



DataConsulting

Understanding Data Analytics

1st December 2017



Agenda

09:30 - **Introducing Data Analytics** – Robin Clough, DataConsulting

10:15 - **The Key to Smarter Analytics** – David Britain, Royal Mail Group

11:00 - Break

11:30 - **Understanding SAP** – Martin Riedl, dab:Daten – Analysen & Beratung GmbH

12:15 - **Q&A, Lunch and networking**



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Introducing Data Analytics

Robin Clough

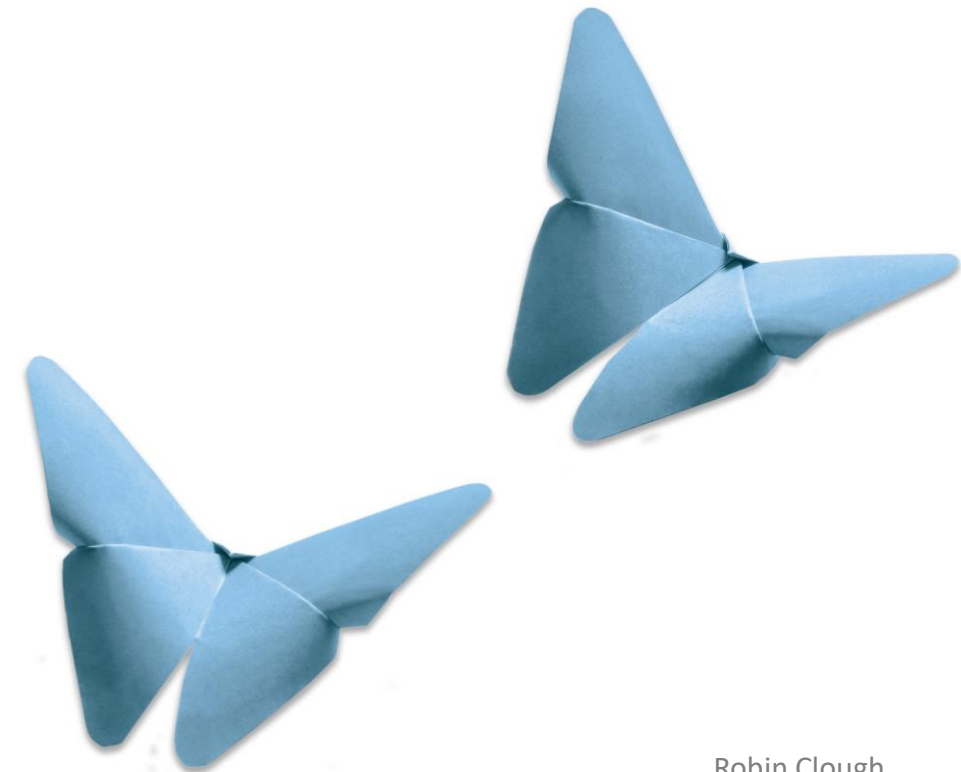
Managing Director at DataConsulting



TURNING
DATA
INTO
DECISIONS

Agenda

- Introduction
- What is Data?
- What is Data Analytics?
- Why Data Analytics?
- Types of Data Analytics
- Examples of Data Analytics
- Data Analytics Strategy
- Challenges
- Quick Quiz
- Closing Thoughts





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Introduction



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Introduction – Robin Clough

- Managing Director – DataConsulting
- Ex PwC, Deloitte
- 20+ years in data analytics
- Bear Grylls of data analytics!



Introduction – DataConsulting

- Data analytics services partner
- UK based
- Specialists in ACL, IDEA, Excel, SQL, Tableau
- Connected with Grant Thornton since 2014

“DataConsulting are a professional team to work with and really know the area of data analytics well. They’ve saved us many weeks of effort and many tens of thousands of pounds”
Head of IA, FTSE100 company





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What is Data?



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Data is the new oil!





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What is Data Analytics?

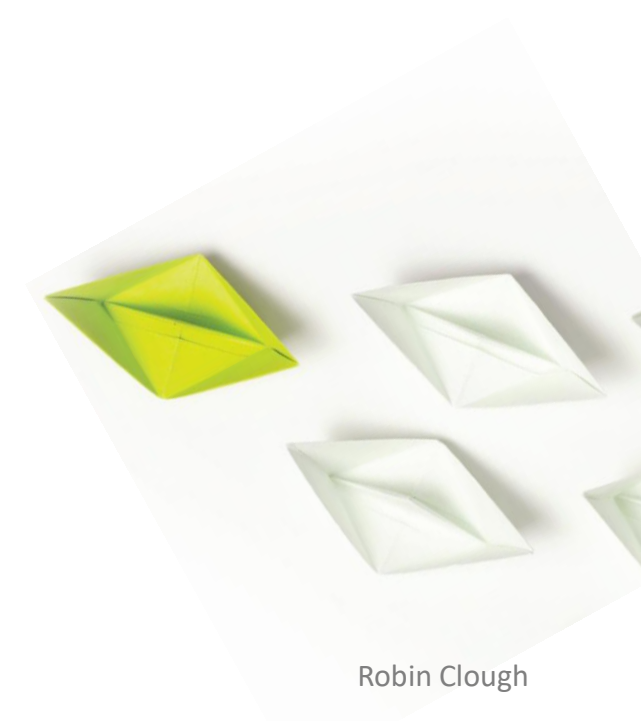


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What is Data Analytics?

“Data analytics, is a process of inspecting, cleansing, transforming and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making.”

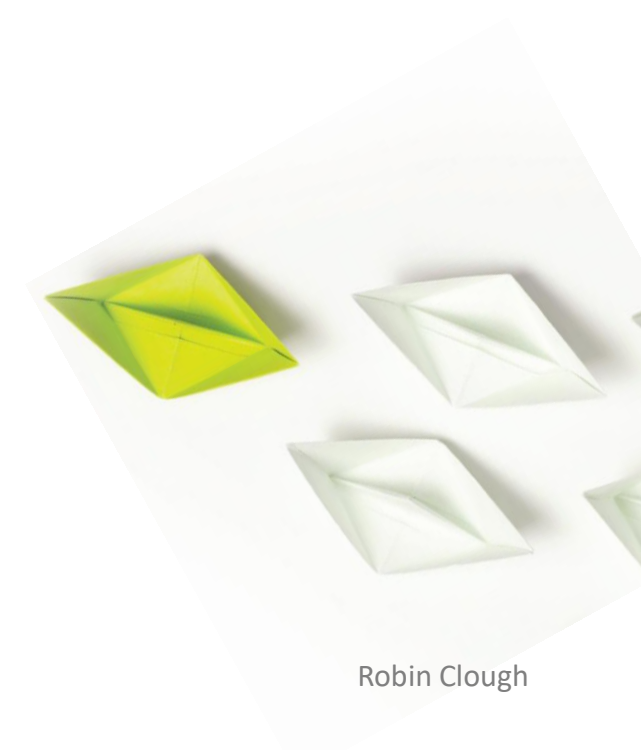
- Its about making the most of one of your most important and mostly free assets – “Data”



What is Data Analytics?

“Data analytics has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains.”

- Data Analytics is used in most areas of life now:
 - Health
 - Business
 - Transport
 - Sport





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Why Data Analytics?



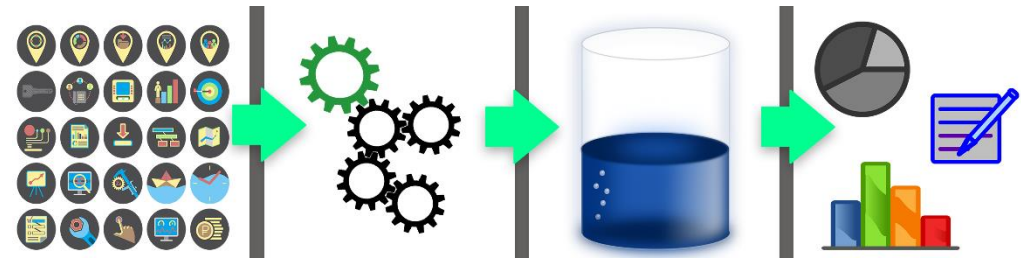
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Why Data Analytics?

- Barometer of current and likely performance
- Concise, consumable information allowing informed decisions to be made
- Retain and gain customers, smarter approach
- Give competitive advantage, stay one step ahead of your market
- Keep supplier costs down
- Stay the right side of legislation
- Spot issues before they arise
- Speed up manual processes

Why Data Analytics?

- Gather data from multiple sources
 - Multiple systems
 - Different time periods
 - External public data sources
 - Combing data can reveal insights previously hidden





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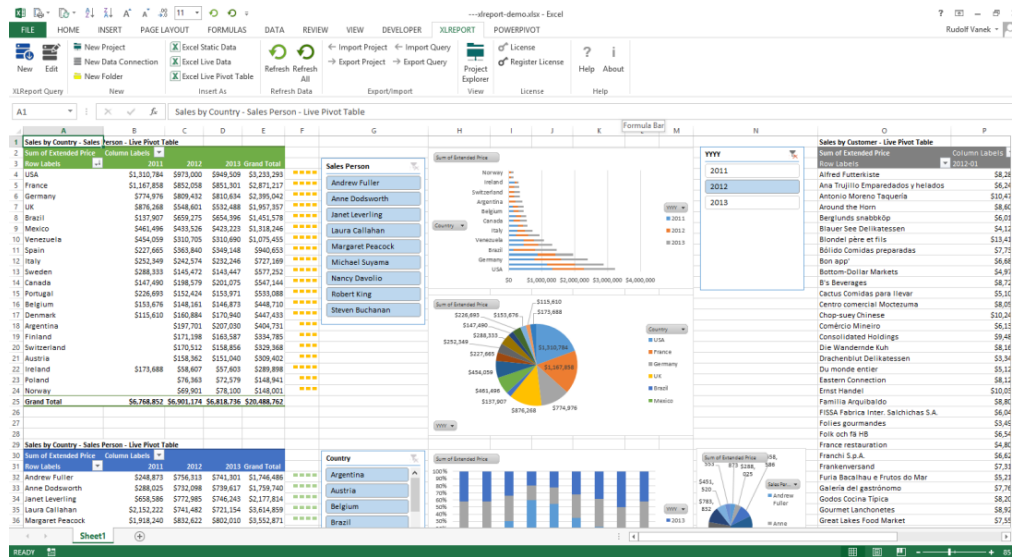
Types of Data Analytics



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Types of Data Analytics

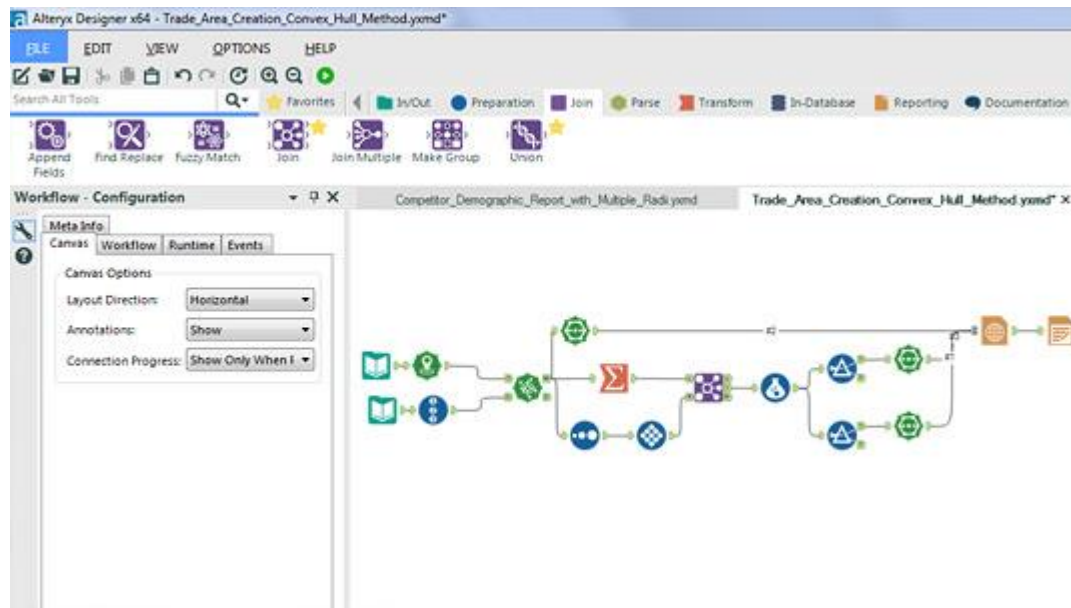
Basic



- Slice and dice the data using queries
- Work with historical data sets
- One or two data sets, size limit
- Can be done with basic tools such as Excel
- Can create some basic visualisations such as pie charts, bar graphs etc...
- Pivot the data

Types of Data Analytics

Intermediate



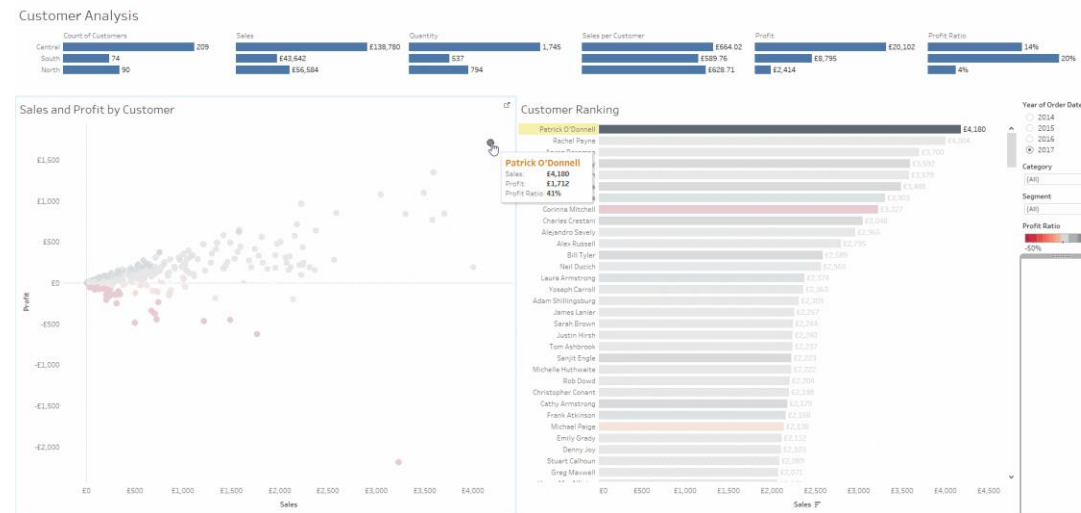
- Dedicated data analytics tools
- Work with multiple data sets
- Big data sets
- Sample tools include Alteryx, SAS, SQL
- Powerful commands
- Some data analytics skills needed

Types of Data Analytics

Visual

- A picture is a thousand words!
- Growing breed of tools that focus on visual interpretation of data
- More than just pie charts and bar graphs
- Can also interact with the data
- Quick demo of Tableau

Types of Data Analytics

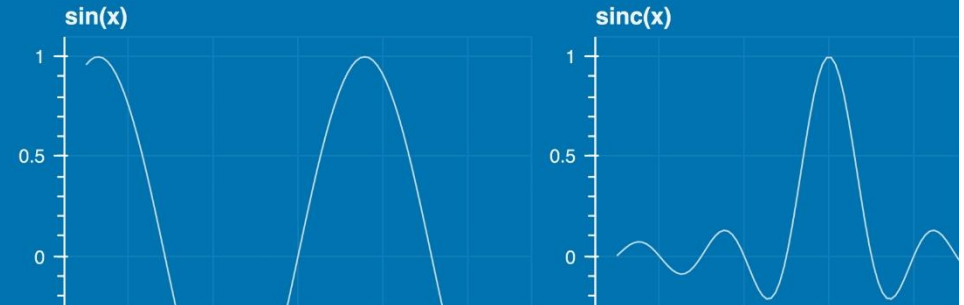


Types of Data Analytics

Advanced (Data Science)

- Predictive analytics
- Machine Learning
- Artificial Intelligence
- Customer behaviour
- Typical tools: Python, R

```
.line(xs, np.sin(x))  
= figure(x_range=fig1.x_range, y_range=fig1.y_range, ti  
.line(xs, np.sinc(x))  
gridplot([[fig1, fig2]])  
(gp)
```





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Examples of Data Analytics



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Examples of Data Analytics

- Internal audit – controls testing
- External audit – journal analytics
- Compliance - adherence
- Cost reduction – expenses, payments, rebates, fraud
- Marketing – churn management
- Owner/Management – health dashboard
- HR – talent retention



Examples of Data Analytics

- Duplicate invoices/payments
 - €millions.....
- Expenses
 - False claims, self authorisation
- Payroll
 - Inflated overtime, paid after leaving
- Clocking in / clocking out
 - Collusion
- Diminishing profit
 - Why?



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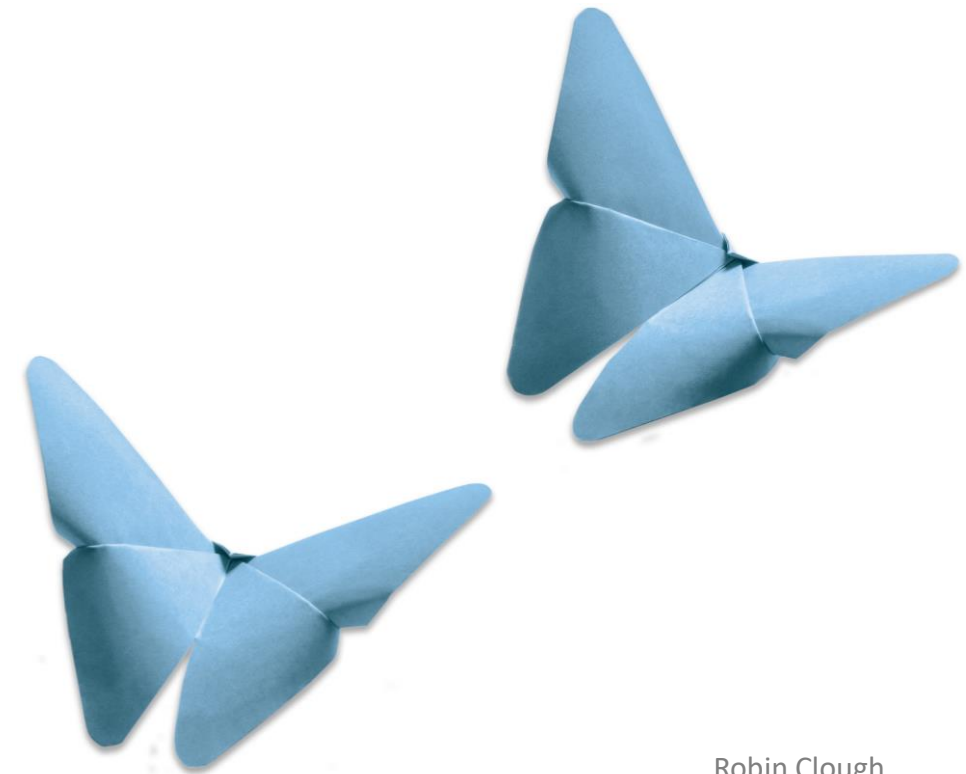
Data Analytics Strategy



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Data Analytics Strategy

- Main areas to address:
 - Goals / Objectives
 - Timescales
 - People
 - Process
 - Technology





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Data Analytics Tools



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Data Analytics Tools

- Basic: Excel
- Standard: SQL
- Audit focus: ACL, IDEA
- Visualisation / Dashboard: Tableau, Qlik, Power BI
- Advanced: SAS
- Machine learning / Predictive analytics: R, Python
- Big data: Hadoop
- Key to success is often the user rather than the technology





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Challenges



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Challenges

- Data access / complexity / disparate
- Multiple technology options
- Shortage of skilled resource
- IT / Data custodians – reluctant to share
- Data protection – legal considerations UK, non-UK
- Data volumes
- Clear strategy – what do we want to achieve?
- Lack of ownership





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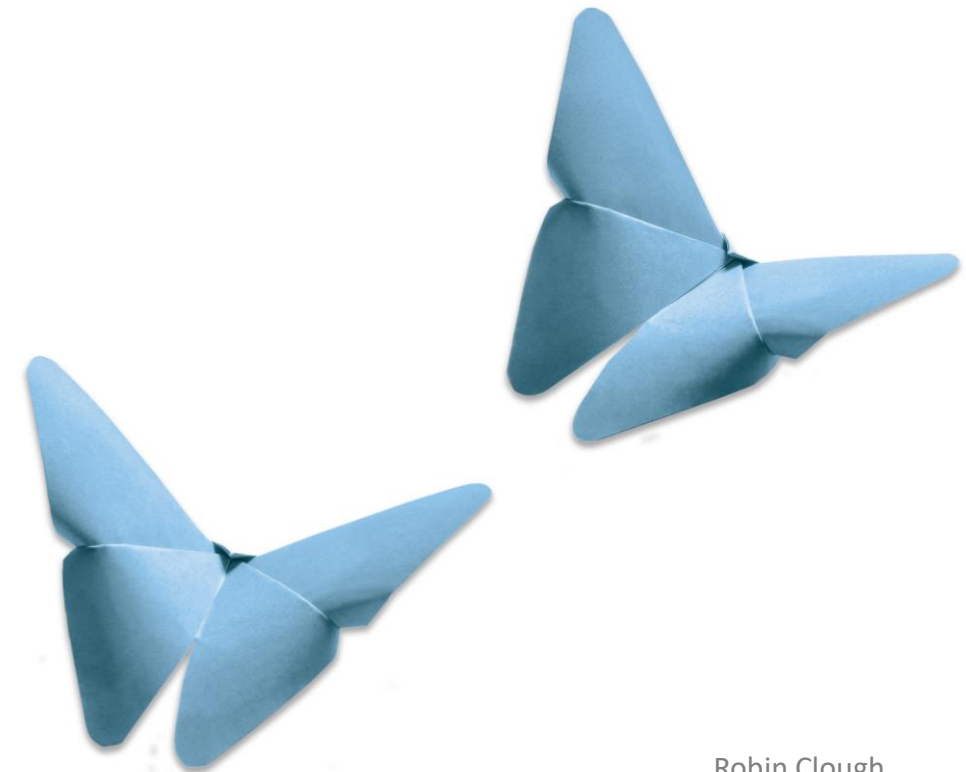
Quick Quiz



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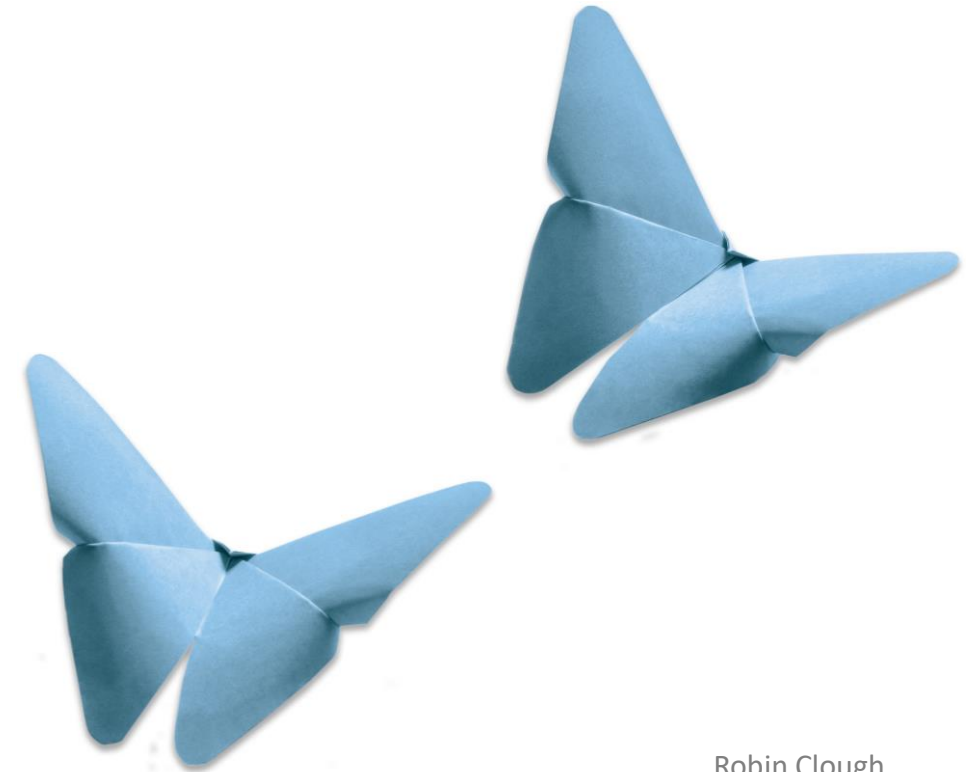
Question 1

- **The volume of business data worldwide, across all companies, doubles approximately every:**
 - 1 year
 - 1.2 years
 - 2 years



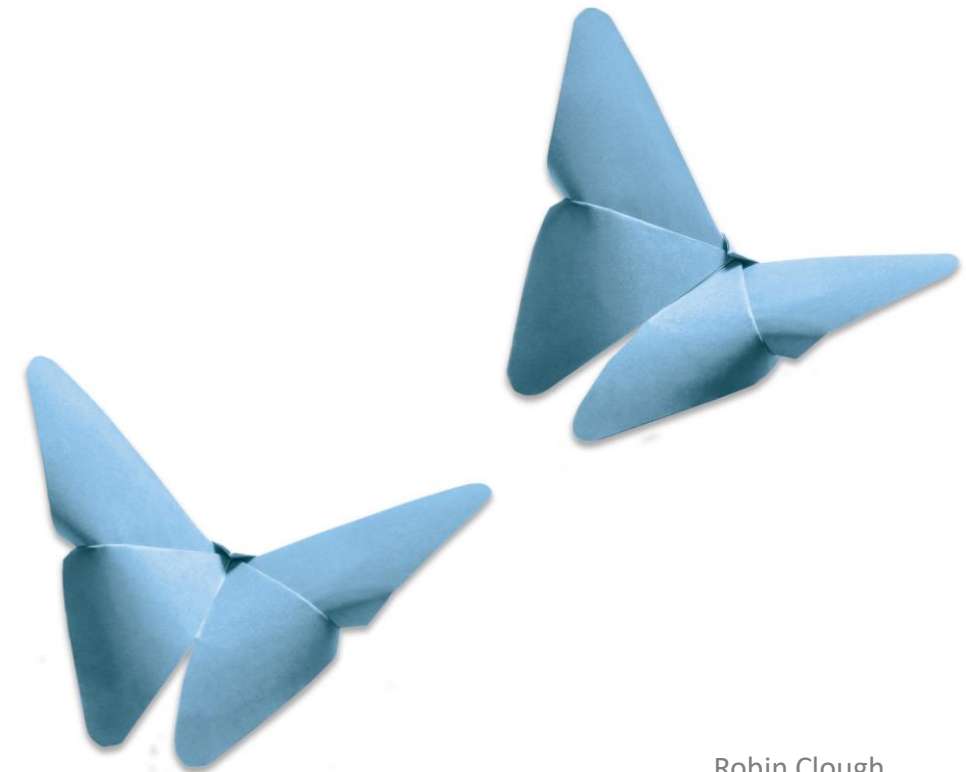
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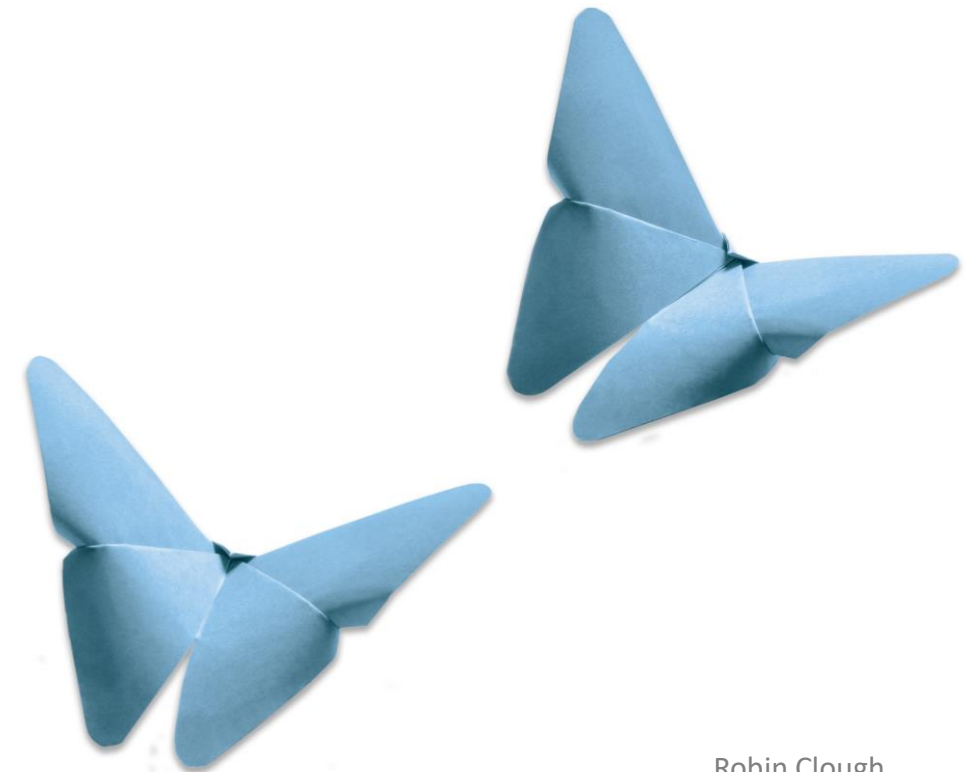
Question 2

- **The classic "3V" model for describing Big Data includes volume, velocity and...**
- Vacuity
- Variety
- Vapidity
- Velociraptor



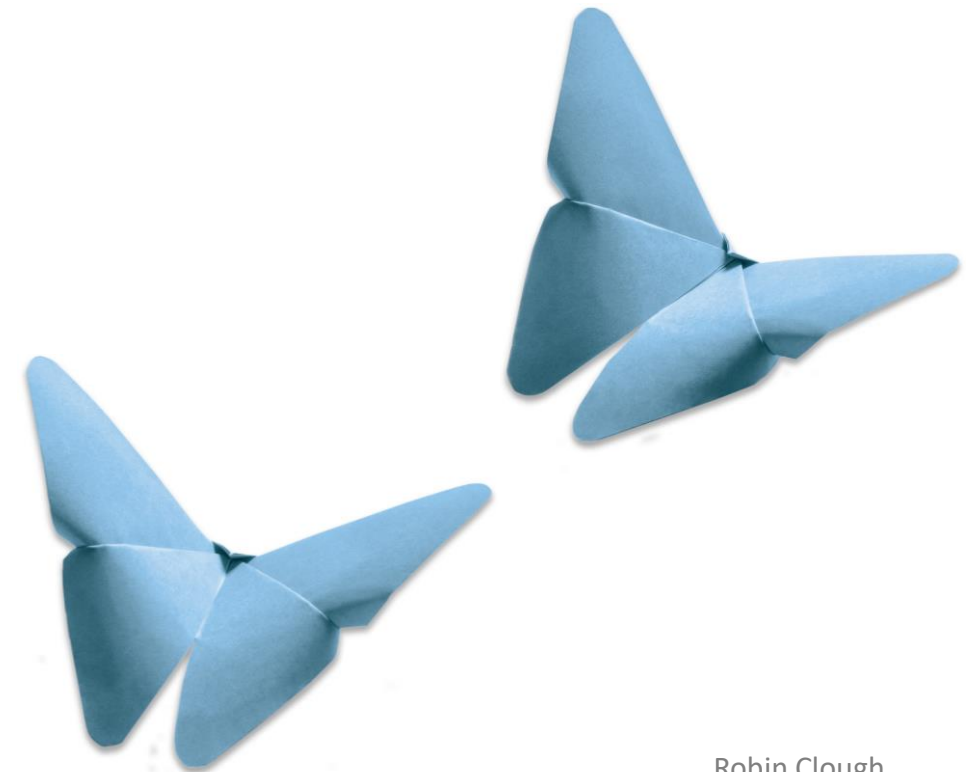
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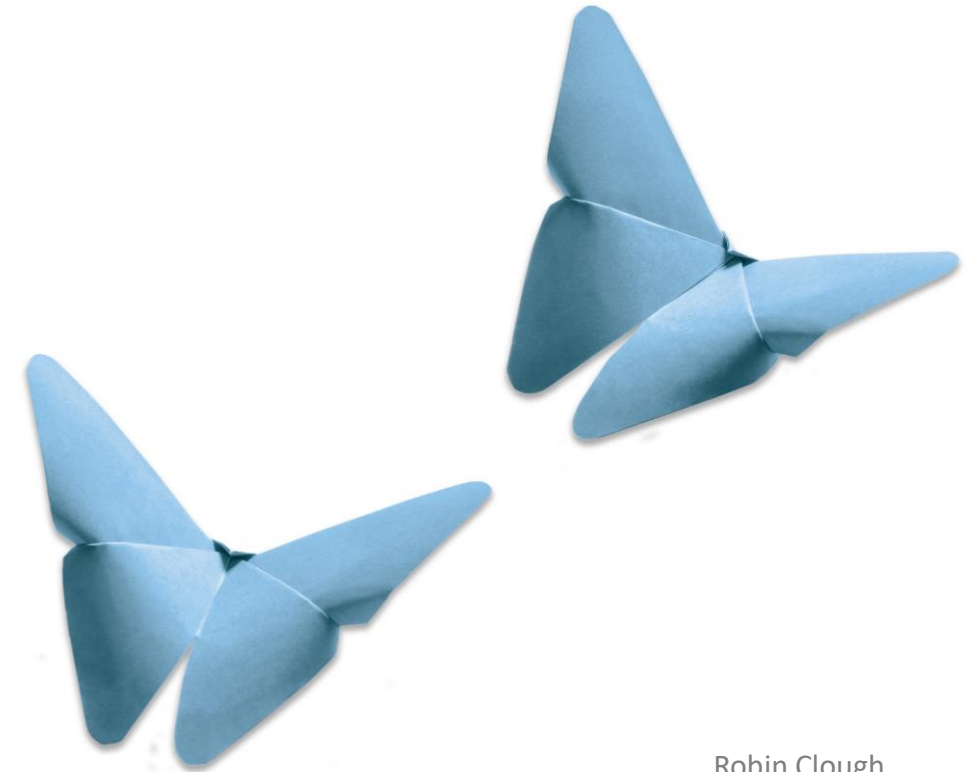
Question 3

- **How many hours of video are uploaded to YouTube every minute?**
- 100
- 300
- 500



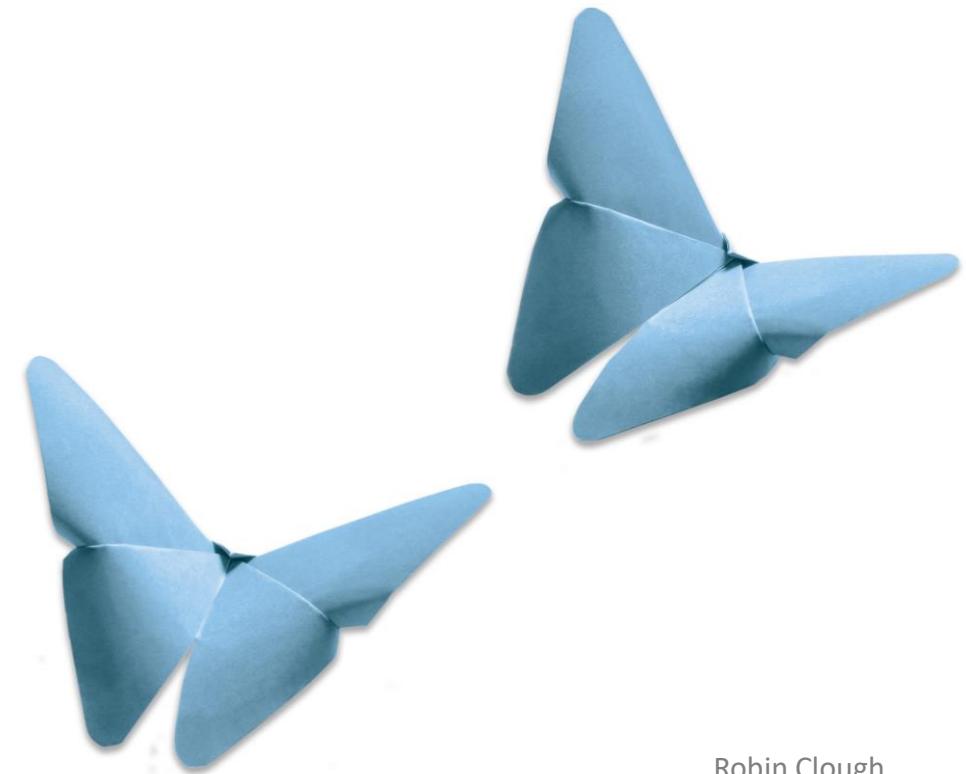
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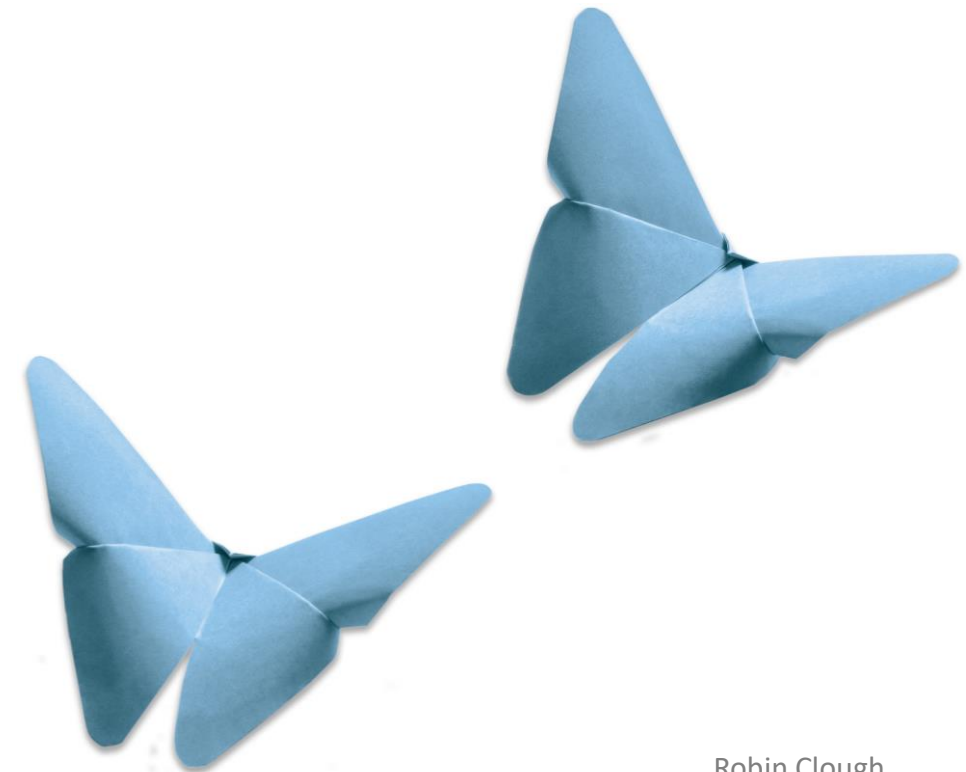
Question 4

- **SQL stands for?**
- Structured Query Language
- Simple Query Language
- Structured Query Logic
- Structured Quizzing Language



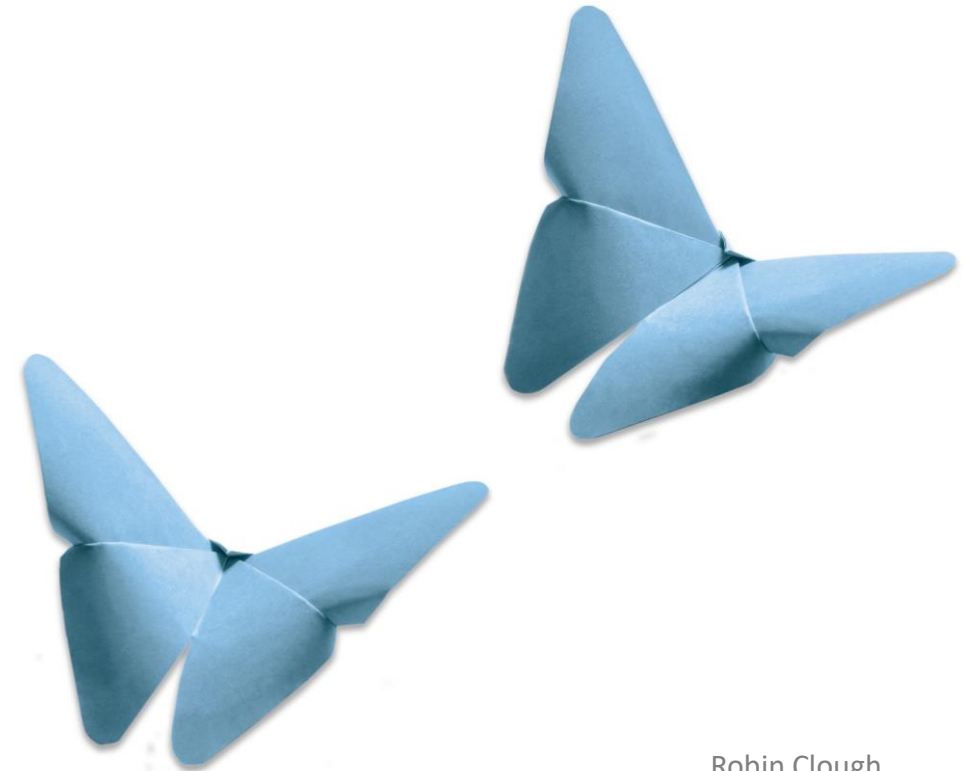
Question 4

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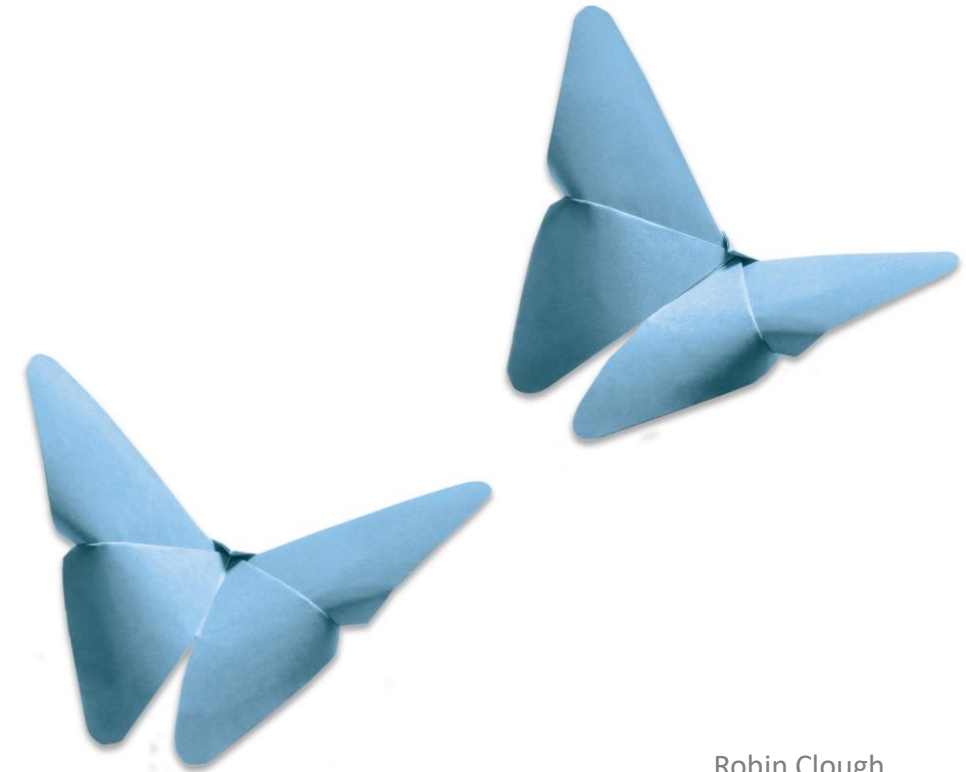
Question 5

- **Which of the following is a Data Analytics application?**
- Ka-plunk
- Hadunk
- Splunk
- Skunk



Question 5

- Which of the following is a Data Analytics application?
- Ka-plunk
- Hadunk
- **Splunk**
- Skunk





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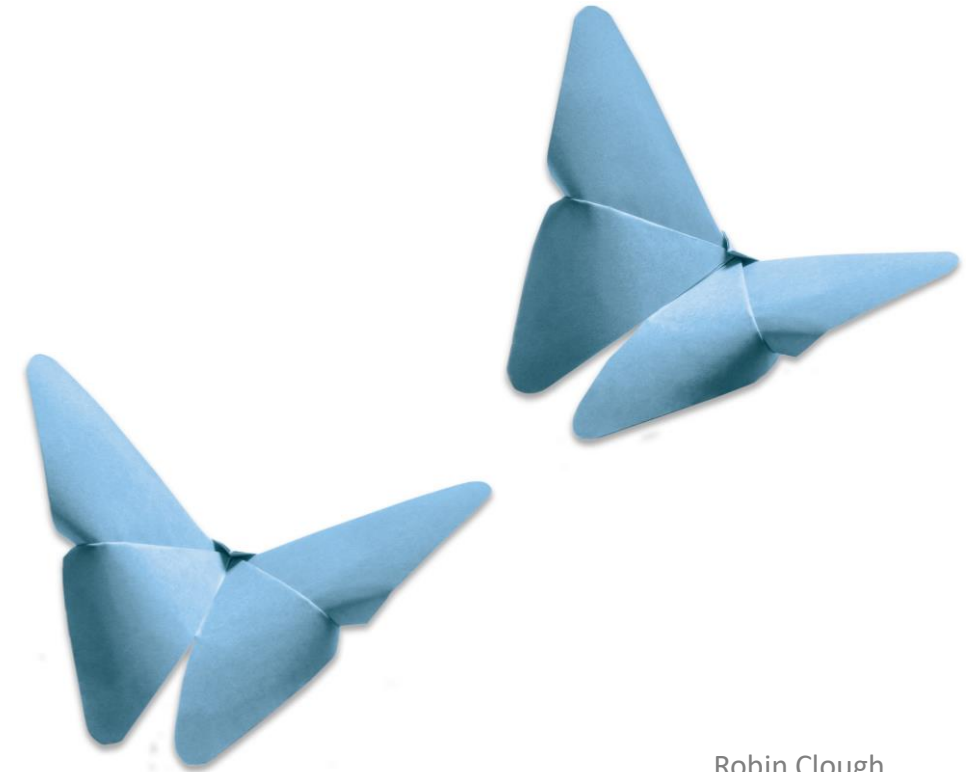
Closing Thoughts



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Closing Thoughts

- Data could be the new oil but it needs locating and refining
- Data is certainly a buzz area and in particular analytics
- Data Analytics is now a career option



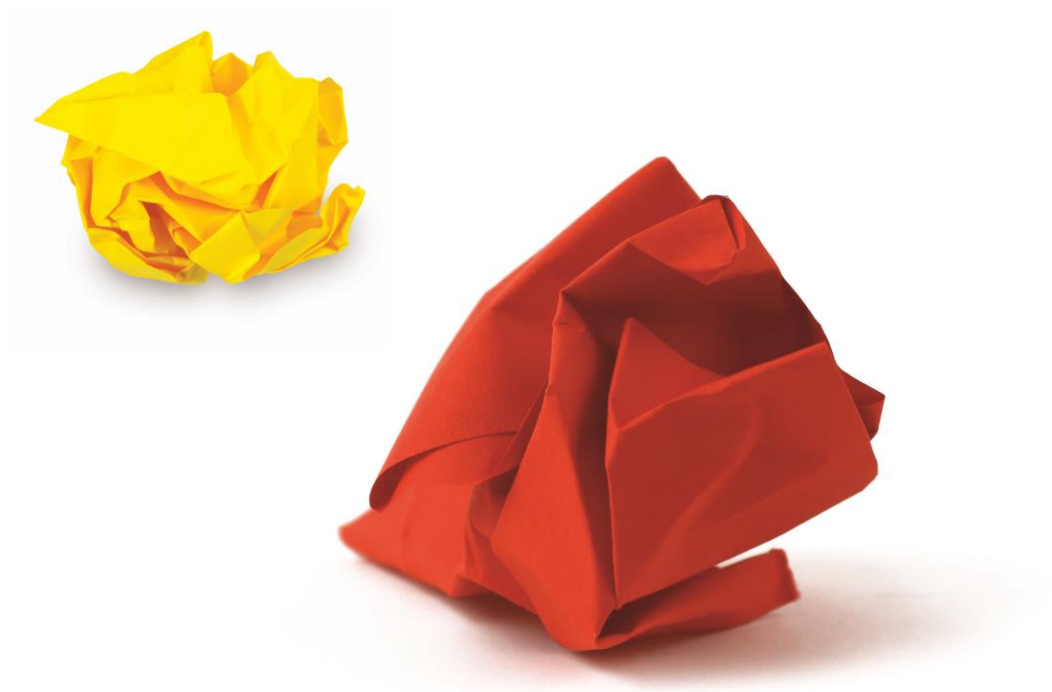


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“

You have data. You have questions.

We have answers” Robin Clough





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Smarter Data Analytics

53 6d 61 72 74 65 72 20 44 61 74 61 20 41 6e 61 6c 79 74 69 63 73

David Britain

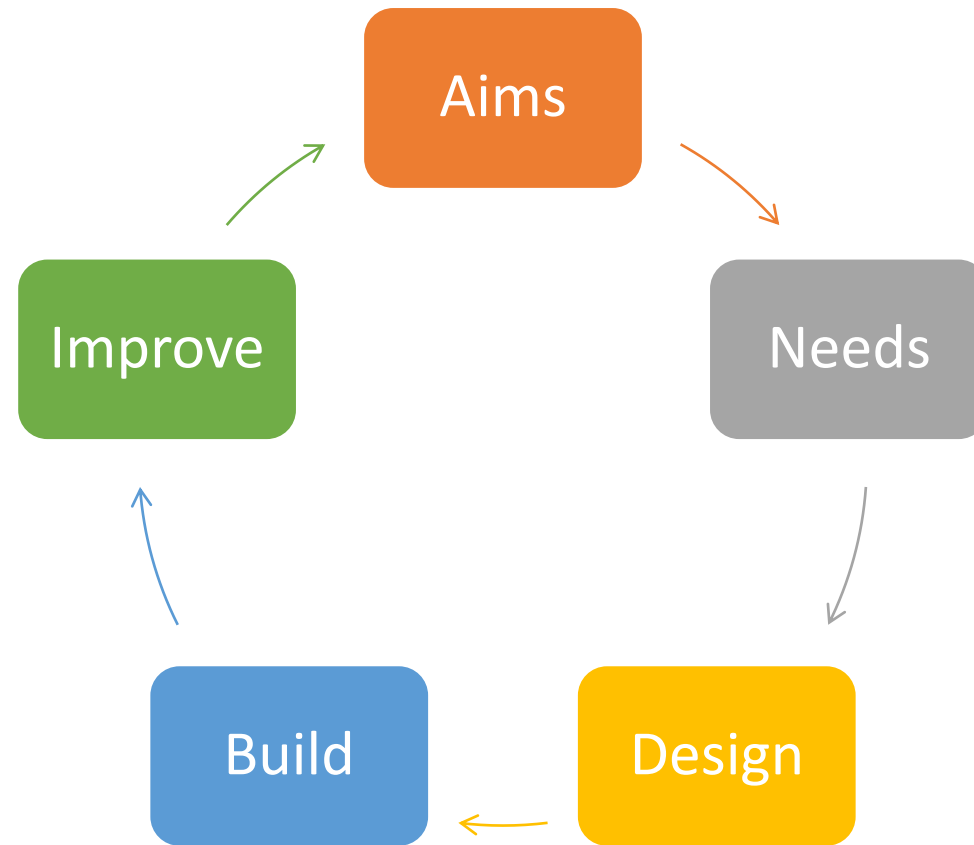
Data Analytics Adviser at Royal Mail Group



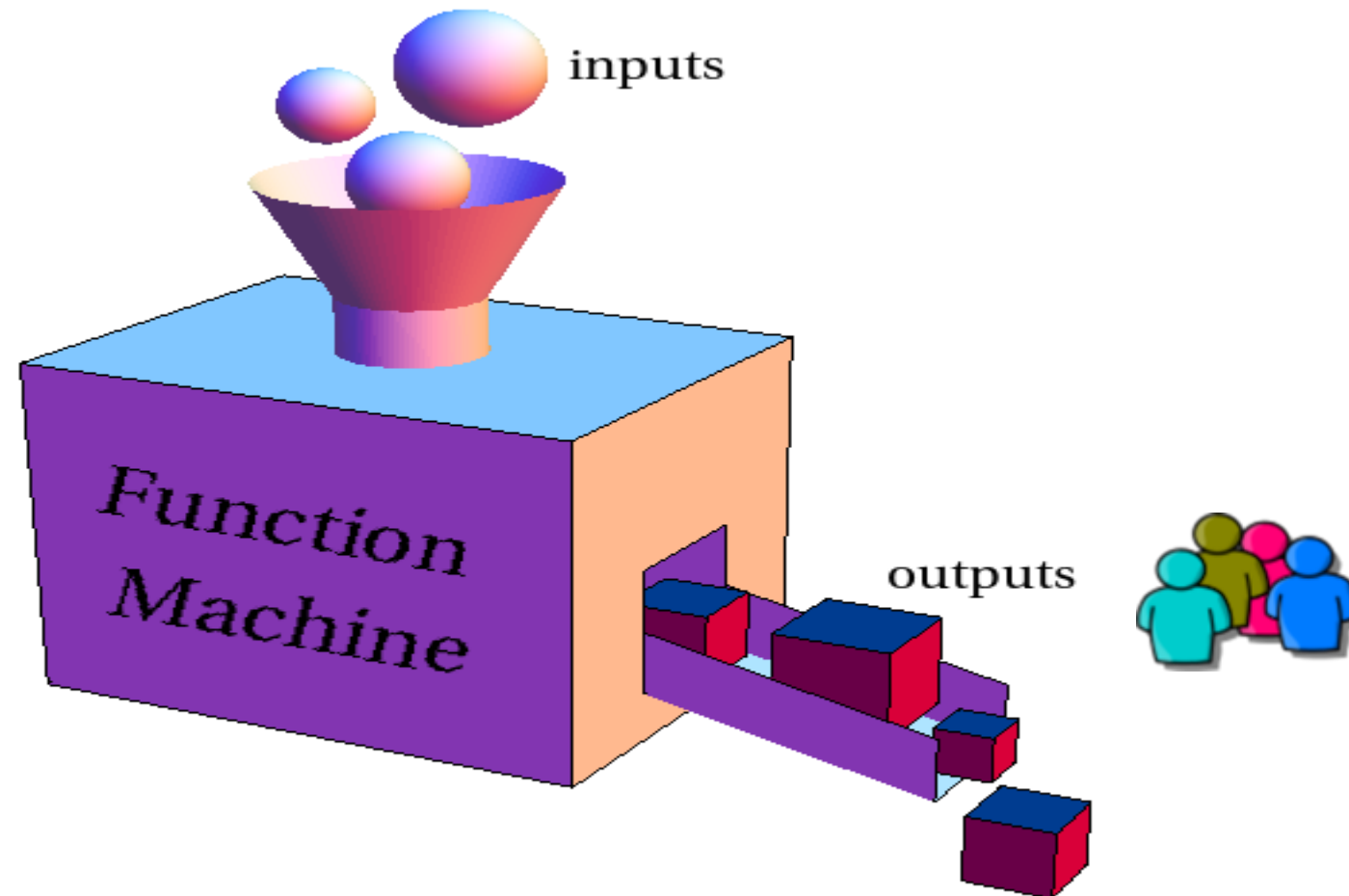
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Get involved with clients work, to better understand their needs and help them to better articulate future requirements





Automate the process as much as possible;
Use the machine to do the 'Heavy Lifting' and
People to finesse the results



Manual Data Process to Machine Data Process

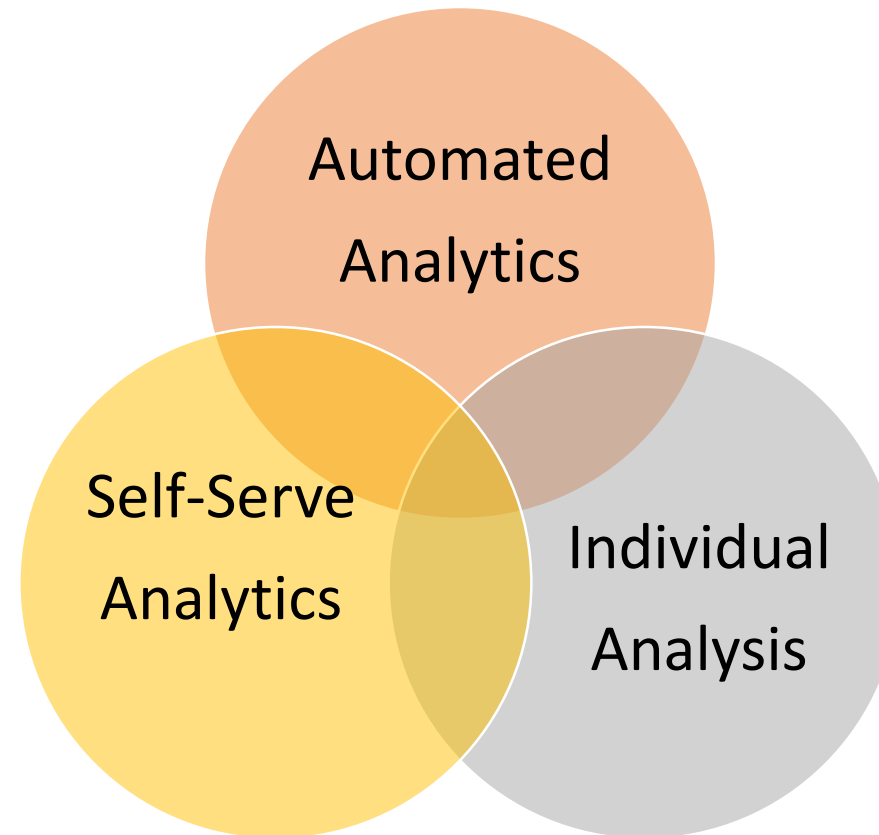
Regular Analytics to Scheduled Analytics

Manual Result Distribution to System Result Distribution

Machine Learning to cover variation in data content

Democratise Analytics by enabling non-technical Users
to understand simple analytics routines and develop their knowledge







“Understanding SAP®”

Martin Riedl (dab) for Data Consulting

London, Dec 01 2017




Martin Riedl

martin.riedl@dab-gmbh.de

One of the two CEOs of dab: Daten
Analysen & Beratung GmbH

Doing data analytics based on SAP® data
since 2004

Participating in large implementations like
Siemens, Bayer and (currently) adidas

- 
- dab: Daten - Analysen & Beratung GmbH
Making analytics fundamental.
 - We help you to get data out of SAP[®], ready for data analytics with our tool **dab:Exporter**.
 - We sell all **ACL[™]** solutions in D-A-CH and provide services for that.
 - In our **dab:AnalyticSuite** we offer readymade analytic tests for SAP[®] data. They analyze data at the push of a button or fully automated.

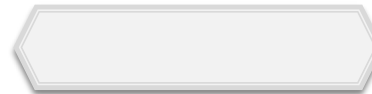
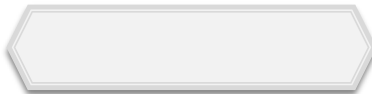
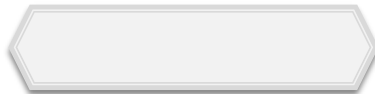
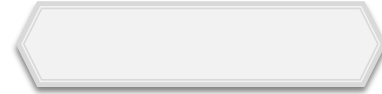
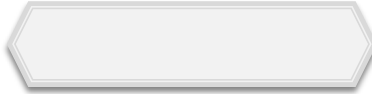
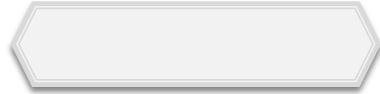
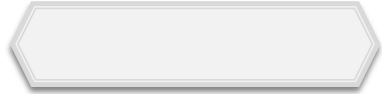


TURNING DATA INTO KNOWLEDGE

References



Ein Stück Sicherheit.





TURNING DATA INTO KNOWLEDGE

Agenda

Three main steps to integrate SAP® analytics successfully



CHANGING DATA INTO KNOWLEDGE

1. Establish a proper way to access your SAP® data

2. Provide ready-made content:
Base tables and analytic tests

3. Use an engine that is powerful & flexible in terms of result formats





TURNING DATA INTO KNOWLEDGE

Challenges & Solutions

Manual
downloads via
SE16



CHANGING DATA INTO KNOWLEDGE

Cumbersome
data formats

Desperately
locating the data
via IT

Accessing your SAP® data should not be a huge effort over and over again.



CHANGING DATA INTO KNOWLEDGE

**Data extraction from
SAP® should be**

Easy-to-
use

Auto-
mated

Stable

Big-data
ready

Data needed for audits



CHANGING DATA IN

Once the data arrived:
Not everyone is a Chef and able to put tons of ingredients together properly. Don't expect everyone to create complex menus.



Step 1:
Provide powerful base populations
ready-to-use for your auditors.
Automate that procedure.

Purchase
order list

Vendor FI
transactions

Sales order
list

Customer FI
transactions

List of all
assets



Evergreen POs

Invoice value vs. Purchase order value



Purchase order splits

Contract circumventions



Purchase orders without requisition

Step 2:
Use that base population for a variety of automated analytic tests.
This is the menu your auditors can select from.



CHANGING DATA INTO KNOWLEDGE

Think about whom to serve the results to guarantee acceptance.

Some need tons of data.
Others need visualizations.

Too much data might be hard to digest





Detail transactions



Visualizations



KPI/KRI



ACL™ AN



ACL™ AX Web browser access



MS Excel™

Provide data access options and styles for different user types.



TURNING DATA INTO KNOWLEDGE

Some Traps

Working with monetary values and currencies

- Make sure you are not comparing apples and pears.
- You will very likely face different currencies in your data, even you are looking only at one company!



The currency you are purchasing in
Document Currency is ALWAYS available



The currency this company (code) is posting in
Local Currency is ONLY available in Finance Data



The currency you might want to use for reporting
Reporting currency not customized in 95 % of SAP Systems

Working with monetary values and currencies

- Make sure you are not comparing apples and pears.
 1. In Procurement or Sales data NEVER build totals without checking if you have different currencies.+
 2. In Finance data, always use Local Currency (DMBTR) as long as you stay within one company or in a couple of companies sharing the same posting currency.
 3. If you have to report over multiple companies and currency in ONE Reporting Currency – there is no option other, than calculating yourself (or use our Analytic Suite 😊).

Working with monetary values and currencies

- Make sure you are not comparing apples and pears.
- *You think that was complicated? Take this!*

Tokyo macOta-ku	2000	20000000001	1	01.03.2000	01.03.2000	31.03.2000	JPY		ZP	3	25		S	1000	546.000,00
-----------------	------	-------------	---	------------	------------	------------	-----	--	----	---	----	--	---	------	------------

Data Browser: Tabelle TCURX 1 Treffer

Währungsschlüssel	Dezimalen
JPY	0



0 Decimals means – shift the comma two digits right

Erfassungssicht

Belegnummer	2000000001	Buchungskreis	5000	Geschäftsjahr	2000
Belegdatum	01.03.2000	Buchungsdatum	01.03.2000	Periode	3
Referenz		Übergreifd.Nr			
Währung	JPY	Texte vorhanden	<input type="checkbox"/>	Ledger-Gruppe	

B...	Pos	BS	S	Konto	Bezeichnung	Beleg	Währg	St	Kostenstelle	Auft
5000	1	25		5002	One time vendor	54.600.000	JPY			
	2	50		111202	Bank 1 (A-Ueberw.Inl	54.600.000-	JPY			

The Document Type Thing – never trust the obvious

- *Whenever you want to identify all invoices within your vendor transactions – what filter will you use?*
- A lot of data analytic projects are using Document Types to identify invoices. The vendor entry should be at the credit side of the balance sheet, right?

Posting Date	<input type="text"/>	to	<input type="text"/>	↕
Document Date	<input type="text"/>	to	<input type="text"/>	↕
Entered on	<input type="text"/>	to	<input type="text"/>	↕
Currency	<input type="text"/>	to	<input type="text"/>	↕
Document Type	RE	to	<input type="text"/>	↕
Debit/Credit	<input type="text"/>	to	<input type="text"/>	↕
Width of Output List	250			
Maximum No. of Hits	500			

ZIDSDATA	RE	1	21	H	V1	5.535,06	
	RE	3	21	S		63.780.337,20	124
	RE	3	31	H		63.780.337,20	124
ZIDSDATA	RF	4	31	H	5000 V1	930 98	

Is that really the best approach?

The Document Type Thing – never trust the obvious

- Document Types and their usage are customizable in SAP.
 1. You can never be sure that a document type that says „Vendor Invoice“ (KR) only contains invoices – it could be used for credit notes as well.
 2. How do you make sure, that you cover all relevant document types and keep doing that, if you go into a automated environment over years?
 3. Go for the „uncustomizable“ stuff in SAP. For identifying financial transactions and their nature, go for posting keys – especially in vendor and customer ledger.

The Document Type Thing – never trust the obvious

- *Whenever you want to identify all invoices within your vendor transactions – USE POSTING KEYS!!!*
- Posting keys are not customized (look it up – if „31“ does not say invoice in your system, I owe you a beer‘).
- And it is the ONLY posting key used for Vendor Invoices.

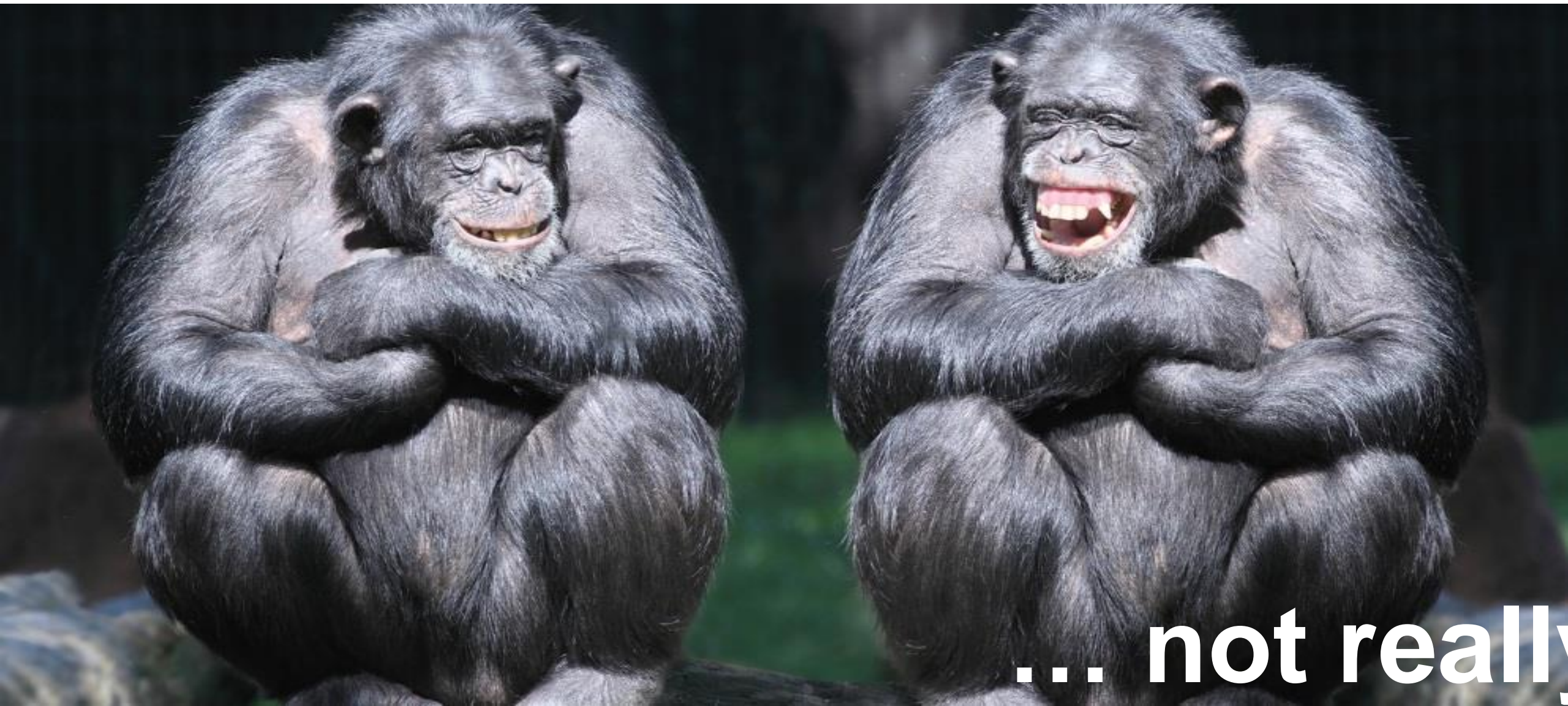
Data Browser: Table TBSL Select Entries 16

Check Table...

Cl.	PK	D/C	AccTy	Sls-rel	Payment	Reverse	Special G/L	Posting key name
800	21	S	K	X		32		Credit memo
800	22	S	K	X		31		Reverse invoice
800	24	S	K			34		Other receivables
800	25	S	K		X	35		Outgoing payment
800	26	S	K		X	36		Payment difference
800	27	S	K			37		Clearing
800	28	S	K		X	38		Payment clearing
800	29	S	K			39	X	Special G/L debit
800	31	H	K	X		22		Invoice
800	32	H	K	X		21		Reverse credit memo
800	34	H	K			24		Other payables
800	35	H	K		X	25		Incoming payment
800	36	H	K		X	26		Payment difference
800	37	H	K			27		Other clearing
800	38	H	K		X	28		Payment clearing
800	39	H	K			29	X	Special G/L credit



But S4/HANA will change
everything...



... not really



TURNING DATA INTO KNOWLEDGE

One more thing...

Happy
Holidays!

:-)



CHANGING DATA INTO KNOWLEDGE

Thank you!



CHANGING DATA INTO KNOWLEDGE

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