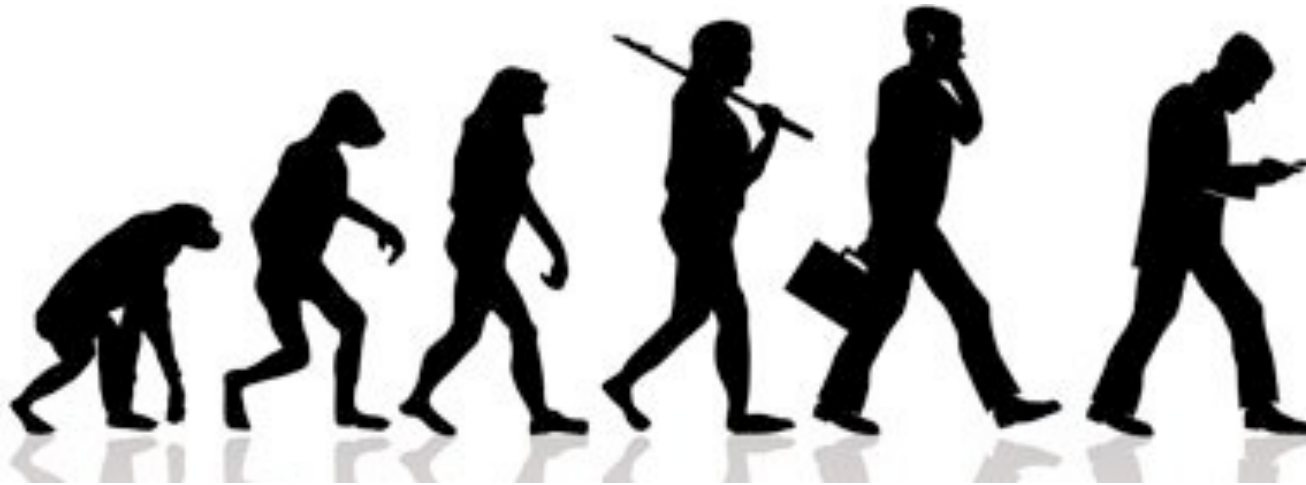# How to Stay Relevant
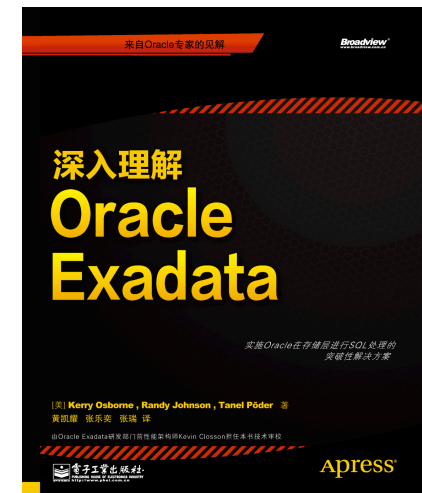

* For Oracle Professionals

whoami –

Never Worked for Oracle
Worked with Oracle DB Since 1982 (V2)
Working with Exadata since V2
Advisor to Enkitec (now part of Accenture)
Founder of Gluent
Exadata Book
Hadoop Aficionado

Email: kerry@gluent.com
Blog: kerryosborne.oracle-guy.com
Twitter: @KerryOracleGuy

But First A Word From Our Sponsor!

gluent.

we liberate enterprise data
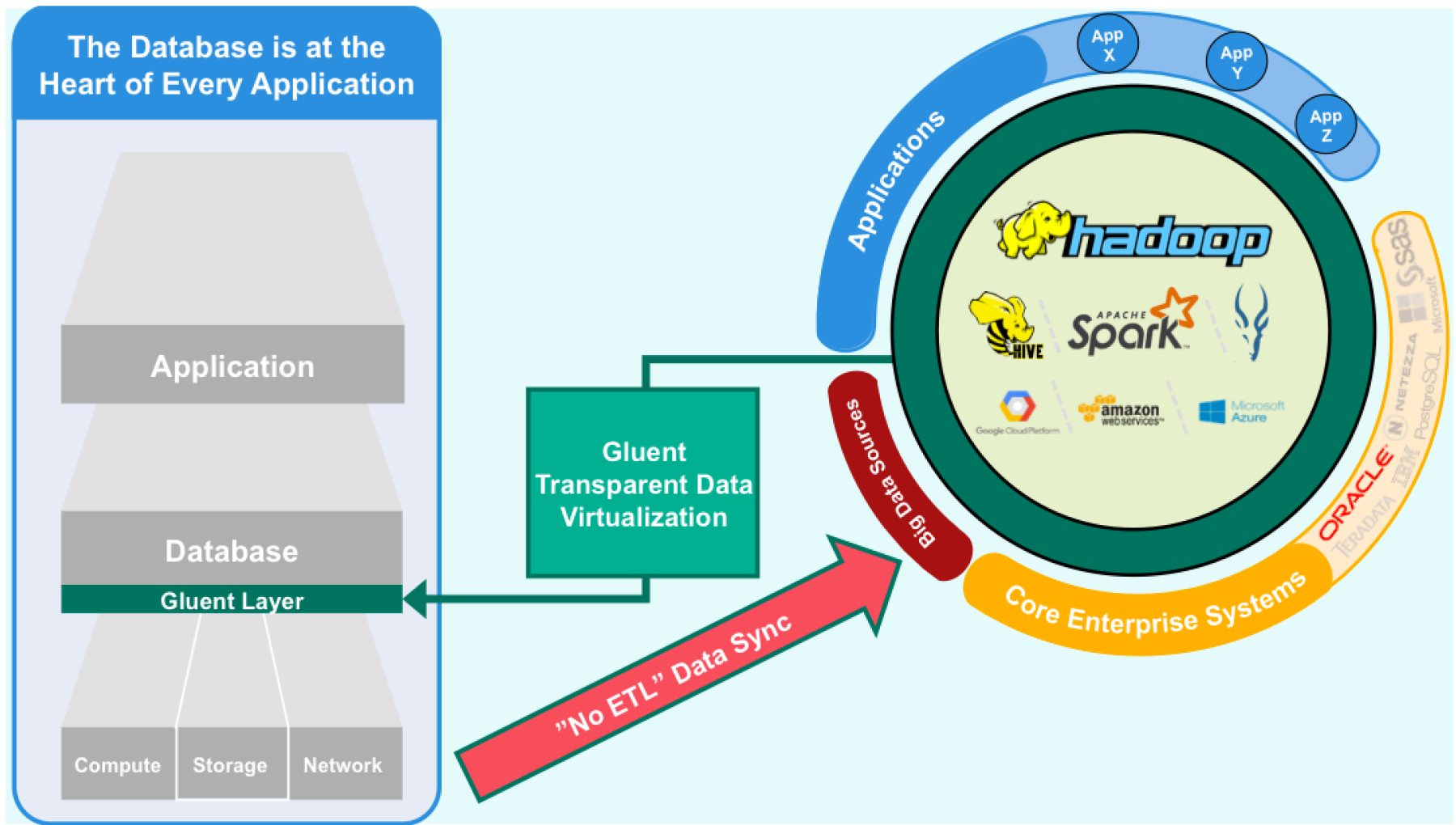
What we do:

We connect enterprise applications

transparently

to cloud & big data platforms

Gluent Overview: Product

The Database is at the Heart of Every Application

Application

Database

Gluent Layer

Compute | Storage | Network

Gluent Transparent Data Virtualization

"No ETL" Data Sync

Applications

App X

App Y

App Z

hadoop

HIVE

APACHE Spark

Google Cloud Platform

amazon webservices

Microsoft Azure

Big Data Sources

Core Enterprise Systems

ORACLE

TERADATA

N NETEZZA

PostgreSQL

SAS

Microsoft

IBM

My Biases

20 COGNITIVE BIASES THAT SCREW UP YOUR DECISIONS

1. Anchoring bias.
People are over-reliant on the first piece of information they hear. In a salary negotiation, whoever makes the first offer establishes a range of reasonable possibilities in each person's mind.

2. Availability heuristic.
People overestimate the importance of information that is available to them. A person might argue that smoking is not unhealthy because they know someone who lived to 100 and smoked three packs a day.

3. Bandwagon effect.
The probability of one person adopting a belief increases based on the number of people who hold that belief. This is a powerful form of groupthink and is reason why meetings are often unproductive.

4. Blind-spot bias.
Failing to recognize your own cognitive biases is a bias in itself. People notice cognitive and motivational biases much more in others than in themselves.

5. Choice-supportive bias.
When you choose something, you tend to feel positive about it, even if that choice has flaws. Like how you think your dog is awesome — even if it bites people every once in a while.

6. Clustering illusion.
This is the tendency to see patterns in random events. It is key to various gambling fallacies, like the idea that red is more or less likely to turn up on a roulette table after a string of reds.

7. Confirmation bias.
We tend to listen only to information that confirms our preconceptions — one of the many reasons it's so hard to have an intelligent conversation about climate change.

8. Conservatism bias.
Where people favor prior evidence over new evidence or information that has emerged. People were slow to accept that the Earth was round because they maintained their earlier understanding that the planet was flat.

9. Information bias.
The tendency to seek information when it does not affect action. More information is not always better. With less information, people can often make more accurate predictions.

10. Ostrich effect.
The decision to ignore dangerous or negative information by "burying" one's head in the sand, like an ostrich. Research suggests that investors check the value of their holdings significantly less often during bad markets.

11. Outcome bias.
Judging a decision based on the outcome — rather than how exactly the decision was made in the moment. Just because you won a lot in Vegas doesn't mean gambling your money was a smart decision.

12. Overconfidence.
Some of us are too confident about our abilities, and this causes us to take greater risks in our daily lives. Experts are more prone to this bias than laypeople, since they are more convinced that they are right.

13. Placebo effect.
When simply believing that something will have a certain effect on you causes it to have that effect.

14. Pro-innovation bias.
When a proponent of an innovation tends to overvalue its usefulness and undervalue...

15. Recency.
The tendency to weigh the latest information more heavily than older data. Investors often...

16. Salience.
Our tendency to focus on the most easily recognizable features of a person or concept.

- Oracle Bigot
- Hadoop Fan
- Distributed Database Fan
- Cloud Realist
- Performance Oriented
- Slightly Overconfident
- Clustering Illusion
- Blind-spot Bias

Graphic from Samantha Lee and Shana Lebowitz at Business Insider

Why Am I Talking About This?

- Because It Keeps Coming Up!

Why Now?

- Because Things Are Changing
- Rapidly!

What's Changing?

- Almost Everything!
- Cloud
- Automation
- Data Volumes
- Open Source
- Artificial Intelligence

Cloud Opinions

- Is it a Buzz Word?   Yes! ☺
- Just Someone Else's Data Center?   No!
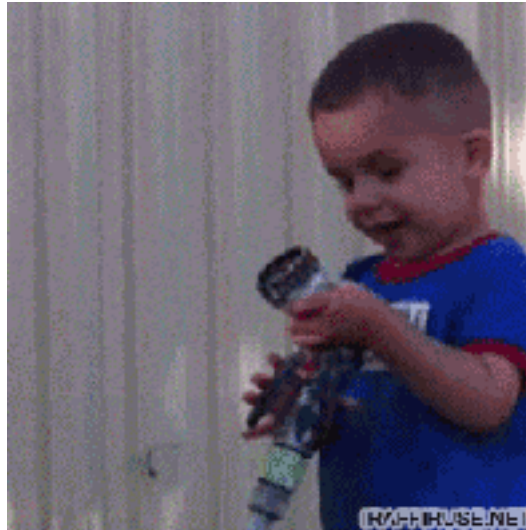- A Fad?   NO!!!
- The End Of Life As We Know It?   Maybe?

More Cloud Opinions

- Cloud will be better and cheaper
  - due to scale if for no other reason
- Cloud will be more automated (faster deployment)
- Cloud will be more efficient
  - capacity on demand
- Cloud will be more secure
- Cloud will be less flexible
- Getting there will be hard!
  - for large systems
  - hybrid on-prem/cloud

So, What's My Use Case?

Automation

- Macro Trend that's many years old
- Cloud Vendors Aim to Capitalize
- Anything that is a repeatable task
- Eventually there will be AI
  - At least a learning component
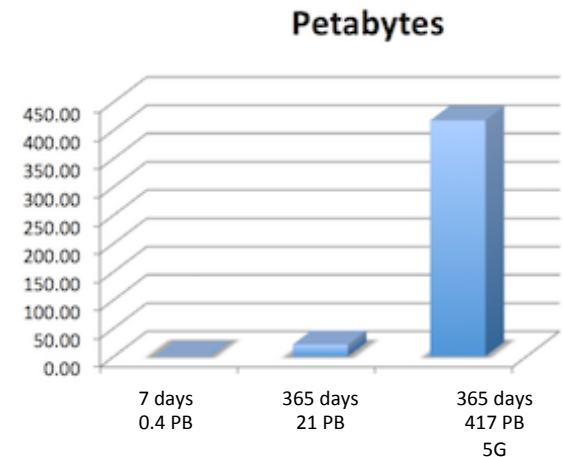 - Oracle optimizer (adaptive optimization)

Data Volumes

- Machine Generated Data (IOT)
  - Industrial IOT (IIOT?)
    - Data coming off manufacturing lines
    - Sensor data from Oil Exploration
    - Call Detail Records
  - Consumer
    - Appliances
    - Cars
    - Watches
    - …

Data Volumes

- Affect of 5G
  - Estimates are 500X faster
    - 10gbps and 1ms latency???
  - Enables new applications
    - Autonomous cars
    - Real Time Virtual Reality
    - Etc …
  - Expected to be in wide use by 2020
  - Affect on Telco ~20X increase in volume

Petabytes

450.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00

7 days
0.4 PB

365 days
21 PB

365 days
417 PB
5G

Data Volumes

- IDC Predictions – 2025
  - 163 Zetabytes
  - 60% Enterprises (not consumer)
  - Largely machine generated (IOT)
  - Connected Person = 4800 interactions/day
    - 1 every 18 seconds
  - 80% expected to be on spinning disk?
    - Remainder mostly on SSD
  - 26% of data will be in public cloud ???

Note: Study sponsored by Seagate in April 2017

Open Source

- Undeniable trend
- Cost Less / Tastes Great ☺
- Free?
- More Rapid Development?
- Ability to Customize
- Open Format Storage
- Avoiding Perceived Lock In

Artificial Intelligence

- Why All the Hub Bub, Bub?
- Is It Just Another Buzzword???
- Definitely Lots of Single Purpose Successes
  - Artificial Narrow Intelligence (ANI)
    - Creepy "Recommended for You" Ads
    - Chess, Scrabble, Checkers, Go – All World Champs are ANI
    - Cars – Electronic Fuel Injection, Anti-Lock Brakes, …
    - Oracle (Adaptive Optimization)
    - IBM Project Debator
  - Artificial General Intelligence (AGI)
  - Artificial Super Intelligence (ASI)

Humans vs. Computers
Computer Advantages

- Accuracy

- Speed

- Tireless

- Do Exactly What they Are Told ☺
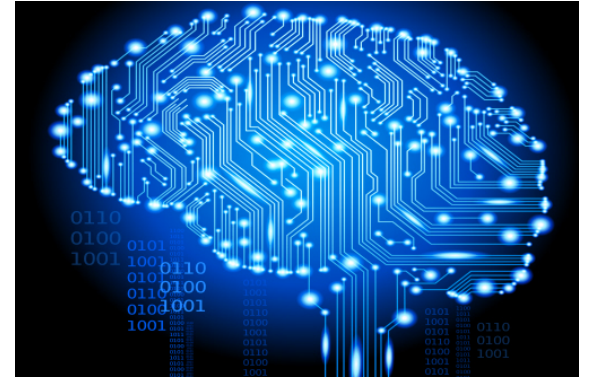
Humans vs. Computers
Human Advantages

- Being Human
  - Empathy
  - Communication
  - Creativity
  - Having a sense of humor?

- Solving Complex Problems
  - Especially those that require intuitive thought
  - And where there are no well defined rules

Digression: Two Modes of Thought

Intuitive
    System 1
    Automatic

$$1 + 1 = \quad 2$$

Analytical
    System 2
    Requires Effort*

$$19 \times 35 = \quad 665$$

*our brains are naturally lazy

System 1 - Intuitive

Correct Most of the Time
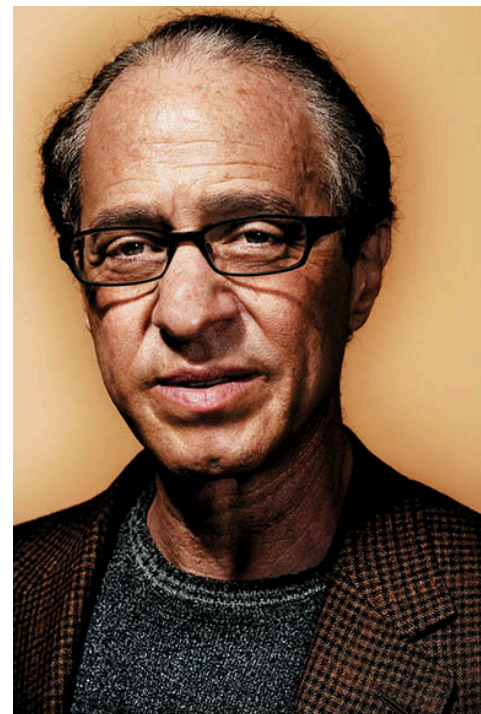In Control Most of the Time
Biases
Lazy – Substitution, WYSIATI
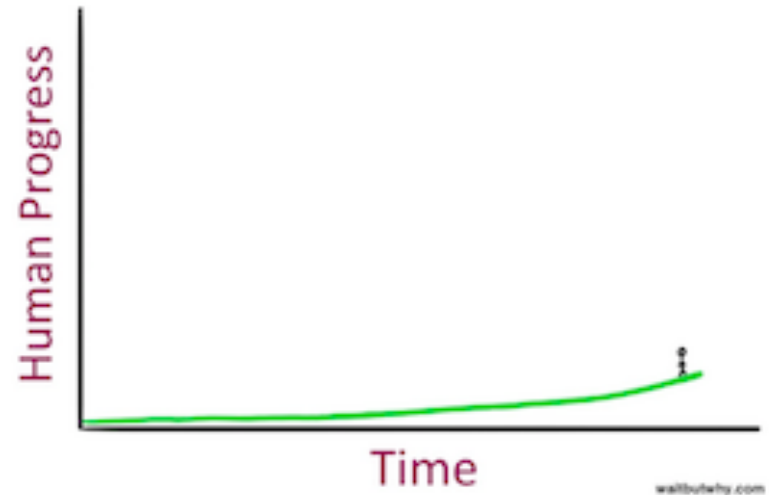You Can't Really Turn It Off
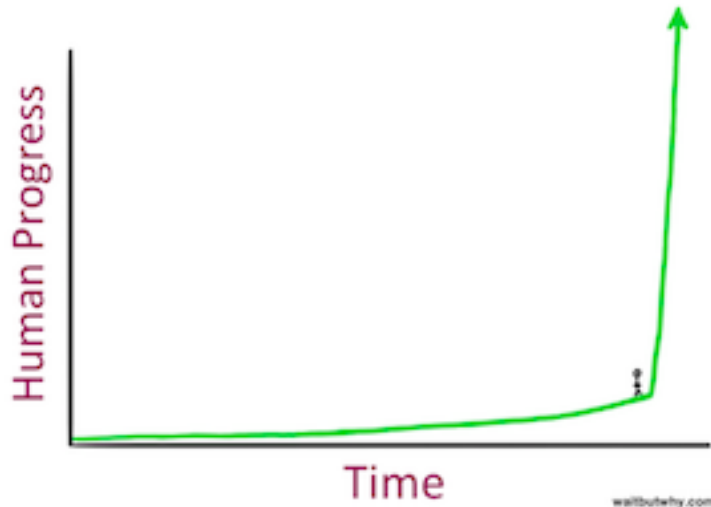
- Müller-Lyer Illusion
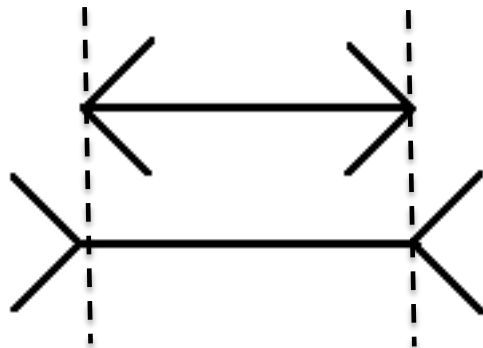
Ray Kurzweil

- Serial Inventor
- 150+ Patents
- Director of Engineering at Google
- Founder Kurzweil Music Systems
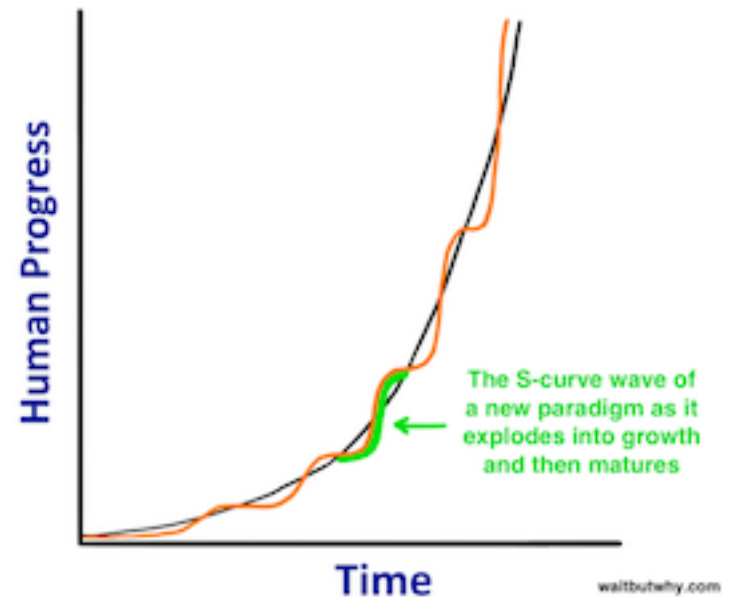 - with Stevie Wonder ☺
- Controversial

Kurzweil Opinions

- *Law of Accelerating Returns*
  - Basically the more advanced we become, the faster the rate of change

More Kurzweil Opinions

- AI will surpass Human Intelligence
- Sometime in the Next Couple of Decades
- And in Fact Blow Past it – into ASI territory
- Progress is not Smooth

Human Progress

The S-curve wave of a new paradigm as it explodes into growth and then matures

Time

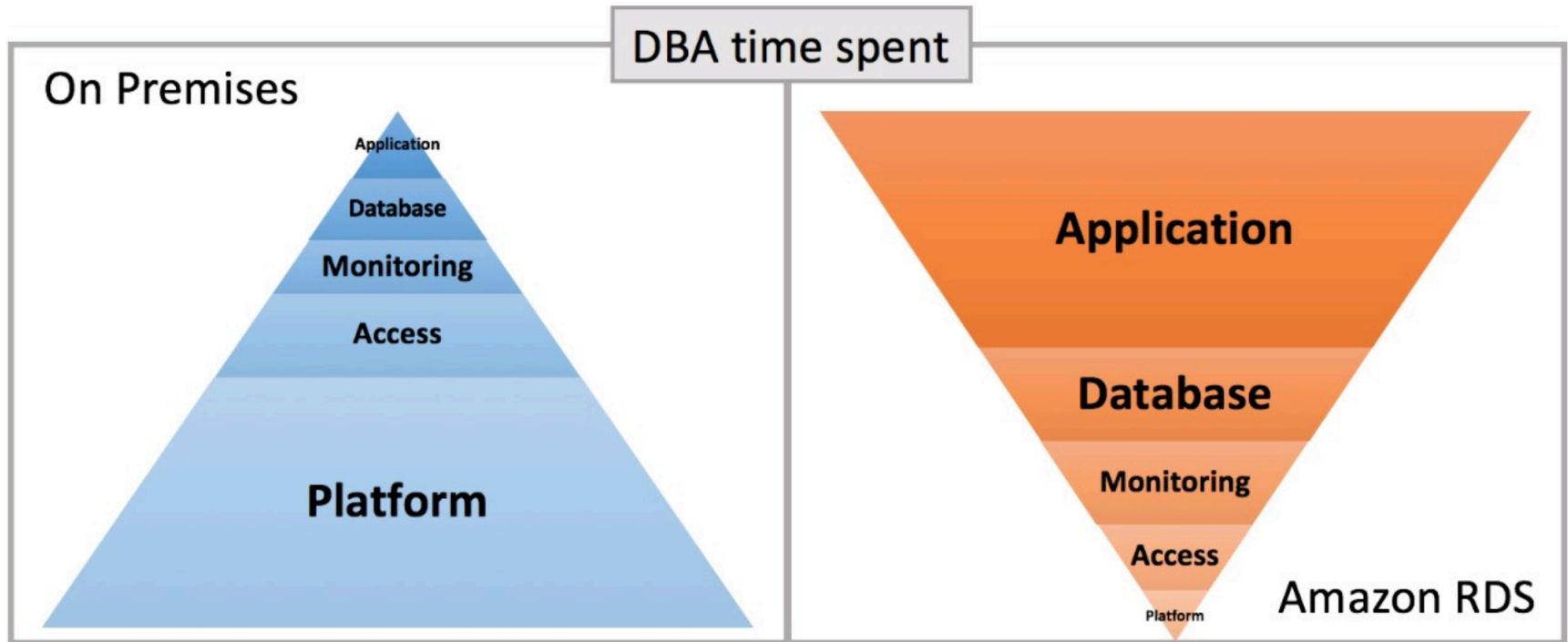waitbutwhy.com

Other Opinions on AI

- You know what they say about opinions
  - They are like XXX, everyone has one
- There are of Course Nah Sayers
  - pointing to the earlier unfulfilled hype
  - turns out the problem is harder than expected ☺
- There are also folks that fear it
- Regardless of disparate opinions
  - It's drawing a lot of attention!
  - And a lot of investment!

AI Relevance

- So Where's the Beef?
- All this Theoretical Stuff Is Interesting, but …
- A couple of thoughts
  - There are a lot of people interested in this stuff
  - Including Oracle (autonomous database?)
  - So it might be worth paying attention
  - If you want to stay relevant ☺
- Now back to earth …

Where We Spend Time

DBA time spent

On Premises
- Application
- Database
- Monitoring
- Access
- Platform

Amazon RDS
- Application
- Database
- Monitoring
- Access
- Platform

- It's a sales pitch
- But I believe it's basically true!

The Money Slide

- Oracle is Not Going Away!
- But the nature of work is changing
- We need to constantly move up the value chain
- And Learn New Stuff
  - Oracle Stuff
    - Tuning
    - Internals
    - Development/Automation
    - Managing the Data
  - Non-Oracle Stuff
    - Other RDBMS's
    - Big Data Platforms
    - Cloud Native Tools
- The Rate of Change is accelerating!
  - Dedicate time to learning new stuff

Wrap Up

- Learn How to Solve Problems – Better!

- Learn How to Communicate – Better!

- Learn to Code – Well!

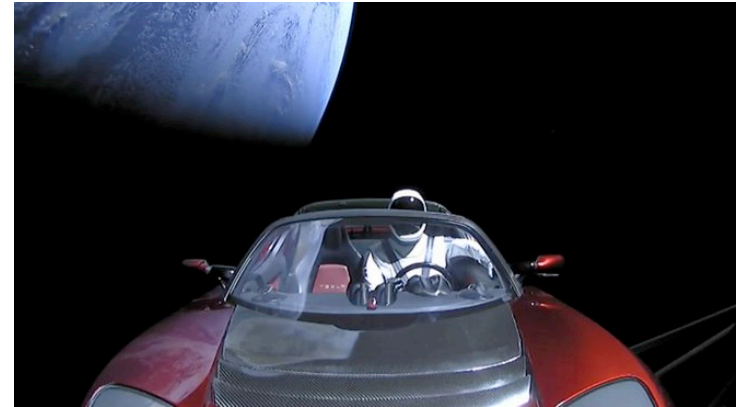- Broaden Your Technical Horizons!

- Read!

- Breath!

- Be Human!

This slide gets the award for the most exclamation points!

Appendix I
My 2025 Predictions
(Just For Fun)

- Oracle will still be around
  - The CBO will still be around and still need help from humans
- Most medium complexity stuff will be automated
  - No more RAC installations, adding storage, etc…
- Data volumes will have increased exponentially
  - (1000X or more?)
- Managing data will be as valuable as mining it
  - (the combination will be the holy grail)
- Elon Musk will be driving a Tesla to Mars!

Appendix II

- Wait But Why Blog – Artificial Intelligence
  - https://waitbutwhy.com/2015/01/artificial-intelligence-revolution-1.html

- How to Create a Mind: The Secret of Human Thought Revealed
  - Ray Kurzweil

- Our Final Invention: Artificial Intelligence and the End of Human Era
  - James Barrat

- Creative Problem Solving (for Oracle professionals)
  - http://kerryosborne.oracle-guy.com/papers/Creative_Problem_Solving_IV.pdf

Questions?

Email: kerry@gluent.com
Blog: kerryosborne.oracle-guy.com
Twitter: @KerryOracleGuy