

# RSA® Conference 2015

San Francisco | April 20-24 | Moscone Center

SESSION ID: MBS-R04

## True Cost of Fraud and Cybercrime Against Your Mobile Channel

**Charles McColgan**

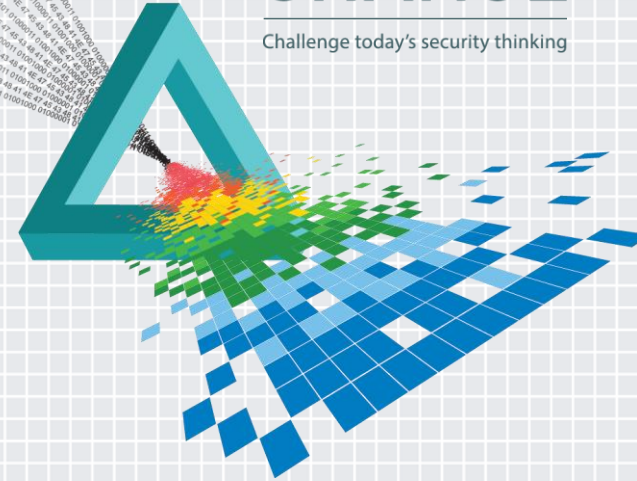
CTO  
TeleSign Corporation  
@TeleSign

**Mark Crichton, CISSP**

Director, Fraud & Risk Intelligence Product Mgmt  
RSA, The Security Division of EMC  
@RSA

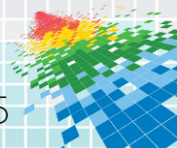
# CHANGE

Challenge today's security thinking



# Agenda

- ◆ Growth In Mobile
- ◆ What are the threats?
- ◆ The Hacker Ecosystem
- ◆ Cost of Fraud in Mobile
- ◆ What Can I do?



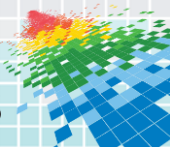
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## Mobile Growth



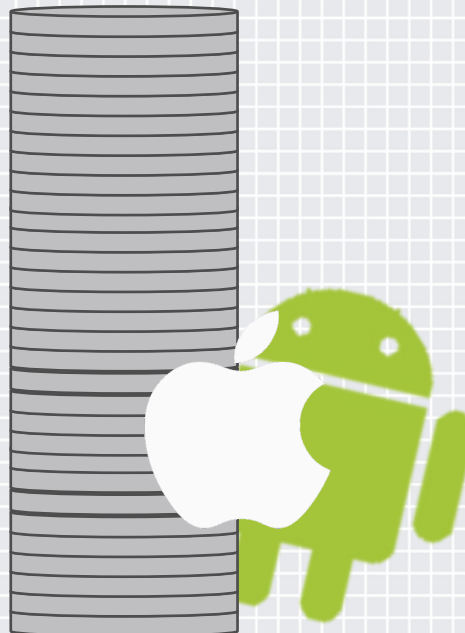
# Mobile Growth



# Smartphones are taking over



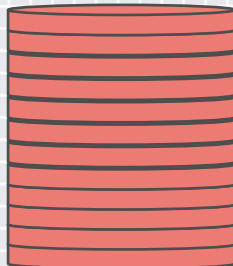
~1-billion smartphones



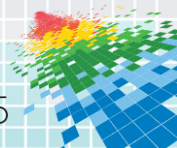
Source: IDC Worldwide Mobile Phone Tracker, January 27, 2014



~132-million babies



Source: Frederick S. Pardee Center for International Futures, Jan 17, 2014



# Smartphones are taking over.. everywhere!

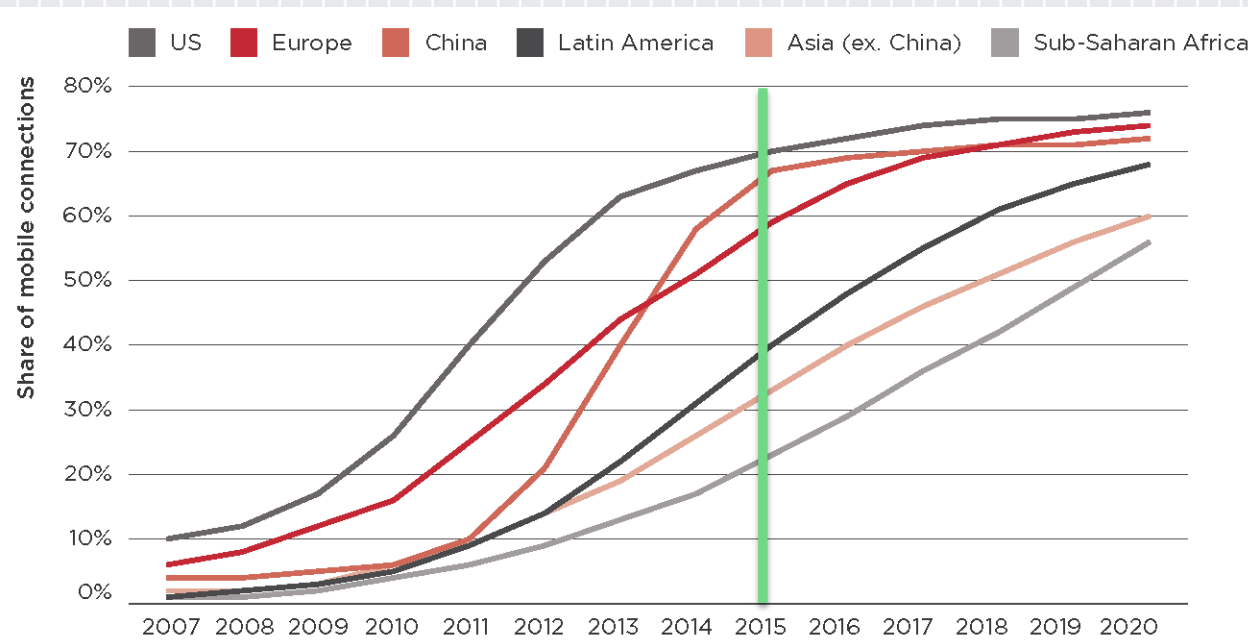
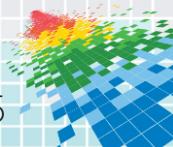


Figure 1: Smartphone penetration by region — the only way is up  
Source: GSMA Intelligence



# Smartphones are taking over... everywhere!

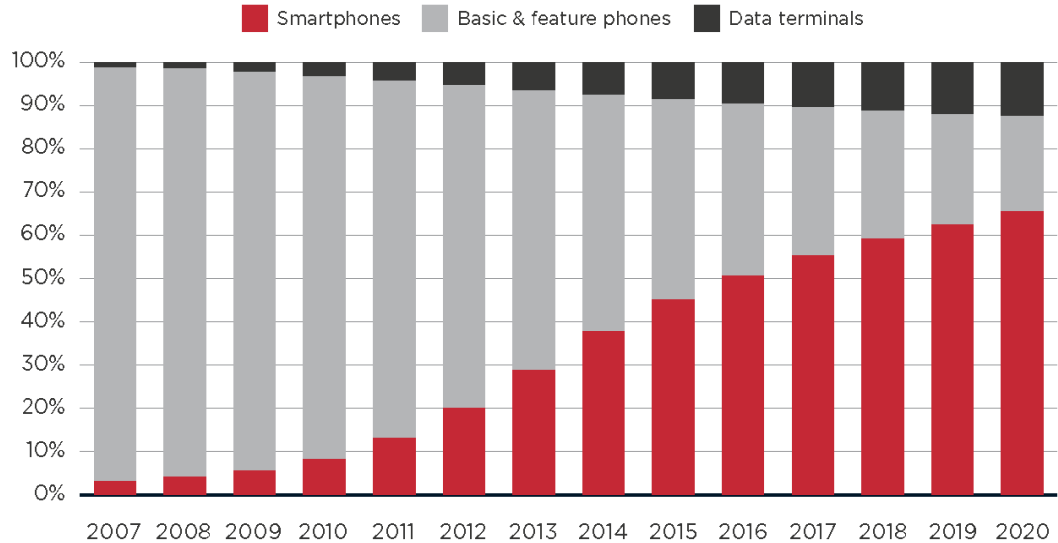


2 in every 3 connections (excluding M2M) globally will be smartphones by 2020  
 80% of which will come from the developing world, from 70% in 2014

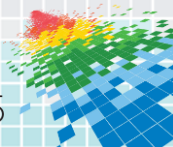


© GSMA Intelligence

Device adoption, as % of global connections (excluding M2M)



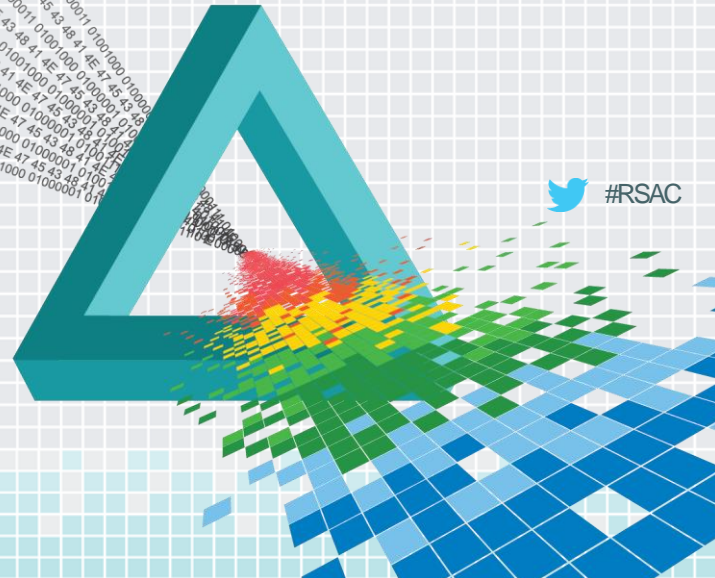
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## What are the Threats?





# What we hear about in the news today...

Almost 15 breaches per week in 2014 - 25% increase from 2013



145M



4.6M



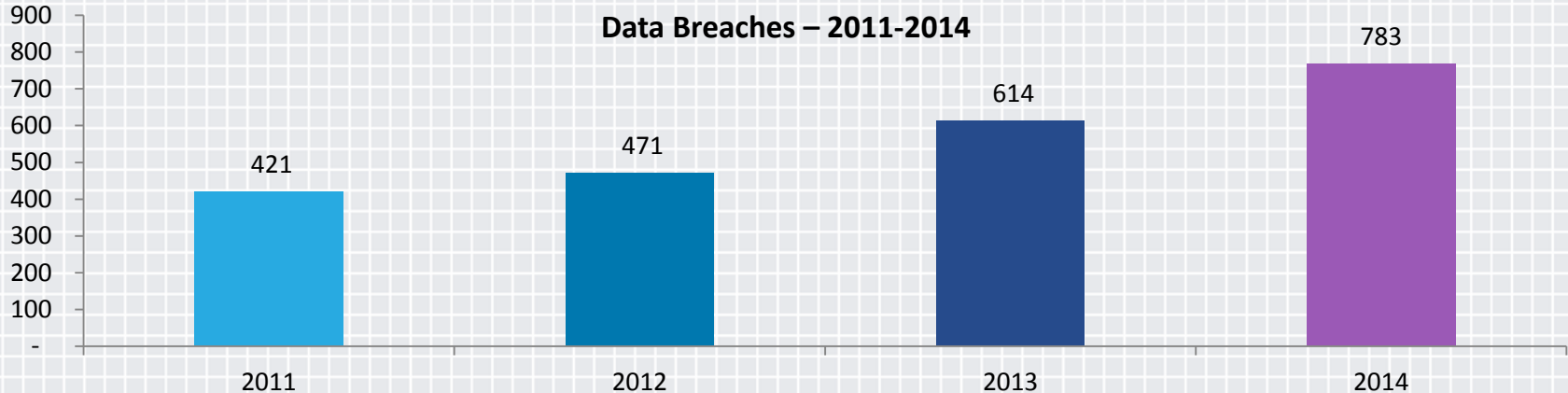
56M



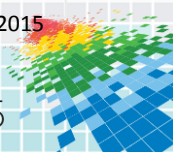
Massive Reach



Cultural Awareness

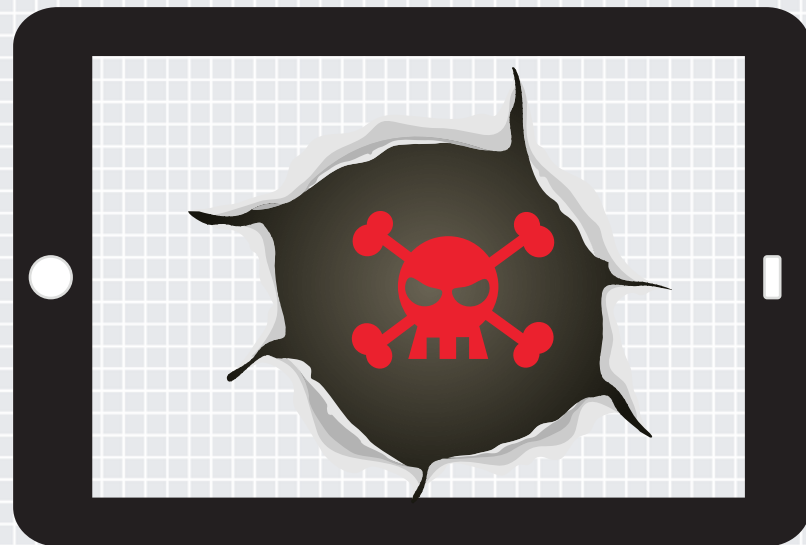


Source: Identity Theft Resource Center, 2015



# Mobile Fraud Follows Consumer Demand

- Increasing consumer access:  
Tablets, Smartphones,  
Wearables
- **27%** of all 2014 banking transactions from mobile devices\*
- **50%** year-over-year growth in mobile transaction volume\*
- **32%** of fraudulent transactions are from mobile channel\*

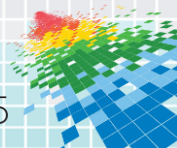


\*Source: RSA Fraud and Risk Intelligence CTO



# Mobile Fraud Examples

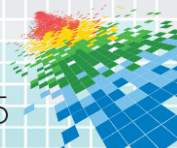
- ◆ Fraudsters use stolen credentials on mobile devices to:
  - ◆ Purchase goods with the victim's debit/credit cards
  - ◆ Gather more info about the victim to be used/sold for fraud purposes
    - ◆ Name, address, phone, email, order history, address book, etc.
  - ◆ Send money via BillPay service, etc.
  - ◆ Access sensitive information (i.e. bank account records)
  - ◆ Lock real user out of account (ransomware)
- ◆ Fraudsters create thousands of accounts they control to:
  - ◆ Test and use stolen credit/debit card numbers
  - ◆ Spam/phish other users



# Why is stopping mobile fraud harder?

- ◆ Identifying and stopping fraud on mobile is very different from web
  - ◆ IP address pool is small on many carriers
  - ◆ Device fingerprinting is less effective and less mature
  - ◆ Cookie tracking is limited
- ◆ Solutions that work for web fraud are far less effective for mobile fraud
- ◆ Visible in the \$92.3M/year loss on average per company!\*

\*Source: J. Gold Associates, 2015

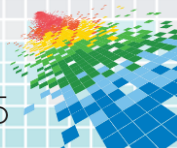


# Malicious App detections are growing

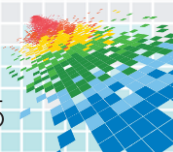
- ◆ Malicious apps are posing as legitimate apps
  - ◆ For Malware Distribution
  - ◆ For Phishing Scams
- ◆ 350,000 malicious Android app detections in 2012\*
- ◆ 1,400,000 malicious Android app detections in 2013\*
- ◆ 3,500,000+ malicious Android app detections by 9/2014\*



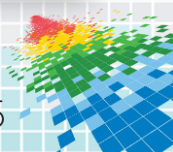
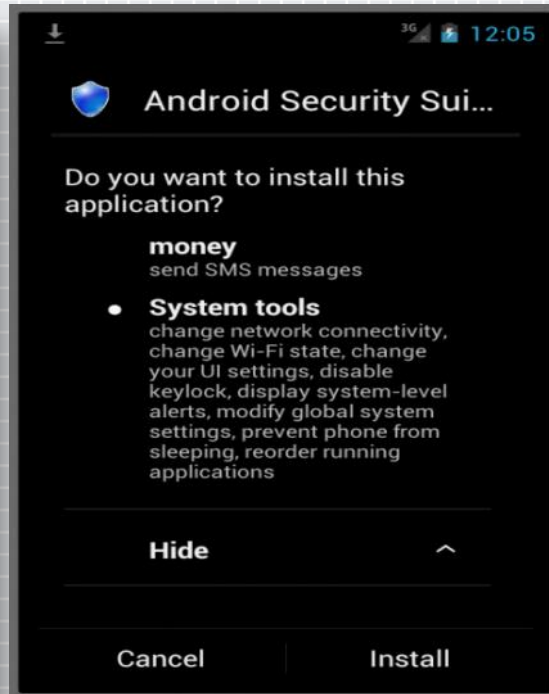
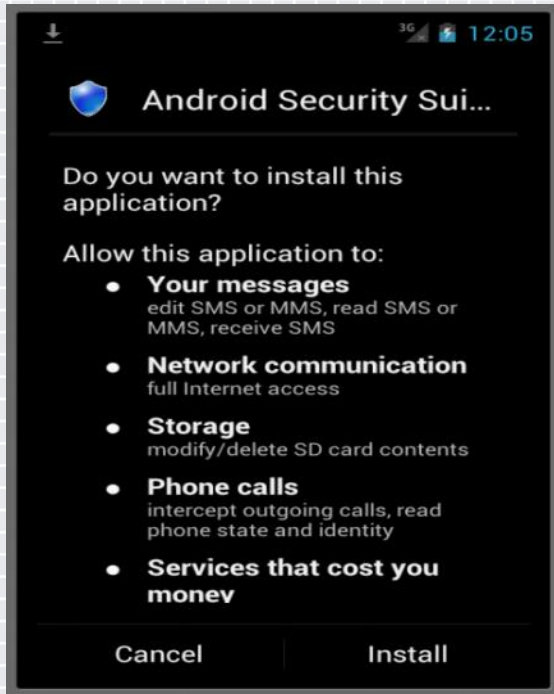
\*Source: Trend Micro Annual Security Roundup 2012, 2013, 2014



# From the unsolicited ...



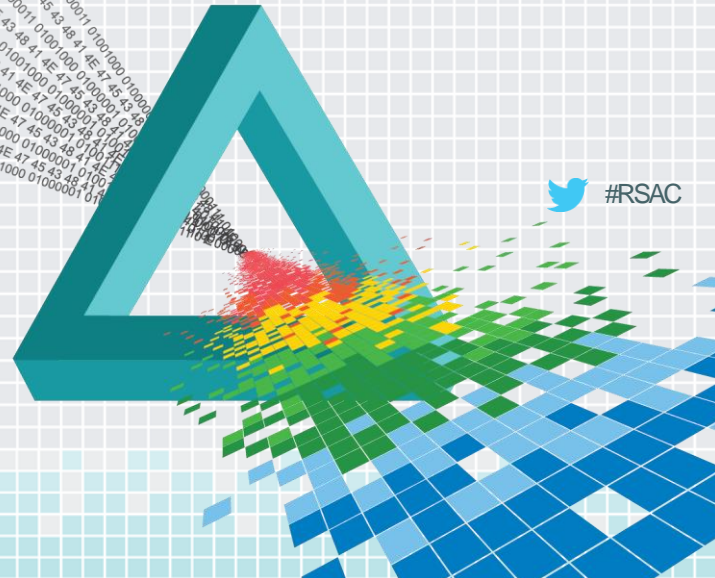
# To the user installed ...



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## The Hacker Ecosystem



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# Where does my data go?

### CARDING CENTER

All about Carding

- Free CVV** (276 Viewing)

Threads: 7,047 Posts: 16,730
- Free Dumps and Tracks** (28 Viewing)

Threads: 216 Posts: 1,240
- Random Logs & Passwords** (5 Viewing)

Threads: 1,326 Posts: 1,835
- Free Bank and PayPal Accounts** (111 Viewing)

Threads: 751 Posts: 7,967
- Carding Tutorials** (70 Viewing)

Threads: 189 Posts: 1,017
- Carding Tools** (33 Viewing)

Threads: 109 Posts: 533
- Carding News**

Threads: 24 Posts: 276
- Real Carding** (2 Viewing)

Threads: 97 Posts: 476
- Cardable Websites** (9 Viewing)

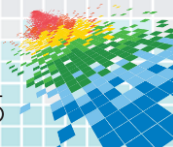
Threads: 51 Posts: 833

- credit card fresh high... >
- Learn real in store carding... >
- Feb. 11. XXX Password Mix >
- Free PayPal Account For All... >
- New Method Carding Bitcoins >
- atm and pos skimmers (... >
- any good uk cc seller >
- I need real visa card please... >
- Get ur free private CC from... >

### BS TRAFFIC

#### Blackstuff Visitors

US	3,998	PL	75
FR	1,904	DO	74
GB	992	CH	73
ID	736	MY	70
CA	497	AR	64
DE	392	UA	60
GH	351	BG	60
IN	279	CL	55
PK	274	JP	50
MX	261	CN	50



# Controlling the Devices Remotely

## iBANKING Admin Area

Project ID: 555 (11 phones, user) | Color scheme: Yellow | [Manage users and projects](#) | Oct 06, 2014 09:30:21 | User: admin

Selected phone: 107 | Last command: call list (send) | Send time: 02-10-2014 09:18:31 | Status: SMS ON | Call OFF | Rec OFF | Admin ON | Rec call OFF

General Info | Intercepted SMS List | All SMS List | All Call List | **Contact List** | URL Analyse | Sounds List | Application List | Pictures List | Code History | **Commands**

Number  IMEI  ICCID  Code  Info

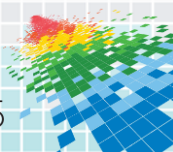
Show all phone | Show favorites only

761	★
107	★
191	★
613	★
210	★
549	★
120	★
704	★
	★
	★
	★
635	★

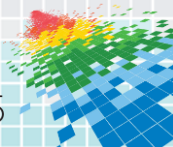
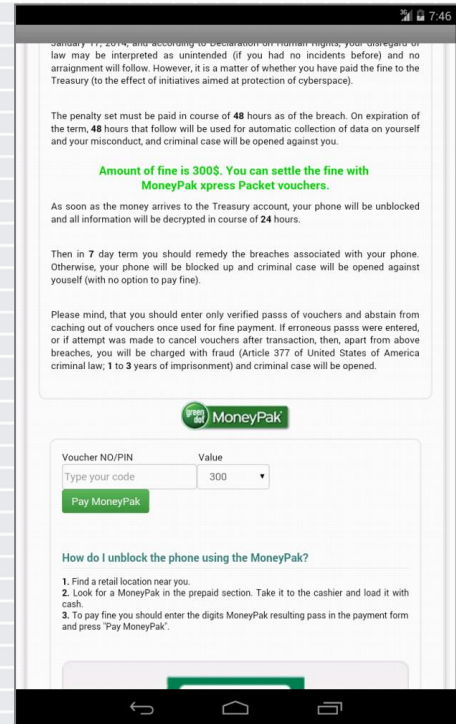
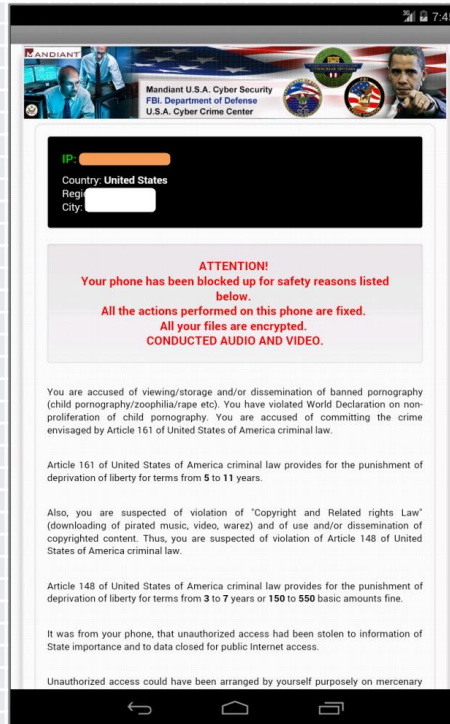
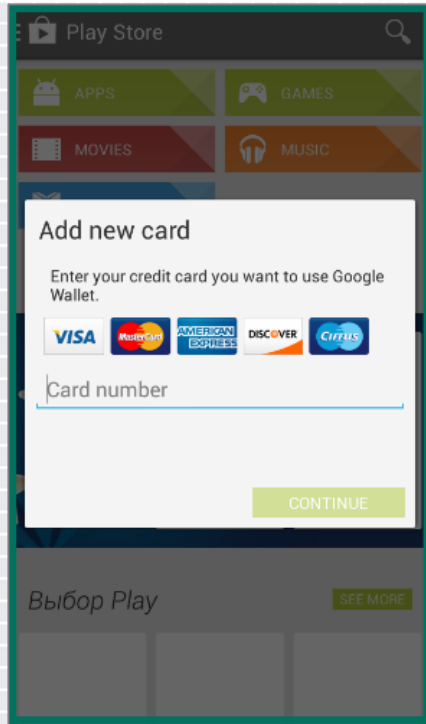
### Commands

Refresh Status Bar

Start SMS	Stop SMS	Start call	Stop call	Start record	Stop record	Start call to #
Get SMS	Get Call	Contact list	Send SMS	Check URL	Get images	Get place
Get apps	Grid	Start record call	Stop record call	Change control number	Change control number for all project	Wipe data



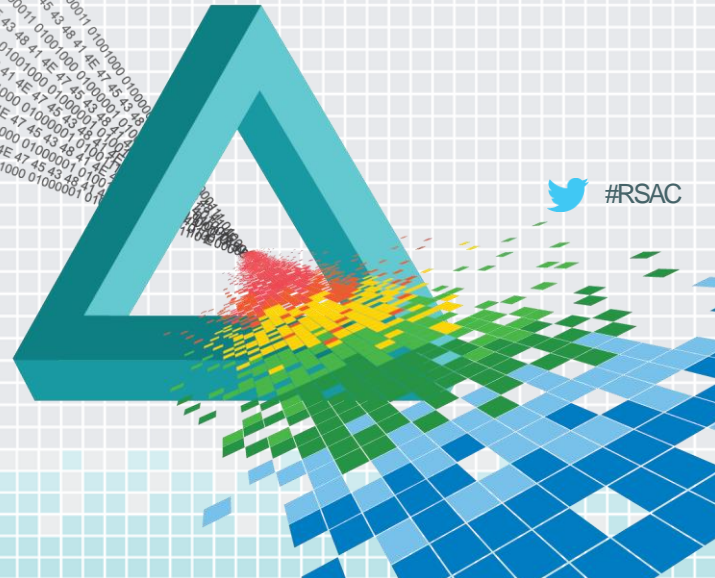
# Controlling them locally ...



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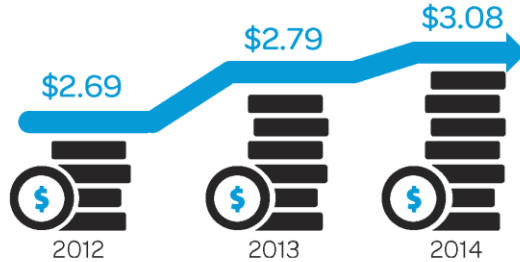
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## Cost of Fraud in Mobile

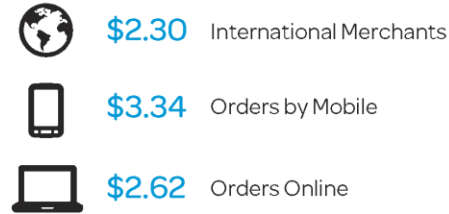


# Traditional vs eCommerce vs Mobile Fraud

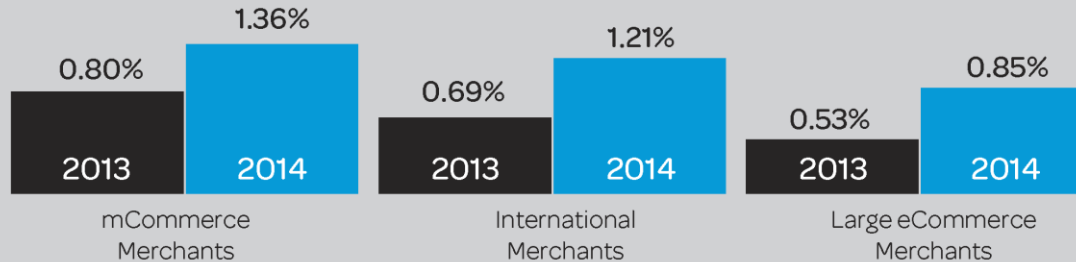
Increasing For The Average Merchant



And Higher For Certain Merchants and Channels



## Fraud Losses Growing



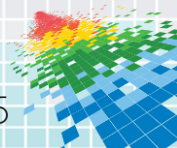
(Fraud losses as percent of revenue)

Source: Lexus Nexus True Cost of Fraud Study, 2014



# Methodology and Survey Size

- ◆ Survey consisted of 250 NA organizations
  - ◆ 44% Large (\$1B+), 25% Medium (\$500M-\$1B), 24% Small (\$100M-\$500M), 7% Very Small (\$100M)
- ◆ Average Total Revenues of \$2.54B
  - ◆ Weighted average across all organizations
- ◆ Internet and Mobile Revenues
  - ◆ One third generated revenues from the Internet in the 26%-50% range.
  - ◆ 25% indicated that 11%-25% of that revenue came from a mobile app.



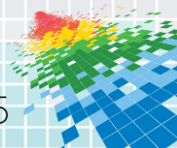
# Mobile Losses by Company Size

- ◆ Lost revenues as percentage of total revenue in past 12 months due to Mobile Fraud
  - ◆ By Company size (Average Percentage Ranges)
    - ◆ Very Small (\$100M), Small (\$100M-\$500M), Medium (\$500M-\$1B), Large (\$1B+).

	Very Small	Small	Medium	Large
%	1%-9%	10%-24%	10%-24%	10%-24%
\$	\$150K-\$450K	\$150K-\$6M	\$1.3M-\$24M	\$15M-\$240M

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- ◆ Total losses across all size organizations are large and will only grow!



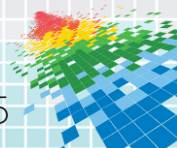
# By The Numbers

- ◆ A compound view of revenues, losses, and growth rates

Average Total Revenue	Average % of Total Revenue Due to Mobile	Average % of Total Rev Lost Due to Mobile	Average \$ Loss per year due to Mobile	Average 5 Year Mobile Growth Rate
\$2.54B	4.53%	3.04%	\$92.3M	47%

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- ◆ Total losses present large potential revenue if fraud eliminated.
  - ◆ Given these losses, companies are not spending enough on security.
  - ◆ Companies must increase level of expenditure on remediation of losses.
- ◆ Investing as little as 10%-20% of the yearly losses in enhanced security would provide significant boost to organization's ability to limit or eliminate the losses resulting from fraud.

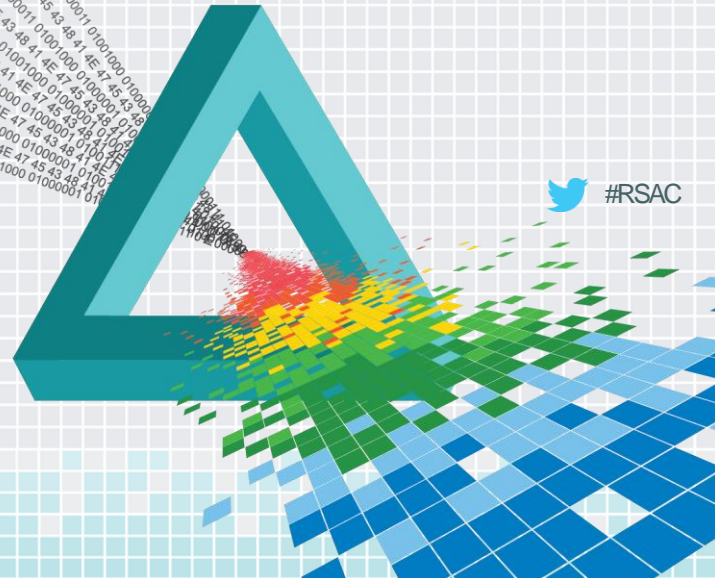




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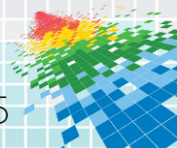
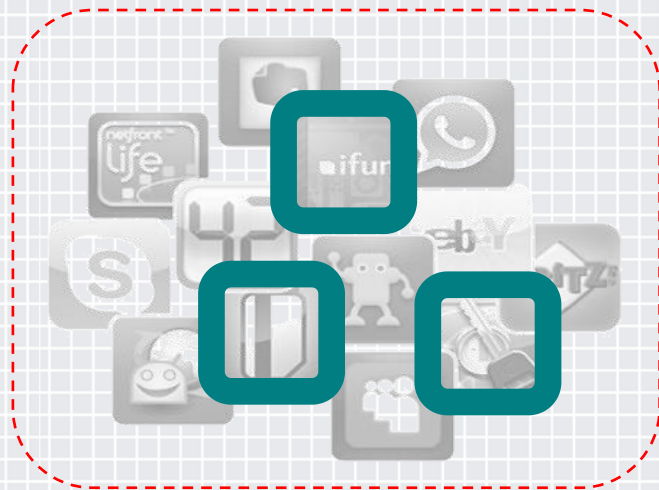
## What Can I Do?



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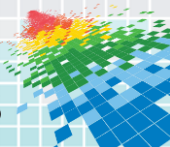
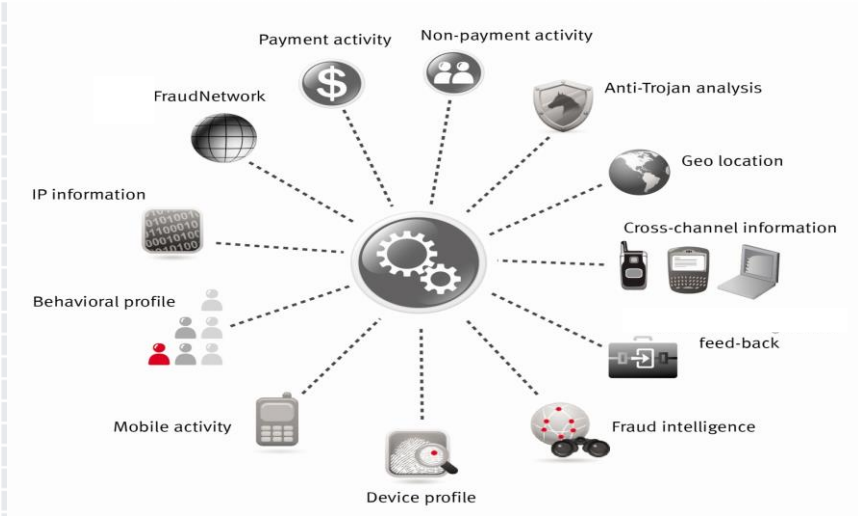
# Rogue App's

- ◆ Detect and shutdown apps targeting customers in public app stores
  - ◆ Don't forget the "non-public" ones too!
- ◆ Perform App Scanning on device
- ◆ Suggest "AV" for the mobile



# Perform Big Data Risk Analytics

- Who you are?
- What is the device that you are coming from?
- Did we see this device?
- Did we see this behavior?
- Did we see this origin location?
- Is the device compromised?
- What do you typically do?
- And more...



# At every step of a users journey

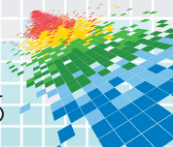
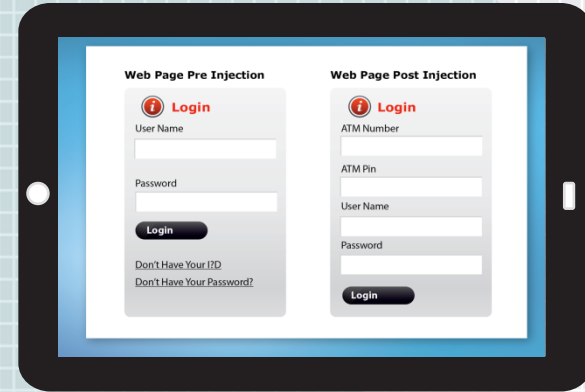
IN THE WILD



BEGIN ONLINE SESSION



LOGIN /  
TRANSACTIONS



# Apply What You Have Learned Today

- ◆ Based on research companies are seeing a disproportionate of fraud happening via mobile devices. Specific dollar and engineering investment must be made to protect this channel.
- ◆ Personally, look at what apps you have on your mobile device. What data are they are using and ask yourself do they need it?
  - ◆ Restrict or Remove apps that ask for too many permissions or that you don't use or need
- ◆ Invest in security for your users, your app or management of your mobile apps (MDM)

