

# 25 DATA PRINCIPLES TO ABIDE BY

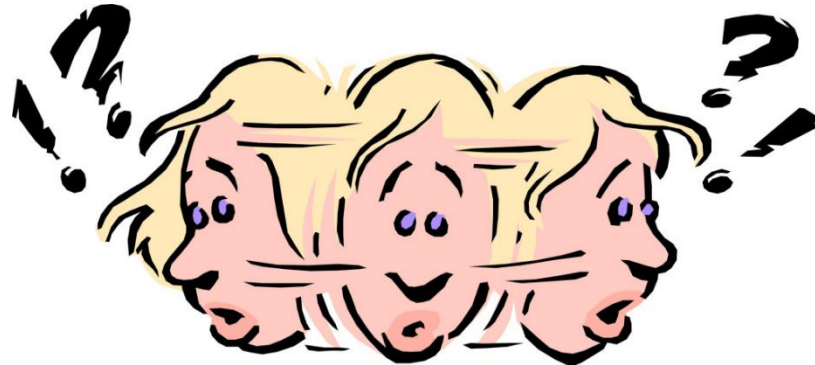
PRAVIN NADKARNI

# 1. Data should have One Master

A data value should not be maintained by multiple systems



I've got to call the customer about their order ...  
But, which number should I call ???



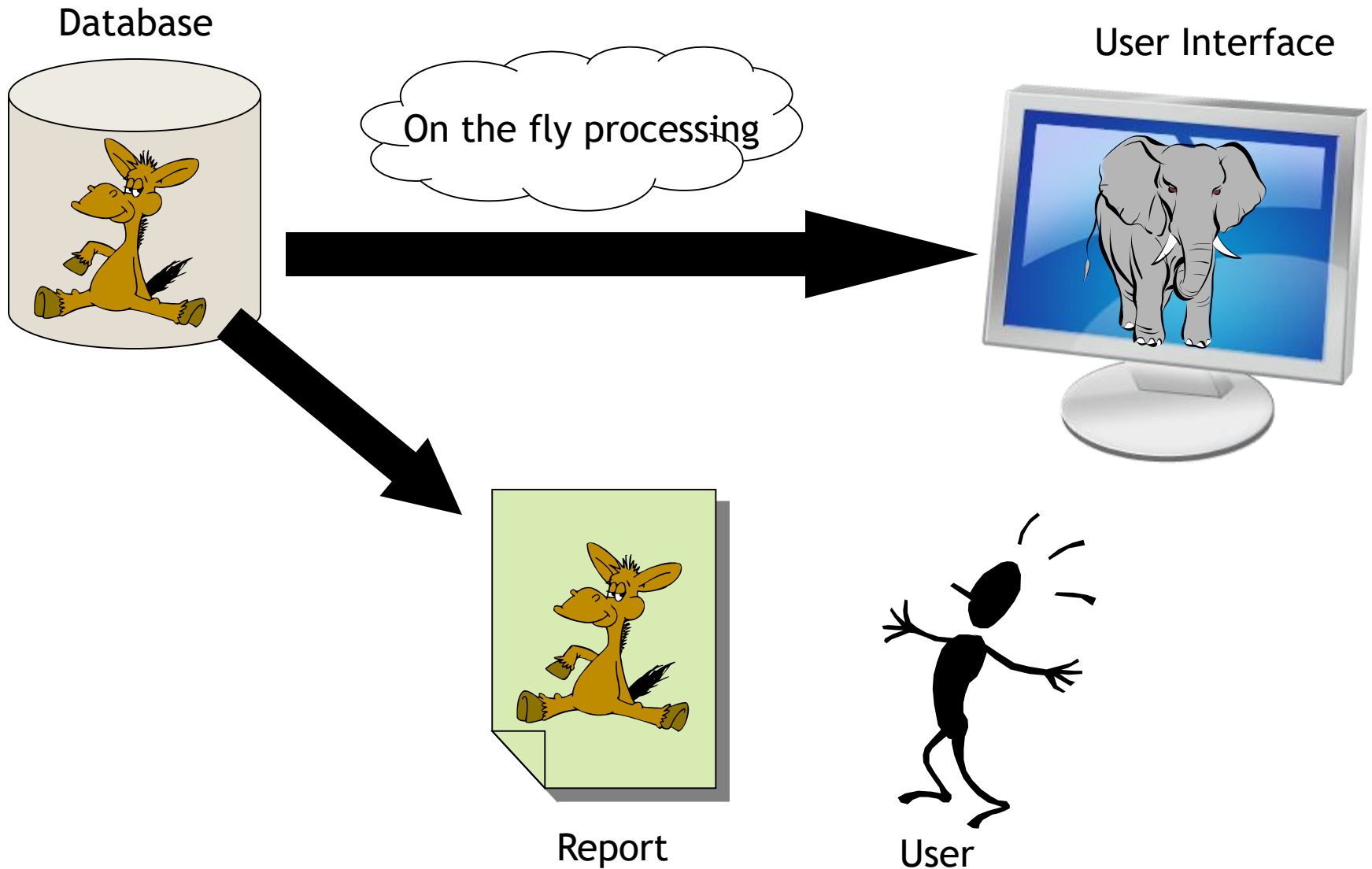
The phone number in  
CRM is different...

from the one in the  
Accounts system ...

than the one in the  
Orders system!

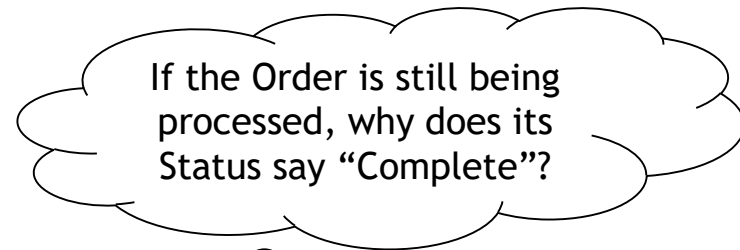
## 2. Store data as displayed

Do not apply business rules on-the-fly



### 3. Reflect status accurately in data

Do not train users to derive correct values in their heads



User



Training Manual

Check the Order Status

If "In Queue" or "In Progress" then

Order Processing is as stated

If "Complete" then

Check the Invoice Status .. if it is "Paid",

Check the Dispatch Date ... if  $\leq$  current date

Get the Dispatch Batch Number

Check its status ...

If it is "Mailed" then

Order Processing is "Complete"

Otherwise Order Processing is "In Progress"

## 4. Keep data value simple and atomic

It should not mean multiple things

If the customer status is SMART  
that means the customer is Single Male  
from Albania who has Requested Termination.

Then, what's STUPID ?



## 5. Avoid ambiguity in data values

Prevent misinterpretation



## 6. Data meaning should be unique

Keep them distinct





## 7. Do not alter data meaning over time

People and processes rely on the data definitions

“FB” on NASDAQ until 2017 :



“FB” on NASDAQ in 2017 :

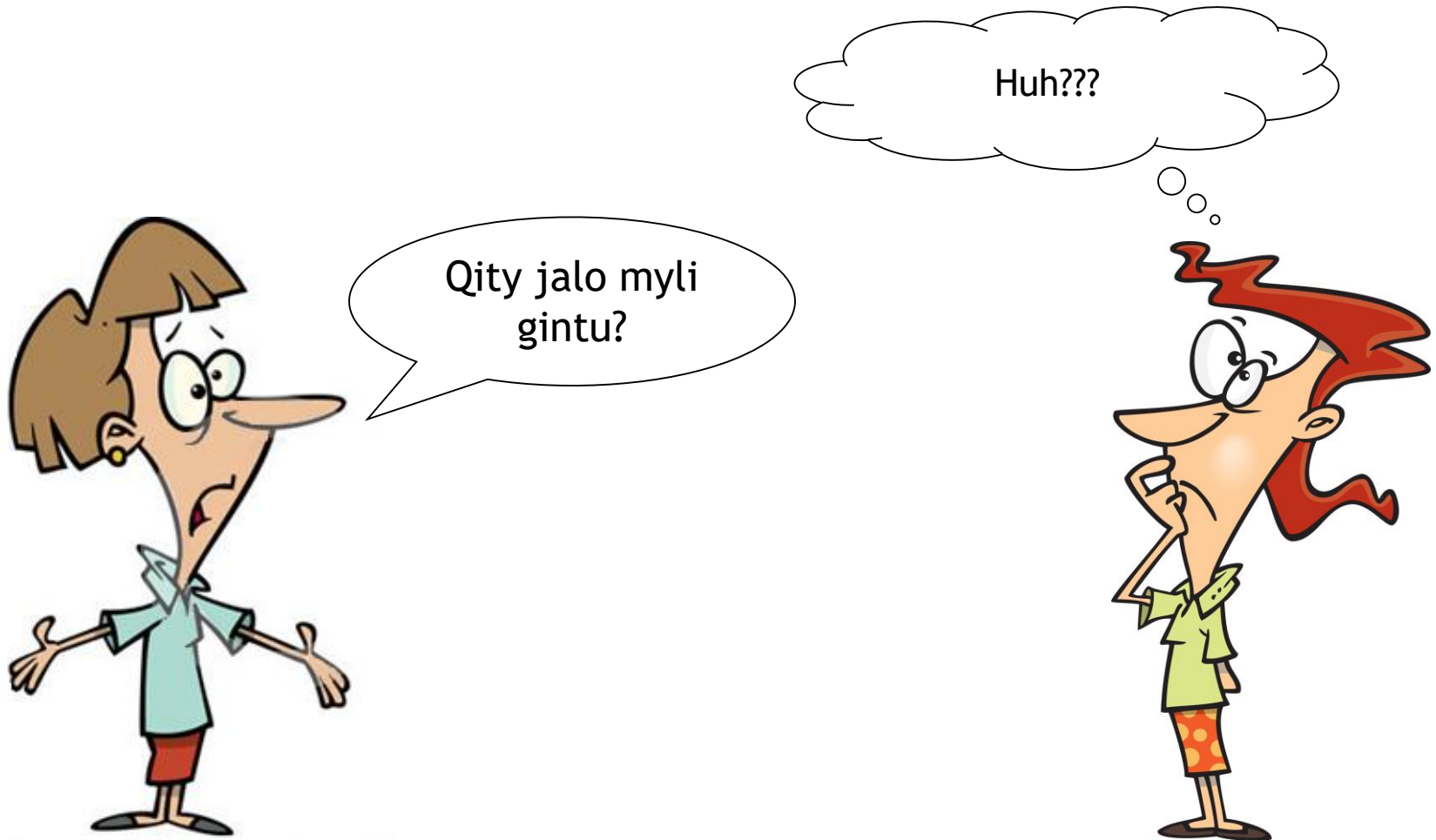
Franco Buena's Shady Inc.





## 8. Adopt industry standard codes and structures

Simplify communication with other parties



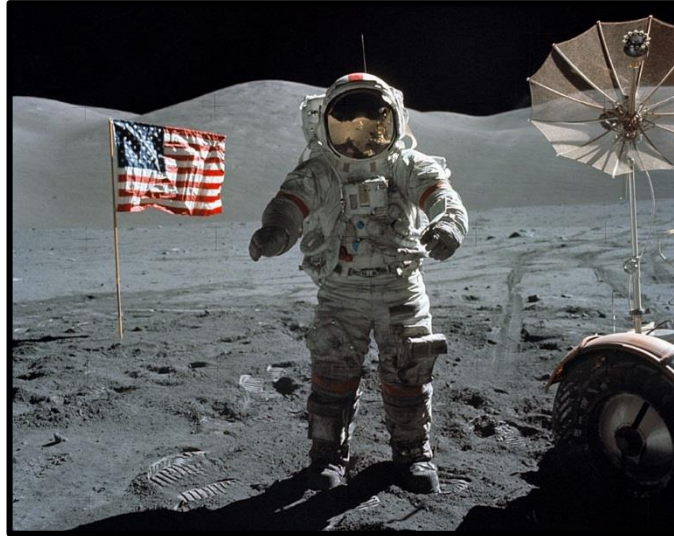
## 9. Derive data once

Spare them the reinvention effort and agony!



## 10. Timestamp updates to data

Otherwise, how would you know when events occurred?

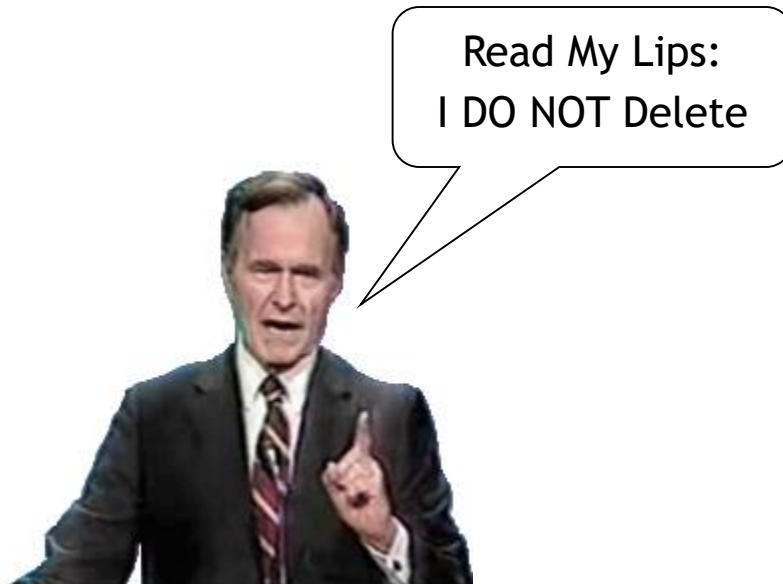


When did we first  
land on the moon?

1776?

# 11. Systems should not drop records

Provide means to void them



Users press the delete button  
no matter what they claim or deny.

It is best to void the records.



## 12. Do not repurpose data structures

Use only as intended by its designer



# 13. Design data services for reuse

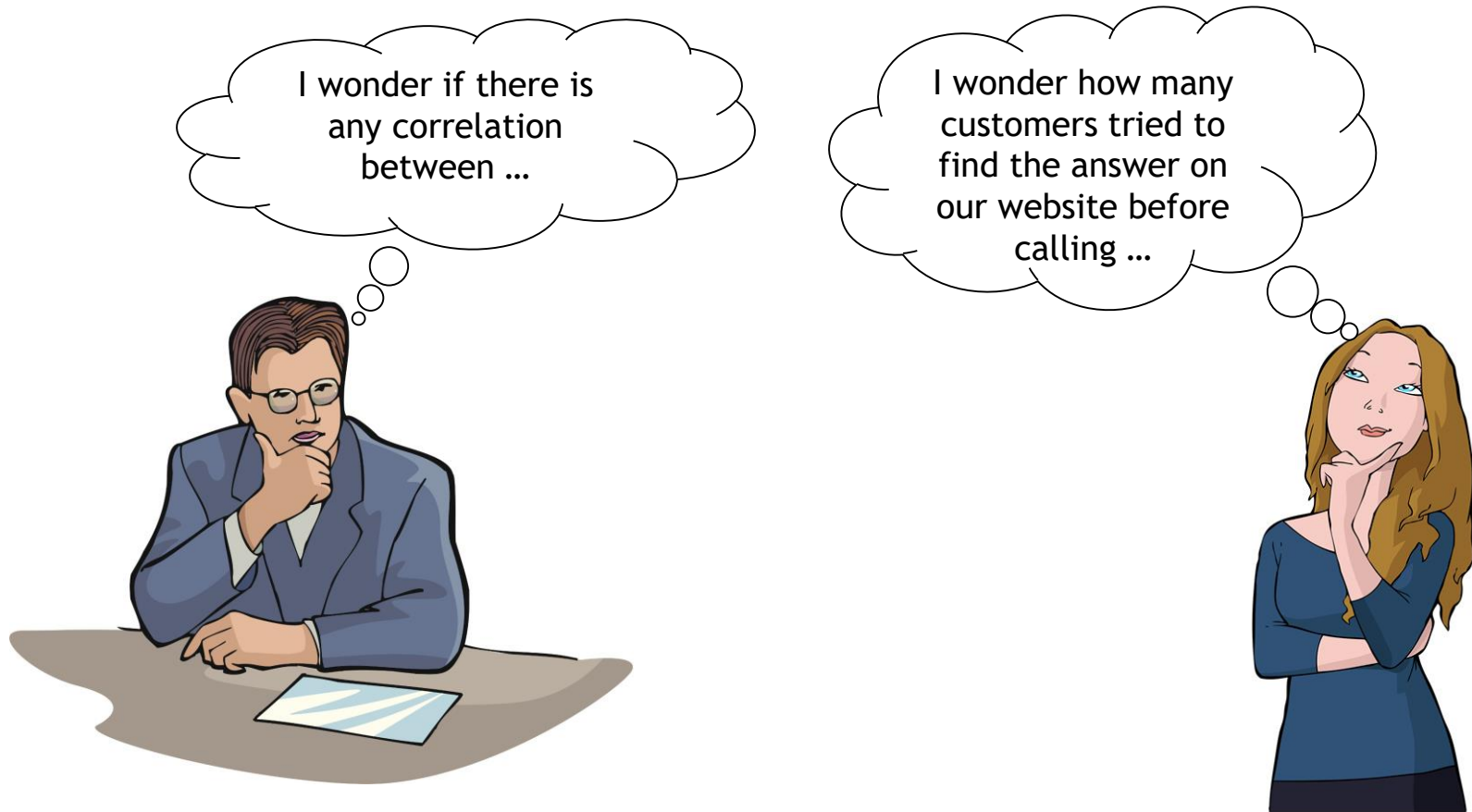
General purpose configurable services enable wider use





# 14. Collect all possible data

Someone will mine valuable insights from it one day



Gather data that may not be necessary for processing but provides deep visibility into operations, interactions and behavior.



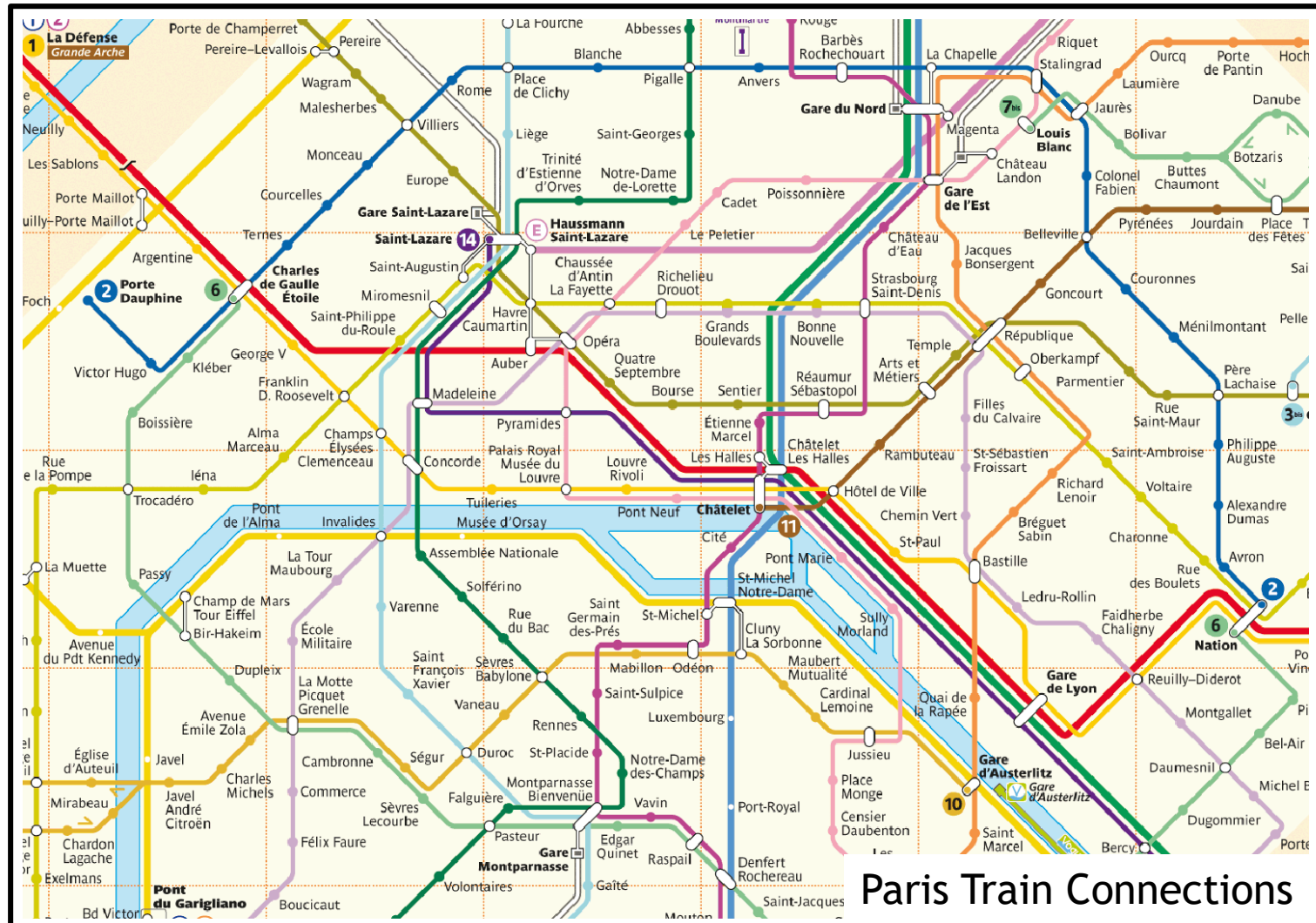
# 15. Capture data change history

Get snapshots of how data changed since its creation



# 16. Connect the data

Connections make them valuable





# 17. Plan ahead for data growth

Infrastructure should scale to meet the demand



## 18. Make data accessible

Authorized users should have easy access to information



Magnificent  
Building!

Would have been  
nice if it had  
elevators!!

## 19. Validate data at entry

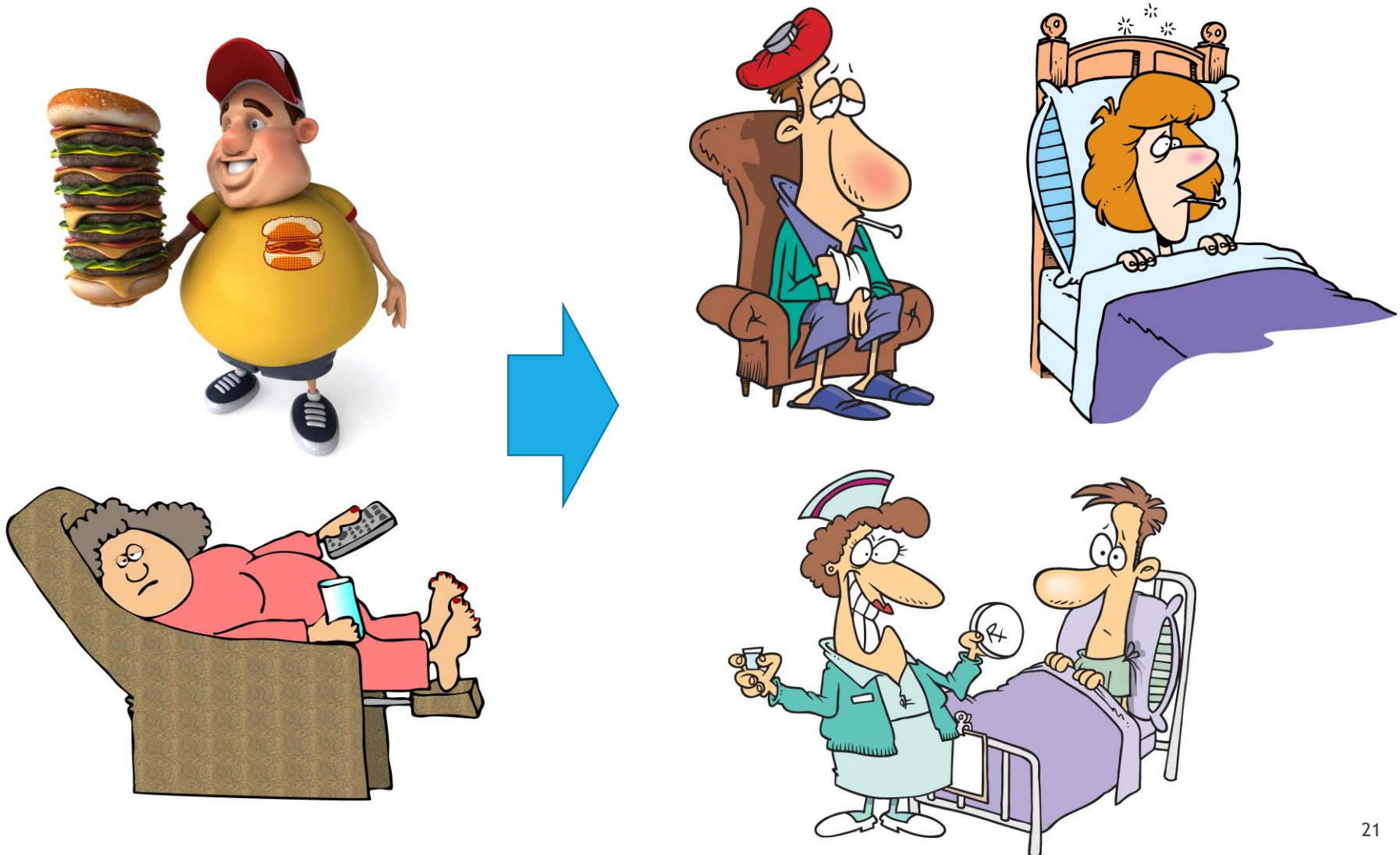
You do not know what will get entered on the screen!





## 20. Correct data error at its source

Fix the root. Otherwise, you have to repair it again and again and ...



# 21. Be mindful of data dependencies

## Upstream and Downstream



*“... could not wait for foundation to be built. It would have impacted our schedule.”*



## 22. Apply data controls

Detect and prevent undesirable outcomes



## 23. Adopt uniform practices

It simplifies training, development and maintenance



## 24. Protect data

Users should have the minimum access necessary to do their jobs effectively



One breach is all it takes!

# And finally, the Mother of All Principles



Please please ...  
Think beyond your little systems !

**Think Enterprise !!**

Keep your sight on the big picture. Always.  
Consider long term impact of all decisions.



TO SUMMARIZE ...

DATA SHOULD HAVE  
**ONE MASTER**

KEEP DATA VALUE SIMPLE AND ATOMIC

CONNECT THE DATA DATA MEANING

AVOID AMBIGUITY IN DATA VALUES SHOULD BE UNIQUE

REFLECT STATUS ACCURATELY IN DATA

CORRECT DATA ERROR AT ITS SOURCE ADOPT INDUSTRY STANDARD CODES AND STRUCTURES

**THINK ENTERPRISE**

STORE DATA AS SYSTEMS SHOULD NOT DROP RECORDS

BE MINDFUL OF **PLAN AHEAD**

DEPENDENCIES FOR DATA GROWTH  
DO NOT ALTER DATA MEANING OVER TIME

DESIGN DATA SERVICES FOR  
TIMESTAMP UPDATES TO DATA **REUSE** PROTECT DATA

DO NOT REPURPOSE DATA STRUCTURES ADOPT UNIFORM PRACTICES

COLLECT ALL VALIDATE DATA **MAKE DATA ACCESSIBLE**

POSSIBLE DATA AT ENTRY CAPTURE DATA CHANGE HISTORY

**APPLY DATA CONTROLS** DERIVE DATA ONCE