Information Sources and Metrics

Knowledge Based Authentication Symposium
February 9, 2004

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Agenda

- What is KBA Authentication?
- Levels of Authentication
- Importance of multiple data sources
- Impact of data accuracy and currency

Knowledge Based Authentication

Type	Method	Sources
Negative	Check information provided for association with known incidents of fraudulent behavior	Compare against known fraud or bad check databases
Positive	Compare information provided with a trusted third party source	Consumer reporting agency
Logical	Analyze logical consistency between information provided	Commercial verification products

Validating and verifying information

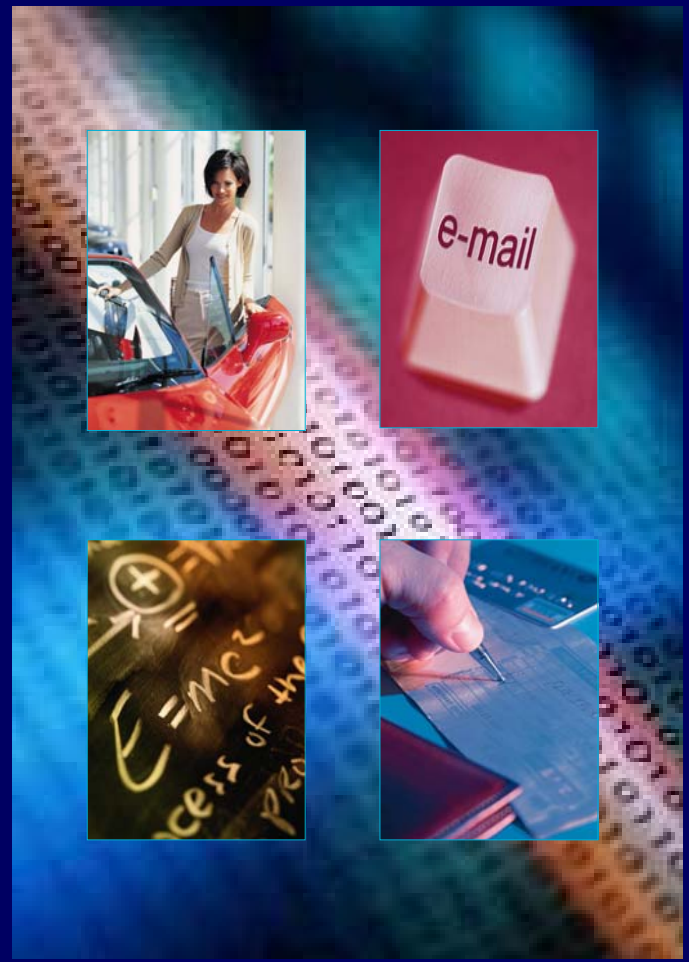
Element	Validation	Verification
Address	•Deliverable •Standardized	•Residential or business •Match to full name/surname
Phone number	•Area code/format •Prefix to zip •Cell phone or pager	•Residential or business •Match to full name/surname and/or address
Social security number	•Format •Issued - includes state and years of issuance •Deceased	•Match to full name/surname and/or address •Based on full SSN or last four
Drivers license	•Format correct for state	•Match to full name/surname and/or address
Date of birth	•Full DOB or year only	•Match to input •Comparison to SSN (if provided)

KBA - levels of authentication

- **Level 1**
  - **Validate customer data against demographic data**
- **Level 2**
  - **Determine likelihood data was provided by actual consumer using consumer credit data**
- **Level 3**
  - **Challenge/response questions only the consumer would know**

Authentication data sources

- Current sources
  - Consumer credit
  - Consumer demographic
  - Vehicle ownership
  - Property ownership
  - Reference files
  - Known fraud data
- Desired source
  - SSA verification



Consumer authentication - level one

Validate customer data against known sources

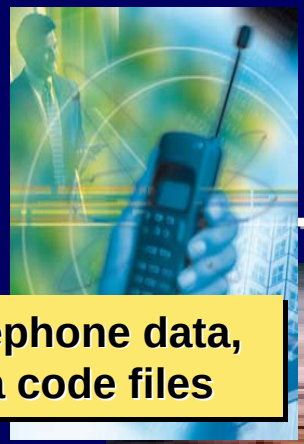
Verify all identifying information

- Name
- Address
- SSN
- Date of birth
- Phone number
- Driver's license

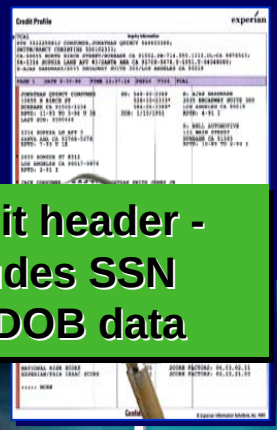
Checks

- Address, SSN, phone, DL validity
- Name/address verification to other input elements
- High risk address and phone
- OFAC screening
- Verification score

Data elements



Telephone data, area code files



Credit header - includes SSN and DOB data

Address data - standardization, residential, deliverable address, change of address

Social Security Administration

Demographic Data

OFAC SDN list

Business data - address, phone

Driver's license data

High risk address, phone

Level one – performance summary

Worst scoring	Frauds	Non-frauds
9.9%	48.53%	9.76%
18.5%	64.37%	18.34%
KS = 48.70%		

Score cut-off – example

- 90.10% accounts pass score, 9.9% referred
- 48.53% bad accounts captured, 51.47% get questions
- 9.76% good account referred, 90.24% good accounts pass

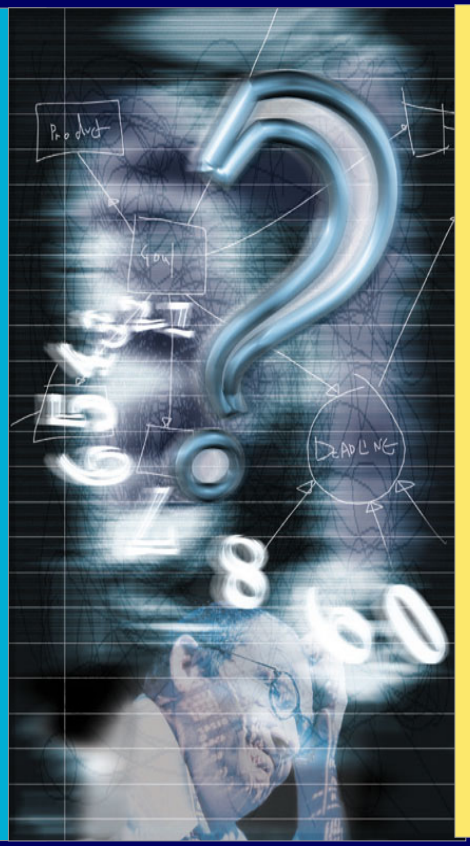
Consumer authentication - level two

Determine likelihood data was provided by actual consumer

Credit data

- Credit bureau fraud flags
- Credit attributes
- Credit bureau match indicators

Demographic data

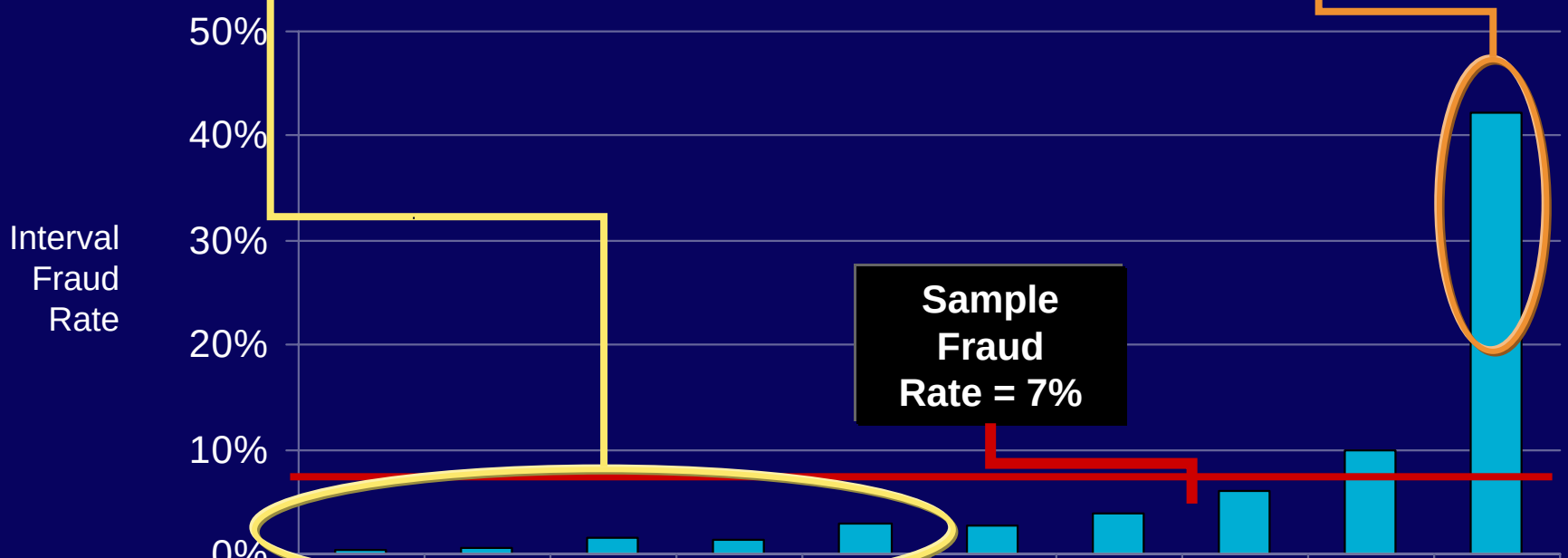


- 220 million consumers
- Updated continuously
- Reported by >30K contributors
- Financial services, retail, automotive, telecommunica-tions
- FCRA data accuracy regulations

Authentication score (KS = 57.21)

Low risk – Fraud rate = 1.34% (50% of population, 9.5% frauds)

High risk – Fraud rate = 42% (10% of population, 59% frauds)

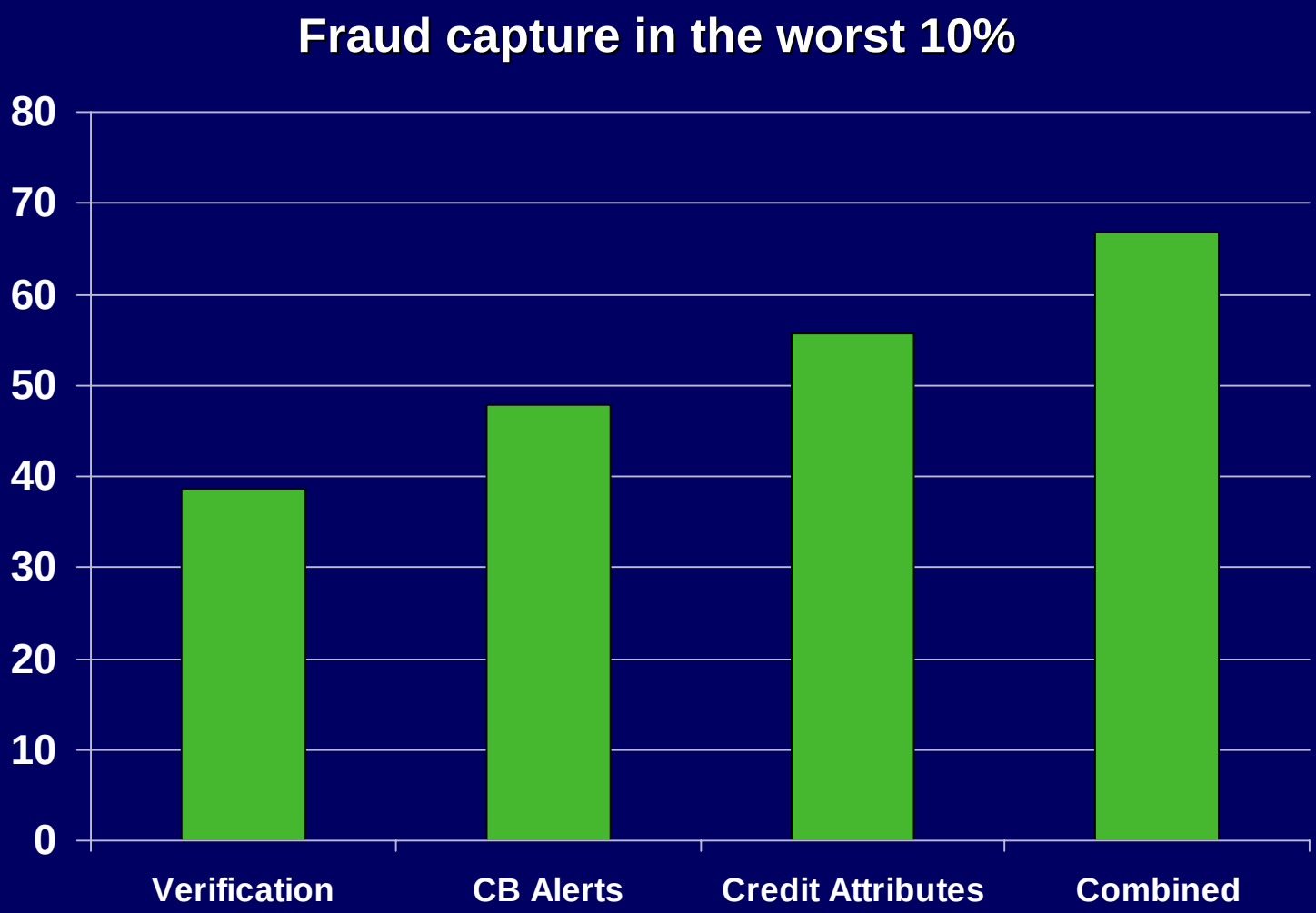


Score Interval	685-895	611-684	489-610	412-488	317-411	223-316	146-222	76-145	23-75	1-22
	0.39%	0.62%	1.52%	1.28%	2.90%	2.80%	3.89%	6.07%	9.84%	42.15%

Authentication Score Band

Data predictiveness

Analysis results



Level three - challenge/response

Challenge/response questions only the consumer would know

Interactive challenge/ response session

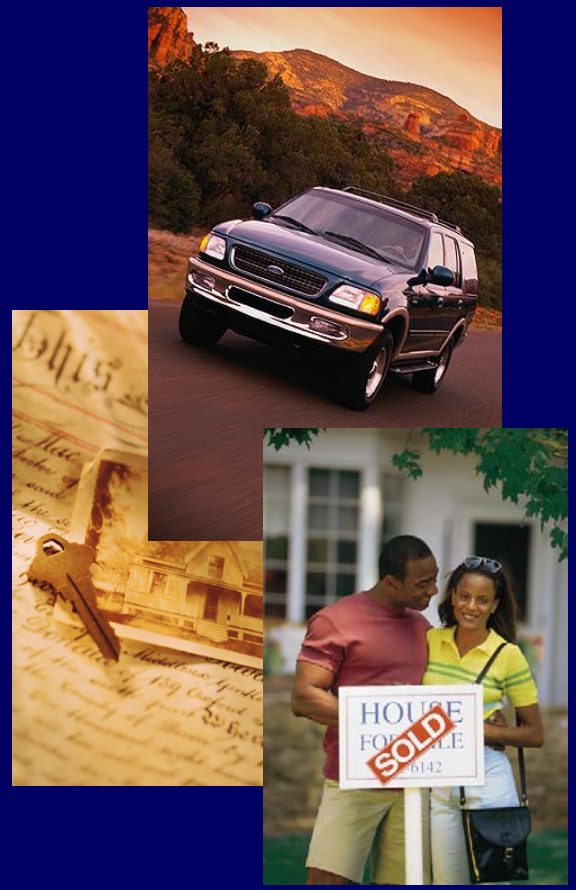
- Dynamically generated series of questions / answer choices
- Questions / answers vary each time
- Correct answer not always present
- Limited time to answer questions

Data Sources

- Consumer credit
- Vehicle Ownership
- Property Ownership
- Reference files

Types of challenge questions

- Vehicle make and model, year
- County of residence
- SSN issue state
- Previous city
- Previous street
- Mortgage lender and payment
- Auto lienholder and payment
- Year home built
- Estimated market value of home
- Last four of SSN
- Student loan provider

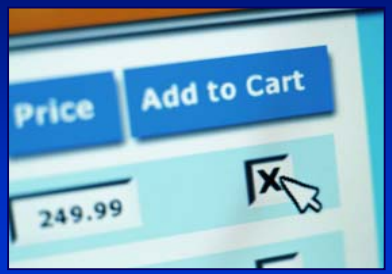


Known fraud data

Telecommunications

Credit cards

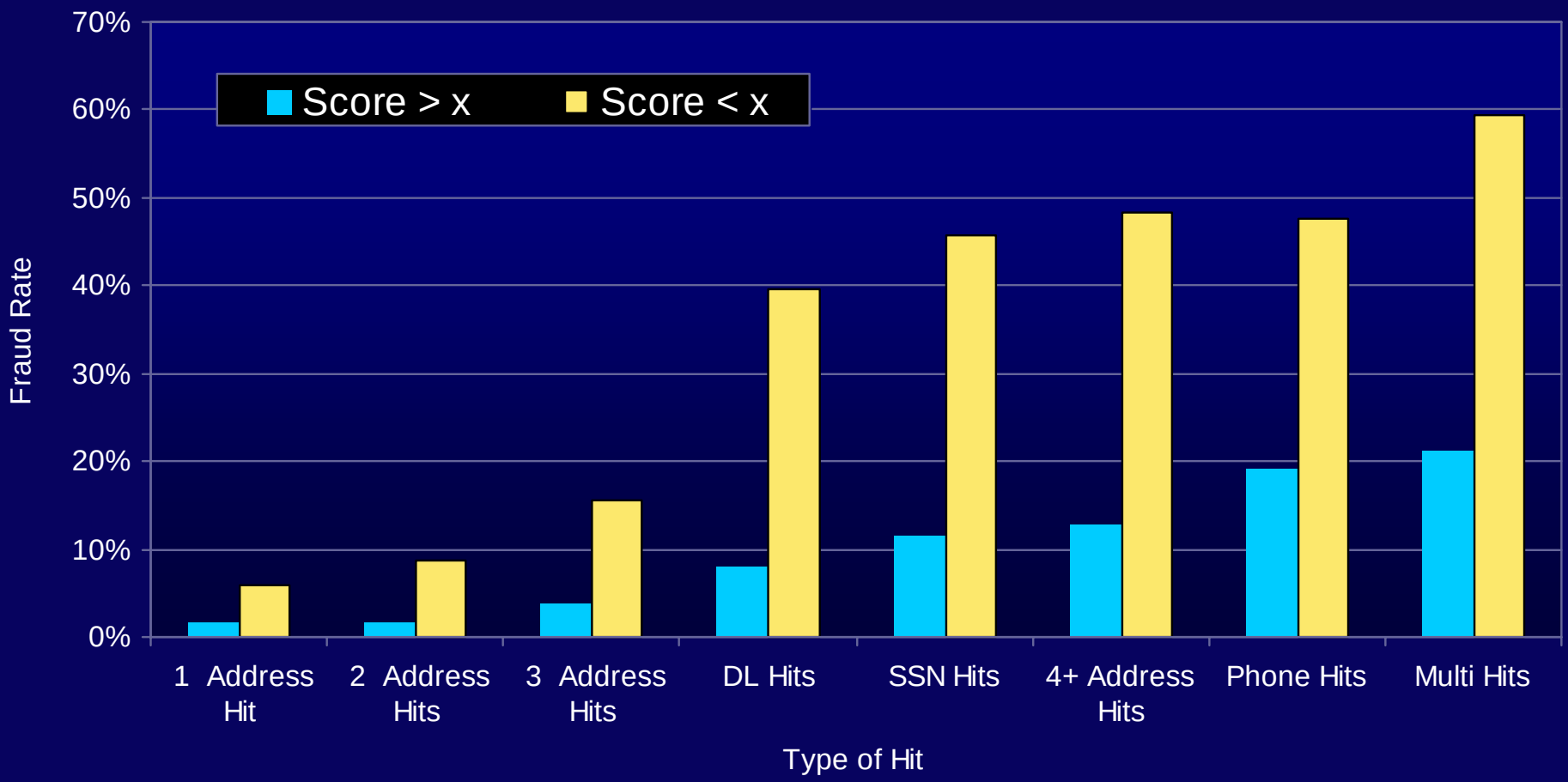
Online retailers



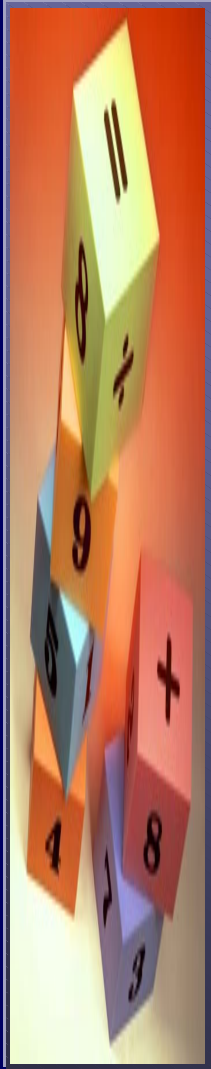
Automotive lenders

Combining known fraud data

Verification score, shared fraud data



Conclusion



- Consumer credit data is the highest quality data and most predictive source of authentication
- Consumer demographic data provides many sources in one database
- Known fraud data highlights a specific behavior
- Ultimate Authentication solution would combine all these sources, plus verification from the Social Security Administration

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