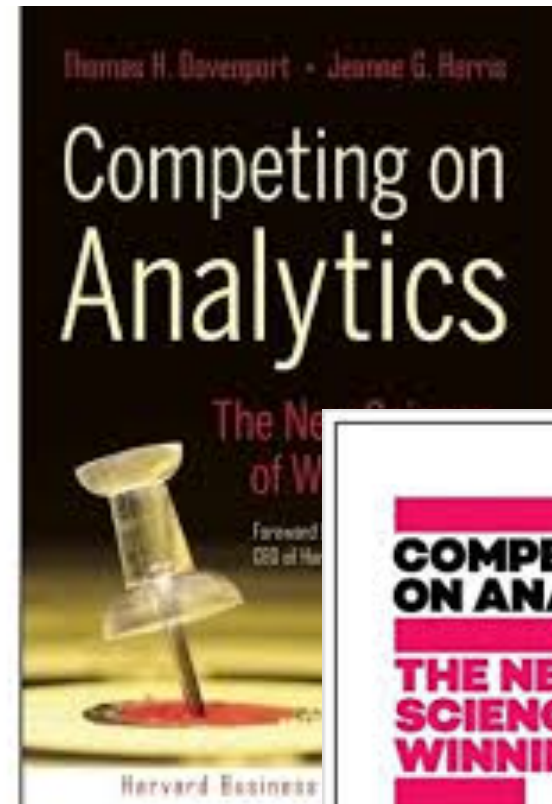


Competing on Analytics in the Cloud

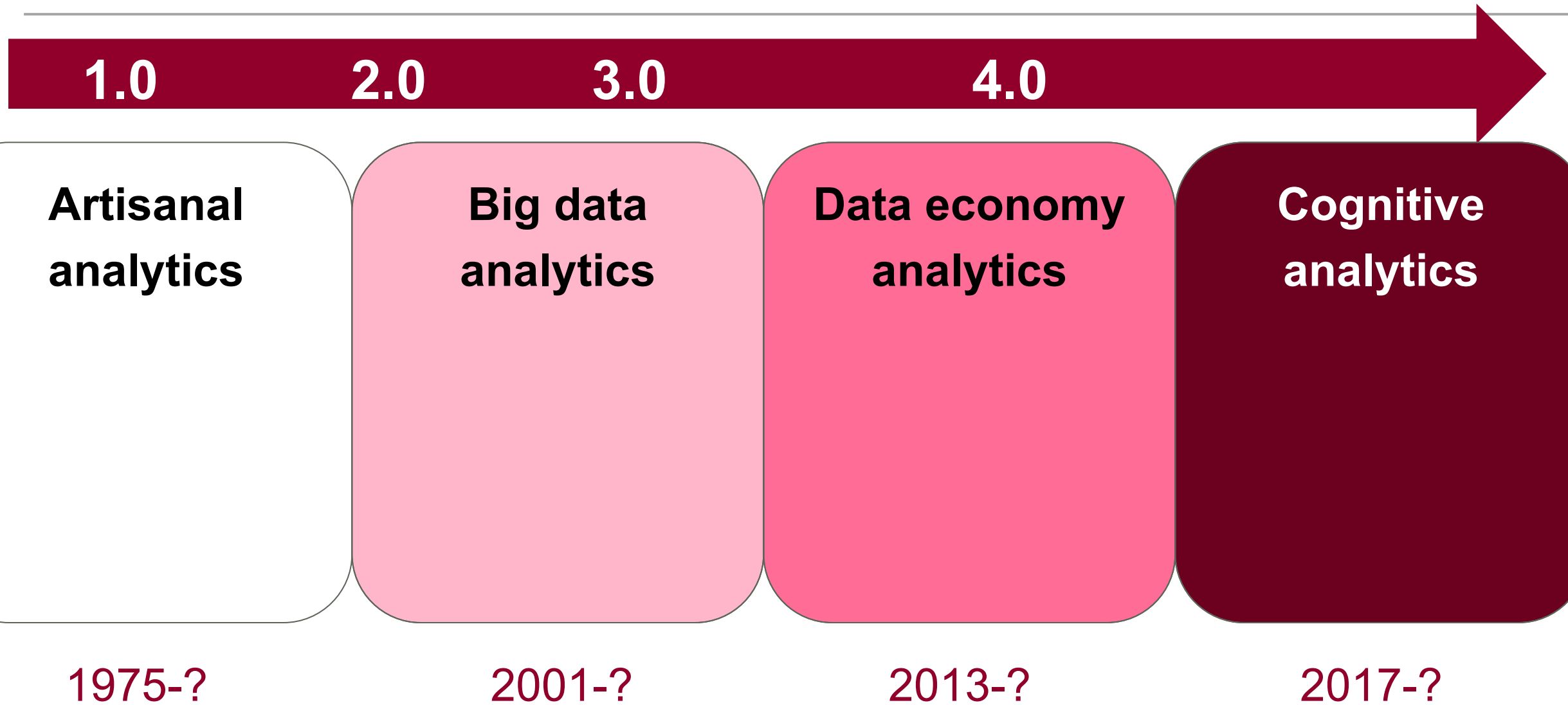
Thomas H. Davenport

Babson/MIT/Deloitte

Snowflake Unite the Data Nation
March 13, 2018



Four Eras of Analytical Competition



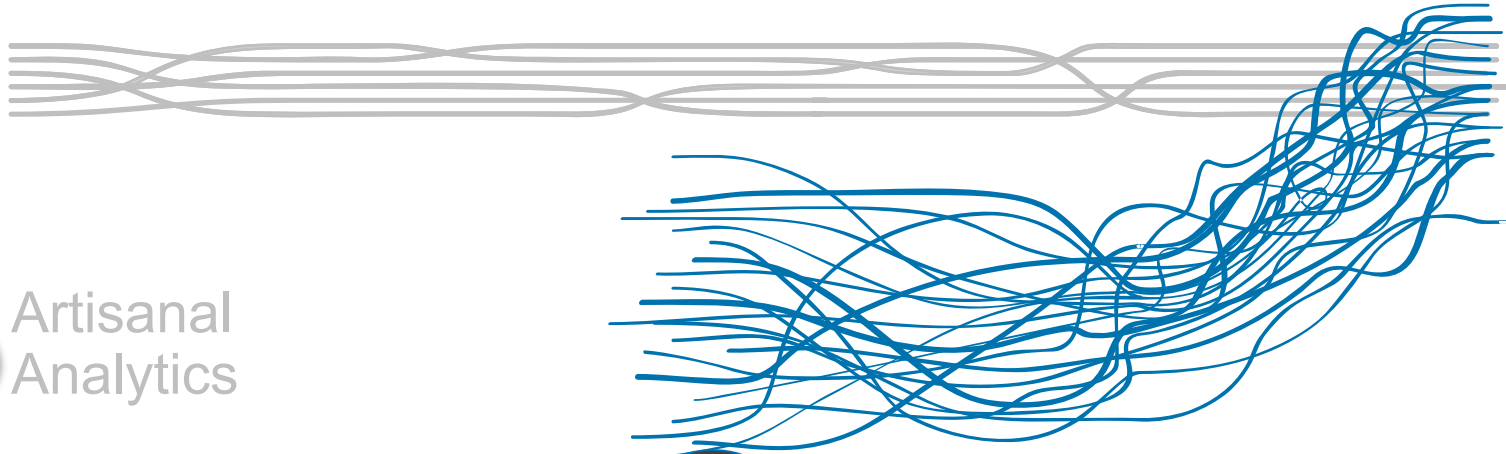
Analytics 1.0 | The Artisanal Era



1.0 Artisanal Analytics

- ▶ Primarily descriptive analytics and reporting
- ▶ Internal, small, structured data
- ▶ Internal decision support focus
- ▶ Predictive models based on human hypotheses
- ▶ Moving to self-service

Analytics 2.0 | The Big Data Era



1.0

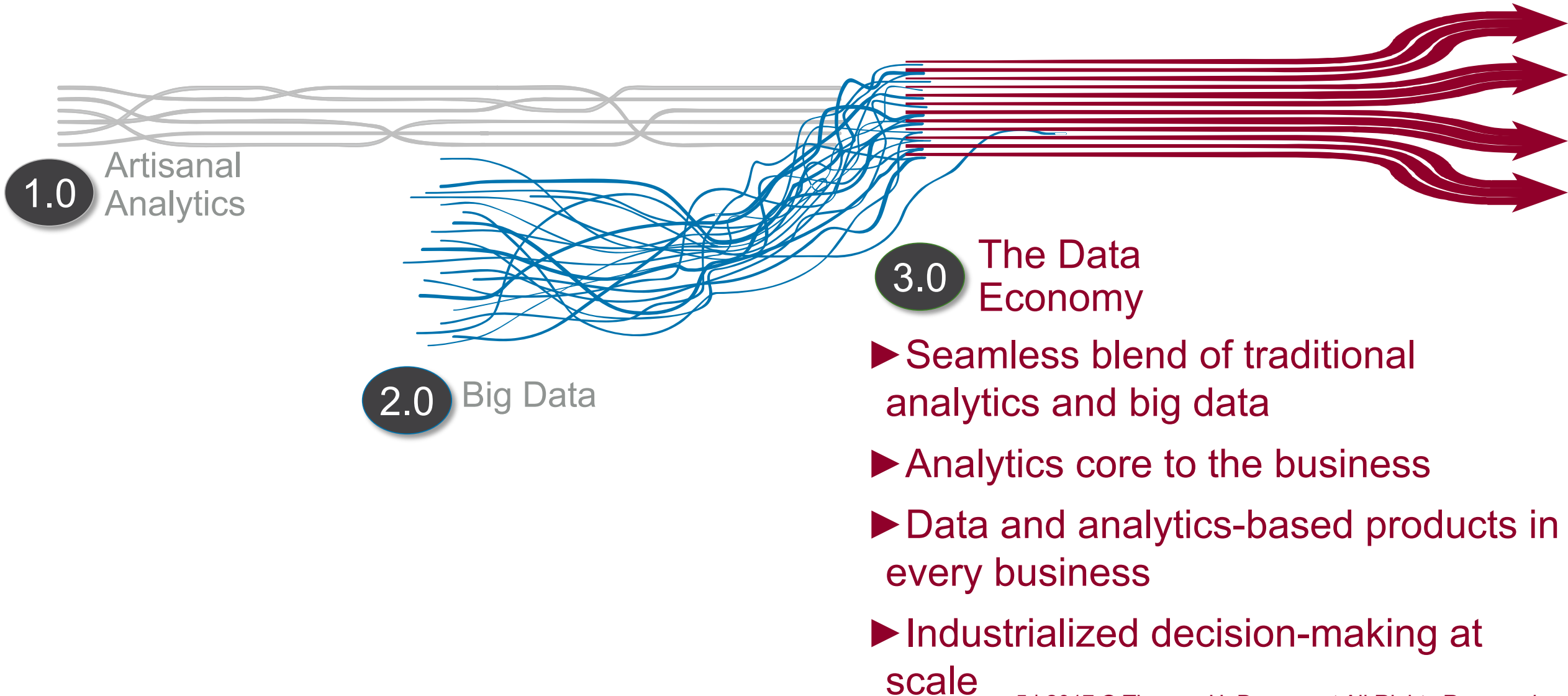
Artisanal
Analytics

2.0

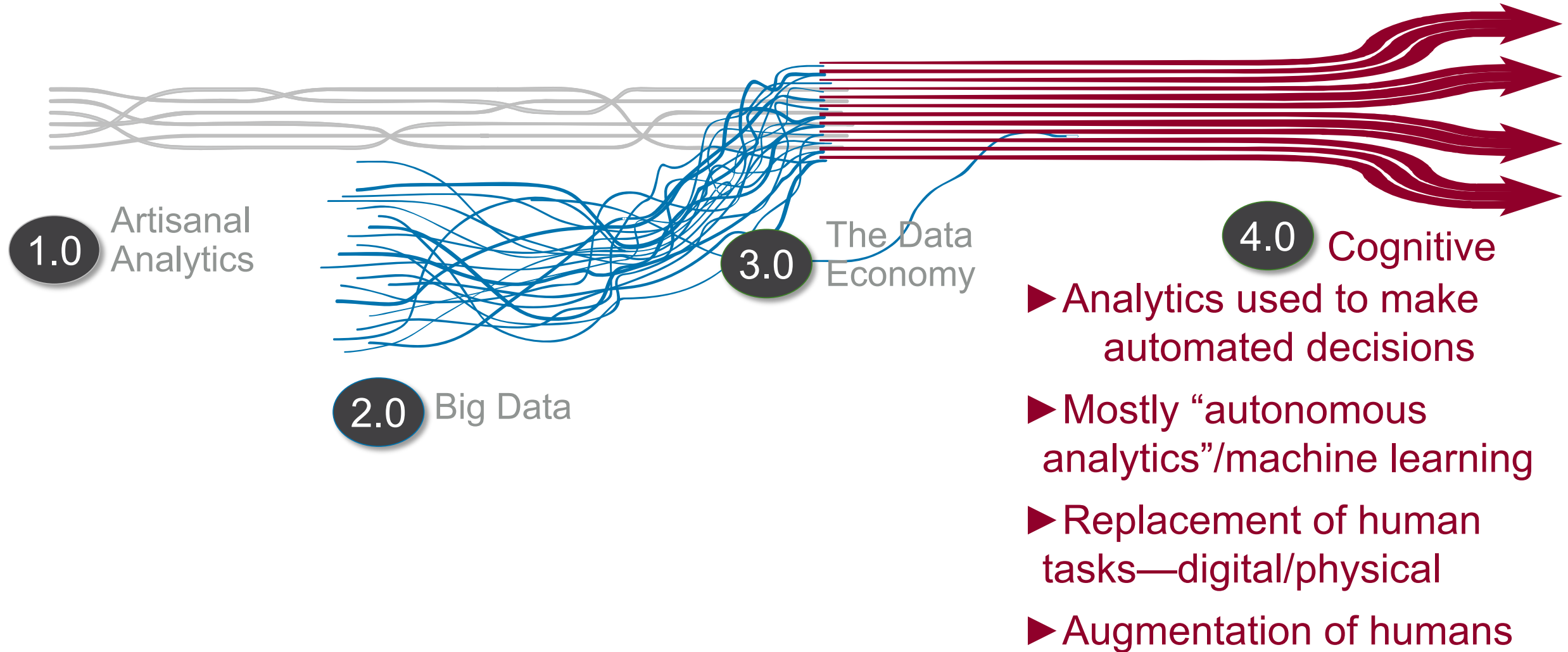
Big Data Analytics

- ▶ Complex, large, unstructured data
- ▶ New computational capabilities required—Hadoop etc.
- ▶ “Data Scientists” emerge—coding, analytics, experimentation
- ▶ Online firms create “data products”

Analytics 3.0 | The Data Economy Era



Analytics 4.0 | The Cognitive Era



As Analytics Mature...

1. More and better data

“We don’t have better algorithms than anyone else. We just have more data.”—Peter Norvig, Director of Research, Google

2. Greater ease of use

The “citizen data scientist”

3. More autonomy, more algorithms

The “post algorithmic” age

4. Greater speed and scale

From tens of models to tens of thousands

5. Off the premise and into the cloud



Cloud Analytics Reason 1: Infinite Scalability

- Analytics are often computationally intensive
- On the cloud, if you need more compute, just ask for it
- Don't need to pay for what you're not using at the time
- Overall cost is likely to be less than on premise computing
- Speed of analysis is almost certainly going to be faster



Cloud Analytics Reason 2: Great Security

- Data breaches among premise-based computing firms in 2017 (As of 10/25): 1570
- Data breaches on AWS in same period: 9
- Of course, still need to follow good security practices (e.g., no unsecured S3 data buckets)
- Virtual private instances would seem to help



Cloud Analytics Reason 3: Great Algorithms

- All major algorithms (open source and proprietary) are now available in the cloud
- Most open source algorithms are available in cloud libraries
- Some cloud analytics and machine learning systems consider multiple algorithms—individually or in ensembles
- Algorithms increasingly becoming commoditized—whatever works best



Cloud Analytics Reason 4: Data Combinations

- Remember: “More data beats better algorithms”
- Analytics today often involve combinations of internal and external data, which is easier in the cloud
- They also often involve combinations of structured and unstructured data, which is difficult in an on-premise relational data warehouse



Cloud Analytics #5: Easy Change to Architectures

- Analytics projects sometimes require changes to IT architectures, particularly in deployment
- God love IT folks, but they are notably resistant to changes in IT architectures
- Cloud analytics are much easier to implement with no change to architecture
- Not advocating rogue projects, but you may not even need to involve IT



The Future of Analytical Competition

- ▶ Leaders are doubling down on analytics
- ▶ Analytical competitors will continue to outperform
 - ▶ Best customers, right price
 - ▶ Optimize old processes, create new ones
 - ▶ Embed data and analytics into products and services
 - ▶ Use analytics for innovation, not just cost reduction
 - ▶ Predict and respond to changing business conditions
 - ▶ Make a lot of money
- ▶ No time to rest on your laurels
- ▶ They will continue to lead us into a cloud-based future!

