2017 CAE Fall Meeting

SYSTEMORPH®

The Good, the Bad, and IFRS17 Data

Dr. Pedro Fonseca
Head of Business Solutions
Systemorph AG

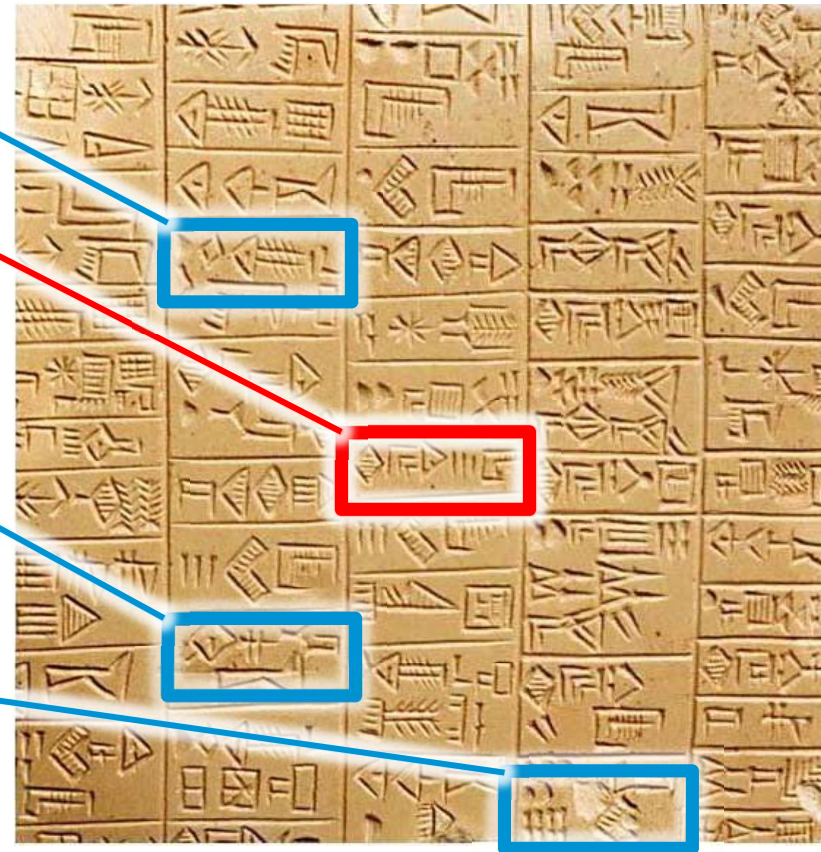London – October 4, 2017

The Title

IFRS 17 – Then

CSM?

CF?

RA?

Sumerian Accountant,
from 3200 B.C.

Sumerian Cuneiform Tablet,
from 26**17** B.C.

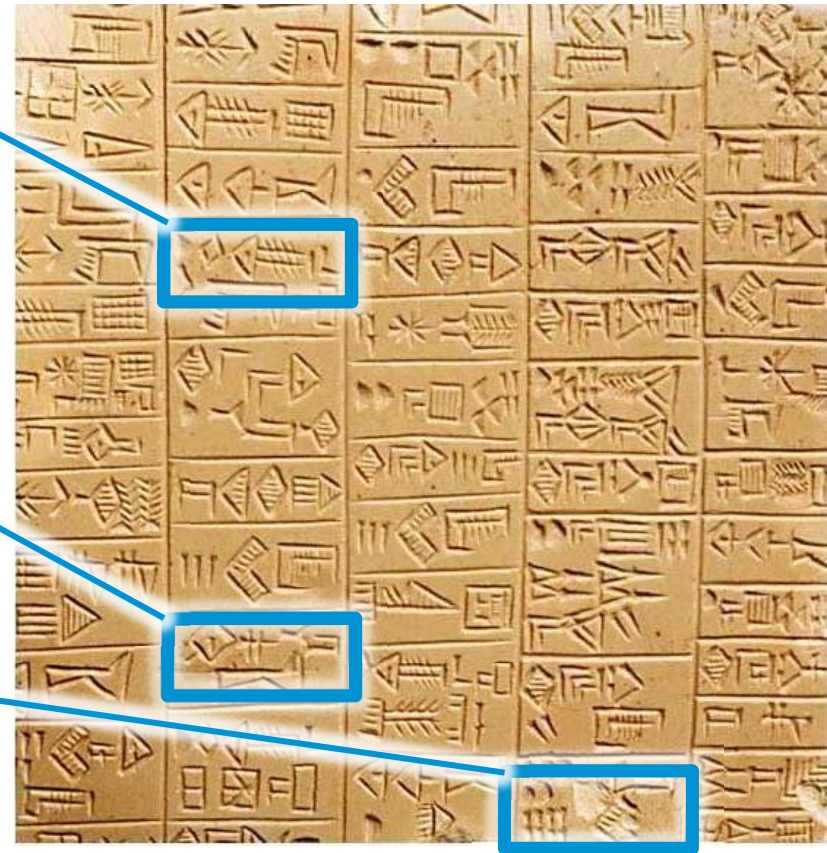# IFRS 17 – In Between

People went around telling the story

IFRS 17 – Today

Contractual Service Margin

Cash Flow

Risk Adjustment

So What?

- What is it all about?

Data,
their Relationships
and Validations

Formulas are trivial,

Keeping track of their Relationships is not

The Big Picture

How to adapt to the

- (fast) Growing Regulation? (Solvency II, ORSA, EMIR, IFRS 17, ...)

- (fast) Growing Complexity?

- Strong Competition?

Under the need to

- Reduce Costs

- Increase Speed

- Increase Efficiency

- Handle Legacy Systems

Answer: With not just any IT Project

Data Mgmt. – Often underestimated

- In IT Projects, Data Management **is too often underestimated**

- Although one hears that «**data is the new oil**»

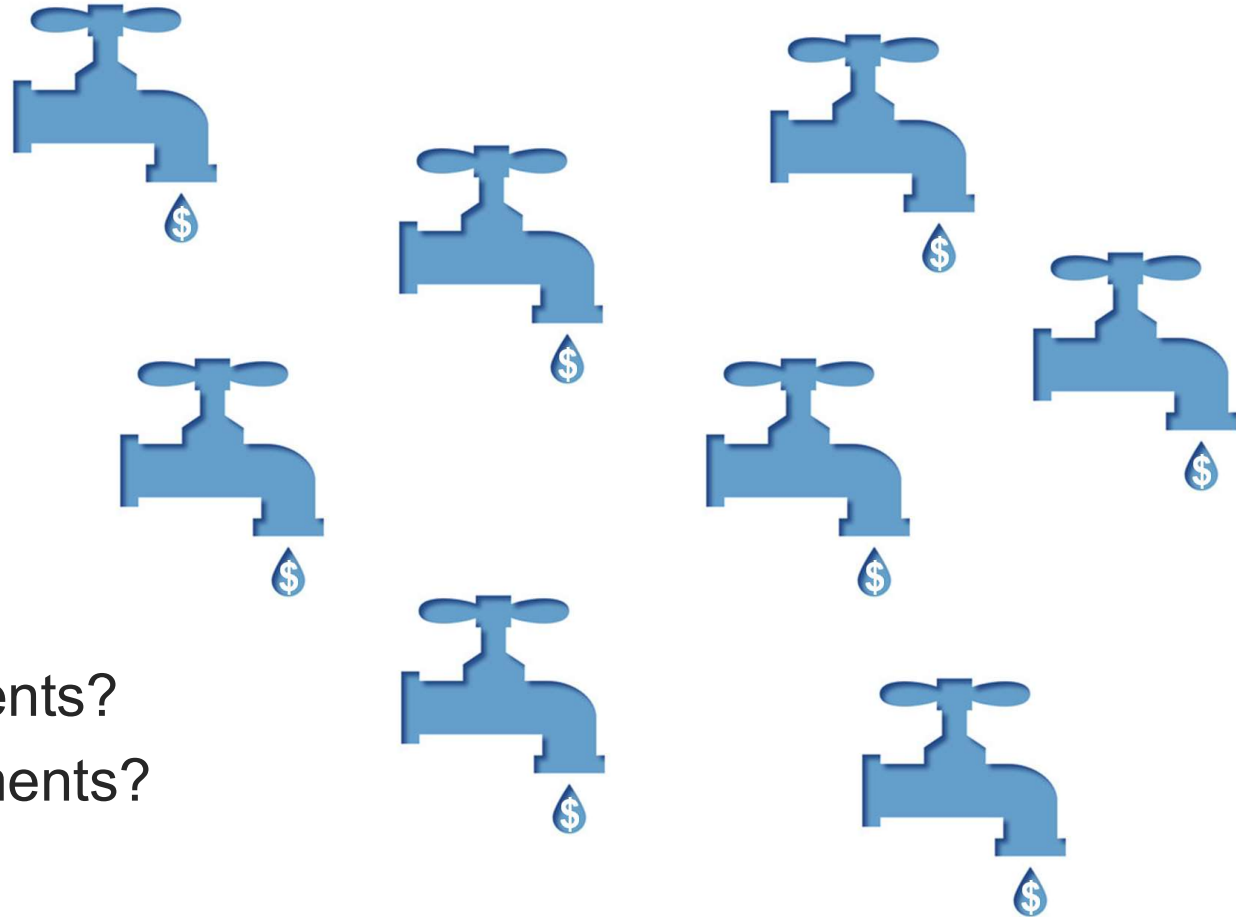- Or we can think that **data is the water** which every company needs

Underestimating its management will likely lead to a **Waste of Resources**

Where does the shoe hurt?

- Policies?
- Pricing?
- Reserving?
- Claims?
- Accounting?
- Reporting?
- Planning?
- Capital requirements?
- Liquidity requirements?

Traceability **Maintenance Reproducibility** **Collaboration Consistency** **Transparency**

(The Right) Technology

Is it the right technology?

- Extract-Transform-Load?
- No-SQL Database?
- Excel Files?

> **Horror stories** from the European Spreadsheets Risks Interest Group: www.eusprig.org/horror-stories.htm

Maybe a cutting edge technology is needed?

- Web Applications
- Cloud Solutions
- Data Virtualization
- Versioning

Financial Industry is unlike E-Commerce

SYSTEMORPH®

- In **E-Commerce:**
  - Data quality is **not so relevant** (e.g.: Data Lake as data store)
  - **High throughput** and **scalability** (Big Data) are crucial

- In **Financial Industries**:
  - **Transactional safety** is often a pre-requisite (extreme e.g.: Blockchain)
  - Data is semantically **complex**, with complex inter-dependencies
  - Data needs to be **joined** in non-trivial ways
  - **Data quality** is highly relevant

The technology should suit the problem, and …

Data should be properly Structured

- Properly **structuring of the data** is crucial

- These are some examples on **non-structured** data:
  - data in text
  - data in pictures
  - data in video
  - and yes, data in **Excel** (it just looks like it is structured)

> **Structuring of the data** is achieved by:
> - Defining a **data language** and
> - **Assigning** the data into this language

IFRS 17 (1/2)

- "One of the **biggest operational challenges** insurers face to date"

- It's not merely accounting topics, but fundamentally related to **Data Integration**

  - Systems have grown in **silos**, data exchange is largely **file based**, and needs human interaction to match the data language required by Group Reporting

  - Many of these systems are not easy to maintain, and the data languages are different and hard to align

A **Common Data Language** needs to be created

in order to fulfil group reporting requirements

IFRS 17 (2/2)

- Needs **Traceability** and **Reproducibility** of all data & calculations to the source

- Needs **Consistency** and **Transparency** of the data submitted by the business units to group reporting

- Special attention should be drawn to **Data Versioning**, since

  o Most of the reference data evolves over time

  o Organizational changes will require the reporting units and portfolios to be adapted not to violate referential integrity)

Data Lineage for Dummies

- It's a bit like this:

$-123 = -140 + 17$

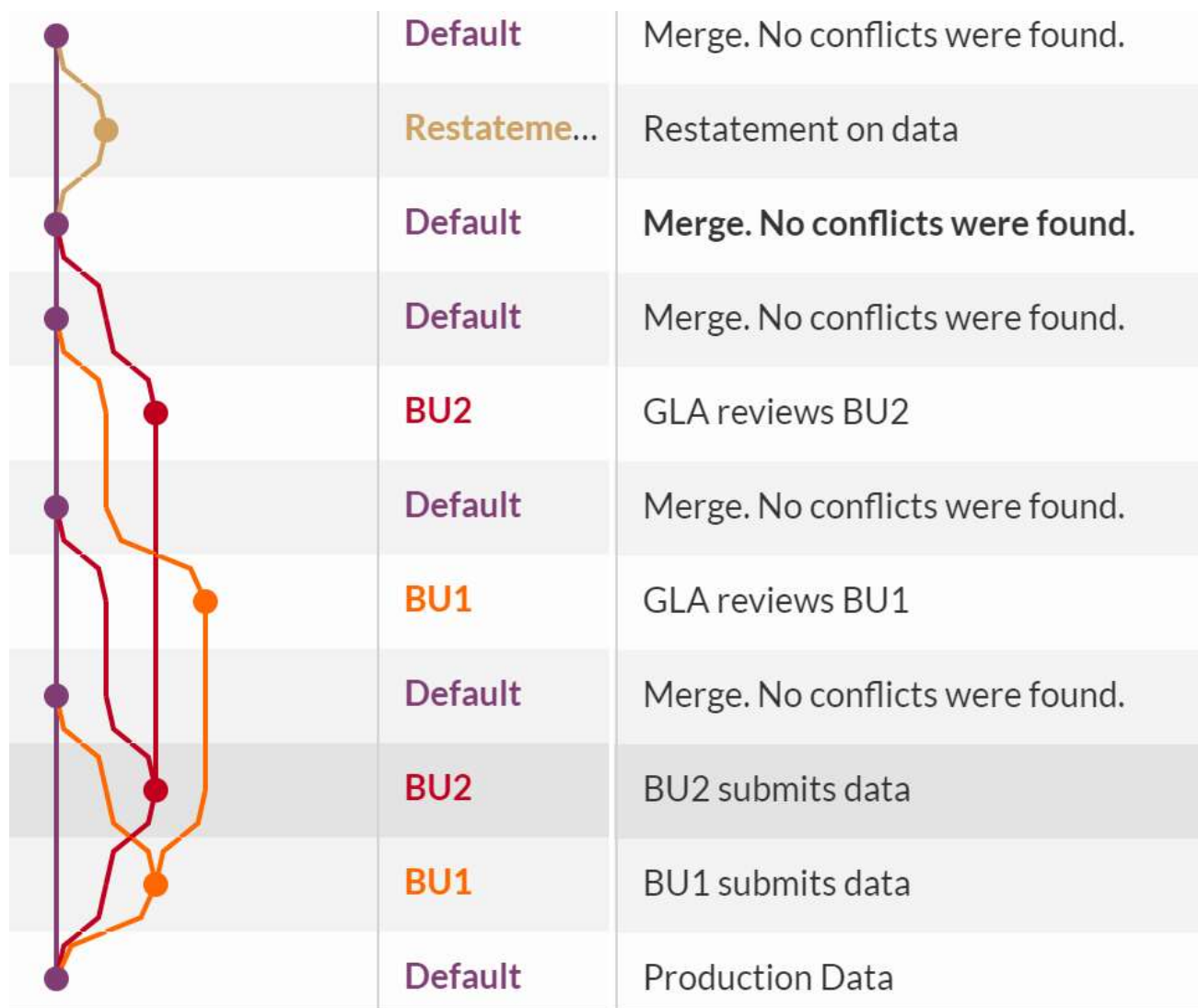$-140 = -110 + 12 + 8 - 50$

$-110 = -200 * 55\%$

$-200 = -2900 / 10$
$+ 90/9 + 80/8 + 70/7 + 60/6 + 50/5 + 40/4 + 30/3 + 20/2 + 10$

Drilling down the Balance Sheet

Many KPIs, Many Units of Account, Many Lines of Business, Many Reporting Periods, Many Sources…

Data Consolidation using Versioning

SYSTEMORPH®

Default	Merge. No conflicts were found.
Restateme...	Restatement on data
Default	**Merge. No conflicts were found.**
Default	Merge. No conflicts were found.
BU2	GLA reviews BU2
Default	Merge. No conflicts were found.
BU1	GLA reviews BU1
Default	Merge. No conflicts were found.
BU2	BU2 submits data
BU1	BU1 submits data
Default	Production Data

Restatements are made transparently in a corresponding branch. All data states are fully traceable

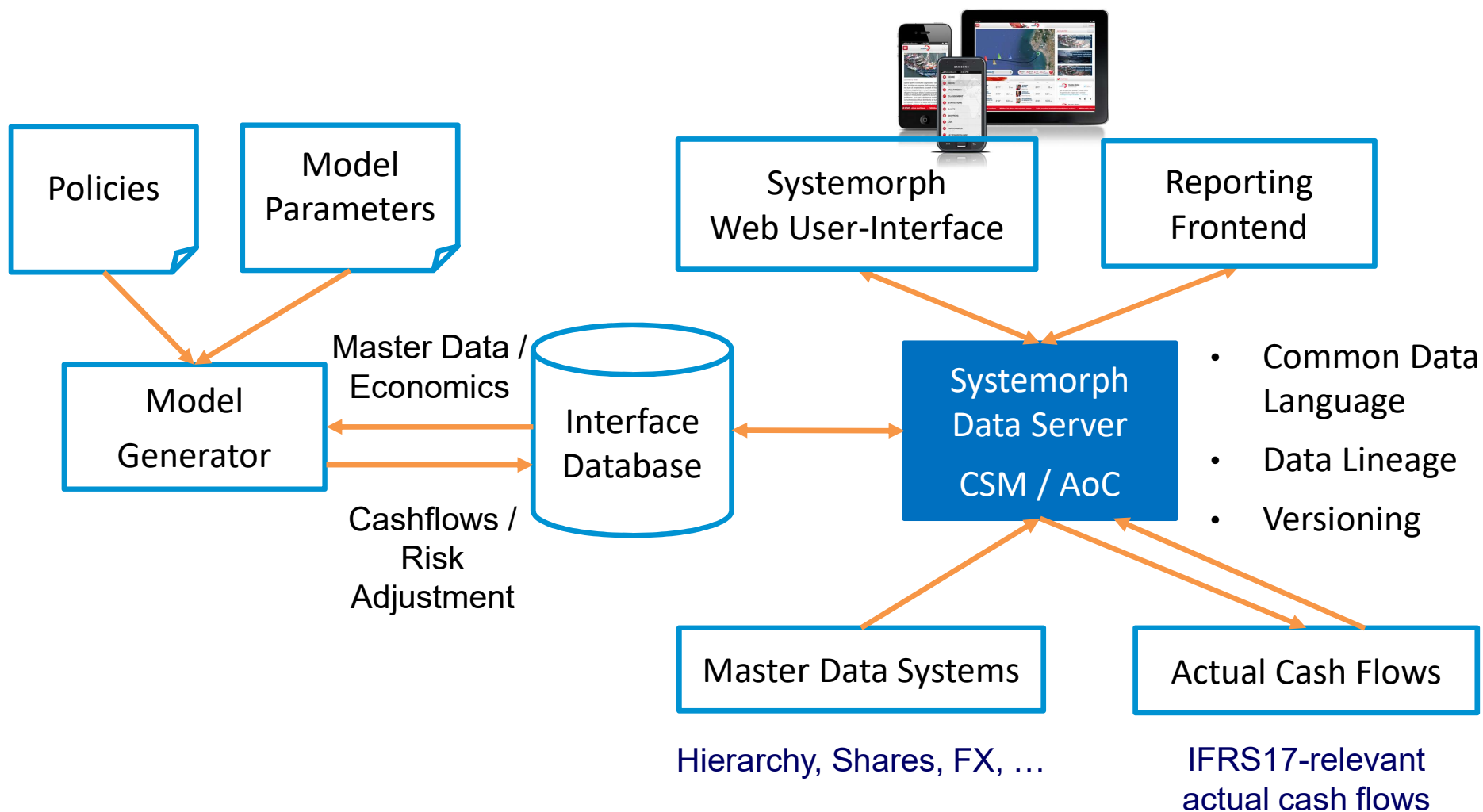Any number of dedicated states can be captured and rolled back to; for each BU separately

Data become visible upon merging in production branch.

BUs can work concurrently in their respective versions

Each BU works in its own data branch without disturbing other BUs. Data is hidden.

IFRS 17
E.g. Systemorph-based Architecture

Policies

Model Parameters

Systemorph Web User-Interface

Reporting Frontend

Model Generator

Master Data / Economics

Interface Database

Cashflows / Risk Adjustment

Systemorph Data Server

CSM / AoC

- Common Data Language
- Data Lineage
- Versioning

Master Data Systems

Actual Cash Flows

Hierarchy, Shares, FX, …

IFRS17-relevant actual cash flows

Demo

IFRS 17

Closing Remarks

- IT Project challenges can be best handled by:

  o Not underestimating the management of data

  o Properly **structuring the data** (e.g. Excel will not do)

  o Introducing a **common data language** (e.g. suited for group reporting)

  o Using the **technology** appropriate to the problem (e.g. Versioning for reference data, data consolidation, etc.)

Btw, structuring data is **not** like this
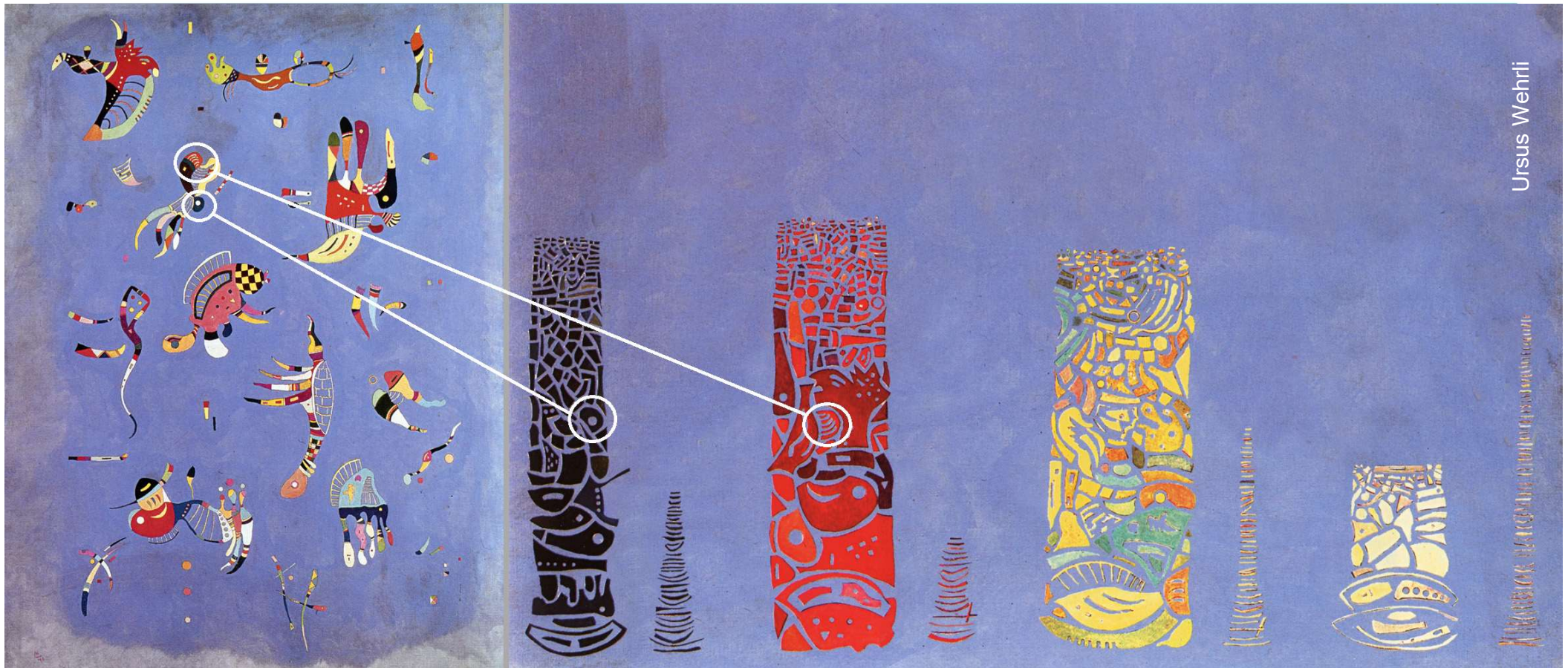
Ursus Wehrli

Before: We had unstructured data with **relationships**

After: We have unstructured data with **other** relationships, i.e. **data-wise we are worse off**

Thank you for your participation

For comments & questions contact:

Pedro Fonseca

pfonseca@systemorph.com

Systemorph AG at a Glance

Background

- Founded in 2011, with Headquarters in Zürich fast growing.

Customers

- Global financial services firms, focus on (Re)Insurance and Banks

Mission

- Revolutionize software solutions for financial institutions
- Streamline and simplify actuarial functions and risk analysis

Team

- Enterprise systems, risk and capital management, modeling, information management
- The vast majority holds master's degrees in computer science, physics or mathematics

Systemorph – Re(Insurance) Use Cases Selection

- **Master Data Management**
  - o Data servers for company master data
  - o Swiss Re: Pricing Parameter Store

- **Data Collection / Reporting**
  - o Financial consolidation
  - o Consolidation of key economics and mangement reporting

- **IFRS 17**
  - o Integrated Data Management
  - o Reporting & Consolidation
  - o IFRS Model Engine