

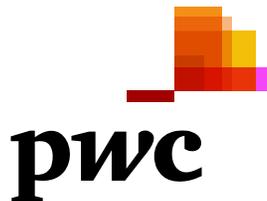
# ***Use of data and technology in the audit***

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The views expressed are my own personal views and do not reflect those of the PCAOB, members of the Board, or the PCAOB staff.



# ***Transforming the audit through innovation***

## ***-Why is this important?***



Technology is transforming and disrupting industries



As a profession, we also look to transform the audit through technology and innovation



Data analytics is changing both the way we conduct our audits and what those audits deliver. It allows us to extract and analyze ever-larger data sets



Further use of data analytics will allow us to deliver effective audits more efficiently



This transformation can improve client and auditor experiences and provide valuable insights

# Illustration: Dashboard summarizing a profile of journal entries



Company ABC 2013-01-01 - 2013-11-30  
Journals

Company code ▼

Selection: All



## Dashboard

**30,207**

Total no journals

**3,197**

Journals < USD 10

**7.1**

Average lines per manual journal

**7**

Number of users

**1**

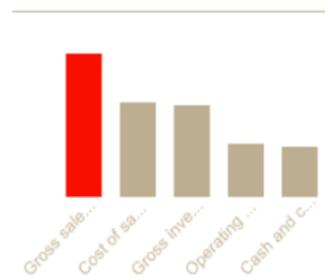
Users posting < 10 journals

### Top 5 FSLI

Value USD (m)

**21.3**

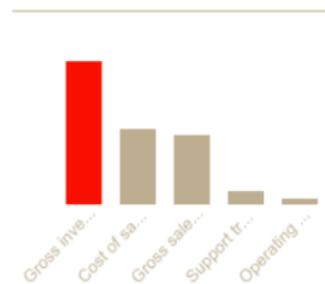
Gross sales



Volume

**274,037**

Gross inventories

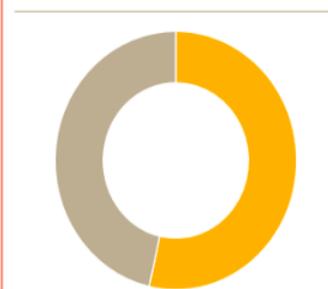


### Automated vs manual

Value

**54%**

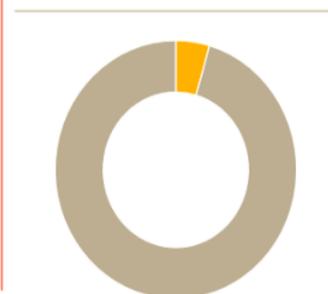
% manual



Volume

**5%**

% manual

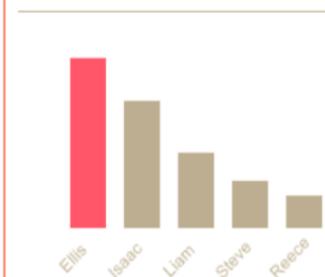


### Top 5 manual users

Value USD (m)

**55.0**

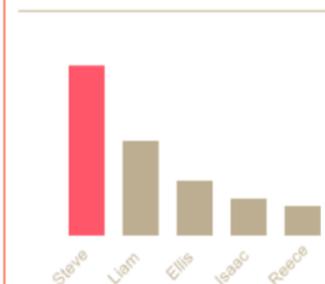
Ellis



Volume

**600**

Steve

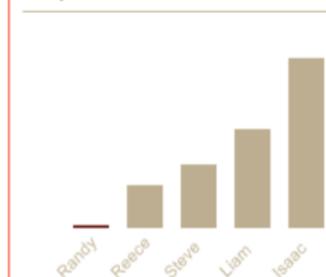


### Bottom 5 manual users

Value USD

**635,102**

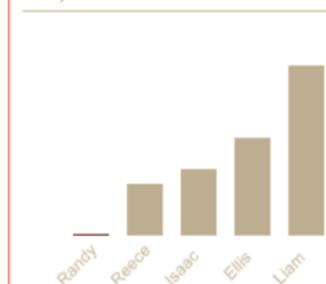
Randy



Volume

**3**

Randy



# Illustration: Journal entries volume visualization



Company ABC 2013-01-01 - 2013-11-30  
Journals



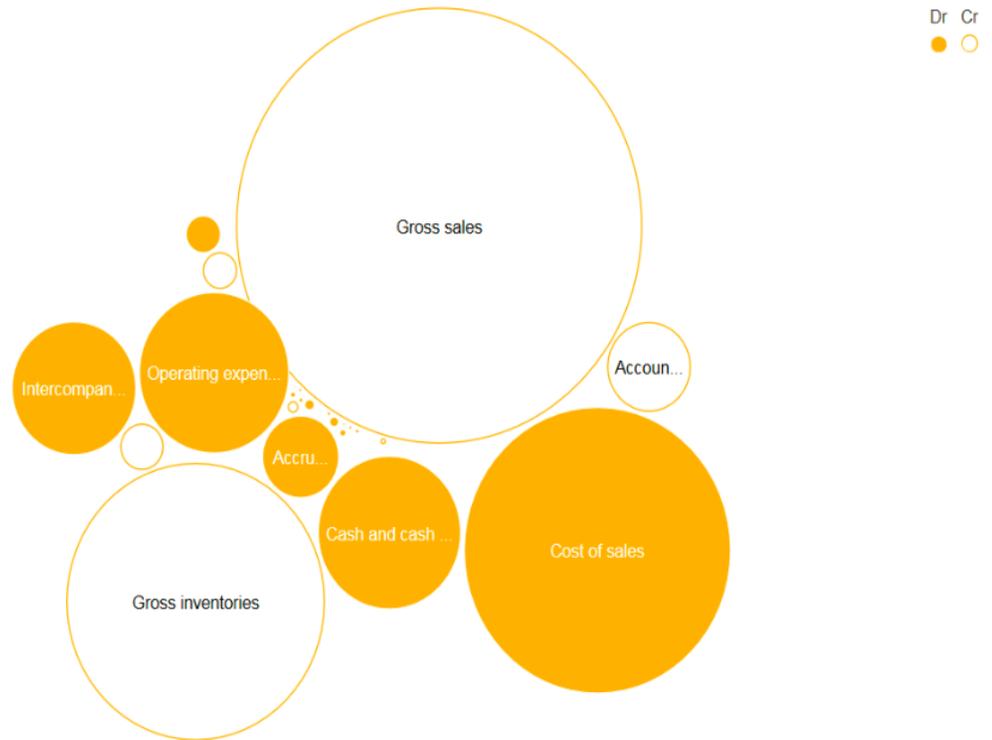
## Testing

### Select test

- All data
- Backdated items
- Benford's Law
- Create and approve
- Duplicates and reversals
- Large entries
- Large items
- Post close entries
- Unexpected account combinations
- Unexpected users
- Unusual amounts
- Unusual days
- Unusual times
- Unusual words



Distinct journals	Journal lines	Total debits	Total credits	Total net PL
30,207	601,230	273,784,898	-273,784,898	410,129



# Illustration: Journal entries example test visualization



Company ABC 2013-01-01 - 2013-11-30

## Journals

Test: Create and approve

Test variables

FSLI | Account code and name | Creator ID | Month | Period | Source

Net value | Gross value



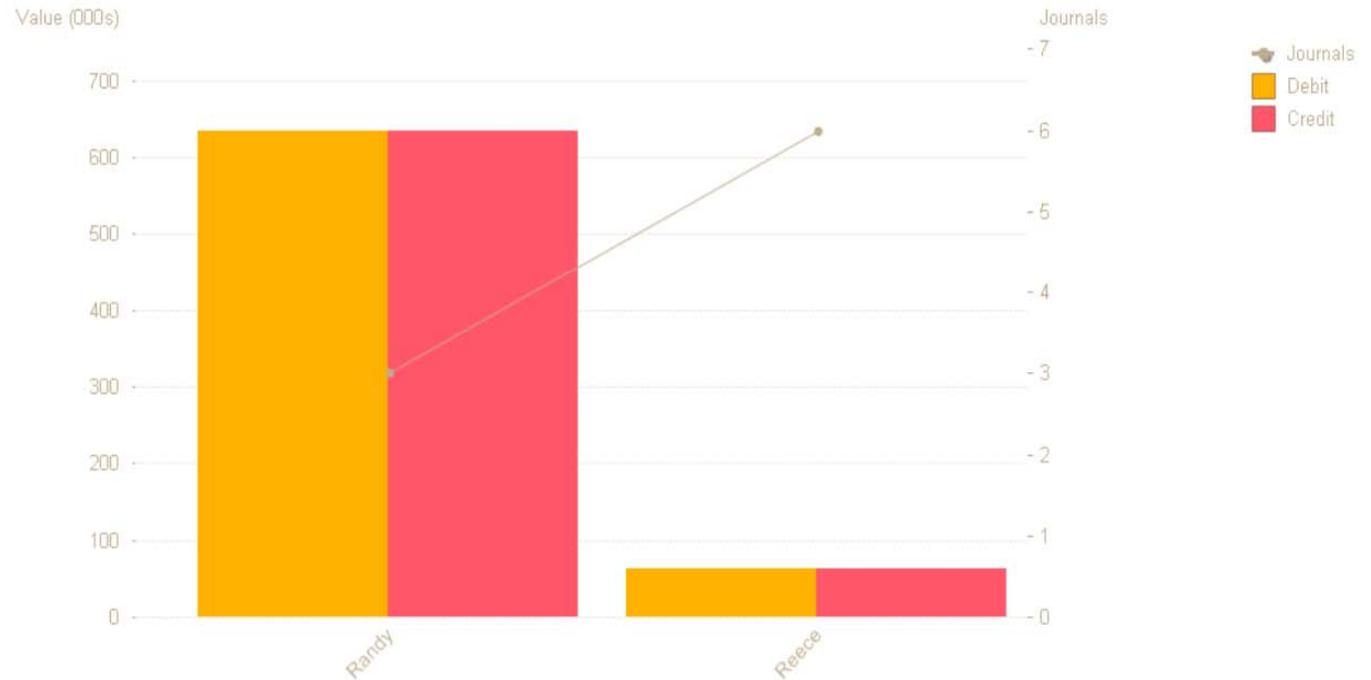
## Manage filters

Clear all

Manual filter

- Automated
- Manual

Current selections



Distinct journals  
9

Journal lines  
18

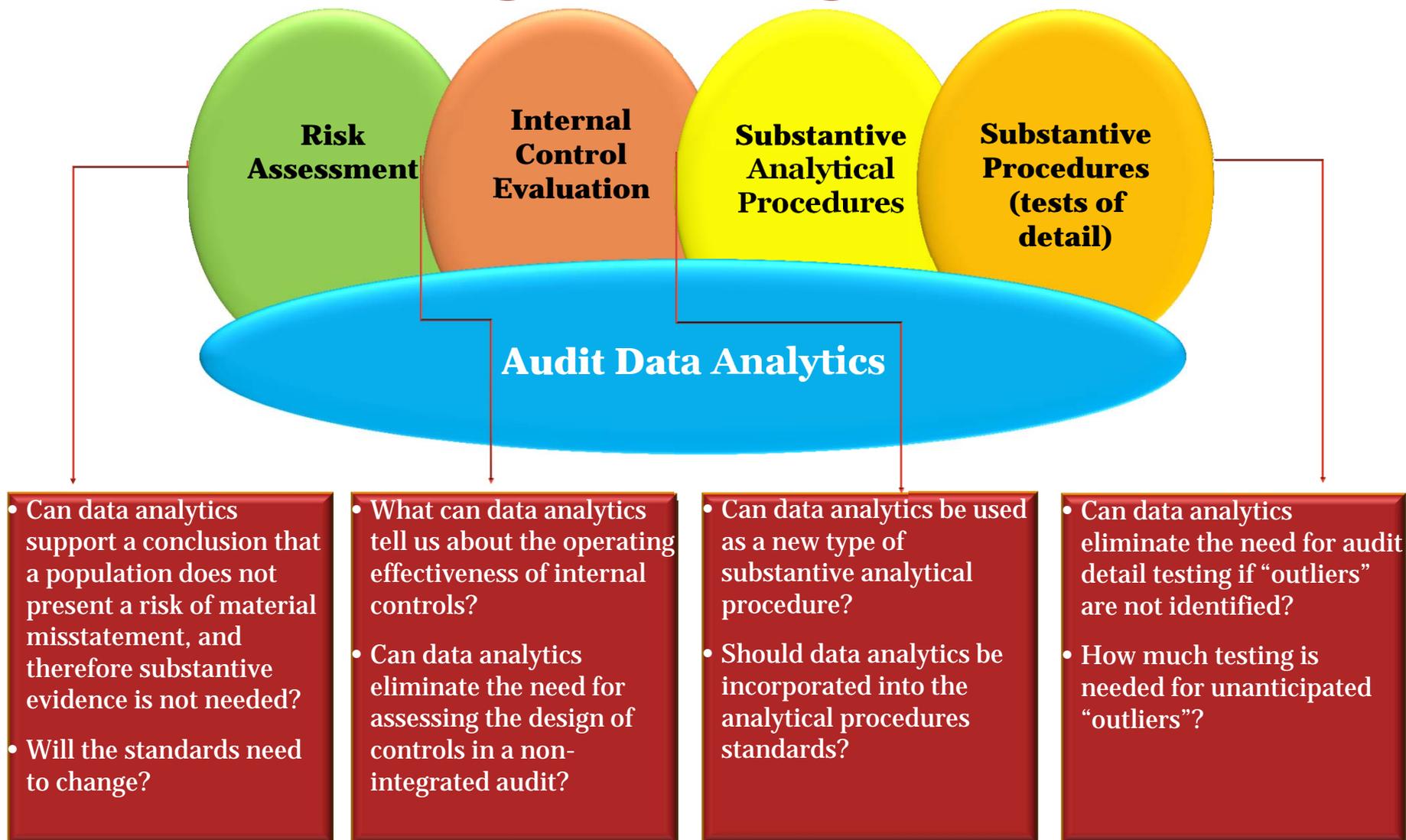
Total debits  
698,476

Total credits  
-698,476

Total net PL  
698,476



## ***Practical challenges – defining the audit evidence***



## ***Practical challenges – Other considerations***

**1**

### ***Access to and usage of data***

- *Obtaining access to client's data*
- *Technology to extract data*
- *Use of new sources of data outside of the client's environment*

**2**

### ***Resource constraints***

- *69% of businesses say in five years they will prefer candidates with data analytic skills but only 23% of educators expect their students to graduate with these skills in the same time period\**

**3**

### ***Benchmarking of data***

- *Use of data analytics across a number of industries in providing audit evidence*
- *Confidentiality challenges*

\*Source: Gallup and BHEF, Data Science and Analytics Higher Education Survey (Dec 2016)

PwC

# *Questions...*

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