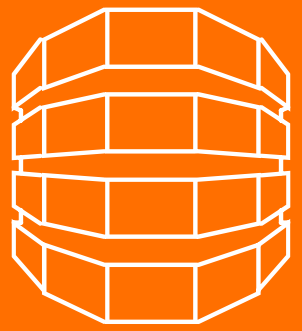
2:32 am. PagerDuty wakes you up.
DynamoDB is failing.



...But What Happens When DynamoDB Explodes?

* No databases were harmed during the making of this presentation

Who am I ?

Erez Berkner

Co-Founder & CEO, Lumigo

lumigo

- Link Technical issues to business impact
- Build a trace-ready environment
- Troubleshooting distributed systems

lumigo

Agenda

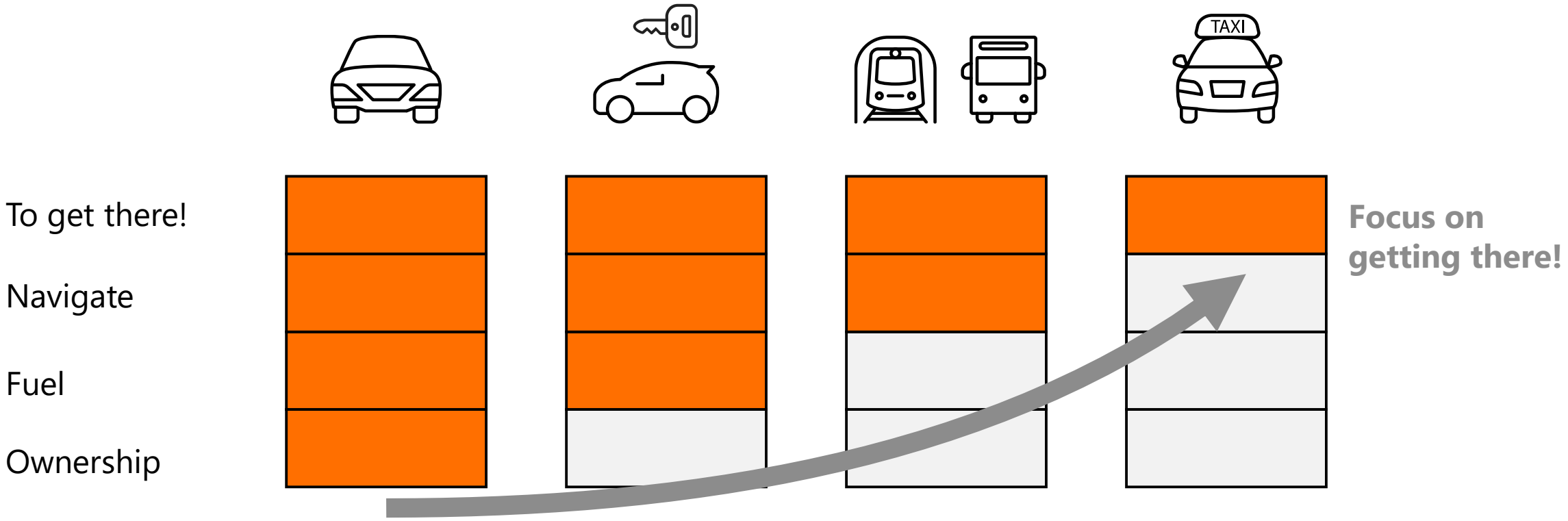
- Serverless changes everything
- The story of Ushop
- Troubleshooting approaches

lumigo

What is Serverless?

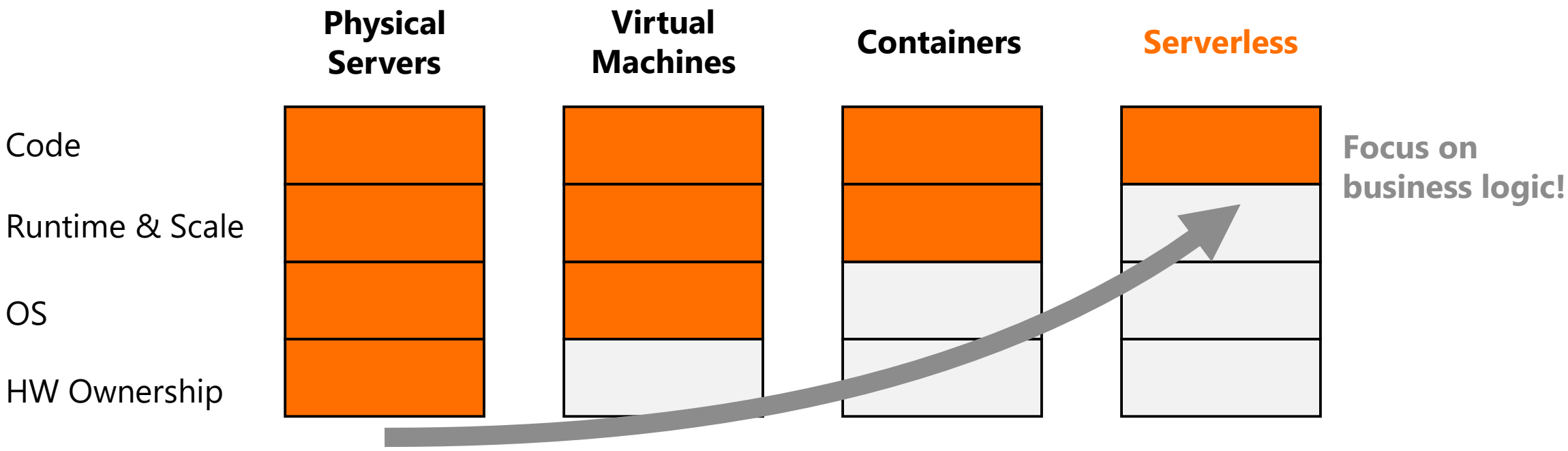
lumigo

What is Serverless? It's like taking a cab!



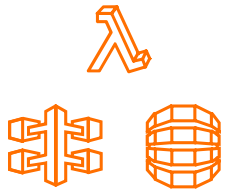
lumigo

What is Serverless? It's like taking a cab!



lumigo

Serverless Impact



Nano Services

Async

Dynamic agile env

Self Managed

Cost Paradigm Change

lumigo

Serverless Challenges

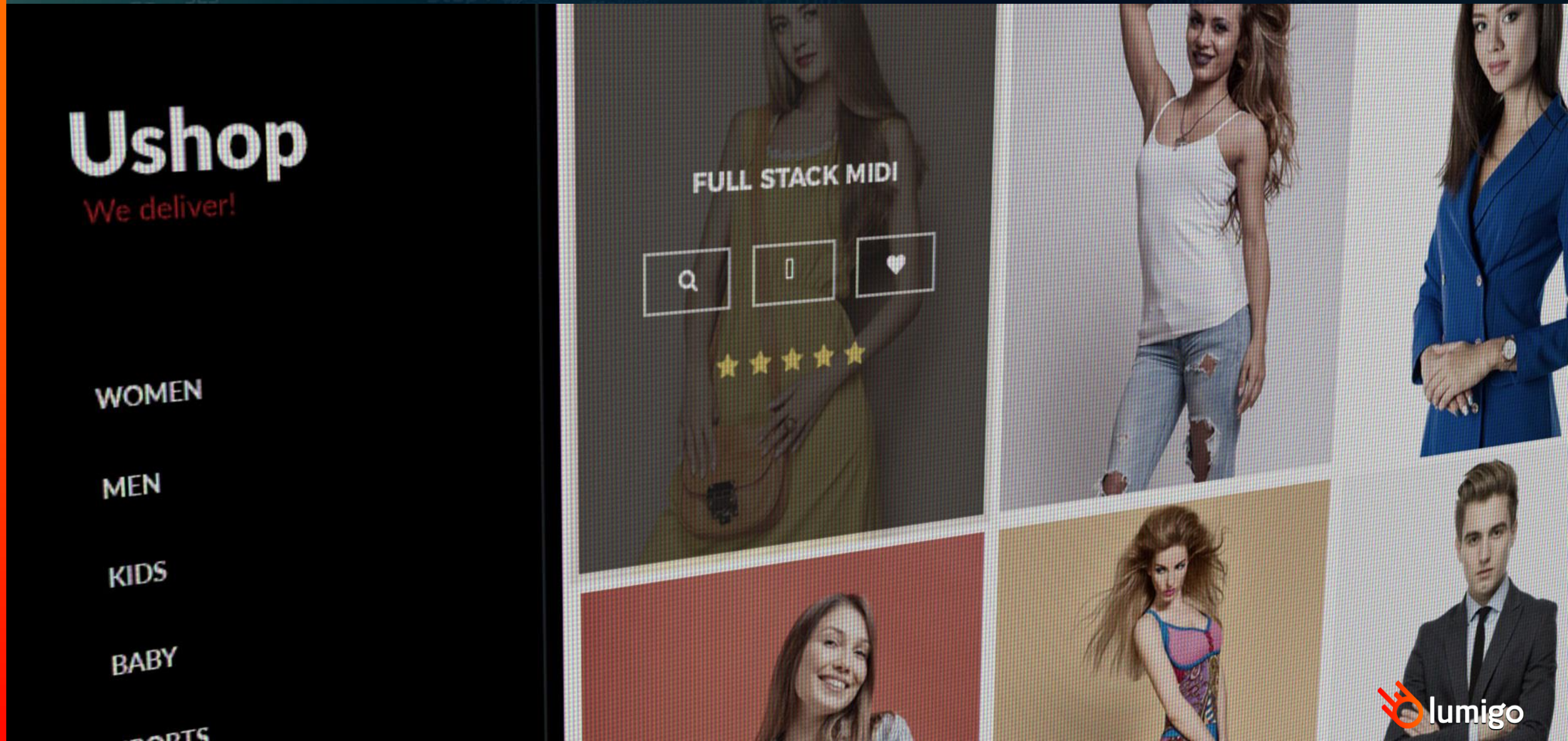
Identify & Resolve Issues

Understanding cost

Visibility

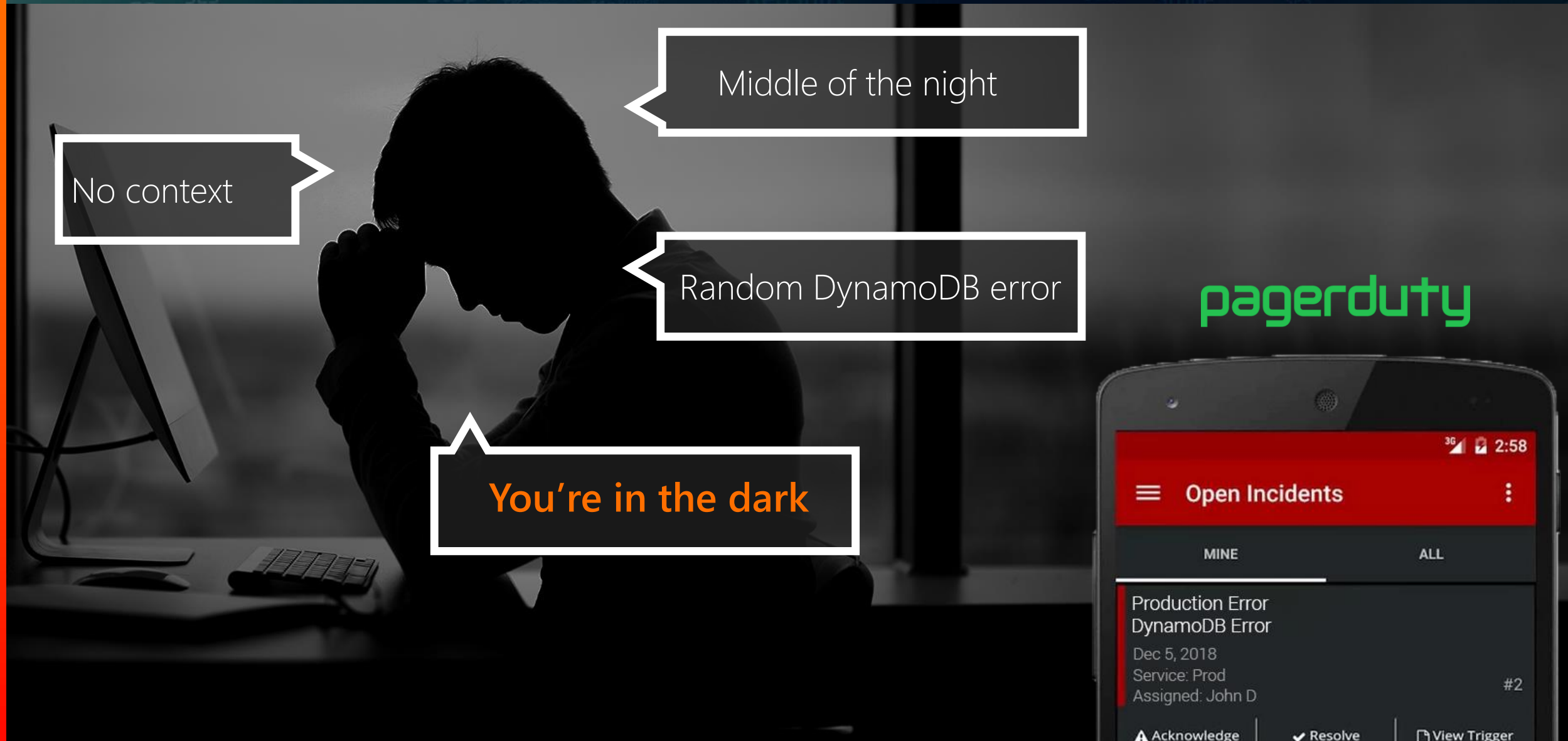
lumigo

The story of Ushop



lumigo

The story of Ushop

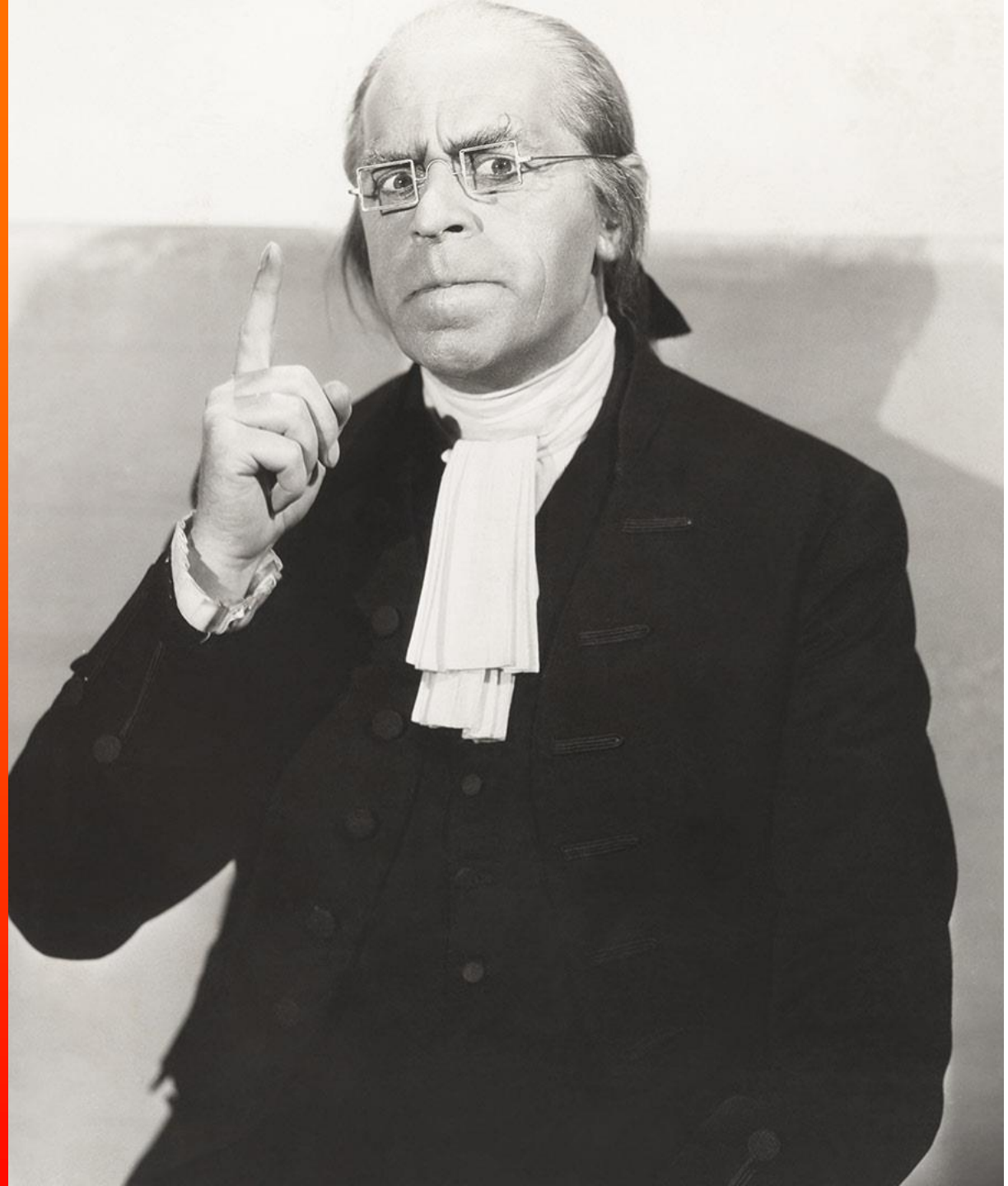


The story of Ushop

Q1: What's the business impact?

Q2: What's the root cause?

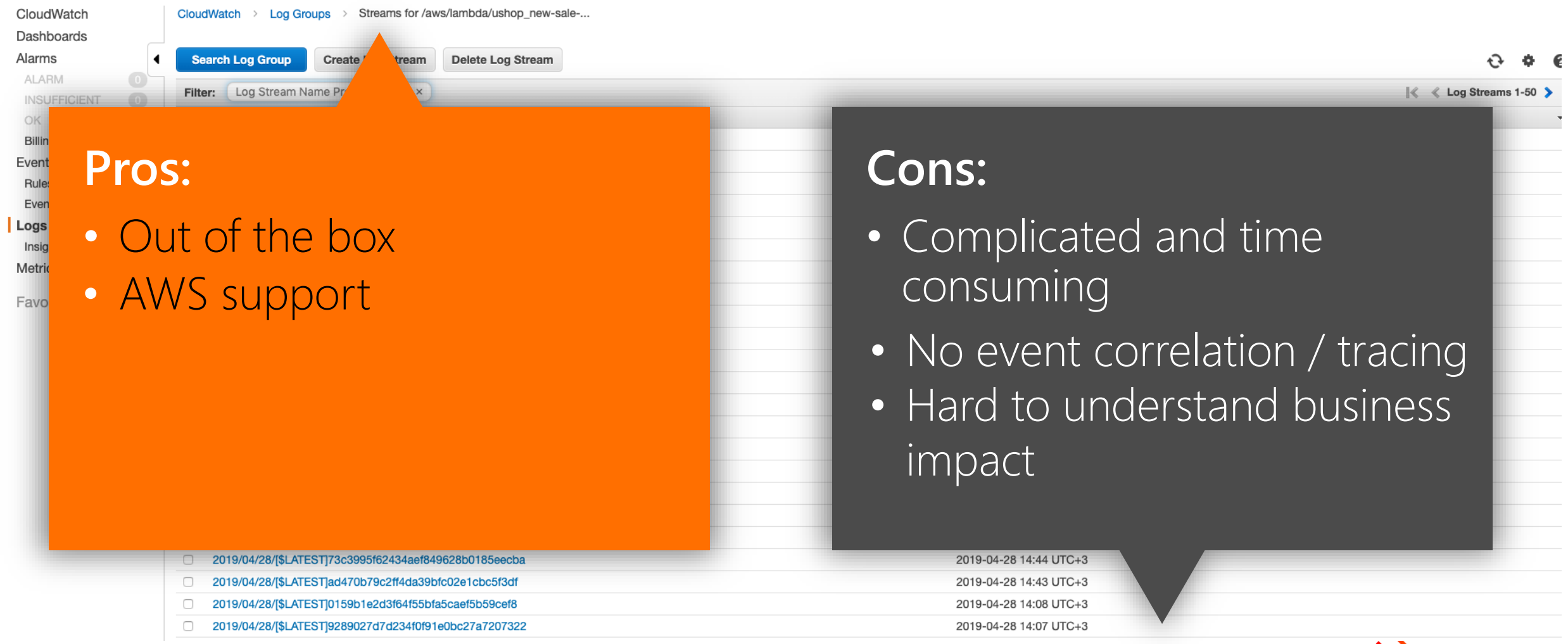
lumigo



Option 1
Cloudwatch & Friends

lumigo

Option 1 Cloudwatch & Friends



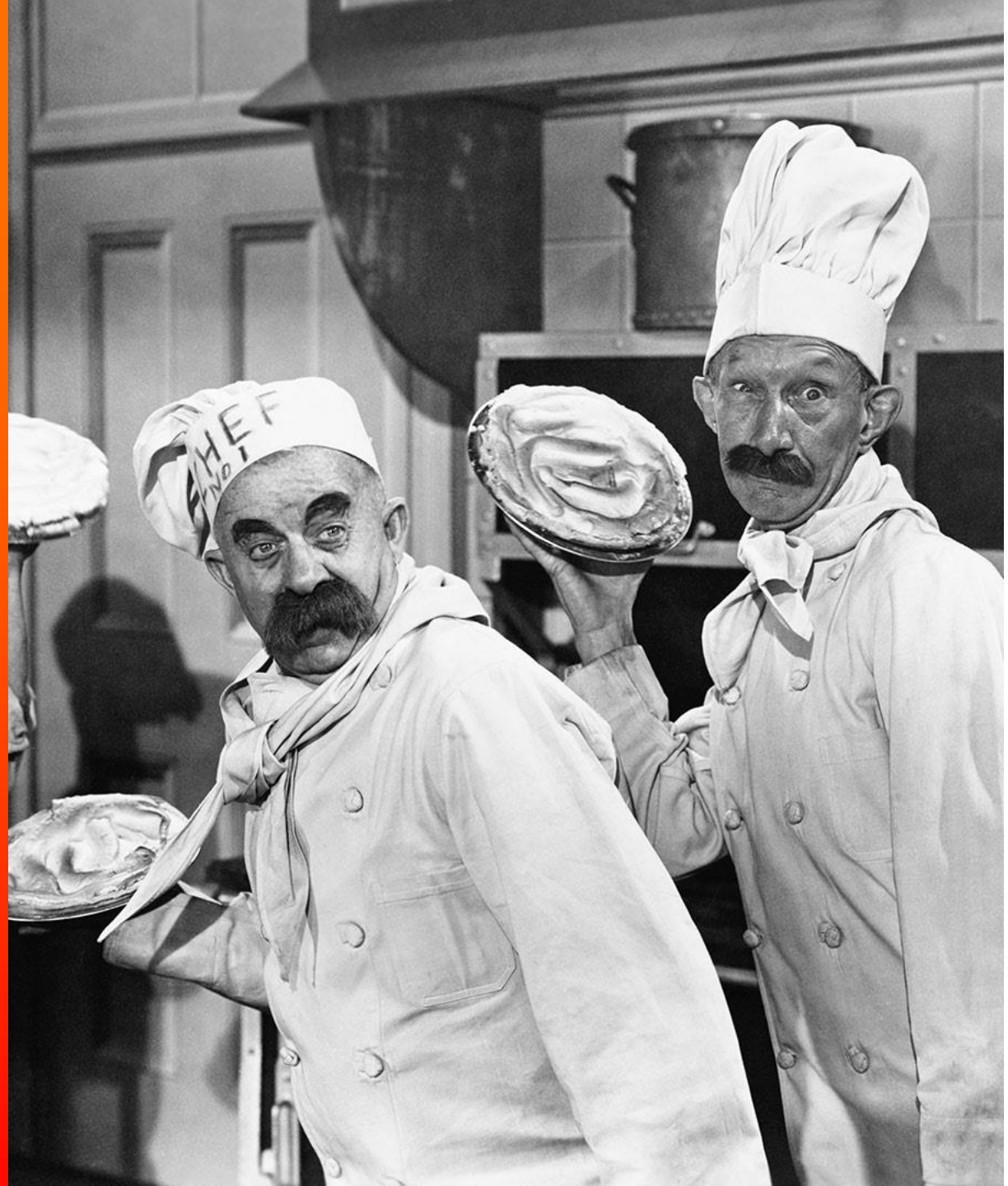
Pros:

- Out of the box
- AWS support

Cons:

- Complicated and time consuming
- No event correlation / tracing
- Hard to understand business impact

lumigo

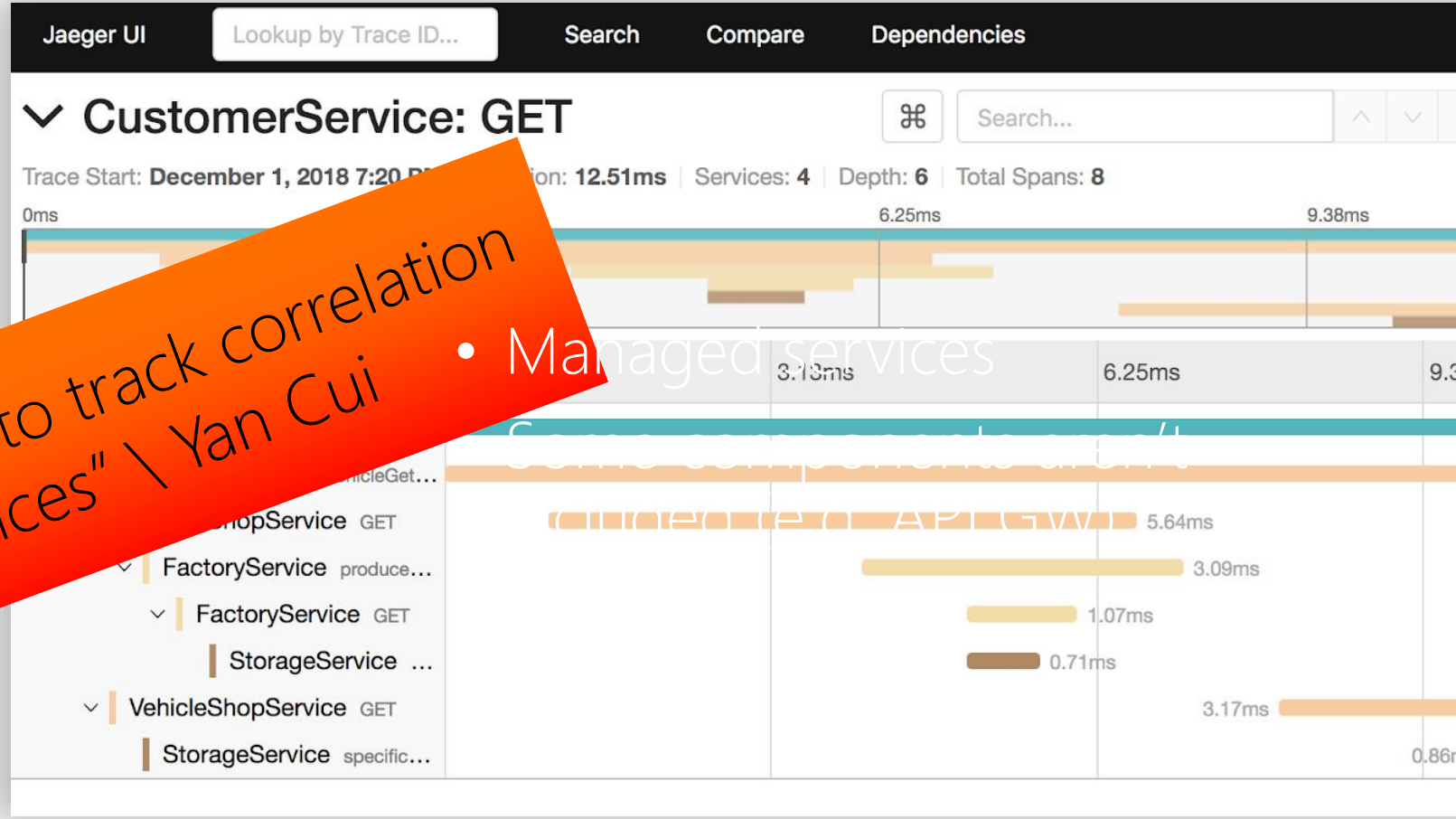


Option 2
Homebrewed Solutions

lumigo

Option 2 Homebrewed Solutions

- Use Distributed Tracing frameworks:
  - Zipkin (+Jaeger)
  - OpenTracing
  - OpenCensus



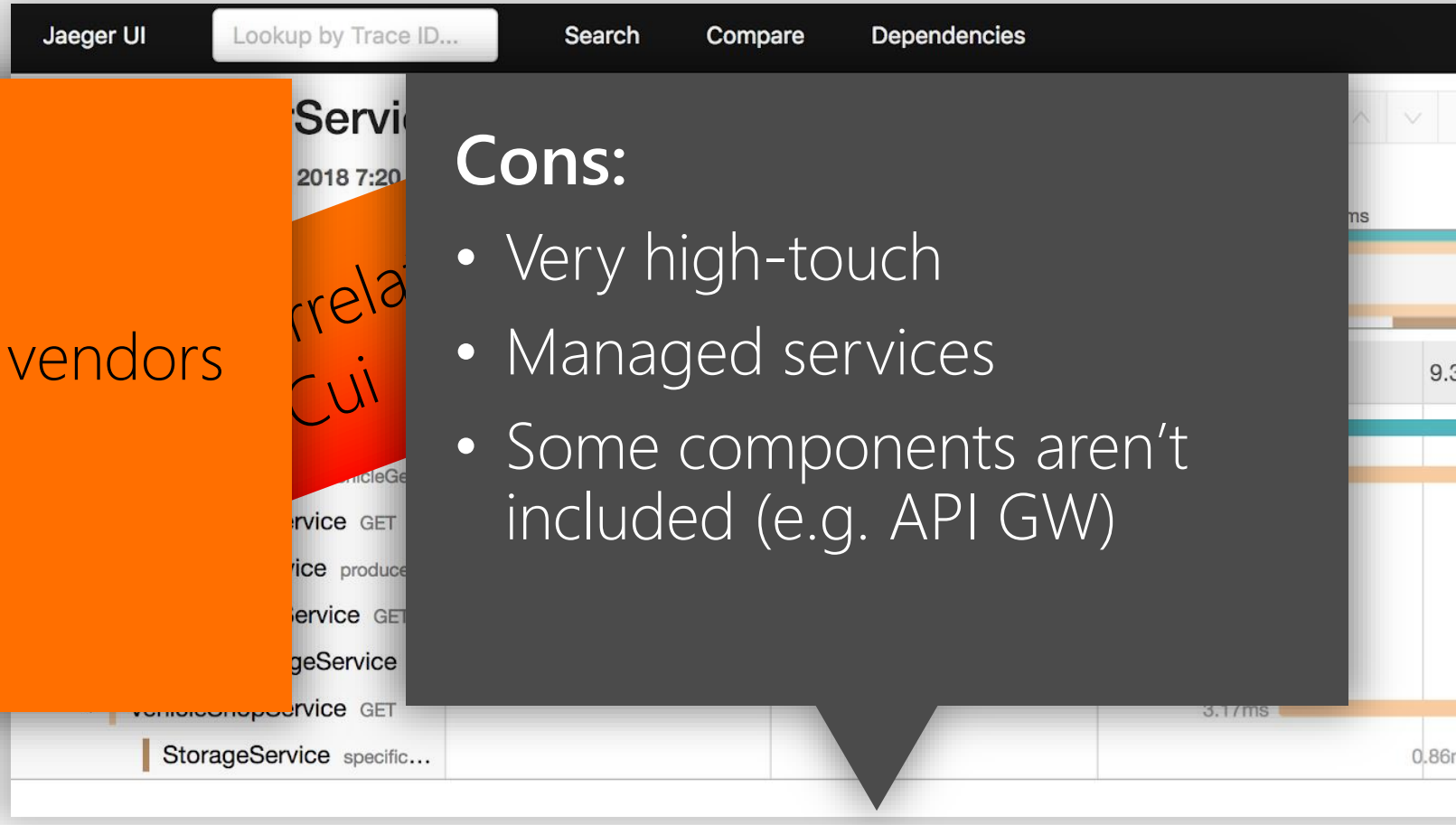
"A consistent approach to track correlation IDs through microservices" \ Yan Cui

- Managed services

lumigo

Option 2 Homebrewed Solutions

- Use Distributed Tracing frameworks:
  - Zipkin (+Ja er)



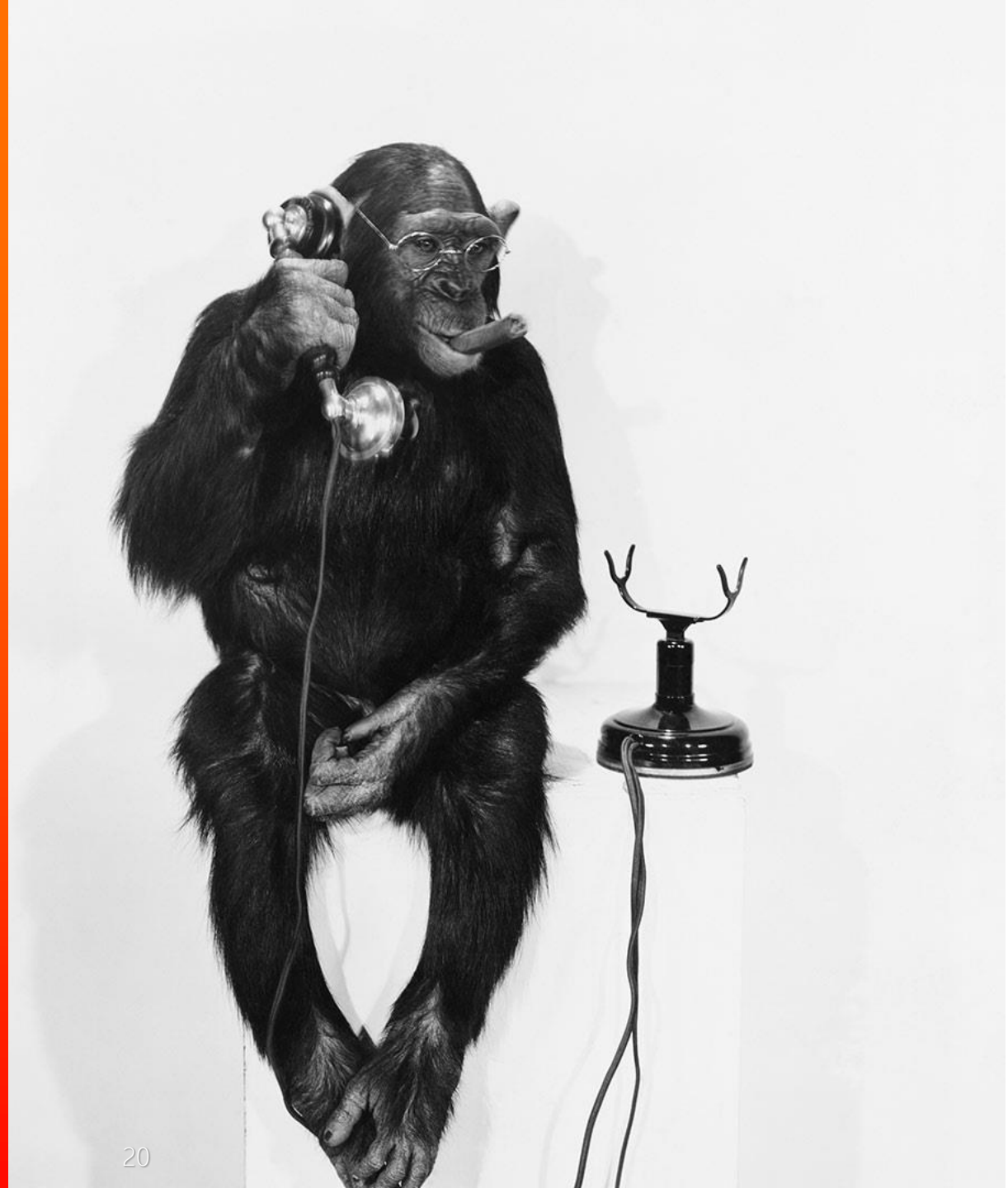
Pros:

- Tailor fit
- Supported by many vendors
- Not cloud specific

Cons:

- Very high-touch
- Managed services
- Some components aren't included (e.g. API GW)

lumigo

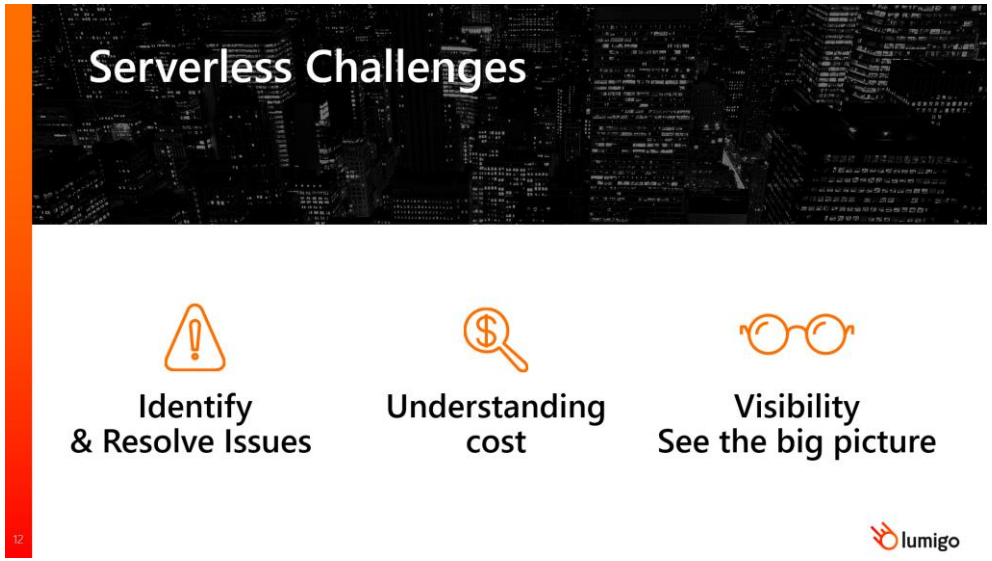


Option 3

Serverless Monitoring Solutions

Option 3 Serverless Monitoring Solutions

- SaaS platforms
- Solving variety of challanges



- Common implementation:
  - Library
  - IAM role

Cons:

- Yet another 3rd platform
- More than just tracing

Pros:

- Serverless focused
- More than just tracing
- Very low touch

lumigo

DEMO TIME !

lumigo

PagerDuty Alerts 7:47 PM

ALERT: aws lambda **ushop_sale-confirmations**

Failure rate is **over 50%** in the last minute

More info at the Lumigo platform:

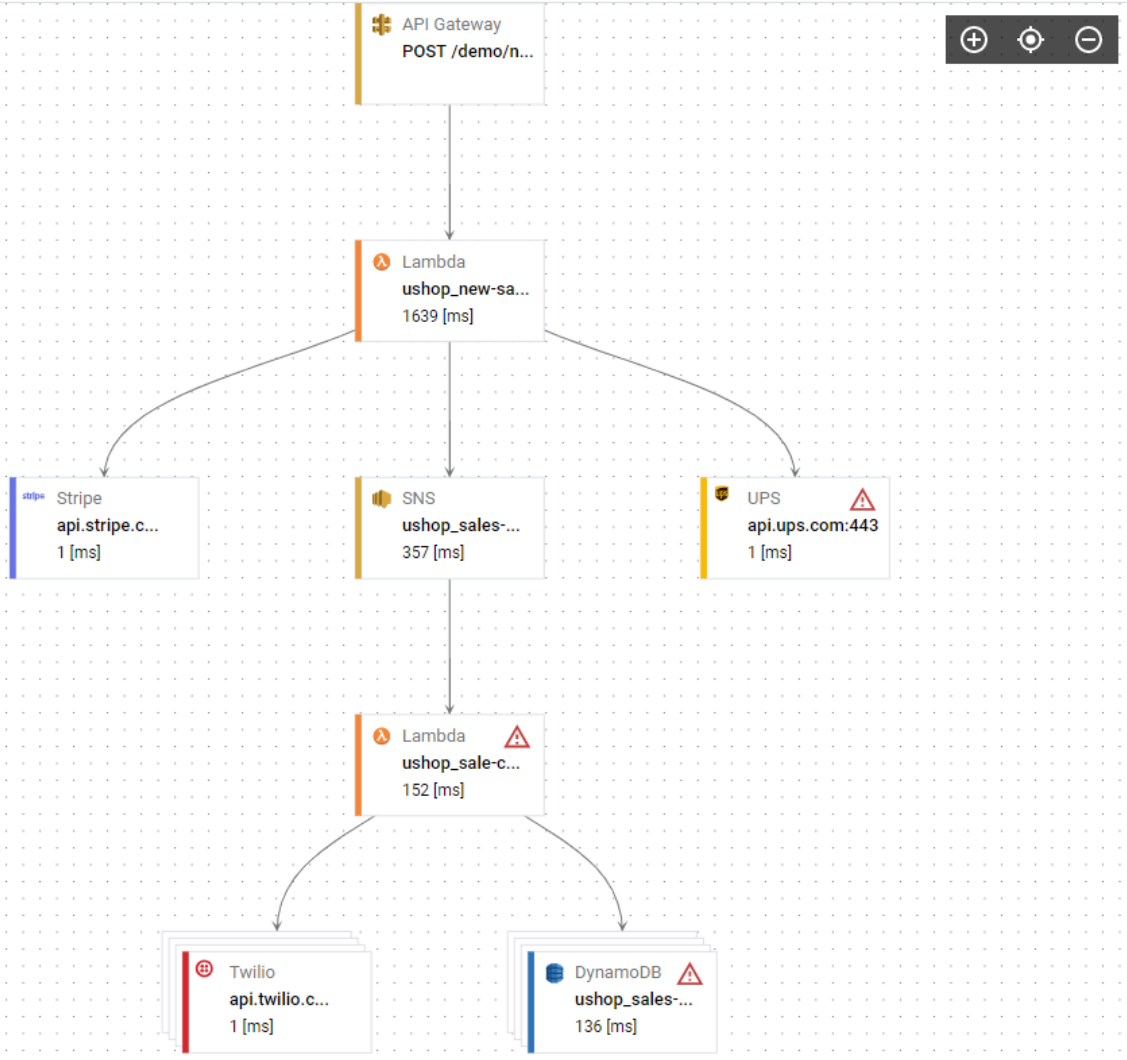
https://bit.ly/30isZDG

lumigo

MAP

SIMILAR TRANSACTIONS EXPAND

Duration: **190458 [ms]** **3** Issues Start Time: **10:23:27 am 2019-06-06** **1** Account **1** Region Cost: **¢0.0007952**



LOGS

Total: 17

Time	Source	Message	
10:23:27 am 06-JUN-2019	ushop_new-sale-processing	START Version: $LATEST	
10:23:27 am 06-JUN-2019	ushop_new-sale-processing	INFO -- New sale processing. saleId = 628d8a...	
10:23:29 am 06-JUN-2019	ushop_new-sale-processing	INFO -- Published successfully to SNS topic: a...	
10:23:29 am 06-JUN-2019	ushop_new-sale-processing	END	
10:23:29 am 06-JUN-2019	ushop_new-sale-processing	REPORT Duration: 2077.68 ms Billed Duration...	
10:24:25 am 06-JUN-2019	ushop_sale-confirmations	START Version: $LATEST	⚠
10:24:25 am 06-JUN-2019	ushop_sale-confirmations	INFO -- New sale confirmation. saleId = 628d8...	⚠
10:24:26 am 06-JUN-2019	ushop_sale-confirmations	ERROR -- Failed writing to DDB table: ushop_s...	⚠
10:24:26 am 06-JUN-2019	ushop_sale-confirmations	{"errorMessage":"One or more parameter valu...	⚠
10:24:26 am 06-JUN-2019	ushop_sale-confirmations	END	⚠
10:24:26 am 06-JUN-2019	ushop_sale-confirmations	REPORT Duration: 1044.35 ms Billed Duration...	⚠

Takeaways

- Serverless changes everything
  - Many strong benefits
  - Some new challenges
- Approaches for troubleshooting distributed services
- Bake it in
- Consult Consult Consult

lumigo

THANK YOU !

Questions?

Erez Berkner

Co-Founder & CEO, Lumigo

erez@lumigo.io

@erezberkner

lumigo