



# Building invincible apps with Temporal + Astra DB

**Aaron Ploetz — Developer Advocate, DataStax**

**Loren Sands-Ramshaw — Developer Advocate, Temporal**

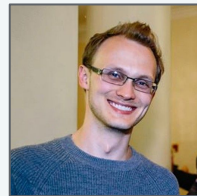
# › Today's Speakers



**Aaron Ploetz**

**Developer Advocate, DataStax**

Host of the Apache Cassandra® Corner podcast, 3x Cassandra MVP, author of *Seven NoSQL Databases in a Week* and *Mastering Apache Cassandra 3.x*



**Loren Sands-Ramshaw**

**Developer Advocate, Temporal**

System design enthusiast, developer experience nut, OSS maintainer, and author of *The GraphQL Guide*.

# » Agenda

- Introductions
- Cloud native application development with DataStax
- Why Temporal
- The joint value of DataStax and Temporal
- Q&A





**DATASTAX**

# › About DataStax



Supporting the Apache Cassandra® community since 2010.

DATASTAX

ASTRA DB

Astra DB, is a DBaaS built on Apache Cassandra®.

DATASTAX

ASTRA  
STREAMING

Message broker and event processor based on Apache Pulsar®.



Recently added Kaskada, providing us with real-time AI/ML capabilities.

# › A Decade of Real-Time Innovation

## › Machine Learning

Bringing ML to the modern data stack, delivering AI-powered apps.

## › Unified event streaming, queuing

Massive throughput and scale based on Apache Pulsar, delivered as a cloud service.

## › DBaaS

Advancing the world's most scalable database, trusted by more than 90% of the Fortune 500 - for multi-cloud, with zero ops.

## › Open Source Co-Innovation

Long-standing community engagement to optimize Apache Cassandra for global enterprises.

## › Real-Time AI

Bringing together real-time data at scale with integrated machine learning in a complete, modern data stack purpose built for developers.

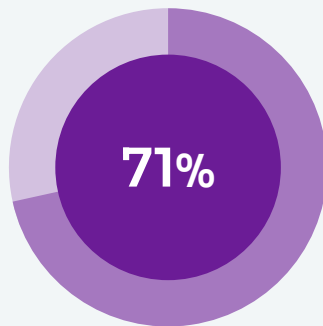
Accelerating a generation of applications that drive more accurate business decisions, predictive operations and more compelling, more engaging consumer experiences.

2023

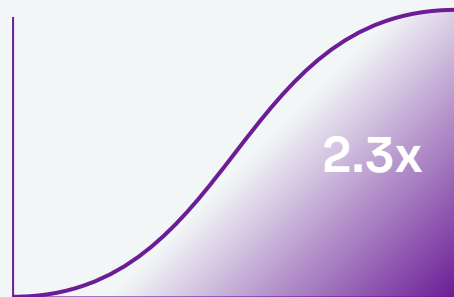
# » Impact of Real-Time

Real-time data directly driving revenue growth.

Organizational commitment amplifies business impact.



**Organizations growing revenue due to real-time data**



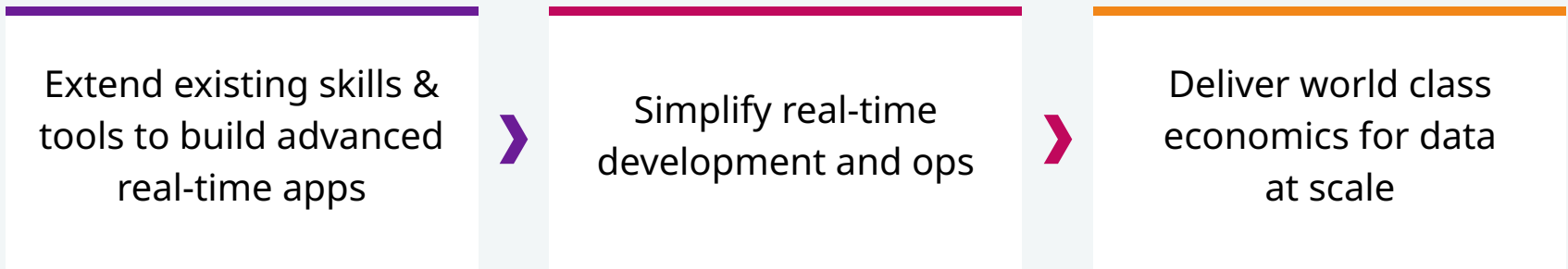
**Strategic focus on real-time increases "transformative impact" on revenue**

## › Improving the Cloud Native developer experience

- Quickly spin-up highly scalable resources
- Multi-region
- Auto-scaling
- No ops



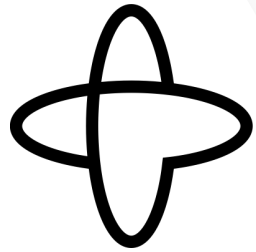
# Build Fast, Scale Without Limits



Extend existing skills &  
tools to build advanced  
real-time apps

Simplify real-time  
development and ops

Deliver world class  
economics for data  
at scale



Temporal

## › What is durable execution?

- Code that's guaranteed to complete running
- Volatile execution
- New possibilities:
  - Automatic retries
  - `sleep( '30 days' )`
  - Send RPCs to the function
  - Forever functions
  - Don't have to use a database

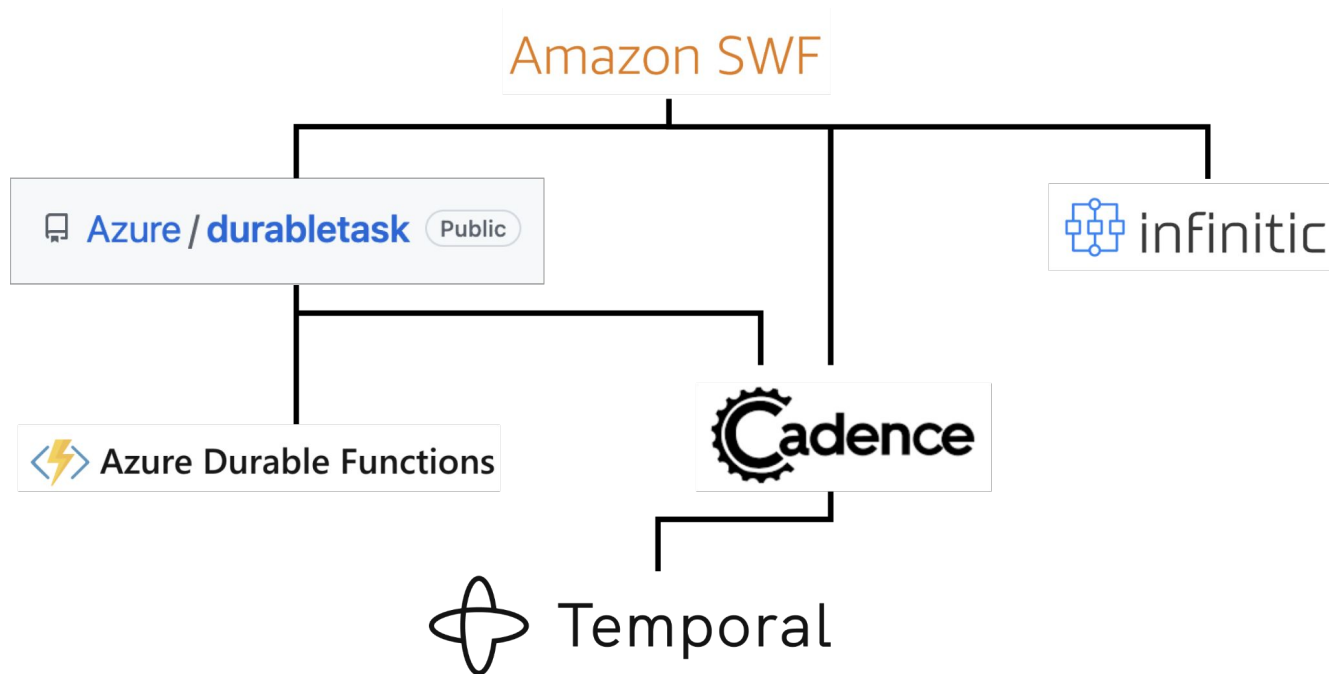
## › Subscription example

```
async function subscription(user, amount) {  
  let canceled = false  
  
  setHandler('cancel', () => {  
    canceled = true  
    await sendEmail(user, 'Your subscription has been canceled')  
  })  
  
  while (!canceled) {  
    await charge(user, amount)  
    await sleep('30 days')  
  }  
}
```

## › Forever function

```
async function loyaltyProgram(user) {  
  let points = 0  
  
  setHandler('notify-purchase', (purchase) => {  
    points += purchase.total * 100  
    if (points > 10_000) {  
      await sendCoupon(user)  
    }  
  })  
  
  setHandler('get-points', () => points)  
  
  await promiseThatNeverResolves  
}
```

## › Durable execution systems



## › Temporal users

stripe



NETFLIX



box



Checkr



indeed

qualtrics<sup>XM</sup>



The joint value of:

**DATASTACK**

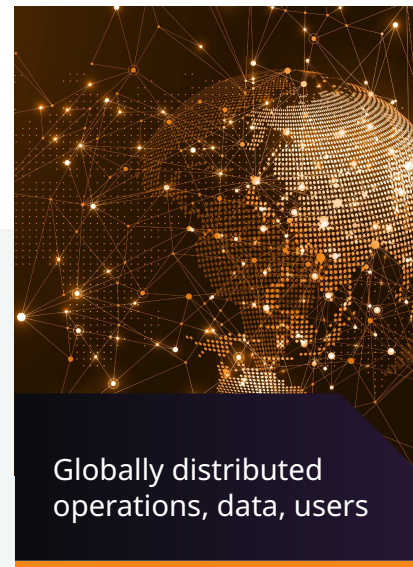
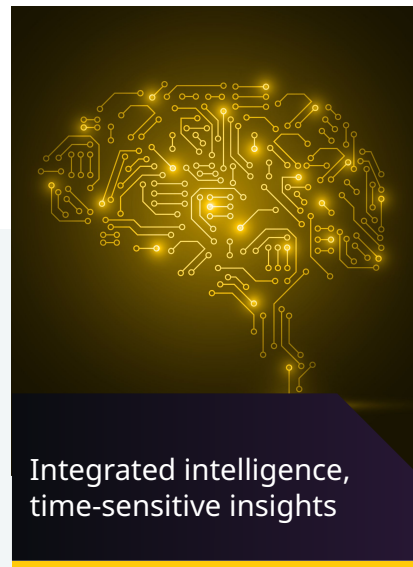
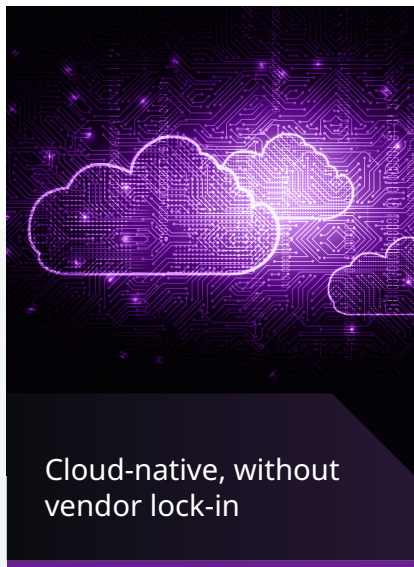
&



Temporal



# › New Class of Real-Time Applications



## › Joint value

- Using Astra DB with Temporal
- Using Temporal with Astra DB



# Q&As

# Thank You



## Questions?

**Aaron Ploetz — Developer Advocate, DataStax**  
datastax.com  
@aploetz

**Loren Sands-Ramshaw — Developer Advocate, Temporal**  
temporal.io  
@lorendsr