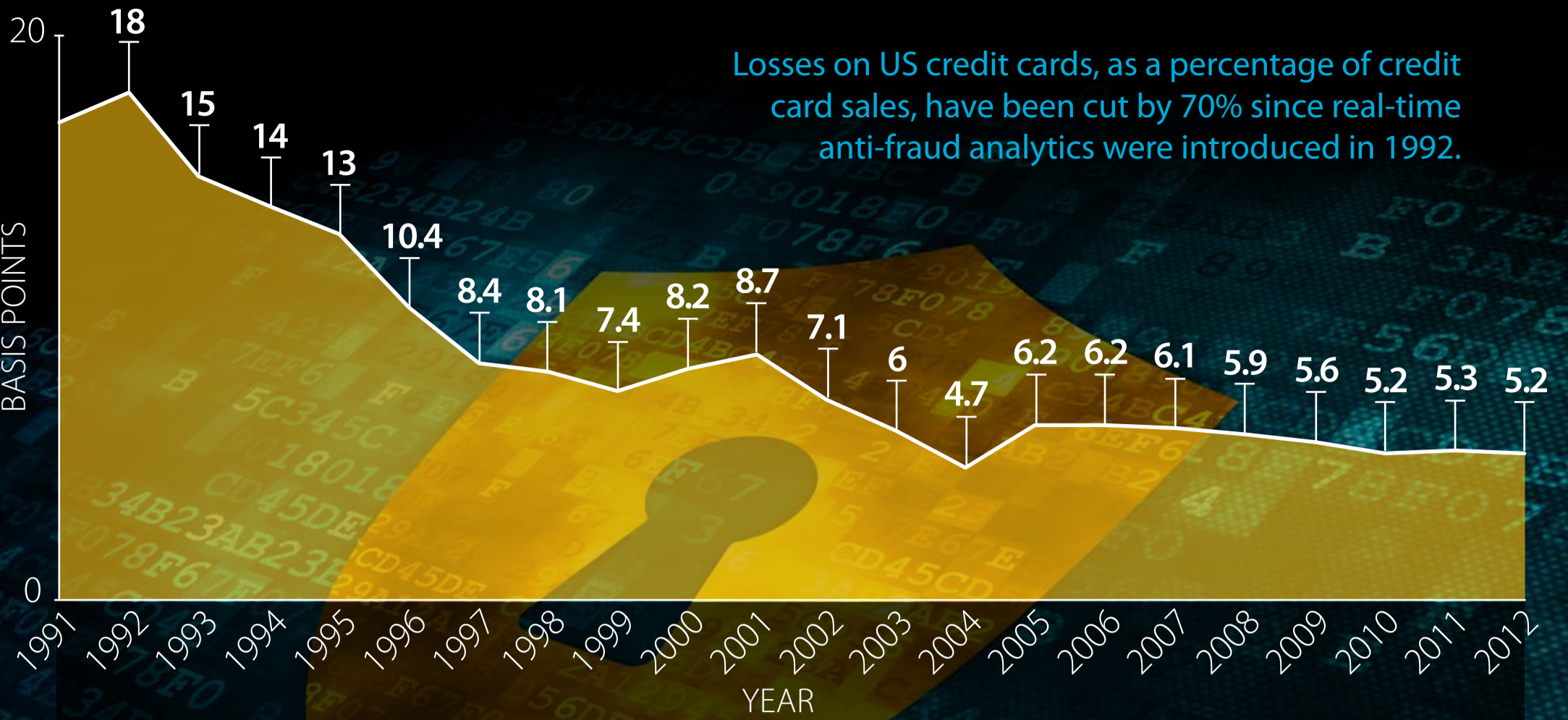
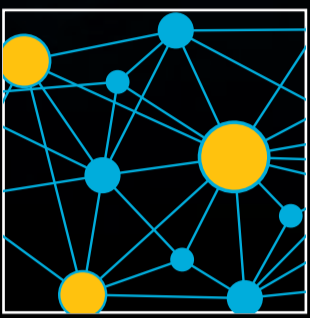


Real-Time Analytics:

Powerful Weapon in War on Payment Fraud



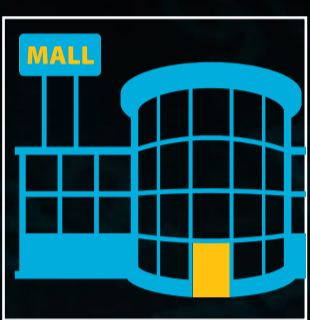
1992: Real-time monitoring of credit card purchases by FICO® Falcon® Fraud Manager software utilizing transaction profiles that analyze transaction data to understand behavioral patterns for each account and recognize fraudulent transactions



1993: Neural networks that are simple models of the human brain used to understand complex interactions between variables (e.g., transaction amount, location) to increase precision in identifying fraud



1995: Debit card modeling to expand real-time payment protection to debit card transactions



1996: Merchant modeling to spot fraudulent merchant activity



1999: E-commerce fraud modeling to protect merchants from card-not-present fraud by customers transacting on their websites



2004: ID enhancement that strengthens identity fraud detection by using multiple sources of identity-validating data



2006: Modeling of first-party fraud to recognize when people are committing fraud under their own names or invented names



2007: Device profiling that utilizes transaction data associated with devices to detect ATMs under fraud attack on debit card networks



2008: Self-calibrating technology that allows anti-fraud software to fine tune itself in real-time in response to shifts in transaction trends



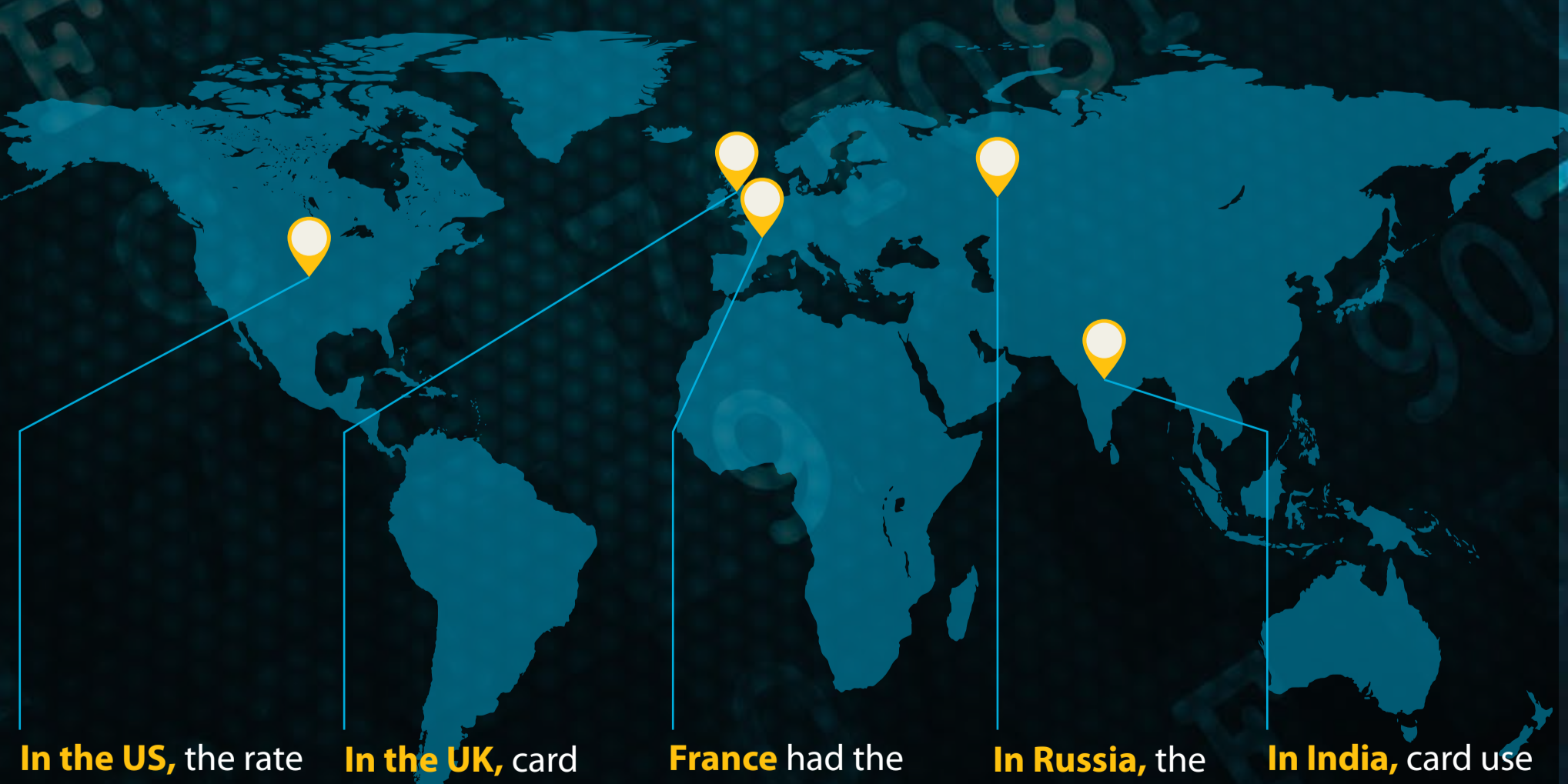
2010: Adaptive analytics that enable anti-fraud systems to adjust their models on the fly as fraud patterns change



2013: Behavior Sorted Lists that improve the ability to identify suspicious transactions by building comprehensive pictures of each consumer's past behavior

Card Payments by the Numbers

- ▶ More than **14 billion** payment cards are in circulation worldwide.
- ▶ Global spending on credit and debits cards reached **\$15.4 trillion** in 2011.
- ▶ Worldwide fraud losses on payment cards topped **\$11 billion** in 2012.



In the US, the rate of card fraud in 2012 was equal to 5.2 basis points. The worldwide card-fraud rate was also 5.2 basis points.

In the UK, card fraud shrank from £610 million in 2008 to £333 million in 2012 due to chip-and-PIN technology and fraud analytics.

France had the highest rate of card fraud in Europe in 2012— 7 basis points (7 cents per €100 spent on cards).

In Russia, the rate of card fraud in 2012 was equal to 2 basis points.

In India, card use is less frequent, but fraud on cards and internet banking grew nearly 50% from 2011 to 2012.