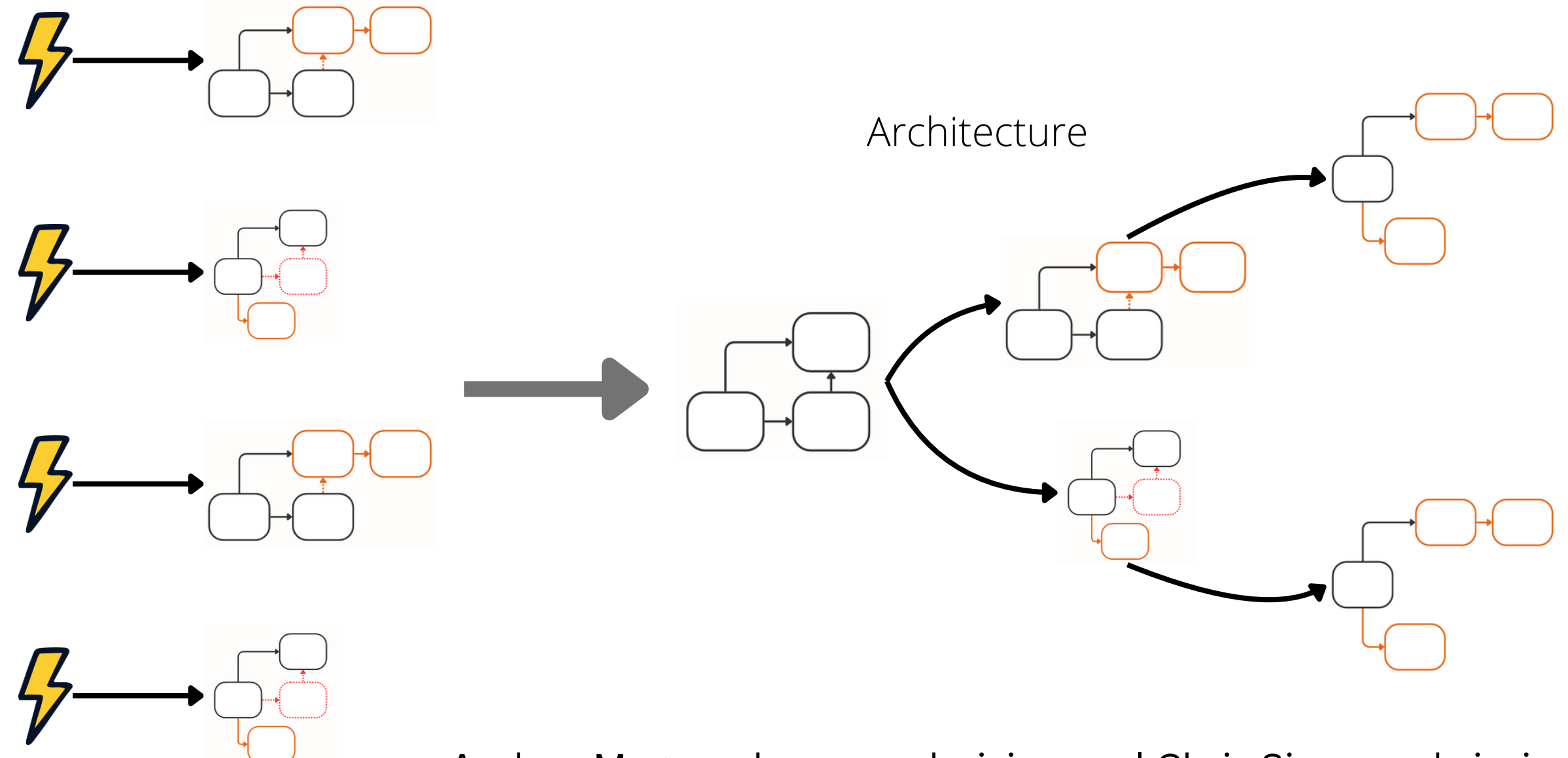
From...

Linear stressing and delta integration → Architecture as a 'static structure'

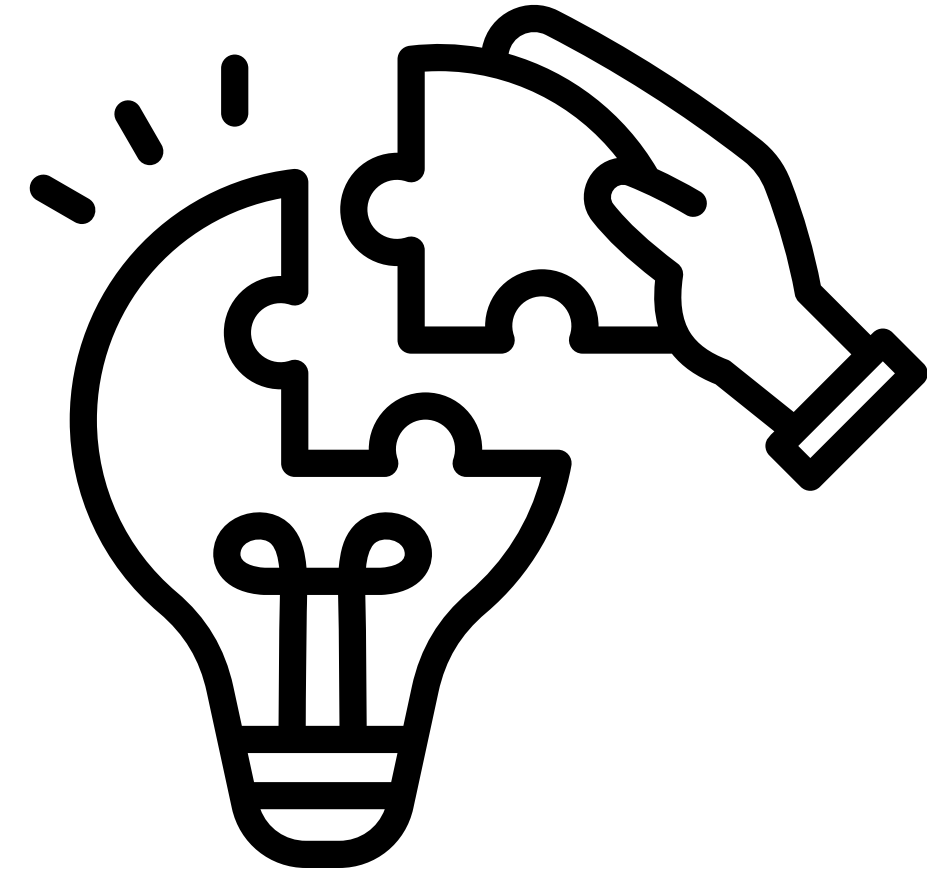


Considering possible stressors and deltas individually → Architecture as a set of possible journeys through time

to...



**Completing Residuality
analysis**



I was surprised that it worked!

**The randomness felt like a weakness, but
it was the secret ingredient to a great recipe**

Residuality:

Real World Comparative Case Studies

1. It's not hard to start - learn by doing
2. Architecture is about change over time
3. Expect to engage in business strategy

Further Reading & References

Andrea Magnorsky

[link](#)



Chris Simon

[link](#)





Thank you for attending:

Residuality:

Real World Comparative Case Studies

Andrea Magnorsky
&
Chris Simon