

ASCEND

ENTERPRISE INTELLIGENCE PLATFORM



ASCEND.IO LEADERSHIP

- **Sean Knapp, CEO**
 - Co-founder, CTO & CPO @ Ooyala ('07-'15)
 - Led 200 person R&D org through \$60M+ growth
 - Architected 4 generations of big data platforms
 - Orchestrated the \$410M acquisition by Telstra
 - Web Search Frontend Lead @ Google ('04-07)
 - B.S. & M.S. in Computer Science from Stanford
- **Steven Parkes, Head of Technology**
 - Staff Engineer @ Twitter
 - Building Big Data systems since 2001 @ IBM Research
 - PhD in Electrical Engineering from UIUC
 - B.S. & M.S. in Electrical Engineering from UC Davis
- **Dan Gordon, Head of Product & Strategy**
 - VP, Product Management @ Guidewire ('03-'15)
 - Led 37 person Product org during \$2M-\$350M growth
 - B.A. in Political Science from Yale, M.B.A. from Stanford

THE BIG DATA OPPORTUNITY

 Lookout Series B, C, D, E, F \$275.5M*	 Hortonworks Series D \$150M	cloudera Series A, B, C, D, E \$141M	 sumologic Series C, D, E \$140M	 Couchbase Series B, C, D, E, F \$139M	 nimblestorage Series C, D, E \$81.7M	 TRIFACTA Series A, B, C \$76.3M
 Savi The Value of Knowing™ Series B, C \$67.5M	Qubit. Series B, C \$66M	AMOBEE Series A, B, C \$54M	 duetto Series B, C \$51M	OP@WER Series C \$50M	 krux Series A, B \$48M	 FUSION-io Series C \$45M
 altiscale Series A, B \$42M	 ZOOMDATA Series B, C \$42M	 RelateIQ Series A, B \$29M	 Origami logic Series A, B \$24.3M	 TERRACOTTA Series B \$23.5M	Jut Series B \$20M	Algolia Series A \$18.3M
causata Series A, B \$15.5M	Qlik  Series A \$12.5M	 StreamSets Series A \$12.5M	 SelfScore Series A, B \$12.35M	 VARONIS Series B \$10.14M	Shift Technology Series A \$10M	SIG  TUPLE Series A \$5.8M

*Amounts sourced from Crunchbase inclusive of funding from all investors.

“ AS MORE ORGANIZATIONS INVEST IN BIG DATA, THE **SHORTAGE OF AVAILABLE SKILLS** AND CAPABILITIES WILL BECOME **MORE ACUTE.** ”

- Gartner Big Data Survey, Sep 2015

COMMON CHALLENGES

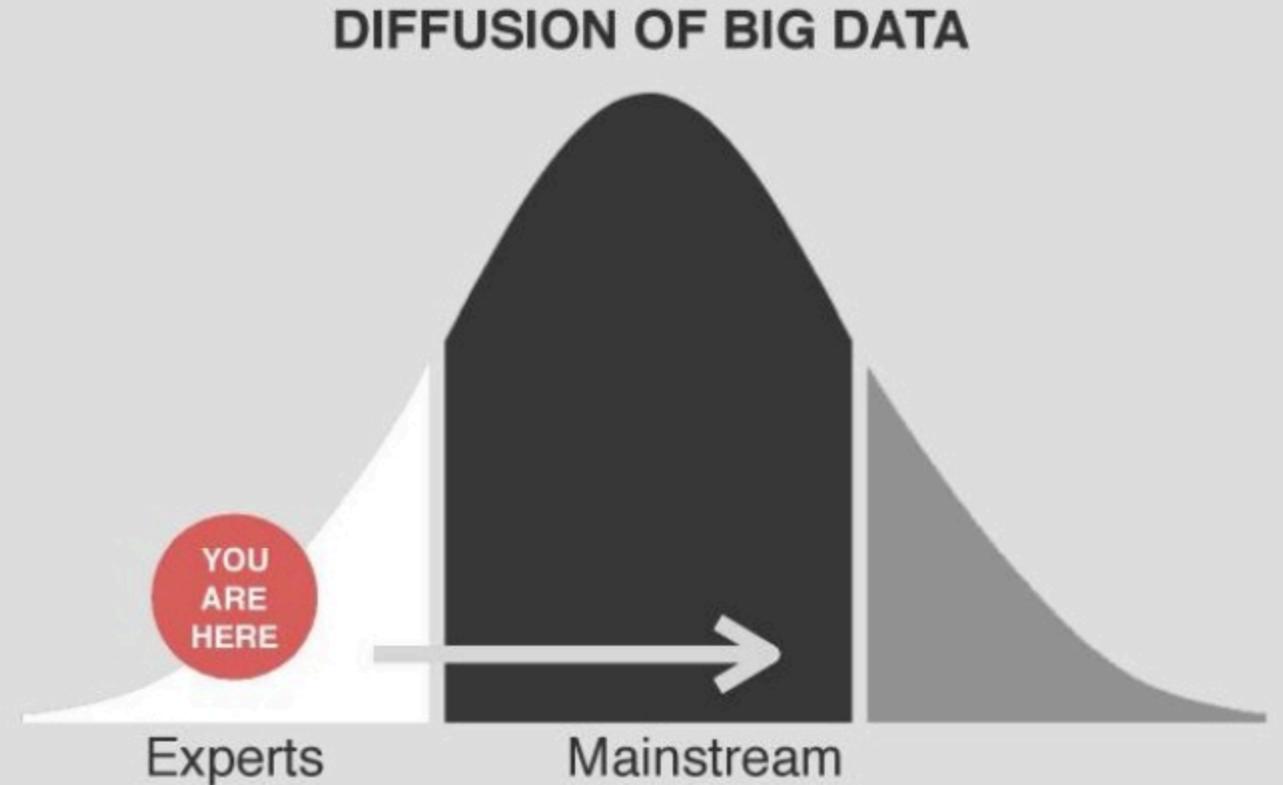
- “When using big data technology, things always take 10x longer.”
- “The technologies are changing too fast and our teams don’t understand them.”
- “I have hundreds of engineers that understand SQL, and none that do Scala.”
- “My Data Scientists are constantly being abused as Data Analysts.”

HISTORY TELLS US

COMPLEX TECHNOLOGIES GO **MAINSTREAM** WHEN THEY **ABSTRACT** AWAY THE COMPLEXITY AND BECOME **ACCESSIBLE**

EXAMPLES

- **Operating Systems:** Windows, iOS
- **Databases:** Oracle
- **Applications:** Excel, Powerpoint
- **Cloud:** AWS



ASCEND'S BET

- Early adopters are finding modest wins, demonstrating the potential, and they **want more now**
- Big data will **continue to expand** its presence across industries
- Big data tools will **inevitably** abstract the complexity away and make big data accessible to regular users
- **Ascend will be the platform to get them there**

ASCEND TARGETS

Company

- Fortune 2000
- Cloud friendly
- Existing investments in data
- Industry
 - Media
 - Consumer
 - Retail
 - Finance
 - IoT

Buyer

- Role
 - CIO/CTO/CDO/VPE
 - LoB head
- Pressures
 - Lack of big data experts
 - Too many pending projects
 - Migrating to cloud
 - Scaling data volumes from traditional systems
 - Future proofing
- Specific project as driver

User

- Role
 - Non Big Data Developer
 - Data Engineer
 - Data Analyst
- Skillset
 - SQL
 - Data Modeling
 - Coding Optional

THE ASCEND PLATFORM

Ascend allows your team to focus on your business, while we automate the technology.

- Business Logic
- Integrate data sources
- Data De-Duplication
- Data Consistency
- Monitor for new data
- Schedule Jobs
- Monitor Jobs
- Commit Jobs
- Error Recovery
- Data Storage Format
- Data Partitioning
- Trigger Downstream

You



Ascend



Ooyala Demo Ooyala Pipeline Shawn Xu

+ ADD Search in pipeline IM/EXPORT PROJECT HEALTHY

Video records by user (S3 OK) RUNNING 401s

Video records by IP (S3 OK) UP TO DATE 61s total records

IP to geo mapper (S3 TSV) UP TO DATE 15s total records

Behavior tracking source (GCSLOUD UDP) RUNNING 111s

Video user with IP (JOIN) PENDING 12s total records

IP to geo cleaned (JOIN) RUNNING 12s total records

Behavior cleared (JOIN) UP TO DATE 15s total records

Video user with IP by geo (UNION) PENDING 12s total records

Behavior clean (JOIN) PENDING

Sink to mocha icecream (MYSQL) PENDING 3s total records

QUERY HELPER

user_id	views_count	request_count	quality	category	totalCount	totalBytes
a8142d	102	8	LOW	AE_21	102	102
d385k	19	121	MED	A1_15	19	19
ju87d	61	245	LOW	AE_11	61	61
ji8y6	35	162	MED	A1_18	35	35
dk02k	87	172	HIGH	A1_12	87	87

EDIT VIEW

NAME: Consolidate by Action

DESCRIPTION: Consolidate user by action, then group them

QUERY BUILDER VIEW / EDIT RAW

FROM: Video-user-with-IP as vp, Behavior-cleaned as bc, Top-user-view as tuv

SELECT: vp.ip, vp.name, vp.customerId, SUM(vp.bytes) as totalBytes, REGEXP_EXTRACT(vp.request, '([^/]+)/') AS host, COUNT(*) as totalCount, bc.action, bc.actionCount

WHERE: host <> ' AND t

GROUP BY

ORDER BY

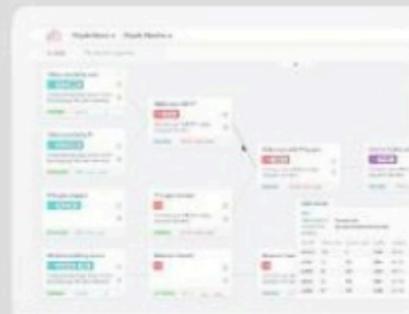
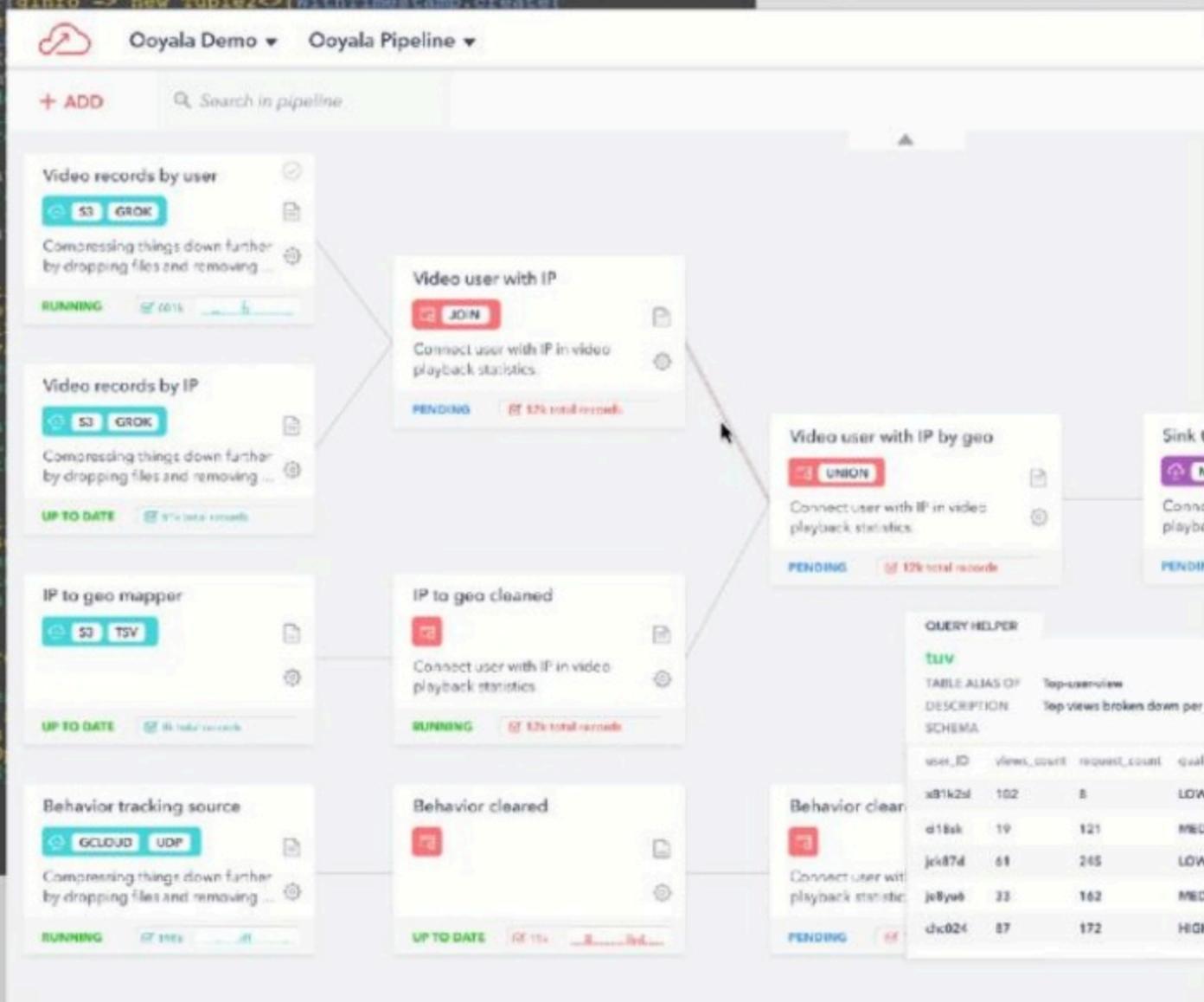
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HOW ASCEND WORKS

```
final Long allowedLatenessMs = Durations.minutes(120).milliseconds();
final Long teamWindowDurationMs = Durations.minutes(60).milliseconds();

gameEvents
[... input ...]
.filter(qInfo -> qInfo.getTimestamp() > System.currentTimeMillis() -
allowedLatenessMs - teamWindowDurationMs)
.mapToPair(qInfo -> new Tuple2<>(WithTimestamp.create(
qInfo.get
+ teamWi
.reduceByK
.transform
teamWind
teamWi
return r
))
.updateSta
.setTTL(
.filter(x
[... output

private stat
List, Op
Optional
final priv
WithTime
private Lo
SumAggrega
this, TTL
return t
)
public Opt
List s
final Lo
if (stat
return
)
if (scor
WithTime
Integer
scores
return 0
sum, 5
)
}
```



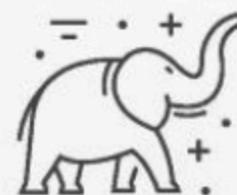
Data Modeling Interface
Users define business logic as higher-level models, called the Declarative Data Graph



Automation Engine
Ascend monitors for changes in data, translating business logic into new underlying tasks



Distributed Workers
Execute tasks and orchestrate underlying infrastructure



Processing Infrastructure
Existing big data infrastructure continues to perform the majority of data processing

COMPETITIVE ADVANTAGES

BUSINESS

- Remove need for big data expertise
- Reduce project times by up to 90%
- Capture canonical knowledge for entire org
- Drive collaboration across teams
- Leverage existing big data investments

TECHNICAL

- Automated Big Data Operations: “design once, run forever”
- Non-Disruptive to existing Big Data systems
- Game-changing combination of ***mutable, persistent, and declarative***

LANDSCAPE

Category

Ascend Viewpoint

BI & OTHER TOOLS

Domo, Tableau

Partners that sit downstream from Ascend. Strong lessons to be learned from this industry.

BIG DATA ORCHESTRATION TOOLS

Cask, StreamSets

A natural next step, but the Imperative (“how”) vs Declarative (“what”) nature fundamentally limits mainstream usability.

OPEN SOURCE BIG DATA ECOSYSTEM

Cloudera, Qubole, Databricks

Great technologies upon which we already, or will in the future, rely.

CLOUD

Amazon, Microsoft, Google

Strong partner potential. Some risk of expanding product offerings in our direction.

BIG DATA IS SUCH A CLUSTER
SEE LIFE FROM THE TOP OF THE STACK WITH ASCEND.IO





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