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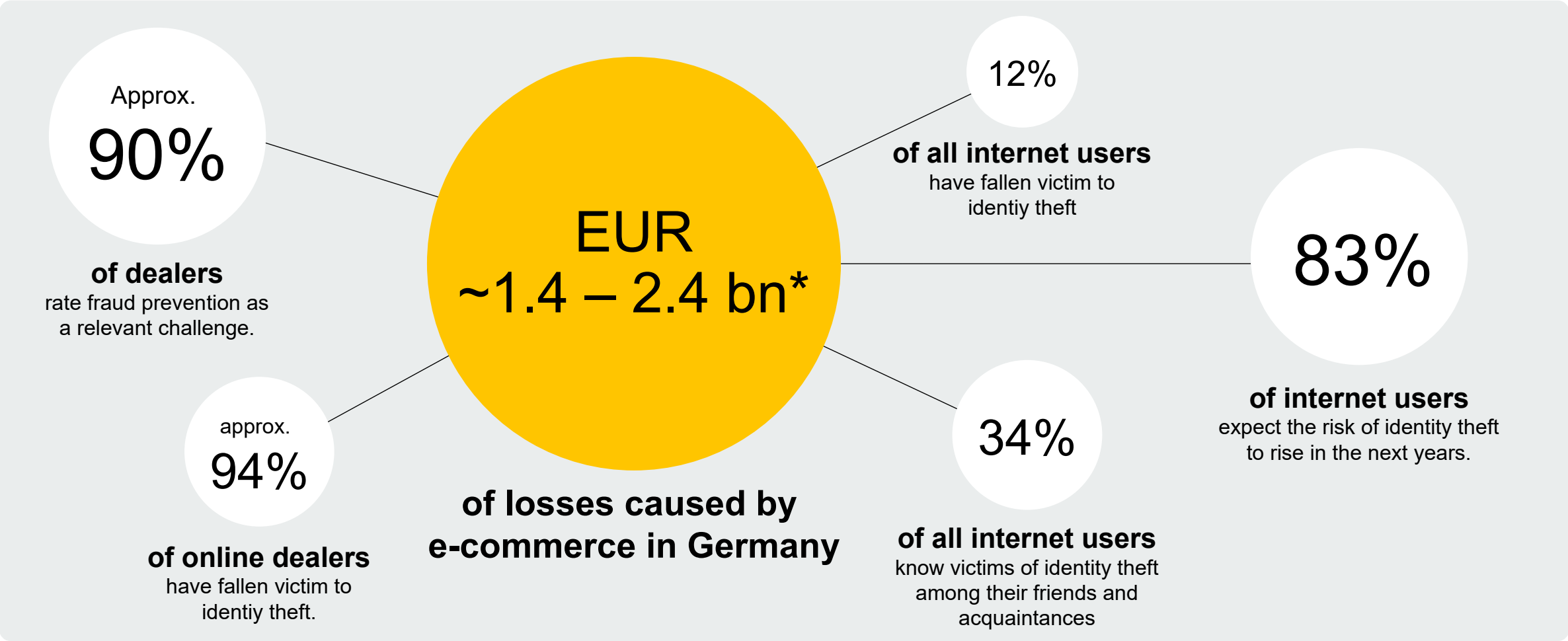
SCHUFA FraudPreCheck

fraud pattern recognition in real time

or: “What a glass of red wine can have to do with the joint product development of customers and a credit bureau”

Amsterdam, 23 May 2025

Fraud in e-commerce: How big was and is the problem?



*upward trend | Sources: bbw Hochschule Berlin (2014) and Study IFH Köln (2020) / CRIF-Survey “Fraud in eCommerce (2025)

Some SCHUFA figures

CREDITWORTHINESS

Credit reports

FRAUD PREVENTION

Information transmitted from the SCHUFA-FraudPool (banks only)

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IDENTIFICATION

Identity checks

COMPLIANCE

Sanction list screenings for money laundering prevention

The “glass of red wine” example

‘ChatGPT, please create a photo of a wine glass filled to the top with red wine’

ChatGPT‘s answer:

‘‘Here is the desired image of a wine glass **filled to the brim** with red wine.’

The “glass of red wine” example

’The wine glass should be filled more with red wine.’

ChatGPT‘s answer:

‘Here is the picture with the wine glass, which is **now filled to the top**, with the wine **slightly curved by the surface tension**.’

The “glass of red wine” example

‘Presentation without surface tension but filled to the brim with red wine.’

ChatGPT‘s answer:

‘Here's the picture with the wine glass **filled to the brim** with red wine and running down the sides...’

The “glass of wine” example

‘The glass must no longer contain any air.’

ChatGPT‘s answer:

‘Here is the picture of a wine glass completely filled with red wine, without any air inclusion, which overflows heavily.’

The “glass of wine” example

‘No more overflowing.’

ChatGPT‘s answer:

‘Here is the image of a wine glass completely filled with red wine, without air and without overflowing.’

■ ■ ■

The “glass of wine” example

…a few more results

100% filled

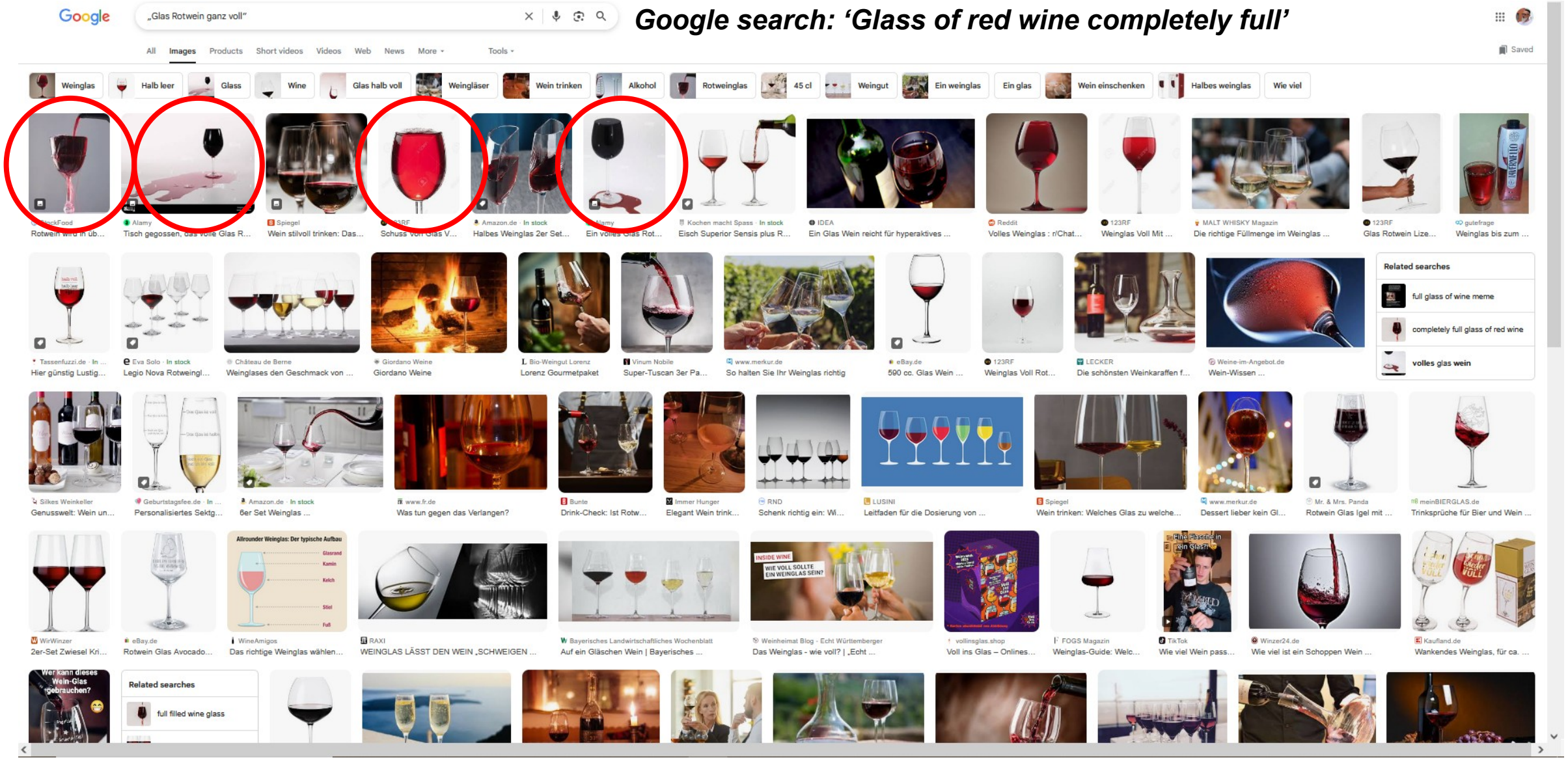
110% filled

105% filled

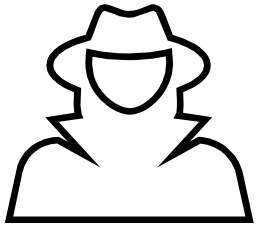
107% filled

ChatGPT: ‘What I’ve *learned* is what you get!’

Google search: ‘Glass of red wine completely full’



Manipulation of data in online orders



Testing and protection routines are established.

However, telcos and e-commerce sometimes report **significant cases of damage – despite extensive checks.**

Analysis of individual cases of loss

from affected online retailers on the basis of the SCHUFA database.

Sample data

Surname	Name	Birth date	Address
SCHMITT	Matis	20.01.1985	Haupstr. 1, Koln
SCHMITT	Mathis	20.02.1985	Hauptmannstr. 11, Kölln
SCHMIDT	Mattis	21.01.1985	Hauptstrasse 1a, Köln
SCHMITT	Matthias	19.01.1985	Hauptstrasse 1, Köln
SCHMIETT	Mattis	20.01.1984	Hauptsstrasse 1, Köln
SCHMID	Mattias	10.02.1965	Hauptstrasse 1, Köln
SCHMOD	Markus	17.08.1994	Hanptstrasse 1, Köln

→ **Result: Data has been manipulated** by fraudulent customers. Such fraud patterns can occur within a few minutes and hours, but also over days and weeks.

Cooperation between competitors to recognise fraud patterns

7 development partners (2 eCommerce, 3 of 4 MNO, 2 PSP) **plus SCHUFA**

May 2016: first data analysis → production: **Dec 2018**

→ **9 workshops:** 3 professional incl. business model – 2 quality gates - 2 data protection - 2 contractual

→ **Financial participation of development partners**

→ **Independent proof of scientific validity**

→ **Code of common understanding**

→ **productive tests up to 200k / day**

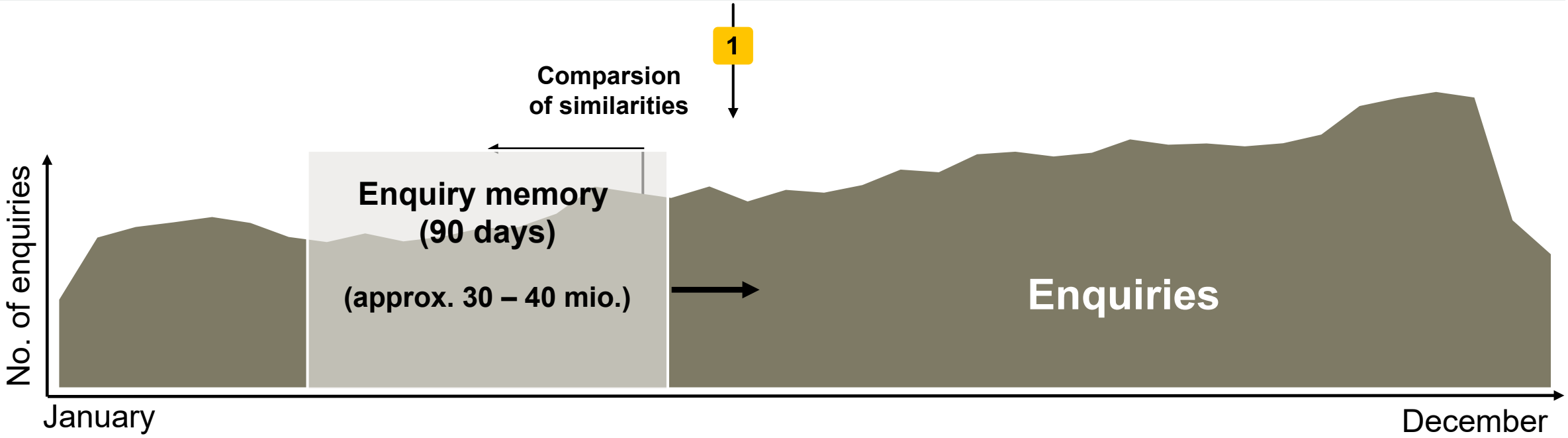
SCHUFA FraudPreCheck
Data bases for analysis and MLM development

Participants (temporarily 8 companies)	No. of enquiries in 6 months	No. of enquiries with damage by fraud (rounded)	Individual fraud ratio
PSP 1	1.500.000	16.000	**1,1%**
PSP 2	1.150.000	8.000	**0,7%**
eCommerce 1	940.000	7.000	**0,7%**
eCommerce 2	600.000	8.000	**1,4%**
Telco 1	1.250.000	10.000	**0,8%**
Telco 2	330.000	19.000	**5,7%**
Telco 3	220.000	3.000	**1,5%**
Telco 4	200.000	2.000	**1,1%**
Summe	**~ 6,2 Mio.**	**~ 73.000**	
Anfragen an SCHUFA	**~ 65,0 Mio.**	**Unique data set of fraud cases in eCommerce**	

SCHUFA-FraudPreCheck: Concept of similarity analysis (1/3)

FPC basis for analysis = 90 days “moving “ data window

Time of request	Name	Surname	DoB	Street	**Town**	**Postcode**	**Feauture code**	Contractual partner
15.06.2015, 23:30:56.0	Maxx	Musterman	02.01.2000	Hauptstraße 12b	Musterstedt	99998	AV	eCommerce 2



SCHUFA-FraudPreCheck: Concept of similarity analysis (2/3)

Creation of an "enquiry group" consisting of similar enquiries

2

Time of request	Name	Surname	Birth date	Street	**Town**	**Postcode**	**Feauture code**	Contractual partner
11.06.2015, 22:17:07.0	Max	Mustermann	01.01.2000	Hauptstraße 12	Musterstadt	99999	AT	Telecom company A
12.06.2015, 08:04:56.0	Max**i**	Mustermann	01.01.2000	**Haut**straße 12	Musterstadt	99999	AT	Telecom company A
12.06.2015, 08:17:16.0	Max**im**	Muster	**11**.01.2000	**Hautt**straße 12**b**	Musterstadt	9999**8**	AT	Telecom company B
13.06.2015, 11:43:89.0	Max	Mustermann	01.01.2000	Hauptstraße 12	Musterstadt	99999	AG	Financial institution A
13.06.2015, 11:52:16.0	Max	Mustermann	01.01.2000	Hauptstraße 12	Musterstadt	99999	AG	Financial institution B
13.06.2015, 22:17:07.0	Max**im**	Muster	11.01.200**1**	**Hautt**straße 12**b**	Musterstadt	9999**8**	AC	Financial institution C
14.06.2015, 14:59:13.0	Max**ira**	Mustermann	**17.11.1997**	Hauptstraße 12	Musterstadt	99999	AG	Financial institution A
15.06.2015, 23:29:03.0	Max	Mustermann	01.01.2000	Hauptstraße 12	Musterstadt	99999	AV	Mail order company A
15.02.2015, 23:30:56.0	**Maxx**	**Musterman**	**02.01.2000**	**Musterstraße 12b**	**Musterstedt**	**99998**	**AV**	**Mail order company B**

SCHUFA-FraudPreCheck: Concept of similarity analysis (3/3)

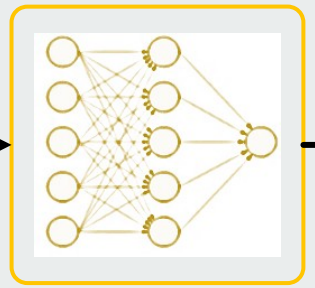
Analysis for manipulation and known fraud patterns

3

Number of requests	First name homogeneity	Surname homogeneity	Birth date homogeneity	Street homogeneity	Town homogeneity	…	**Number of contractual part.**
9	0.65	0.74	0.45	0.83	0.99	…	7

4

Statistical model



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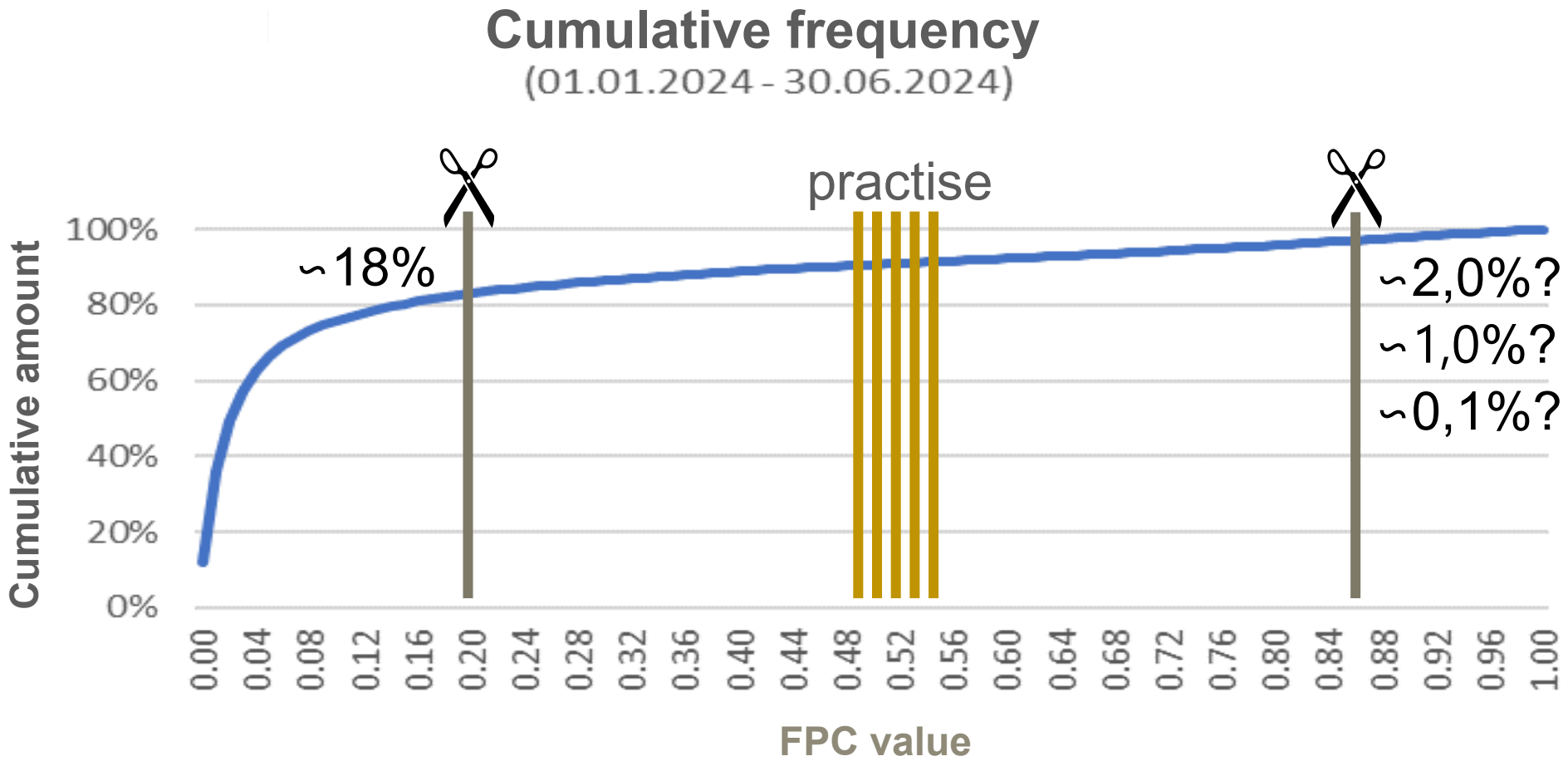
Fugitive FPC value

0.86

6

The FPC value describes the **conspicuousness of an enquiry.** It is calculated in real time and transmitted to the online retailers in <1 sec..

SCHUFA-FraudPreCheck: Product results and benefits



What is the SCHUFA-FraudPreCheck (FPC)?

The FPC is a cross-industry fraud prevention solution in the e-commerce business

The FPC is **an algorithm that is trained by modern ML methods on fraud patterns that are identified by AI**.

The database used for this is

- **validated data of verified fraud cases** of eCommerce companies,
- the **extensive SCHUFA database**,
- **publicly accessible VIP data** and
- **building information**.

Critical success factor

THANK YOU.

DO YOU HAVE QUESTIONS?

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