It's all about the algorithms!

Data & Analytics

Einat Shimoni

Pini Cohen

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Algorithms are disrupting markets

Connected cars

Programmatic Marketing

TV & media

Retail shopping

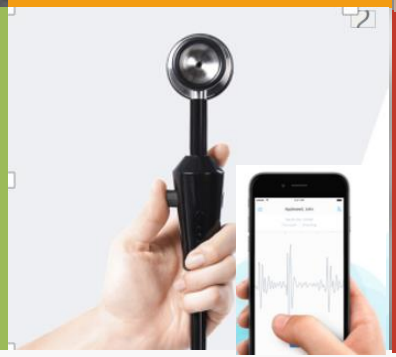
Everything is getting smarter

Smart Cup

Smart Stethoscope

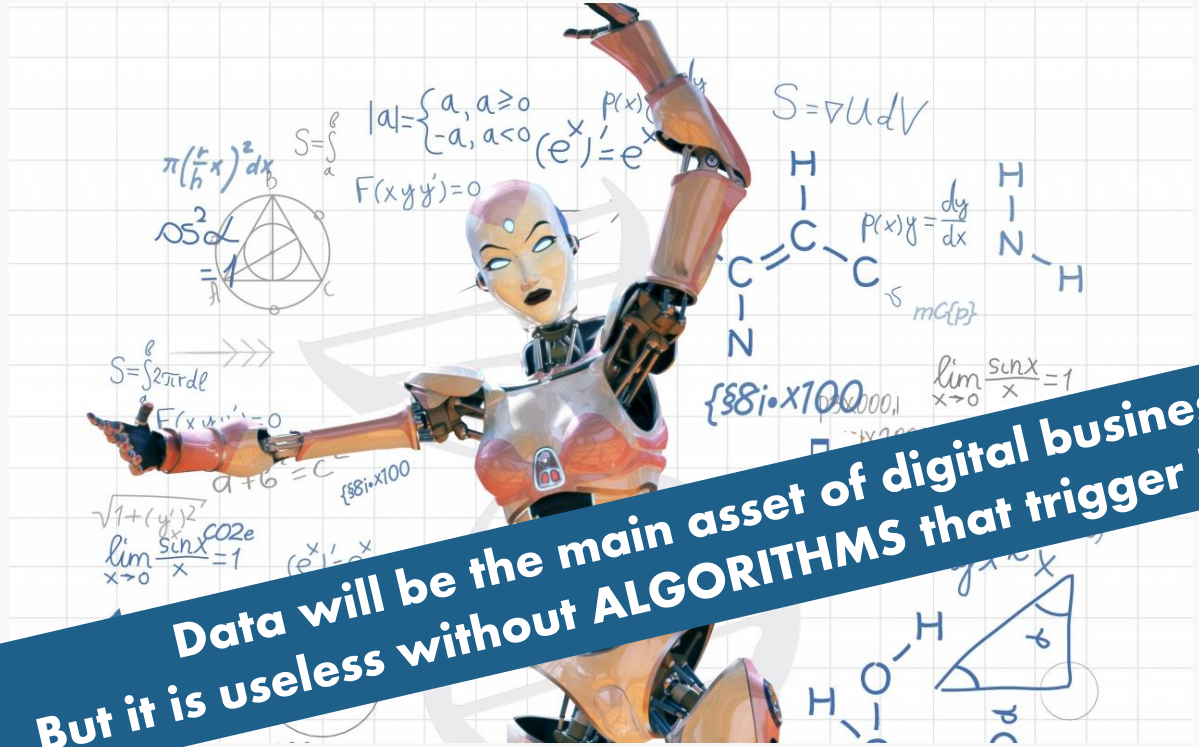
Nike's Self-Lacing Shoe

Smart Toilet



Smart Pacifier

Algorithms are at the heart of ANY digital business



Data will be the main asset of digital businesses
But it is useless without ALGORITHMS that trigger DECISIONS

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Tremendous technological progress in data & analytics.

Anything is possible.

The only limit is your ***imagination.***

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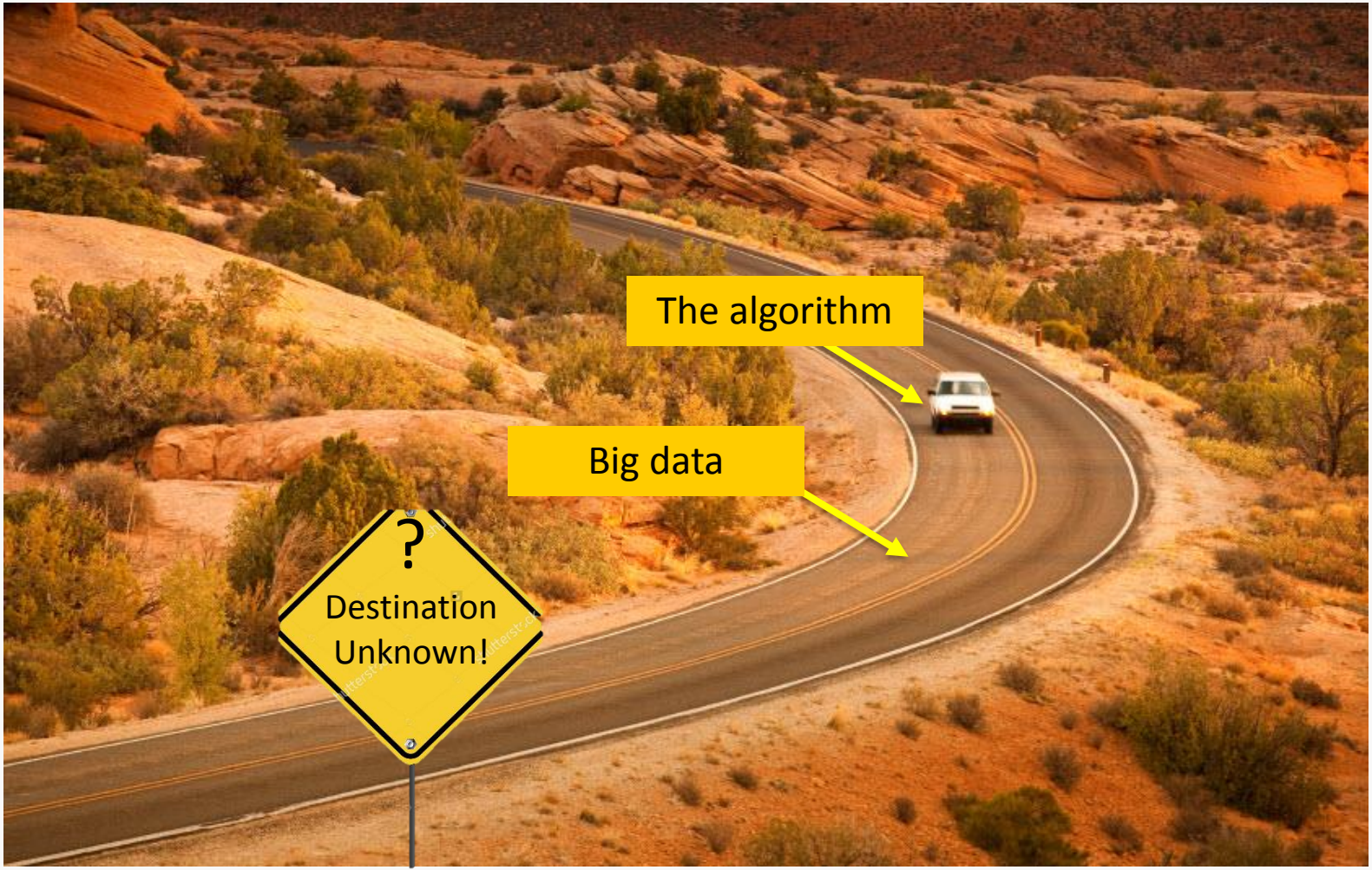


What's your problem, business?

Our platform can solve ANY business problem!

Vendor

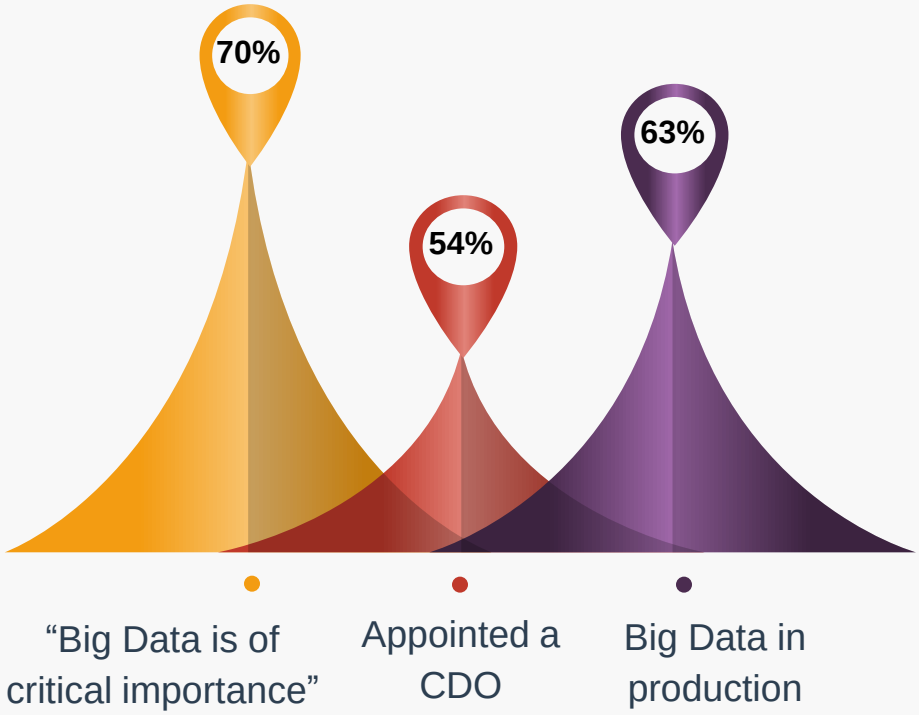
Hmmm, well, that's your decision.
Hey, did I mention we use machine learning?

Which business problem?

Big data is still a **solution** looking for a **problem**

Adoption – worldwide versus Israel

Source: STKI estimation, 2016 (Enterprises)



Source: HBR, 2016 Study of F1000

Data & Analysis

Decisions

Visualization & Analytics

Information Management

Virtual data layer

Data Platforms

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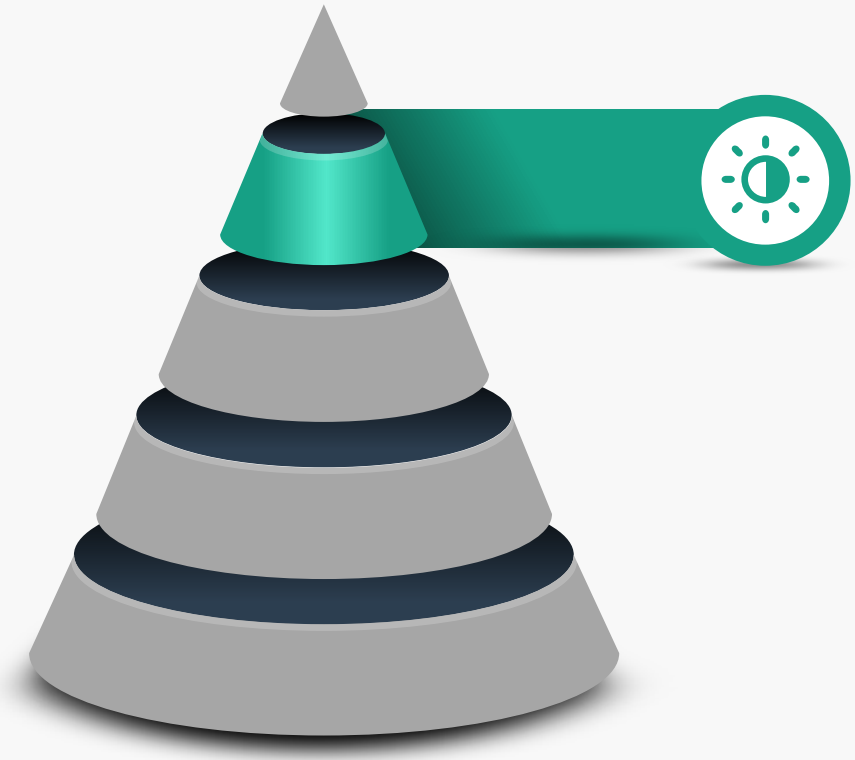
Analytics



Visualization & Analytics

The evolution of Analytics

1 **Classic BI/ DW**

2 **Data discovery Analysis**

3 **Predictive Analytics**

4 **Machine Intelligence**

5 **Autonomous Decisions**

"**What** happened?"

"**Why**?"

"What **will** happen?"

"**Help me to** ask the **right** question!"

"**Make the decision** for me"

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NEW questions we can ask

- What are **relevant** questions to ask?

machine intelligence

- What are the relevant **features**? Entities? **Connections**?
- Optimization & micro-segments

advanced analytics

- **Real time** analytics

streaming analytics

- Extracting features and **insights** from highly **unstructured** data

text analysis + neural networks

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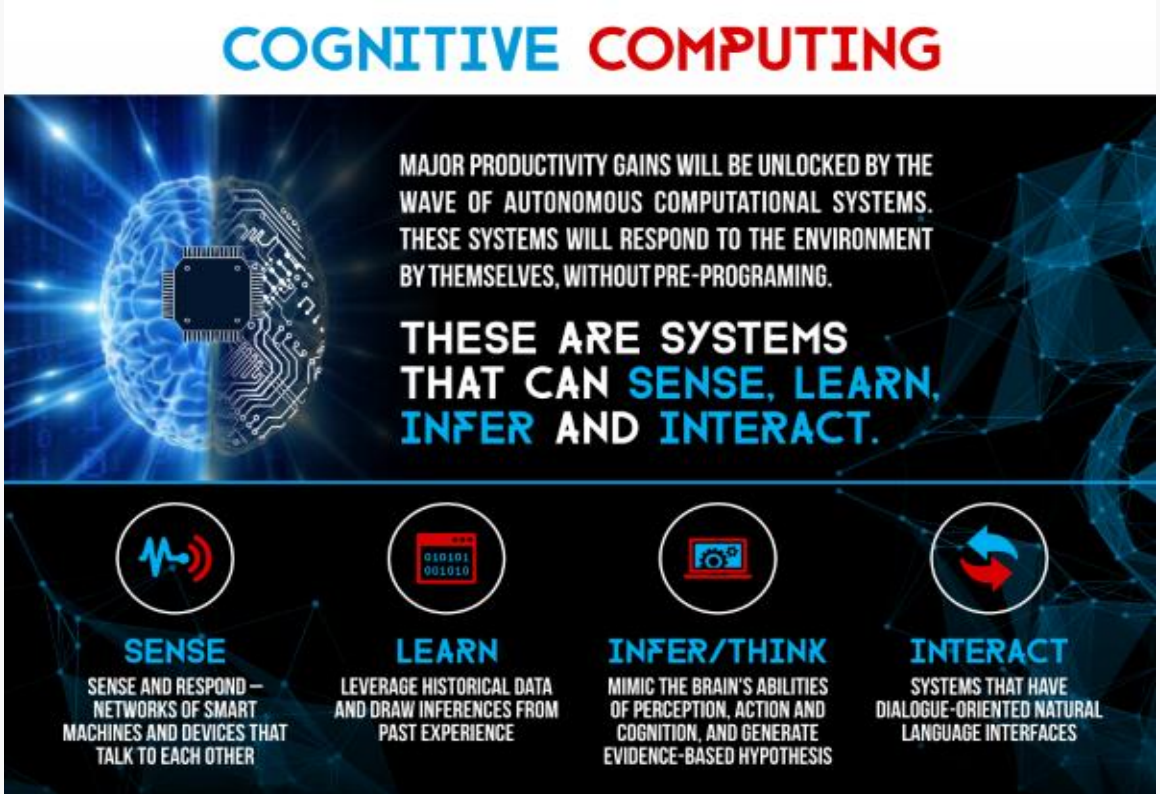
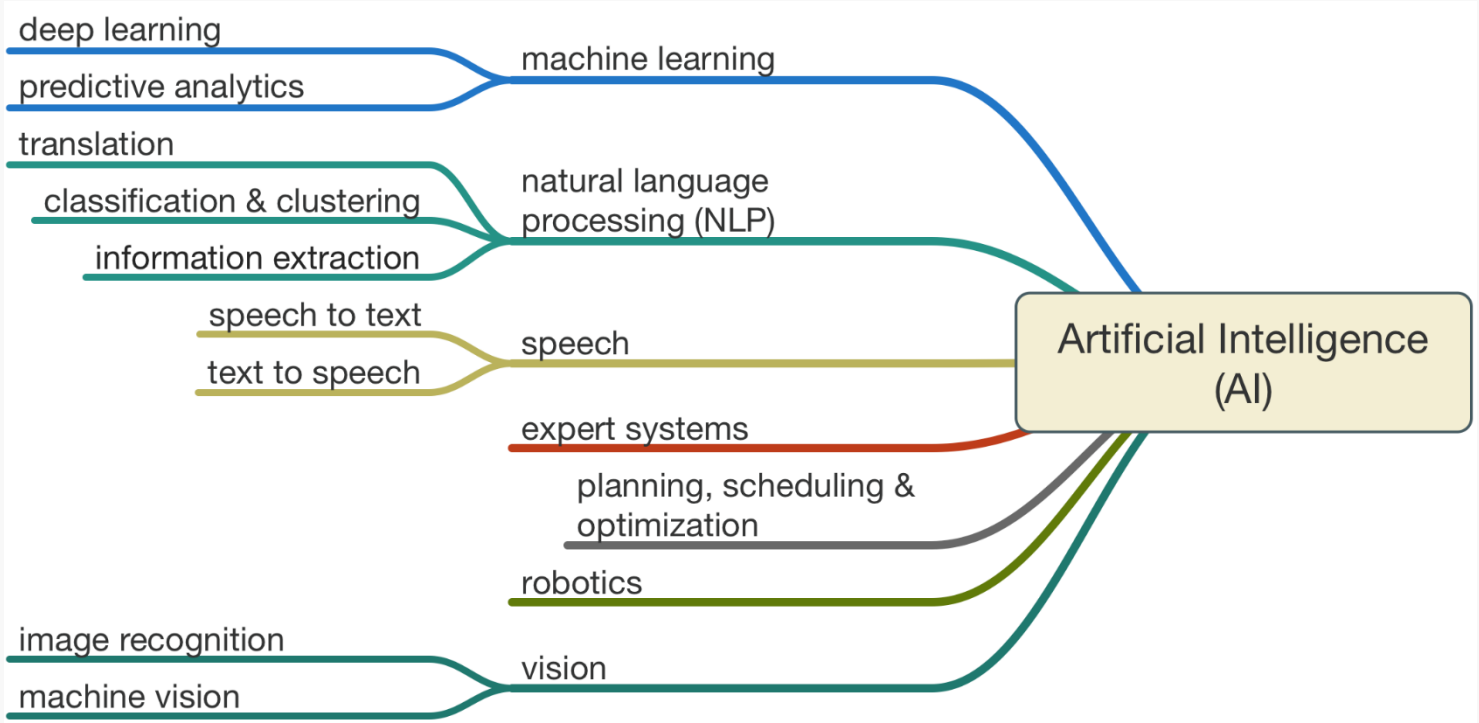
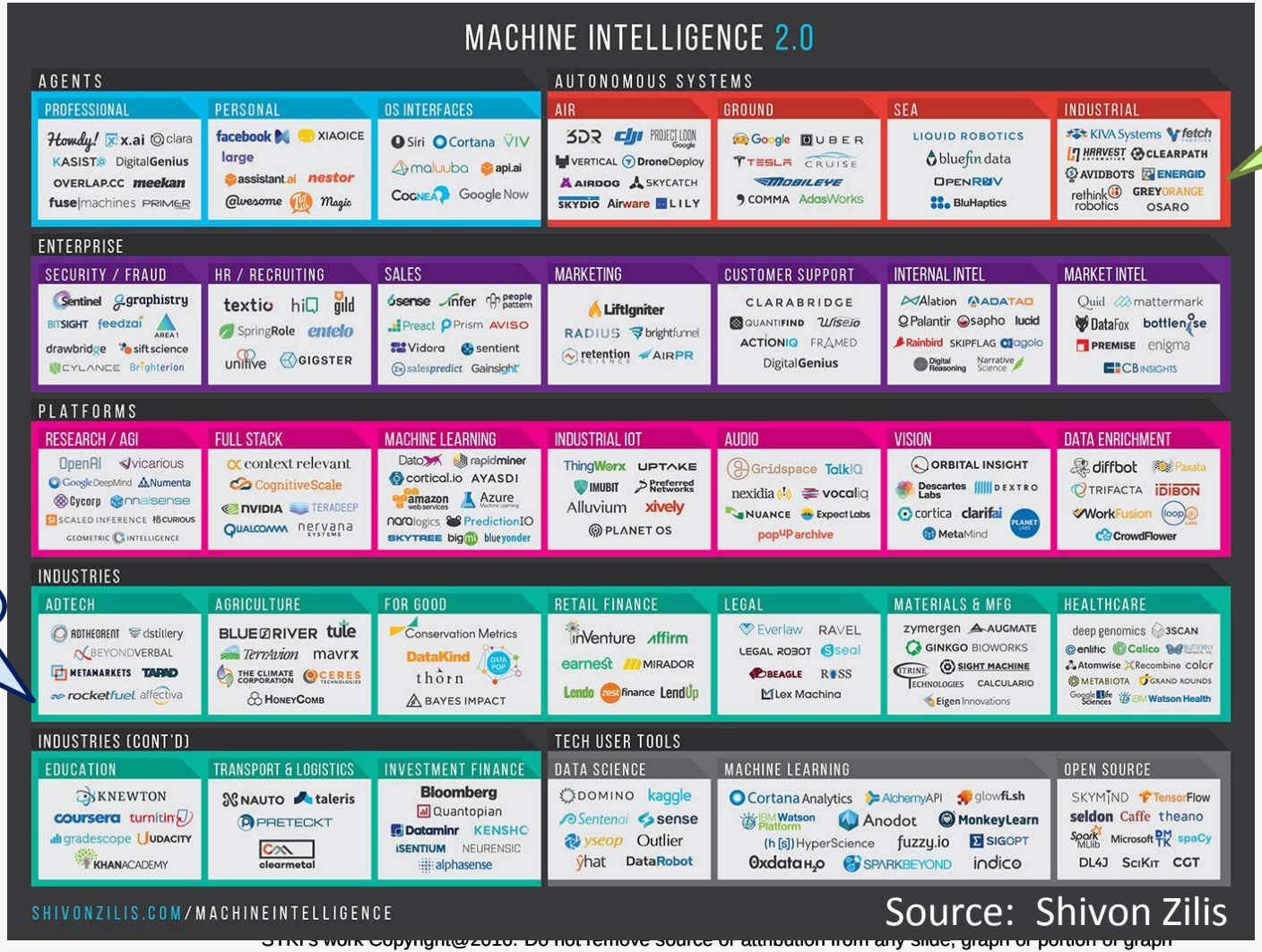
Will cognitive-powered machines learn, think and make decisions for us?

Will cognitive-powered machines learn, think and make decisions for us?



Many branches to Artificial Intelligence





Physical

Self-driving cars
Autopilot drones
Robots daily tasks

Bots trained by humans

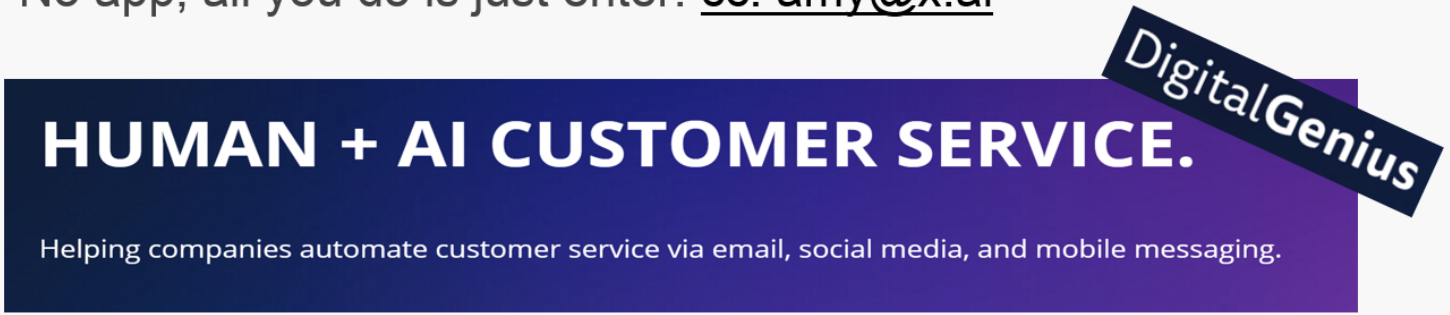
Virtual

Source: Shivon Zilis

2 Examples of AI-powered apps in enterprises:

x.ai is a personal assistant who schedules meetings for you

No app, all you do is just enter: cc: amy@x.ai



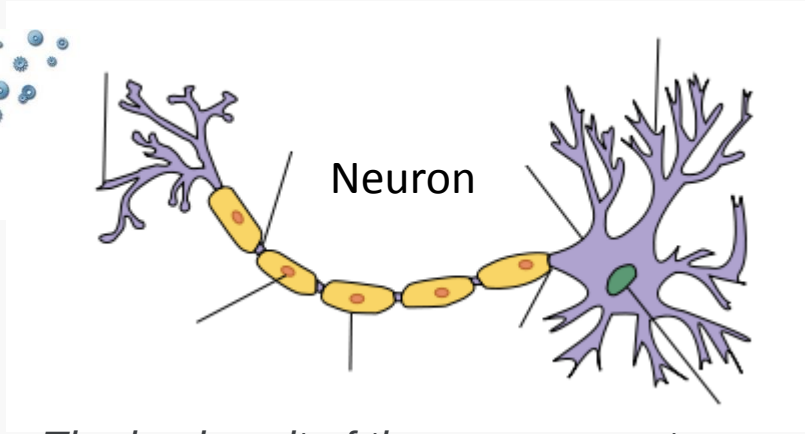
Uses Deep Learning to enable automated, human-like conversations with consumers (Salesforce partner)

Has analysis reached the level of human thinking?

~~No~~

~~Not yet~~

✓ **We are getting there**



The basic unit of the nervous system
A cell that carries messages between the brain and other parts of the body

Deep Learning: a branch of machine learning that is Inspired by the way the brain works

Neural networks *versus* Deep Learning

- **Neural networks** have a hidden layer and perform "supervised" predictions (human intervention)
- **Deep Learning Neural Networks** – have more hidden layers and can perform "unsupervised" tasks like feature extraction & image recognition

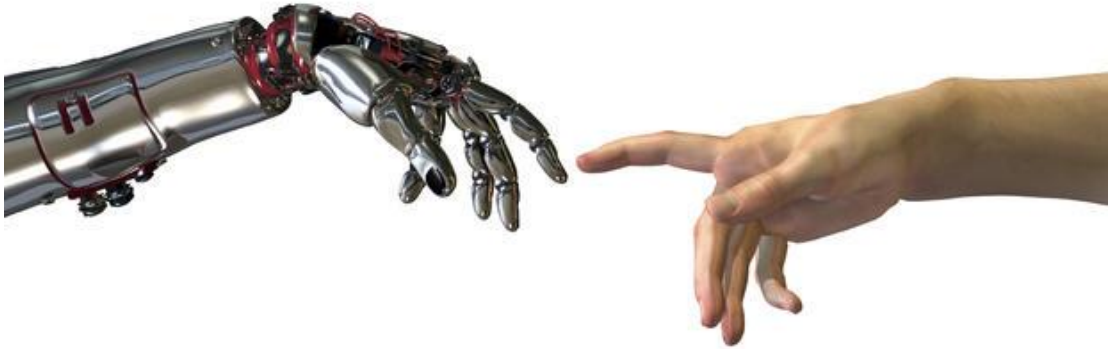
2015 - Google opened its DL project to the community

Who makes the decisions?

Decisions

The future Data Scientist: a Robot?!

Artificial intelligence will assist data scientists mainly in data preparation (but not only…)



Data scientists can focus more on *algorithms*
instead of *data engineering*

Insights Discovery

Predictive analytics can now reach a broader audience

Does "Citizen data scientist" = an empowered business analyst?

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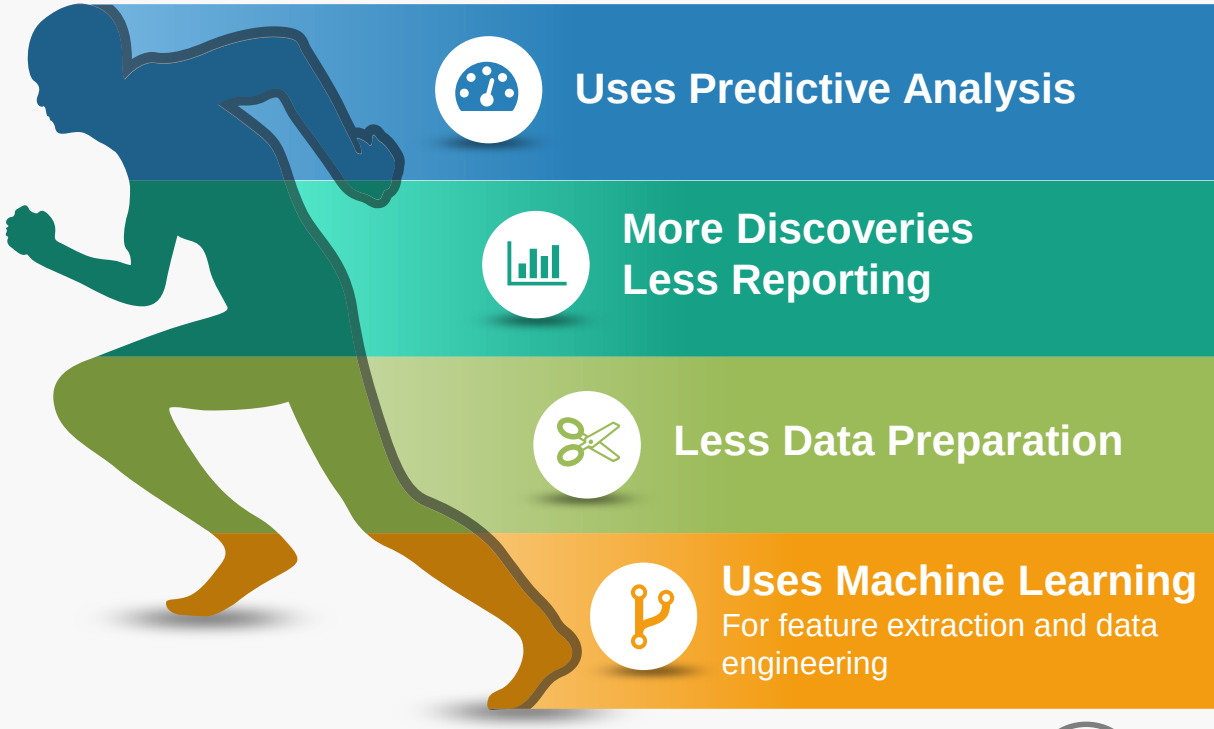
The empowered business analyst

Can use machine learning, visualization and self-service to perform more meaningful analysis



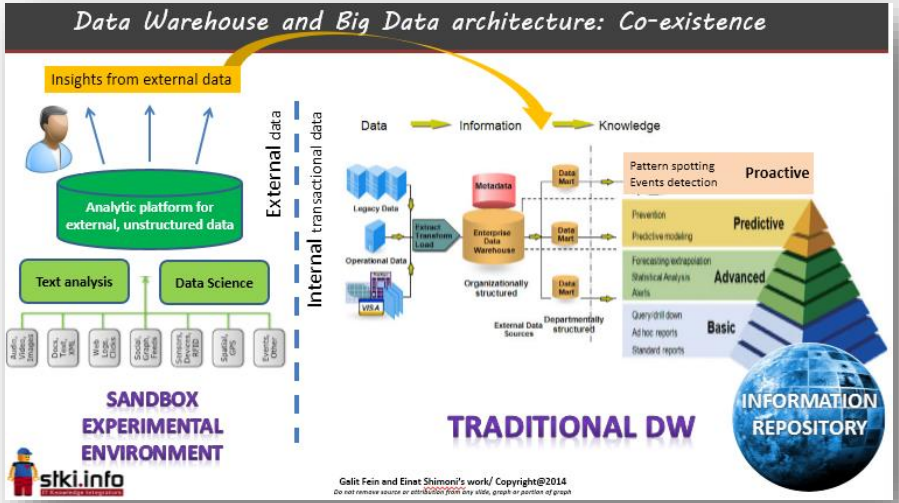
Data Virtualization

Virtual data layer

Architecture shifts

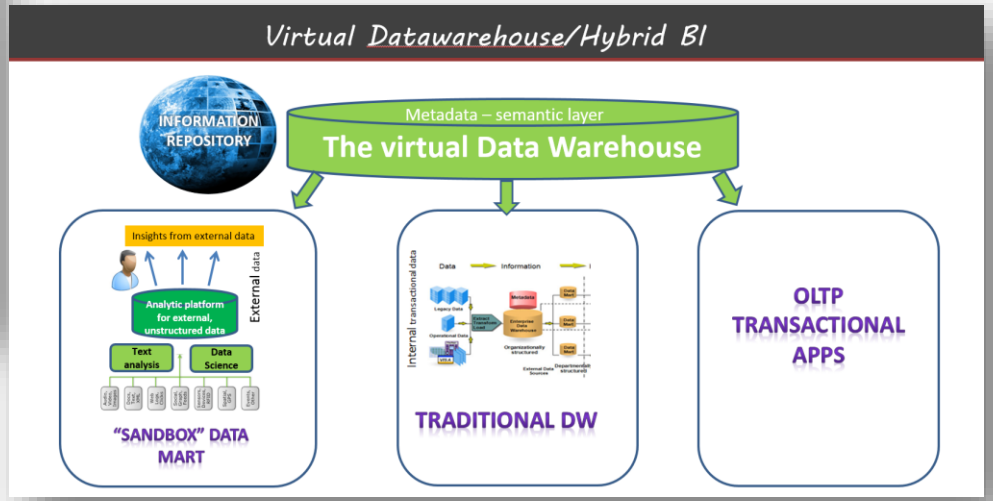
We are moving from this:

Once in a while connection

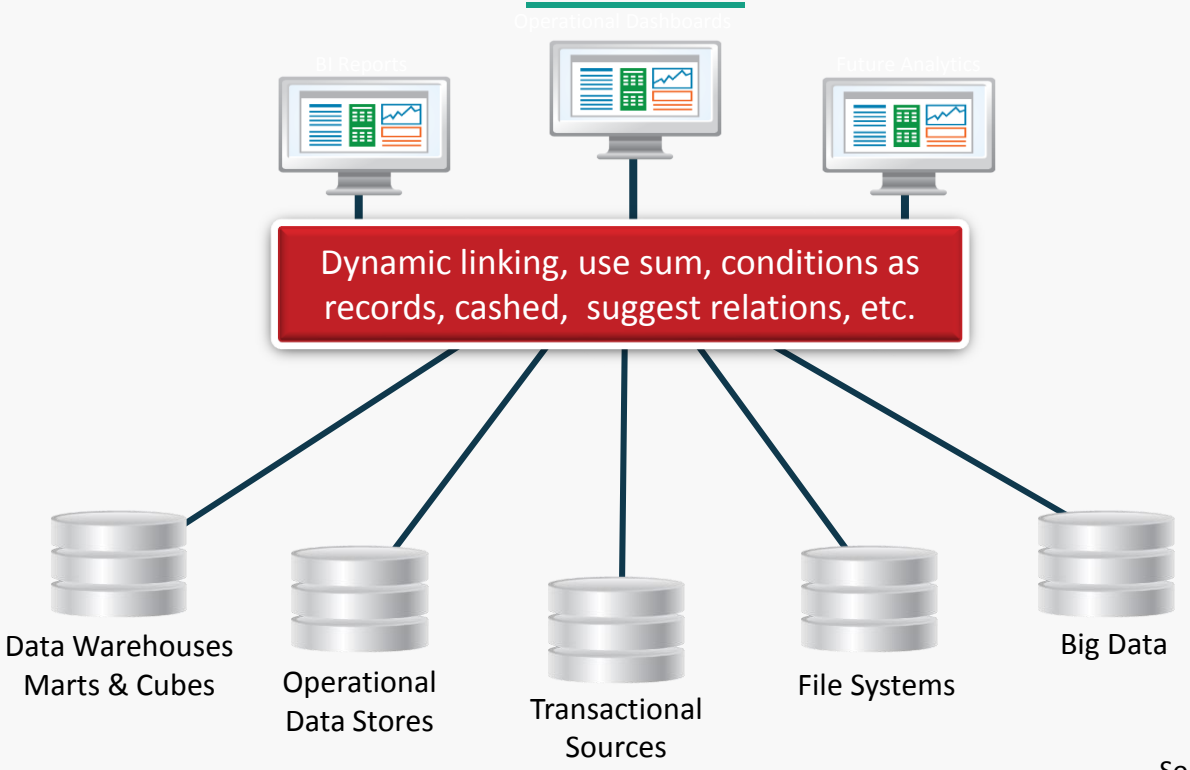


To this:

Constant connection



Virtual Data Layer



Source: cisco

The virtualized data layer

An Agile approach to Data Integration:

Quick access to data, no replication, in the way you would like to see it

Specialized players – virtualized data layer:

K2VIEW

CISCO Data Virtualization

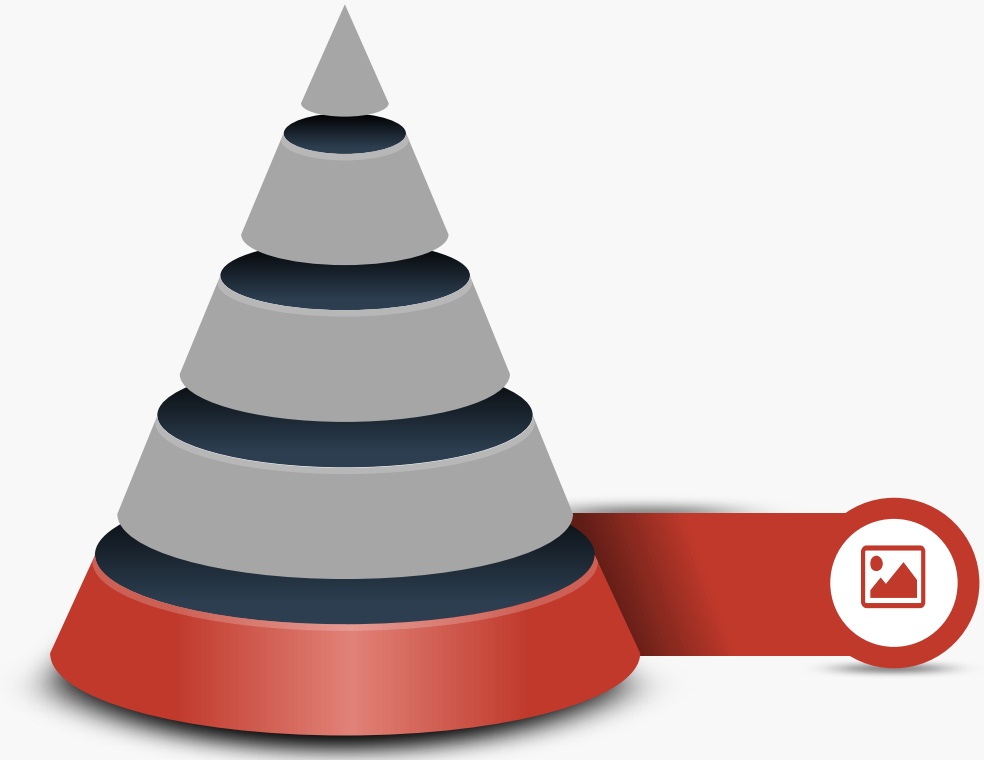
EIM Players' solutions for data federation:

IBM

informatica

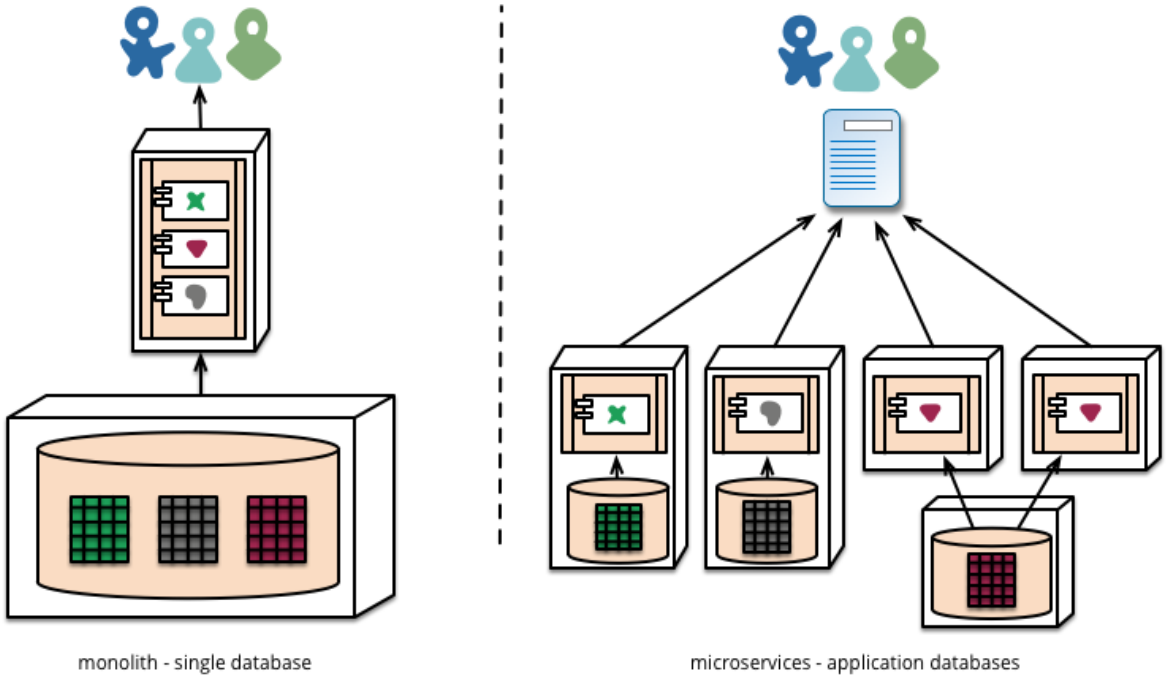
ORACLE

Data Platforms



Data Platforms

Microservices



Source: http://martinfowler.com/

What are Microservices implications on data: Polyglot Data (polyglot persistence)

Source: Martin Fowler

Evolving DBA Roles

Devops

Automation and self service in general

Development expertise

For supporting NoSQL

Freedom to the Developers

Developers in NoSQL DBMS are more free

Cloud DBA

Leverage cloud offering (limitless scale, elasticity, new functionality)

Open Source RDBMS

PostgreSQL

MariaDB

MySQL

New options: Third party maintenance for DBMS

STKI Recommendations: Data & Analytics

Establish BI/Analytics users KPIs!

Do now

"Analysis tools usage" as part of employee assessment

Make advanced analytics a part of your portfolio

Data virtualization will become important as enabler for business agility

Be aware

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That’s it.

Thank you for listening

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