Unweaving the AML/CTF system

Dr Dionysios Demetis

Head of AML/CFT at Syntax IT Inc.,
& Member of the Scientific Board, Geolab Institute, Ionian University

http://www.demetis.com

Technology and Anti-Money Laundering

A Systems Theory and Risk-Based Approach

Dionysios S. Demetis

i. AML domain
ii. CTF
iii. Risk-based approach

Individuals/groups

↓

Criminal Activity

↓

Profits

↓

ML

(masking the origin of funds)

Individuals/groups

↓

Criminal Activity

↓

Profits

↓

ML

(masking the origin of funds)

United Nations
European Union
IMF
World Bank
BCBS
Financial Action Task Force (FATF)

KYC
CDD/ECDD
Sanctions
PEPs
Financial Institutions

Transactions/data

Financial Institutions

KYC

CDD/ECDD

Sanctions

PEPs

Transactions/data

KYC

CDD/ECDD

Financial Institutions

Sanctions

PEPs

Suspicious **A**ctivity **R**eport (SAR)

Transactions/data

KYC

CDD/ECDD

Financial Institutions

Sanctions

PEPs

Suspicious **A**ctivity **R**eport (SAR)

Financial **I**ntelligence **U**nit (FIU)

Banks

Insurance

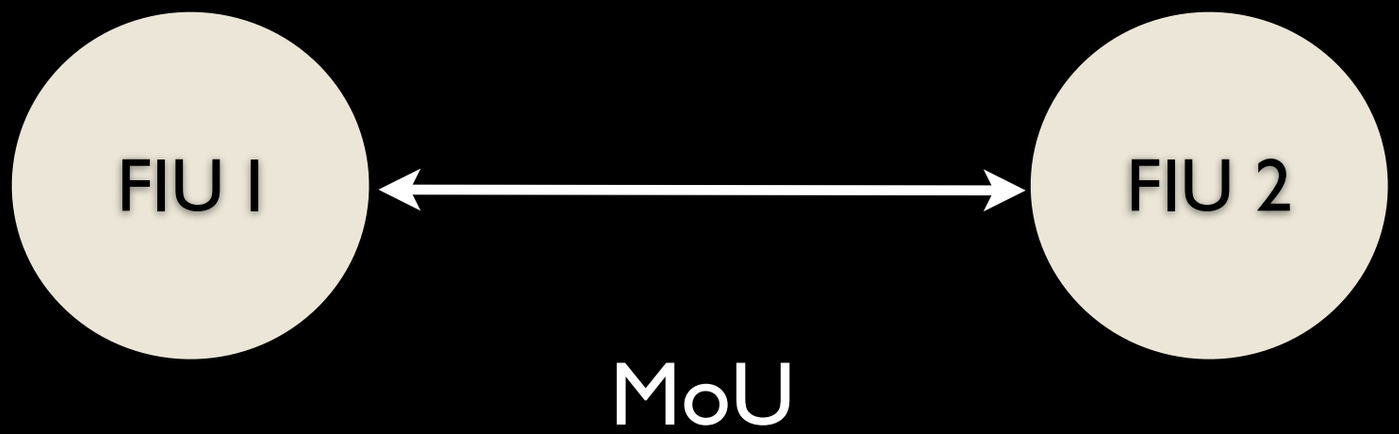
MSBs

Casinos

Bureaux de Change

Financial Intelligence Unit (FIU)

- No FIU
- No Annual Reports / STR information
- Not in Egmont
- FIU established


FIU 1
FIU 2
MoU

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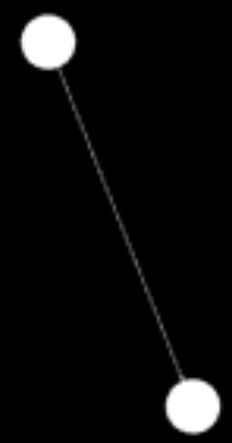

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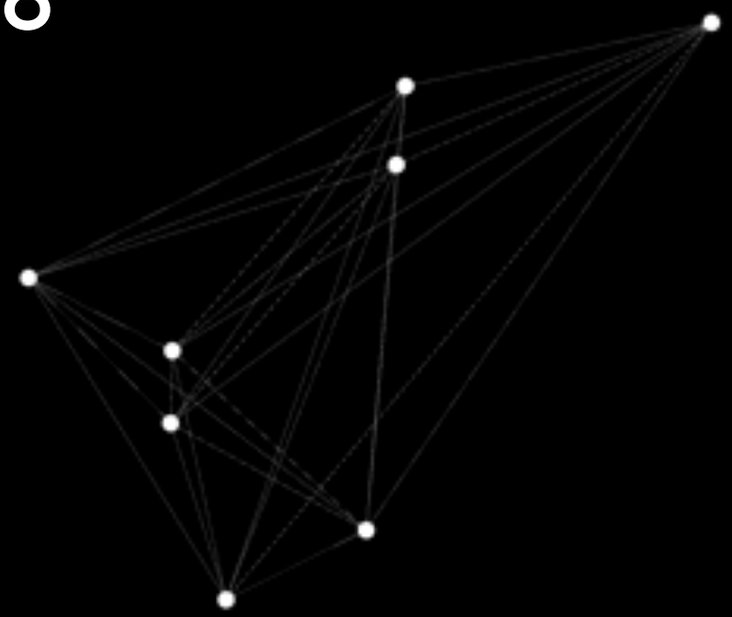

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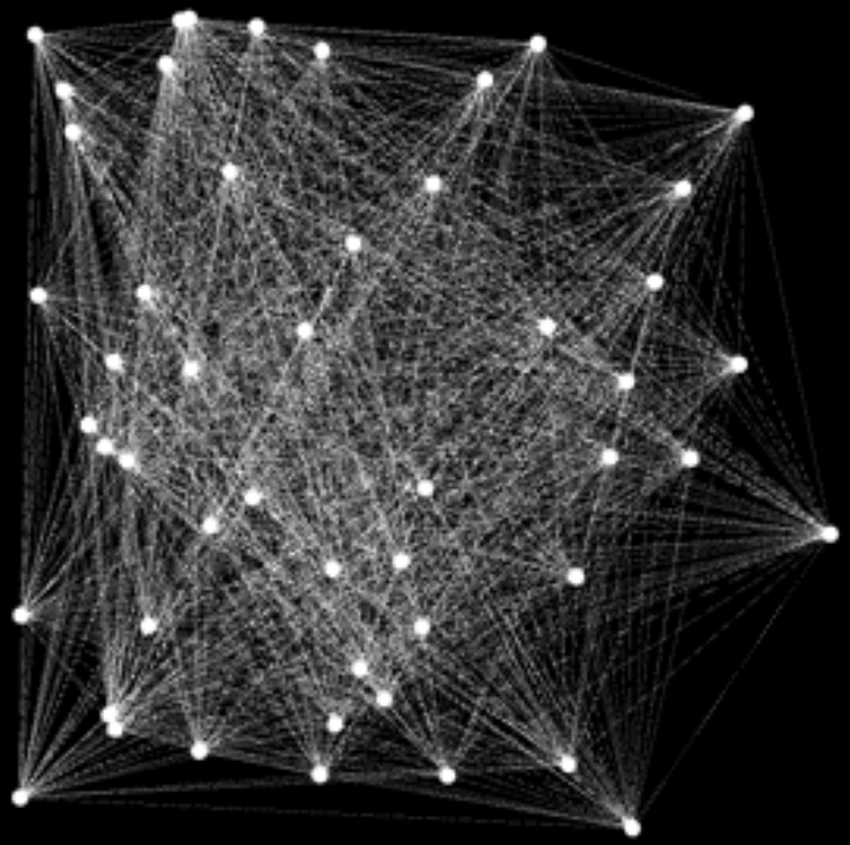

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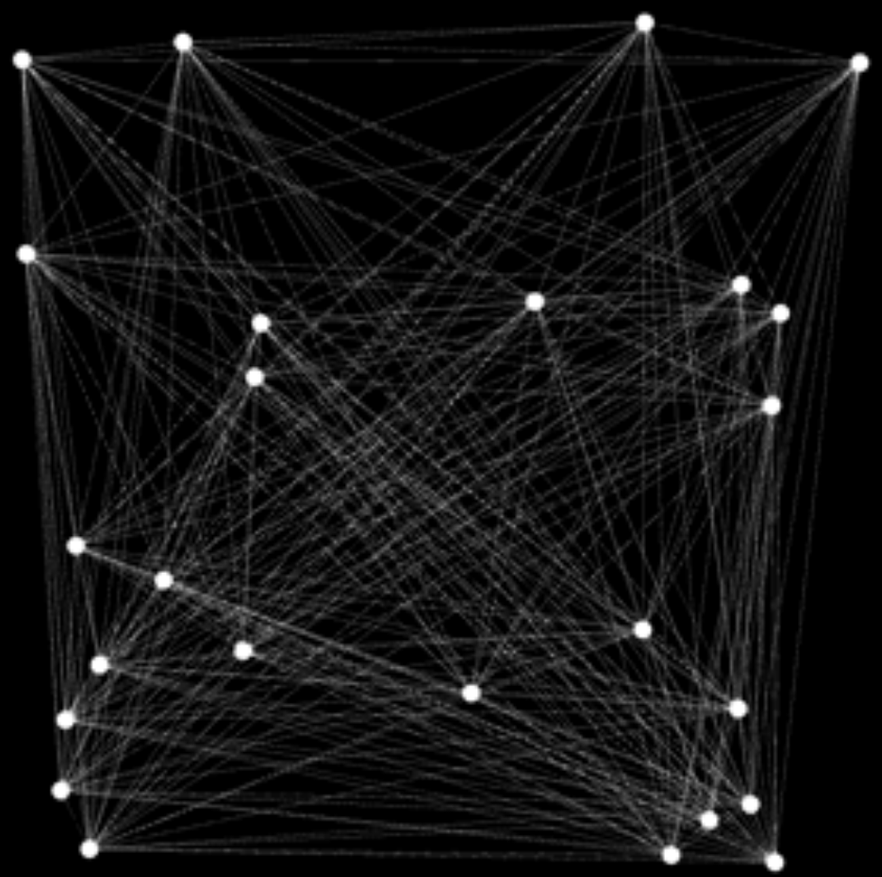
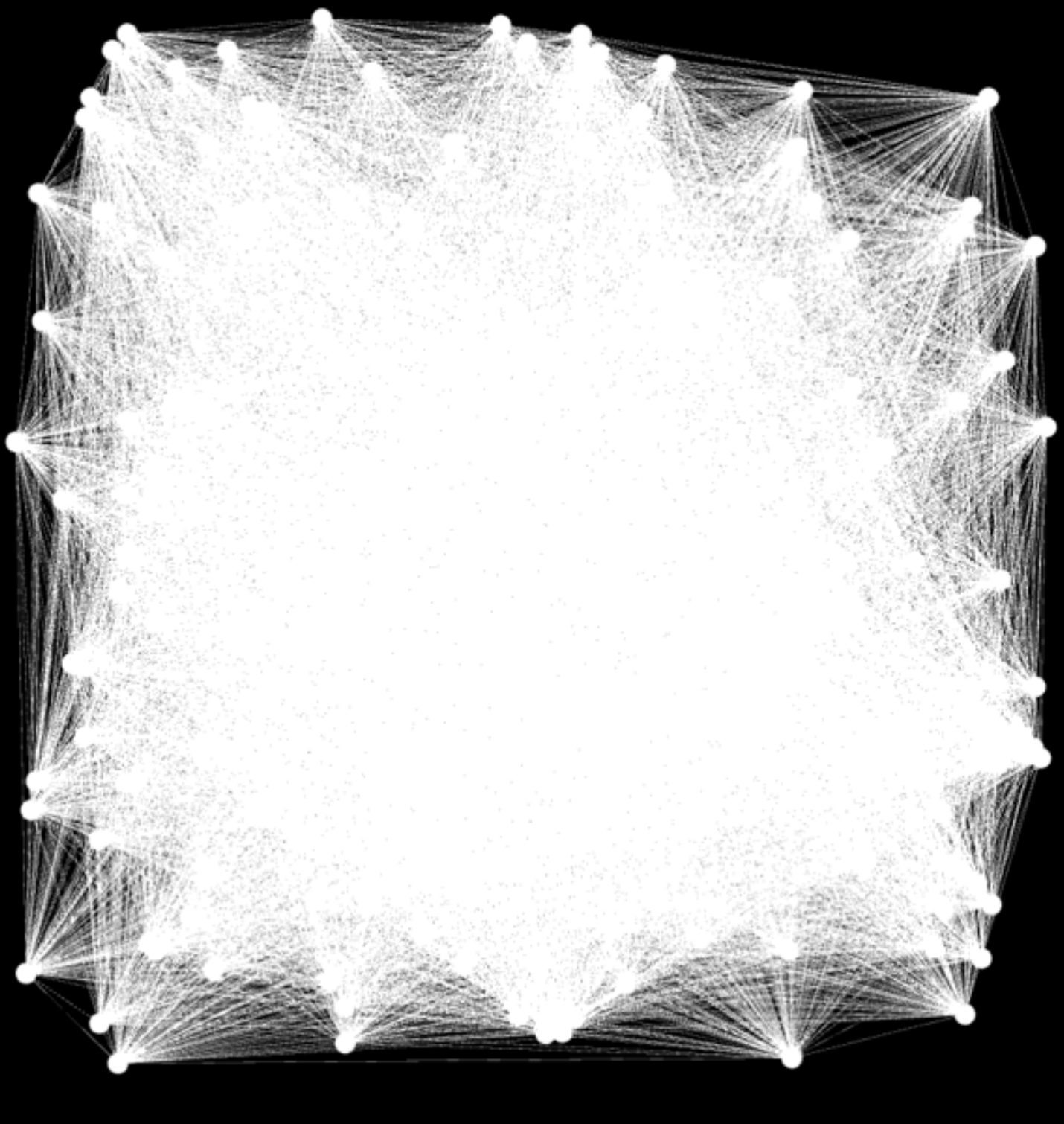




‘Criminals don’t have to sign MoUs’

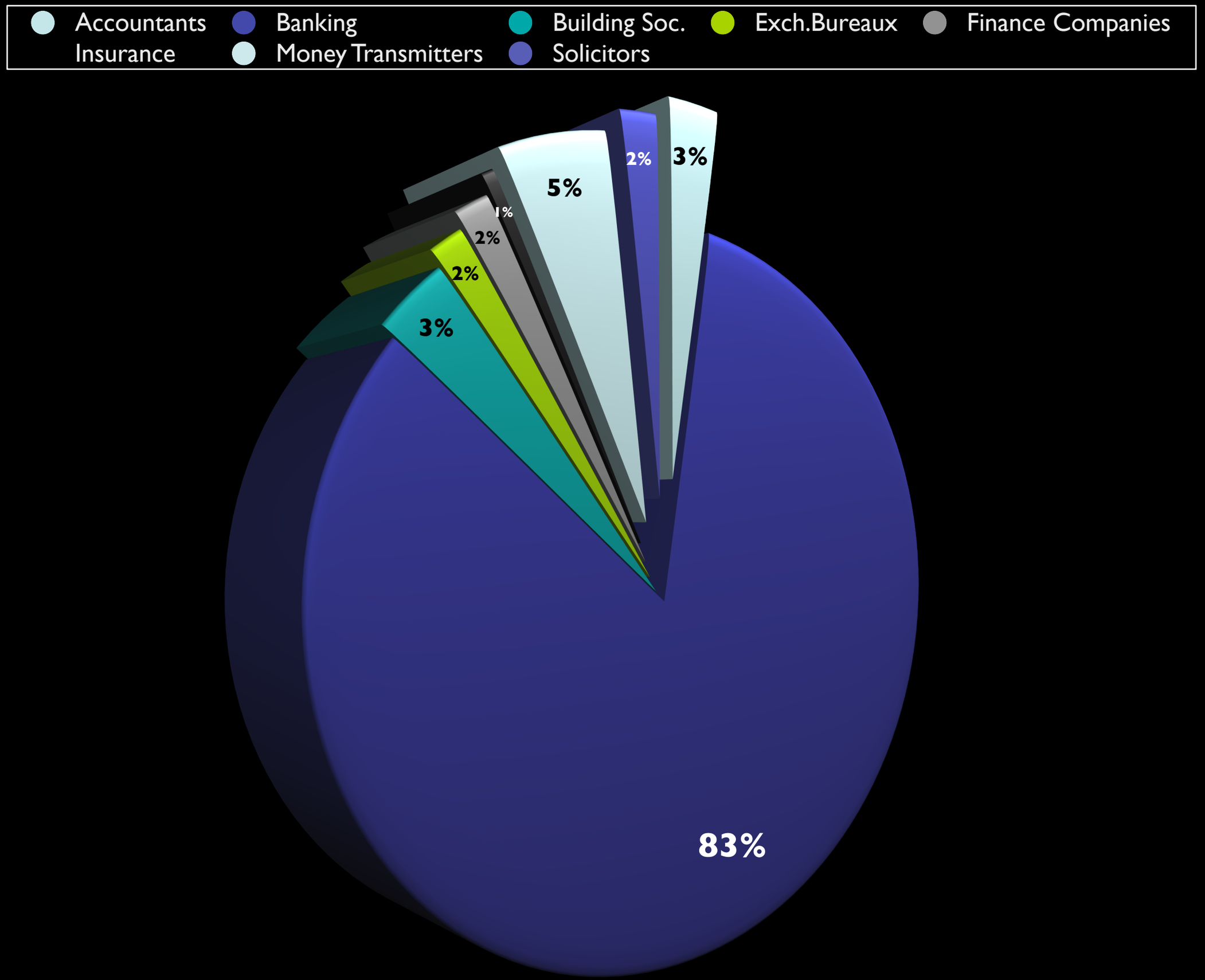
-- Judge J.

"... the (legal) system as a unity can never decide the basis of what is legal or illegal. It can never apply the code to itself as a system. There is no foundational value establishing what is legal or illegal, only operations"

"...it enables the **legal** system to operate **legally** (!) by declaring that something is legal or against the law"

Niklas Luhmann (2008): Law as a Social System, Oxford University Press

data source: SOCA (2011)



data source: SOCA (2011)

Total number of SARs (UK)

Total number of SARs (UK)

250,000

187,500

125,000

62,500

0

1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

Total number of SARs (US)

Total number of SARs (US)

1,500,000

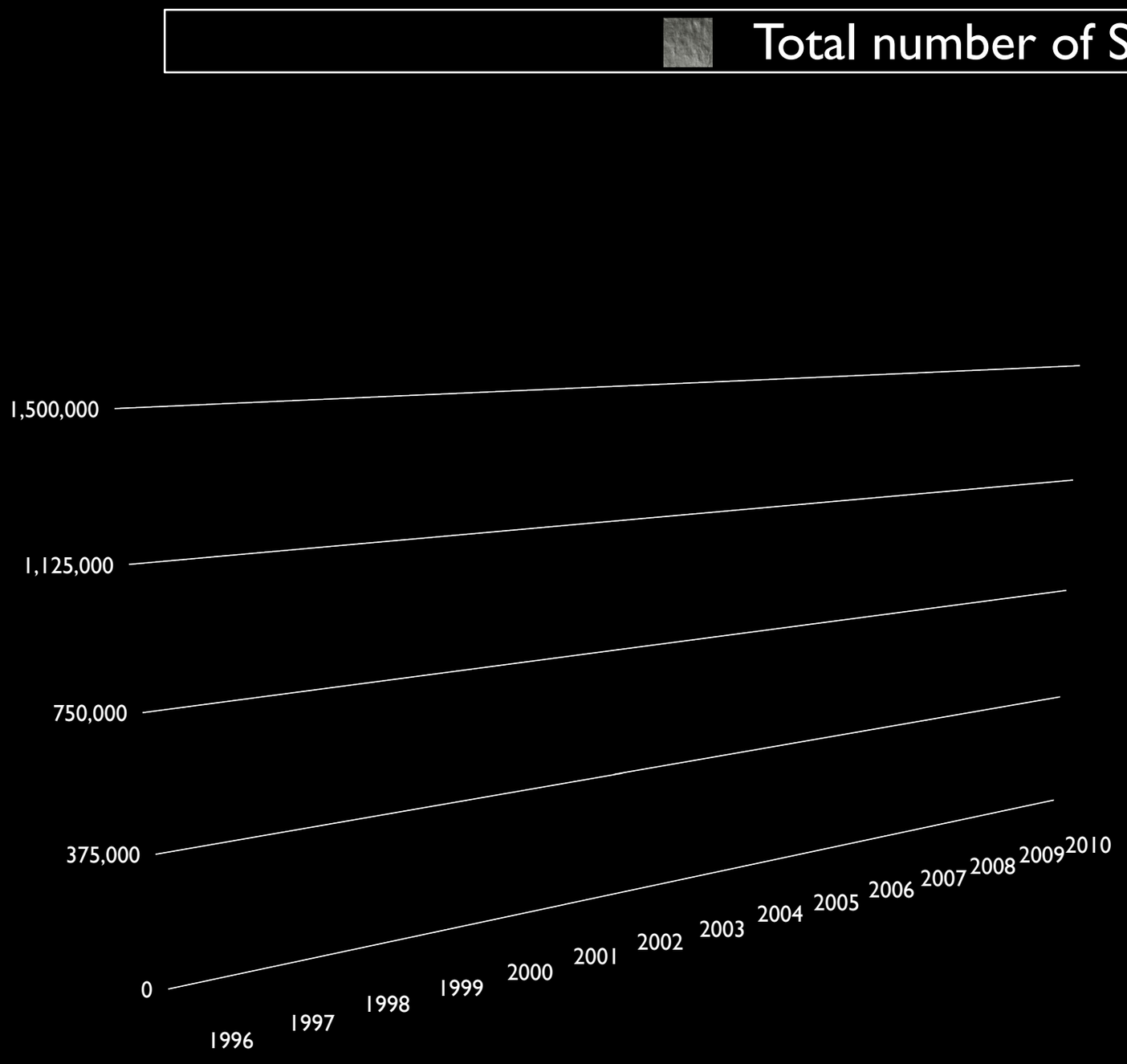
1,125,000

750,000

375,000

0

1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010



* Increasing Reporting Entities

* Training/ Raising Awareness

* Compliance Fear

Technology

Technology

‘simulating money laundering behaviour by using sequences of transacting patterns, common ML typologies, etc’

1) A lot of data

A lot of **raw transaction data** that one has to manipulate in order to 'find' suspicious cases

2) Algorithms try to make sense of that data

We do our best to come up with algorithms, patterns, queries, thresholds, and so on.. techniques that will 'model' the behaviour of ML

3) Humans reduce the complexity further

ML Analysts are forced to do that every day, from the many suspicious cases generated by TMS

$$\text{TPR} = \frac{\text{‘truly’ suspicious cases after Manual analysis}}{\text{TMS-generated suspicious alerts}}$$

$$\text{TPR} = \frac{\text{‘truly’ suspicious cases after Manual analysis}}{\text{TMS-generated suspicious alerts}}$$

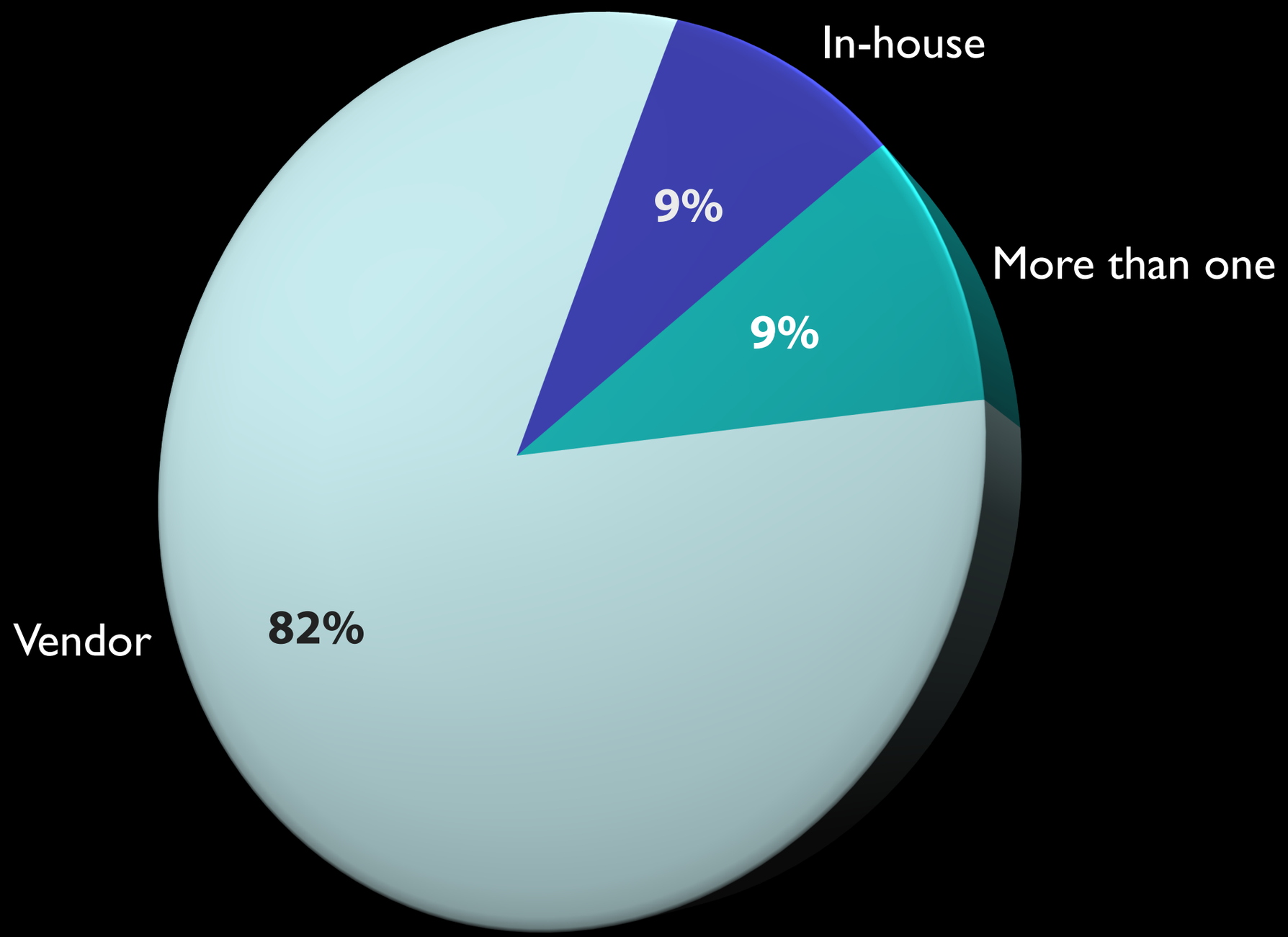
$$= \frac{10}{100} = 10\ \%$$

Survey by Syntax

* Type of technology they use
* What they think of AML-technology
* What is their *True Positive Rate (TPR)*
* What they think of regulators
* How many queries they use for profiling

* Type of technology they use

* Type of technology they use



* What they think of AML technology

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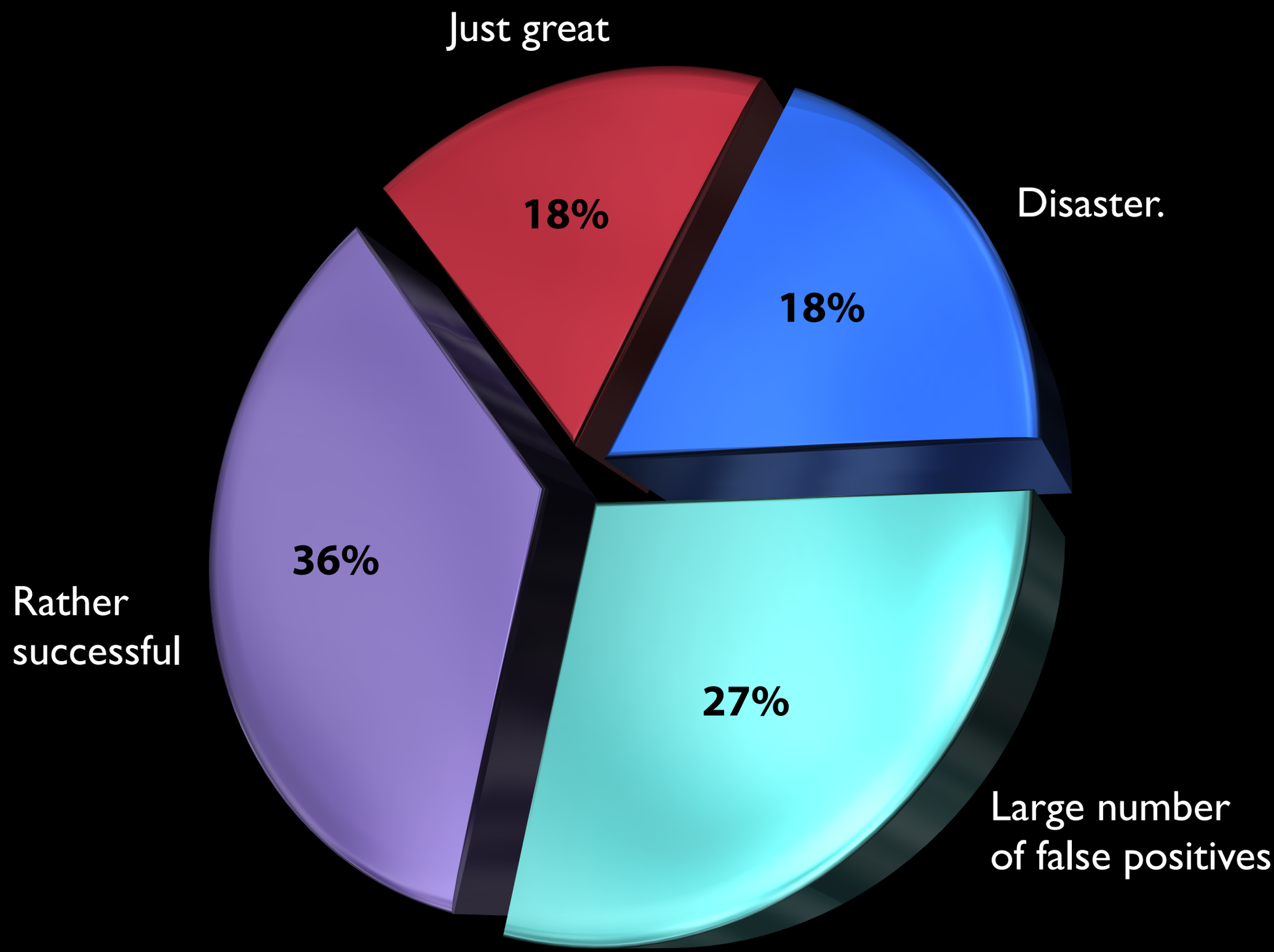

* True Positive Rate (TPR)

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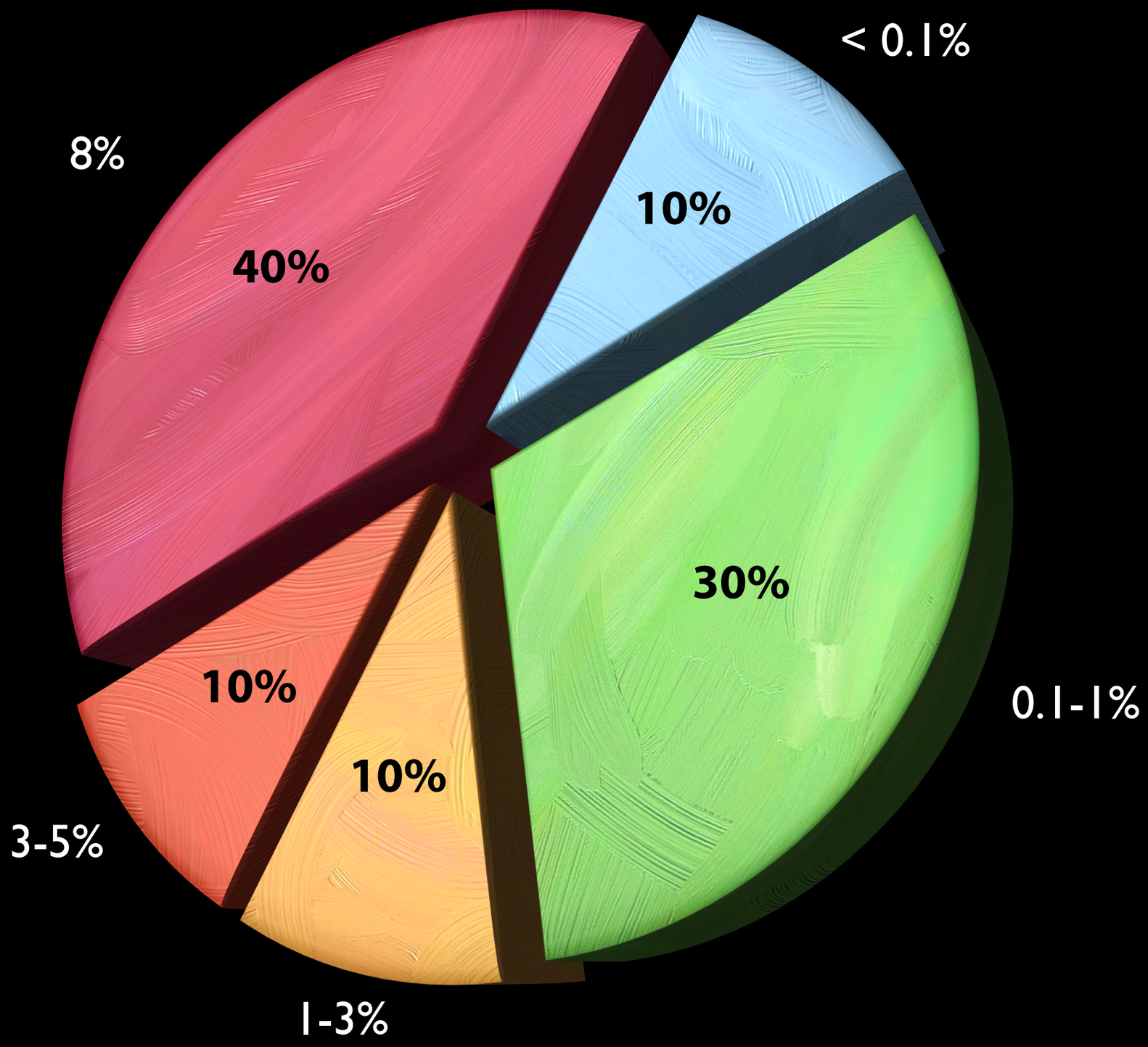

* What they think of regulators

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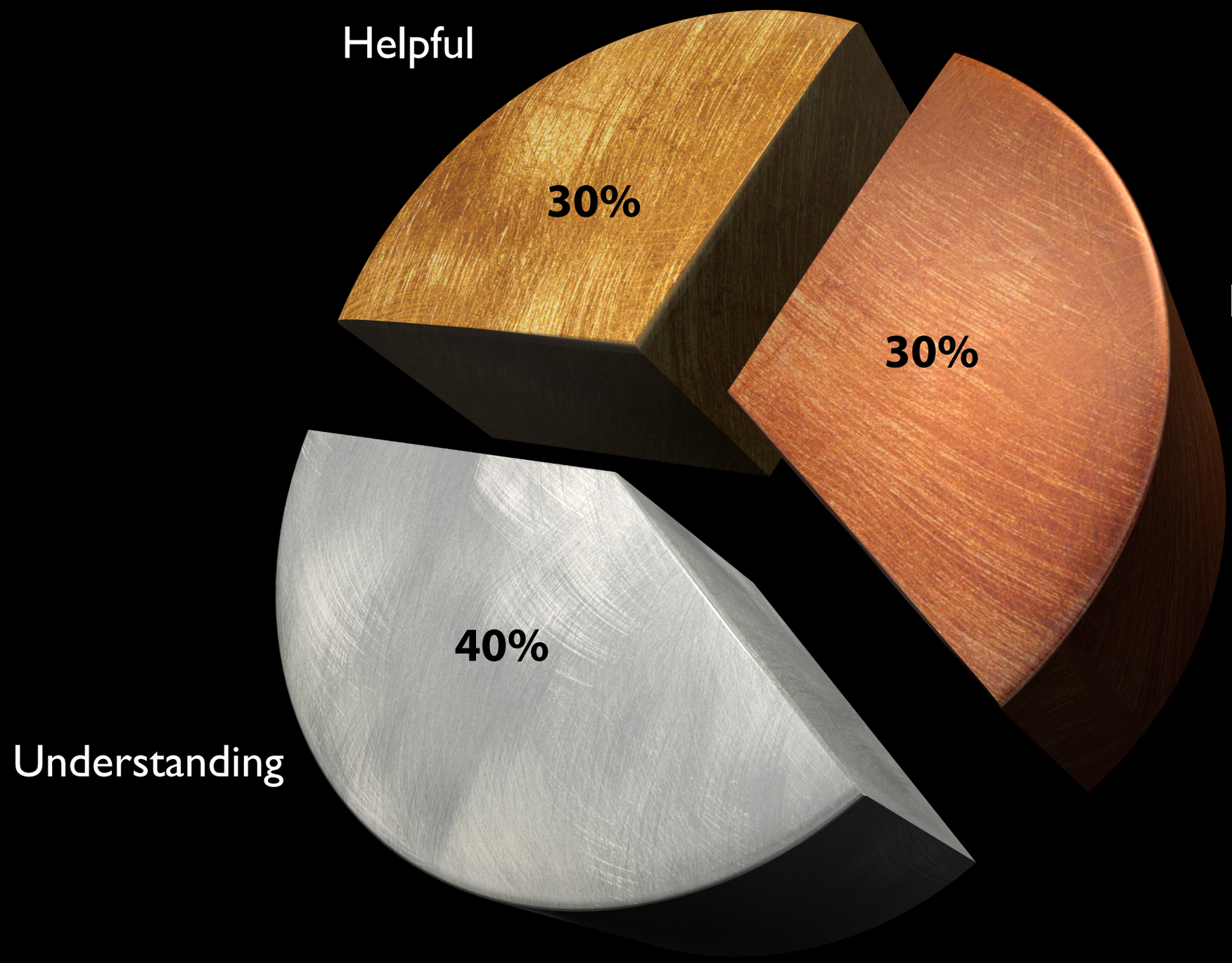

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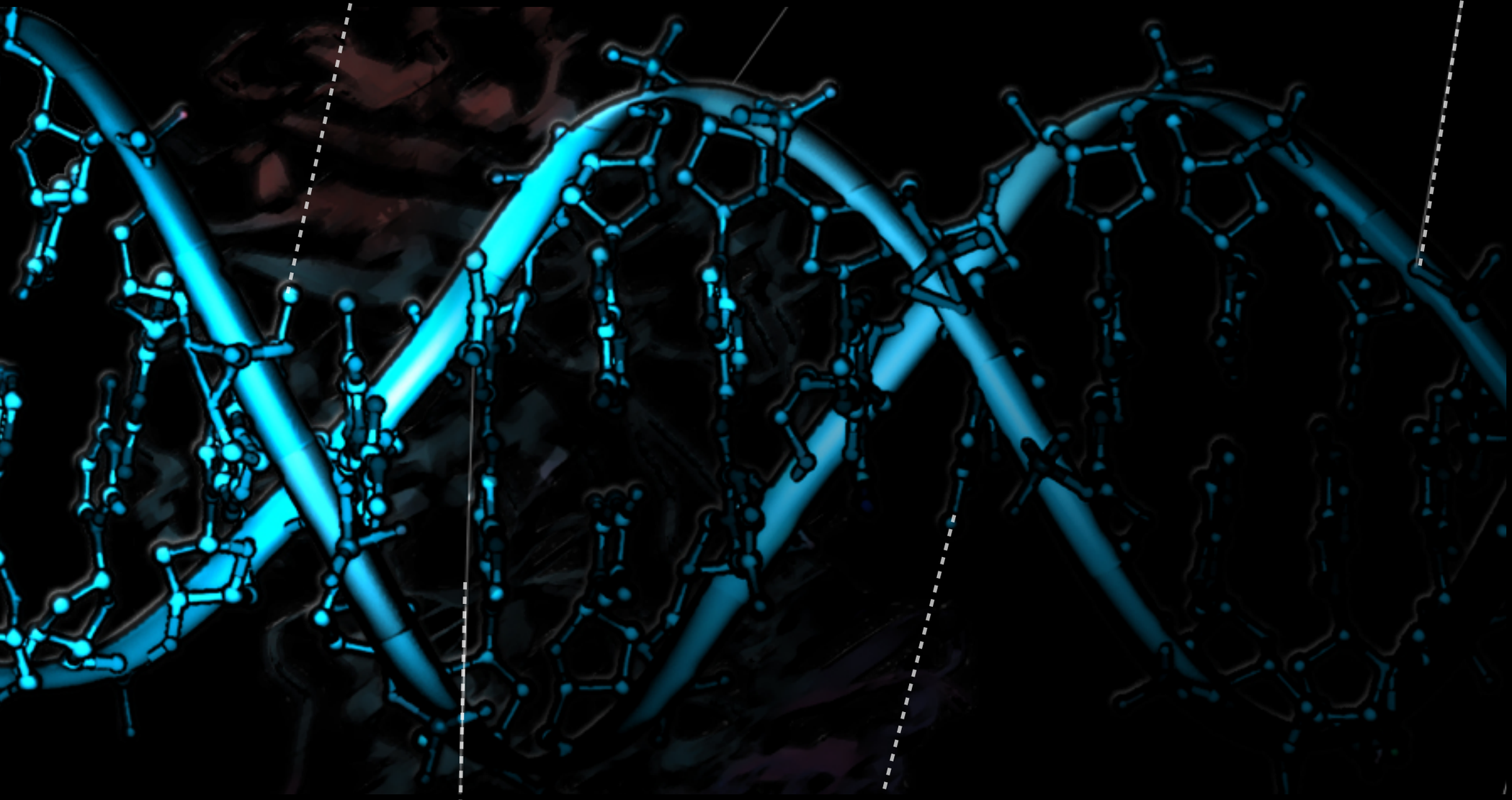
180



20

48

“When a lot of different remedies are suggested for a disease that means the disease can’t be cured”.

Anton Chekhov

Terrorism

POLITICS : SECURITY

Nun Terrorized by Terror Watch

Ryan Singel 09.26.05

Sister Glenn Anne McPhee is a busy woman.

As the U.S. Conference of Catholic Bishops' secretary for education, Sister McPhee oversees Catholic education in the United States, from nursery school through post-graduate. Her job includes working with the Department of Education, speaking frequently at conferences and scrutinizing religious textbooks to clear them with the teachings of the church.

For nine months in 2003 and 2004, Sister McPhee also took on the task of clearing her name from the government's no-fly list, an endeavor that proved fruitless until she called on a higher power, the White House.

"I got to the point I could hardly go to the airport, because I couldn't anticipate what would happen and I couldn't do anything," she said in an interview with Wired News. "I missed key addresses I was to give. I finally got to the point where I always checked my bag, because after I got through the police clearance, then they would put me through special security where they wand you from head to foot all

source:Wired

6-Year-Old Northeast Ohio Girl on 'No Fly' List

Comments 0 Recommend 2K Tweet 123 Share 8477 +1 0

Video

source: Fox News

Countering the Financing of Terrorism

Table 1: The direct attack costs of a terrorist conspiracy

Attack	Date	Estimated cost[3]
London transport system	7 July 2005	GBP 8 000[4]
Madrid train bombings,	11 March 2004	USD 10 000
Istanbul truck bomb attacks,	15 & 20 November 2003	USD 40 000
Jakarta JW Marriot Hotel bombing	5 August 2003	USD 30 000
Bali bombings	12 October 2002	USD 50 000
USS Cole attack	12 October 2000	USD 10 000
East Africa embassy bombings,	7 August 1998	USD 50 000

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1 Obligations set out chiefly in UNSCR 1373, 2001.

2 Including: Comras (2005), Kohlmann (2006), National Commission on Terrorist Attacks Upon the United States (2004) Williams (2005), Abuza (2005) and Prober (2005).

3 Unless otherwise noted, all estimates adapted from the August 2004 report of the UN Monitoring Team Report on al-Qaeda and the Taliban.

4 The United Kingdom Home Office (2006).

‘those sums spent by active terrorist cells on the preparations for a conventional terrorist attack are typically so small as to be mere droplets in the ocean of daily financial transactions’

Parkman and Peeling (2007), Countering Terrorist Finance, Ashgate publishing company

7%

"It should be acknowledged as well that financial institutions will probably be unable to detect terrorist financing as such. Indeed, the only time that financial institutions might clearly identify terrorist financing as distinct from other criminal misuse of the financial system is when a known terrorist or terrorist organization has opened an account"

FATF Guidance notes on TF

Algorithmic Racism

i.e.: *racial and religious indicators are embedded in algorithmic representations for monitoring the probability of terrorist financing*

ARTICLE 29 DATA PROTECTION WORKING PARTY

01008/2011/EN
WP 186

Opinion 14/2011
on data protection issues related to the prevention of money laundering and terrorist financing

Adopted on 13 June 2011

Probability of a known terrorist opening an account?

30 years of data

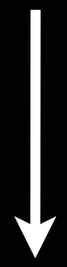
1400 terrorist organizations

12,200 terrorist attacks were recorded in that time frame

169 different countries

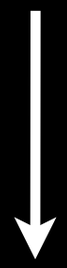
1400 terrorist organizations

1400 terrorist organizations



8 organizations

1400 terrorist organizations



8 organizations

$2648 (Taliban)

Official Secrets Act 1989

1989 CHAPTER 6

An Act to replace section 2 of the Official Secrets Act 1911 by provisions protecting more limited classes of official information. [11th May 1989]

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

Risk-based approach

Risk

“to find something meaningful in all that data
for forecasting purposes must be so plainly
impossible that there will always be endless
scope for well-paid advice on how to do it”

Peter Kennedy (2003),
Introduction to Econometrics
MIT Press

$$R = P * I$$

$$R = P * I$$

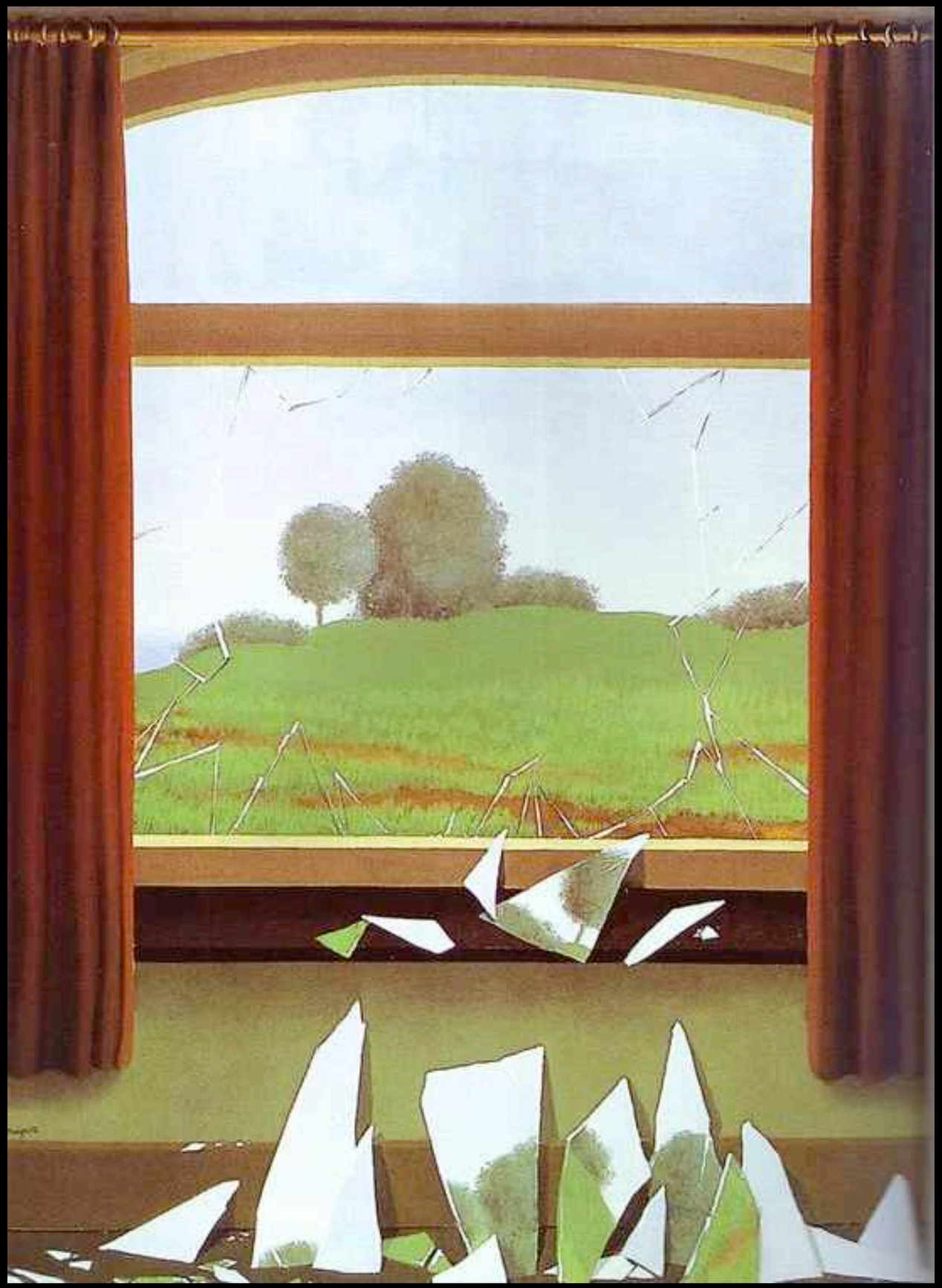
$$R = \text{unknown} * \text{unknown}$$

$$R = P * I$$

$$R = \text{unknown} * \text{unknown}$$

$$R = (\text{unknown})^2$$

$$\sqrt{\text{Risk}} = \textbf{unknown}$$



La clef des champs

financial risk
legal risk
Risk
structural risk
project risk
process risk
technical risk

There is no such thing as a
non-risk-based approach.

The word 'approach' necessarily includes risk.

‘complexity in this sense means being forced to select; being forced to select means contingency; and contingency means **risk**’

Luhmann, N (1995) Social Systems, Stanford University Press

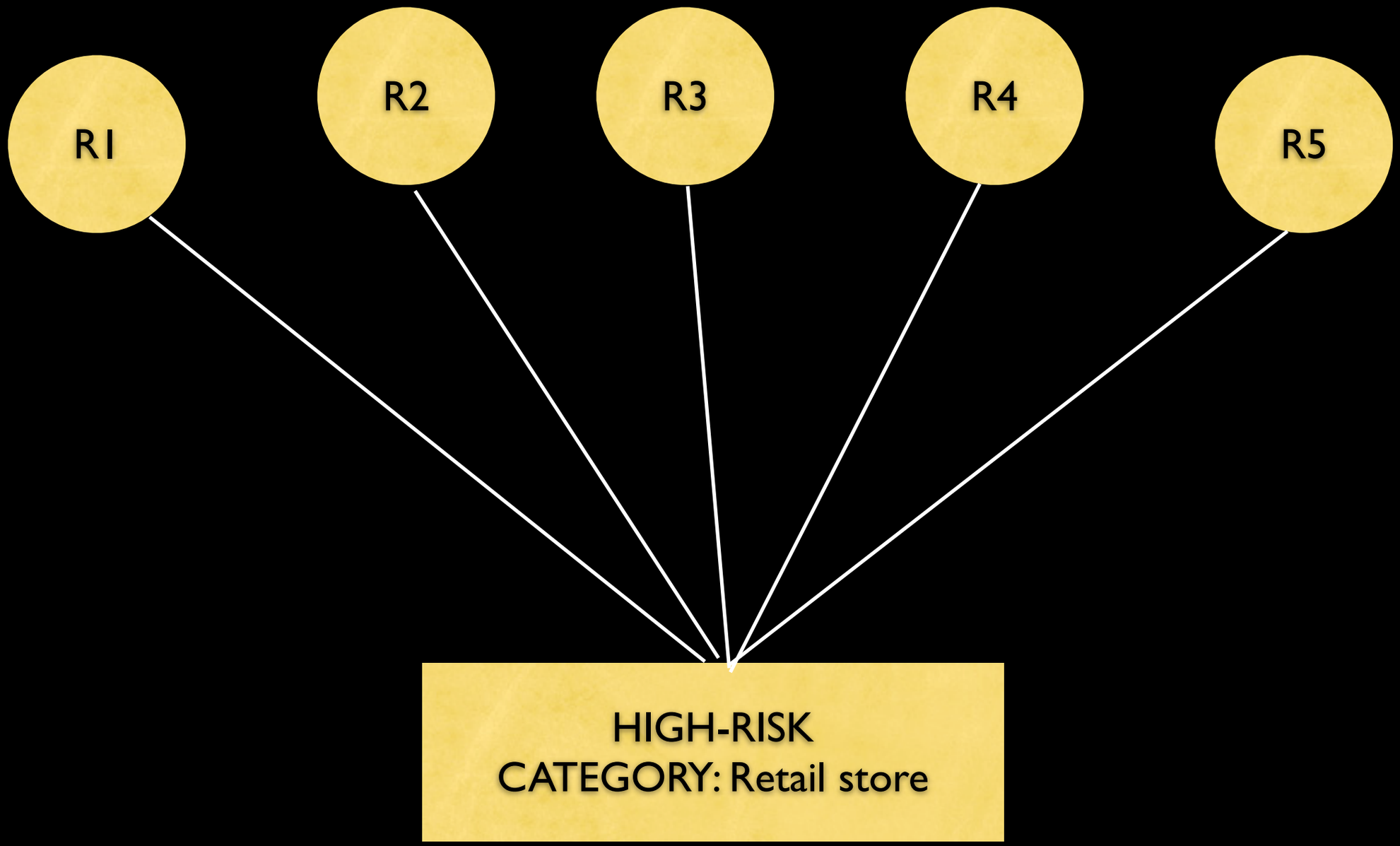
"since Bacon, Locke, and Vico, confidence in the feasibility of generating circumstances has grown; and to a large extent it has been assumed that knowledge and feasibility correlate.

This pretension corrects itself to a certain degree with the concept of risk, as it does in other ways with the newly invented probabilistic calculation. Both concepts appear to be able to guarantee that even if things do go wrong, one could have acted correctly"

Luhmann, N (1993)
Risk: A Sociological Theory

AML (risk)

- high/low risk products or services
- high-risk customers (e.g. cash intensive businesses)


R1
R2
R3
R4
R5
HIGH-RISK
CATEGORY: Retail store

Any category is a **risk-based hybrid** of **<u>both</u>** high- and low- ML/TF risks

To deal with the risk-based approach, we need context-sensitive data that will act as *2nd order proxies for determining risk-levels of risk-categories.*

Behaviour (e.g. Banking)

Parameter2

Proxy_3

Parameter3

Proxy_1

Proxy_2

Proxy_3

Behaviour 2

Parameter1
(e.g. location)

Proxy_1

Proxy_2

Proxy_3

Parameter2

Proxy_1

Isolation.

money laundering

1 KILO
9999

THIS CERTIFIES THAT THERE HAVE BEEN DEPOSITED IN THE TREASURY OF THE

UNITED STATES

5

>33709659<

>33709659<

PAYABLE TO THE BEARER ON DEMAND

FIVE SILVER DOLLARS

FEDERAL RESERVE NOTE
AE 77665544 B
E5
THE UNITED STATES OF AMERICA
100
AE 77665544 B
THIS NOTE IS LEGAL TENDER FOR ALL DEBTS, PUBLIC AND PRIVATE
Treasurer of the United States
SERIES 1996
Secretary of the Treasury
100
ONE HUNDRED DOLLARS
FRANKLIN

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QQ: China's New Coin of the Realm?

Officials Try to Crack Down As Fake Online Currency Is Traded for Real Money

By GEOFFREY A. FOWLER and JUYING QIN

HONG KONG -- China's fastest-rising currency isn't the yuan. It's the QQ coin -- online play money created by marketers to sell such things as virtual flowers for instant-message buddies, cellphone ringtones and magical swords for online games.

In recent weeks, the QQ coin's real-world value has risen as much as 70%.

It's the most extreme case of a so-called virtual currency blurring the boundaries between the online and real worlds -- and challenging legal limits. A Chinese Internet company called Tencent Holdings Ltd. designed the payment system in 2002 to allow its 233 million regular registered users to shop for treats in its virtual world. Virtual currencies are in use in many countries -- but nowhere have they taken root more deeply than in China.

Non face-to-face interactions

*only 30.2% online!

http://www.demetis.com