WMC GLOBAL

JPAAWG

Text Messaging Updates: SMS Spam and RCS Safety

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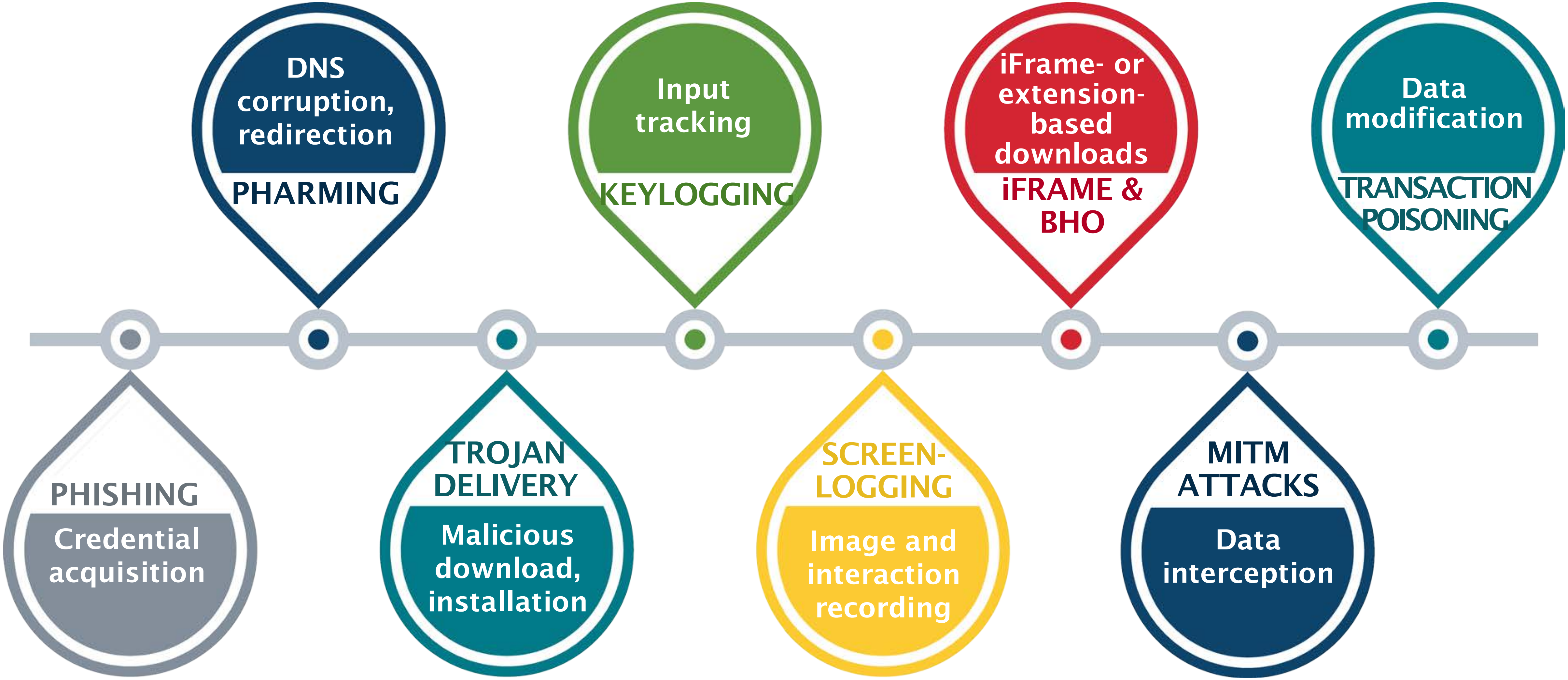
TEXT MESSAGING ATTACKS

Update

THREAT TRENDS

Advancing Attack Types



PHISHING
Credential acquisition

PHARMING
DNS corruption, redirection

TROJAN DELIVERY
Malicious download, installation

KEYLOGGING
Input tracking

SCREEN-LOGGING
Image and interaction recording

iFRAME & BHO
iFrame- or extension-based downloads

MITM ATTACKS
Data interception

TRANSACTION POISONING
Data modification

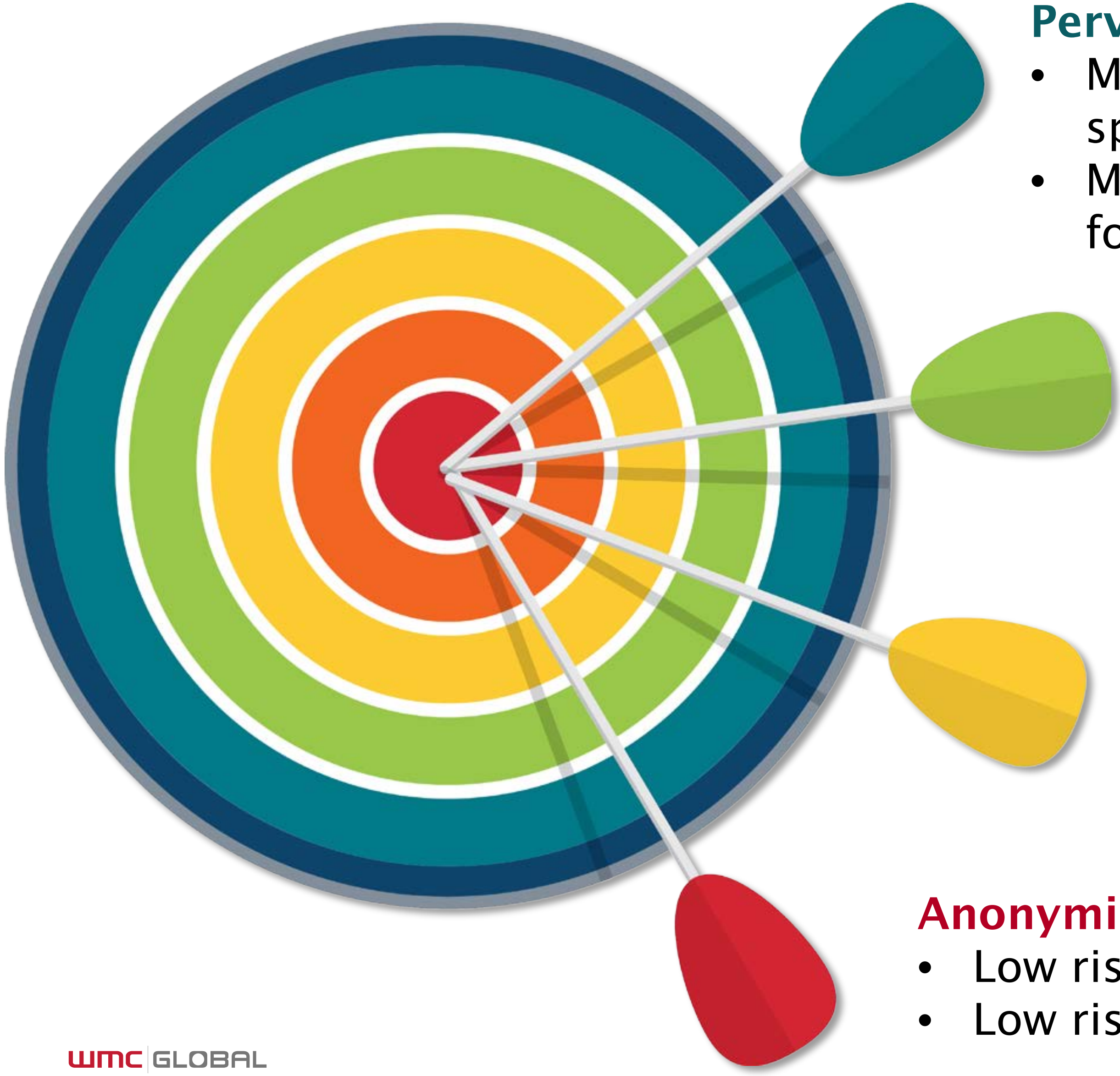
MOBILE SHIFT

Advancing Attack Types

- Email is still the attack delivery vector of choice
  - Corporations use email every day
  - Push media
  - Can carry payloads
  - Easy to spoof
- However, text messages, OTT messaging, and social media are rapidly rising in popularity
  - With the anticipated rise of RCS, text messaging takes on many of the characteristics that makes email so appealing for threat delivery
- Messages—regardless of platform—are only the initiation point for a threat; the real danger occurs once a user engages with the content

MOBILE-TARGETED MESSAGING ATTACKS

SMS is the Gateway to Consumer’s Lives



Pervasiveness

- Mobile accounts for 70% of consumers’ time spent with digital media
- Mobile continues to surpass desktop usage for web access worldwide

Accessibility

- Widely available
- Cross-platform-delivery capable
- Accessible from disparate entry points
- Easy first interaction for various exploits

Cost Effectiveness

- Inexpensive infrastructure
- Scalable
- Repeatable

Anonymity

- Low risk of attribution
- Low risk of retaliation

ATTACK ENTRY POINTS

Shared Codes and Over-the-Top Platforms

Unvetted and Shared Codes

- Grey route to ecosystem entry
- Multiple layers behind registered entities enable obfuscation
  - Enables code swapping
  - Masks actual message senders
  - Enables snowshoeing
- In the last year, abuse on shared codes has skyrocketed as blocking has become more aggressive in other areas

Over-the-Top Platforms

- Entry via Over-the-Top (OTT) platforms offering SMS forwarding options
  - Harder to track OTT account ownership without direct engagement with OTT services
  - Circumvents upfront safeguards and per-code volume caps
  - Facebook and Twitter SMS forwarding are major source of these attacks

ATTACK CATEGORIES

Popular Attack Types

Social Engineering

- Credential phishing
- Fake accounts set up on Facebook, LinkedIn, and Twitter impersonate known individuals within an organization and engage with employees as trusted entities
- Buying and selling scams, especially over Craigslist
- Event and issue-based attacks
  - Lottery jackpots
  - Holidays or major events (sports, elections, etc.)
  - Health care open enrollment periods

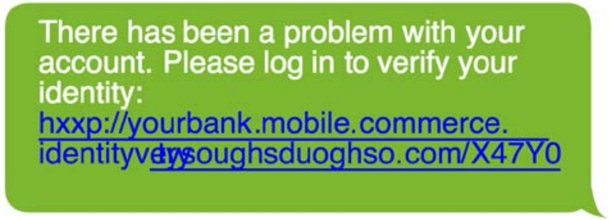
Malware Distribution

- Contributing factors
  - Kaspersky forecasted that espionage will be shifting heavily to mobile and apps
  - Mobile banking has seen a rapid rise in popularity, and is thus a prime target
- SMS used as attack delivery vector, prompting link and media interaction
  - Malware delivery sites
  - Side-loaded apps
  - RCS file transfer
- Bespoke exploit kits can be created to capture specific desired data (e.g., SpyEye)
  - SMS generation and receipt to defeat 2FA

ANATOMY OF AN ATTACK

Core Components

Attack Message



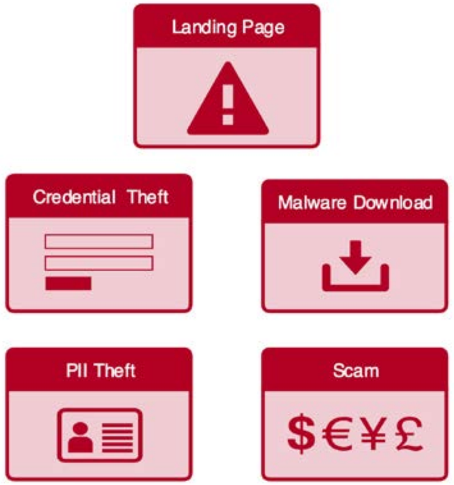
There has been a problem with your account. Please log in to verify your identity: hxxp://yourbank.mobile.commerce.identityvdysoughsduoghso.com/X47Y0

- Variable text generation
- Variable URL generation

Redirects

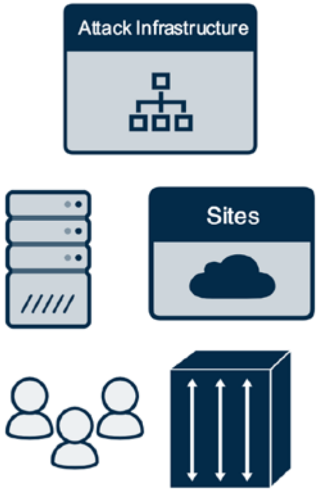
- Variable redirect chain
  - Device
  - Location
  - OS
  - Access time
  - Operator network

Landing Page



- Interaction points
- Data collection
- Malware installation

Supporting Infrastructure



- Sites
- Servers
- Accounts
- IPs

Threat Actor Information

- Identity
- Location
- Contact info
- Relationships

US-TARGETED ATTACKS

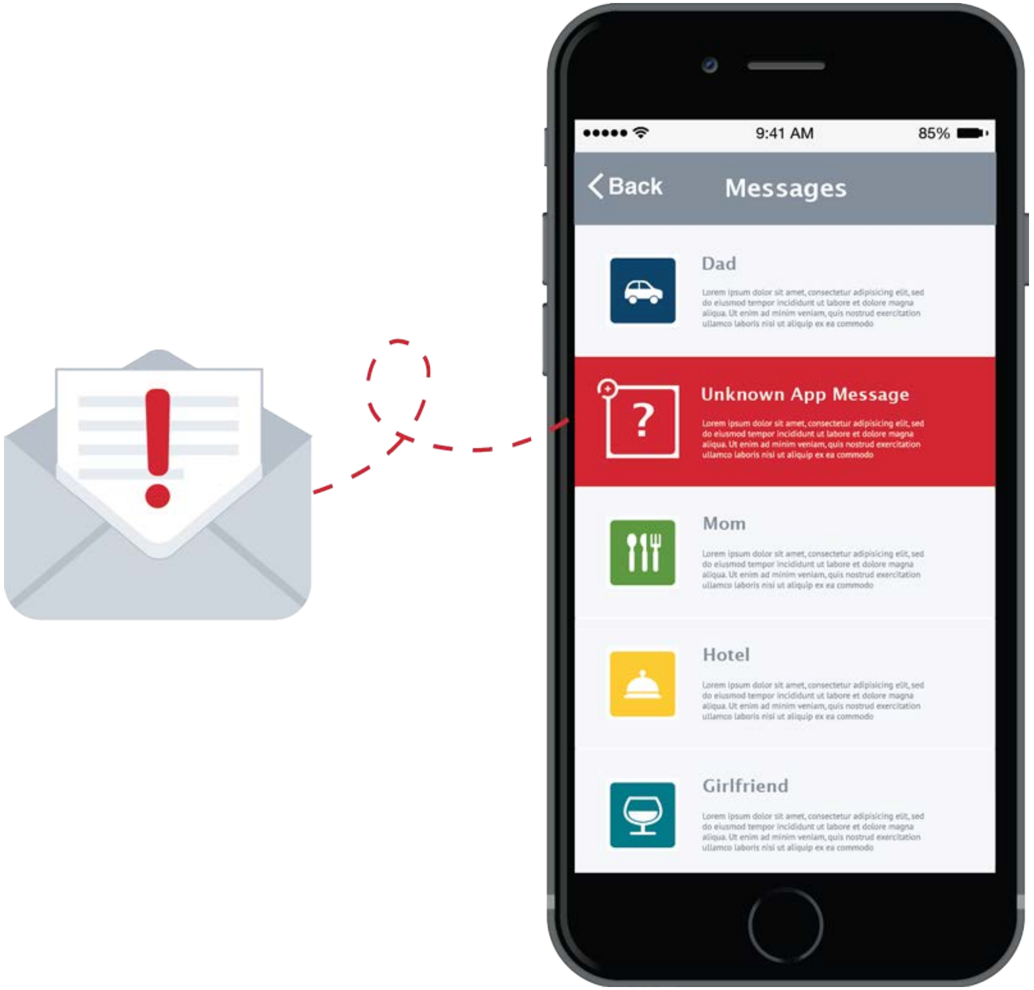
Recent Attacks

- **Political Messages**
  - Not attacks, per se, but high complaint volumes
  - Spikes during election lead-up and periods of high political engagement
- **Socially Engineered Swatting**
  - Messaging sent to multiple recipients threatening bodily harm and containing another phone number, intending to implicate the contained phone number as an involved party
- **Phish Hopper**
  - Pervasive attack targeting major brands
  - Leverages a flexible phishing kit to hop between major brands
    - Facebook
    - Wells Fargo
    - Bank of America
    - Chase
  - Shifts IPs
- **Coinbase Phishing**
  - Increased interest in phishing bitcoin accounts
  - Attacks ramp up over holidays to evade detection
  - Attack shifts domains, IPs, and sending accounts continuously, phasing the transition between infrastructure

JAPAN-TARGETED ATTACKS

Recent Attack Example

- Malware Distribution
  - Sagawa Express-branded attack
    - Urged users to download app-disguised malware
    - Some versions of the attack also collected user PII
    - Malware stole IDs, passwords, and credit card information
    - Malware hijacked devices to send additional smishing messages
- Phishing
  - SMS, email, and fake app attacks targeting LINE, Amazon, MyJCB, AppleID, BitCoin credentials



RCS

Emerging Threats

RCS DEPLOYMENT

Japan Leads the Way

64 Operators Across 45 Countries

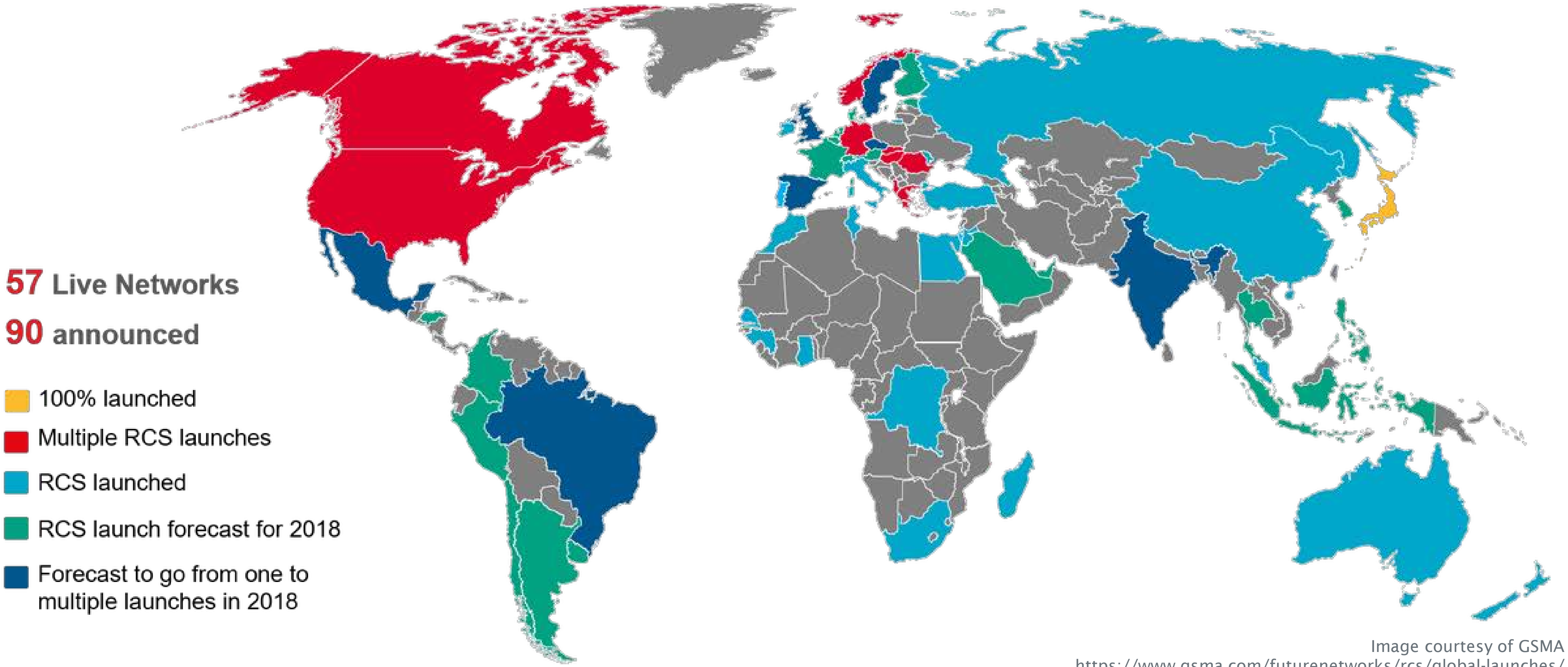

57 Live Networks
90 announced
🟨 100% launched
🟥 Multiple RCS launches
🟦 RCS launched
🟩 RCS launch forecast for 2018
🟦 Forecast to go from one to multiple launches in 2018

Image courtesy of GSMA
https://www.gsma.com/futurenetworks/rcs/global-launches/

RCS CAPABILITIES

Enhanced Experiences and Interactivity

- RCS brings app-like functionality to text messaging
  - Typing indicators
  - Read receipts
  - Link interactions
  - File transfers
  - Interaction components
  - Embedded branding
  - Multi-device messaging
  - Geolocation
- Introduces Messaging as a Platform (MaaP) functionality for A2P Messaging
  - Certified senders with branding and logos
  - Chatbots
  - Rich cards
  - Purchase of items sold by chatbots
  - Privacy controls
  - Spam protections

RCS CAPABILITIES

Examples

Verified Sender

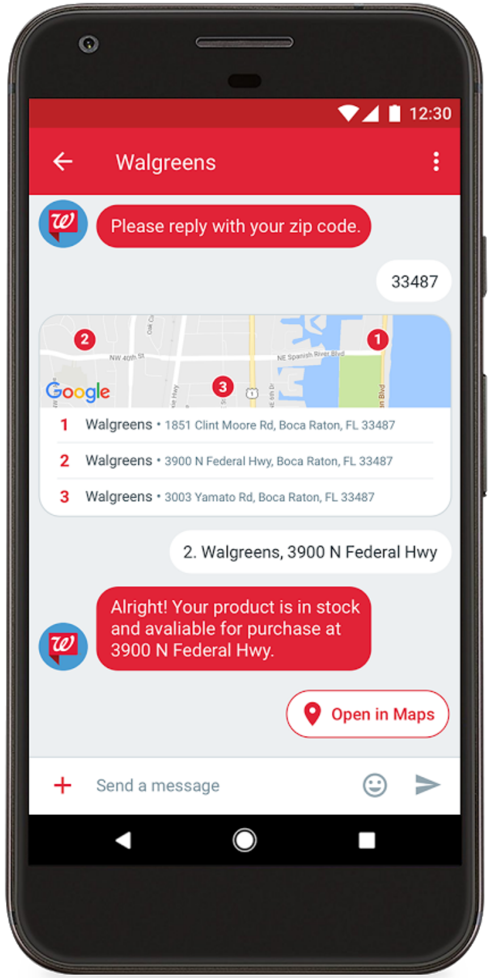
Vetted and identified

Custom Branding

Names, colors, logos

Suggested Actions

URLs, maps, calendars, dialers



Please reply with your zip code.

33487

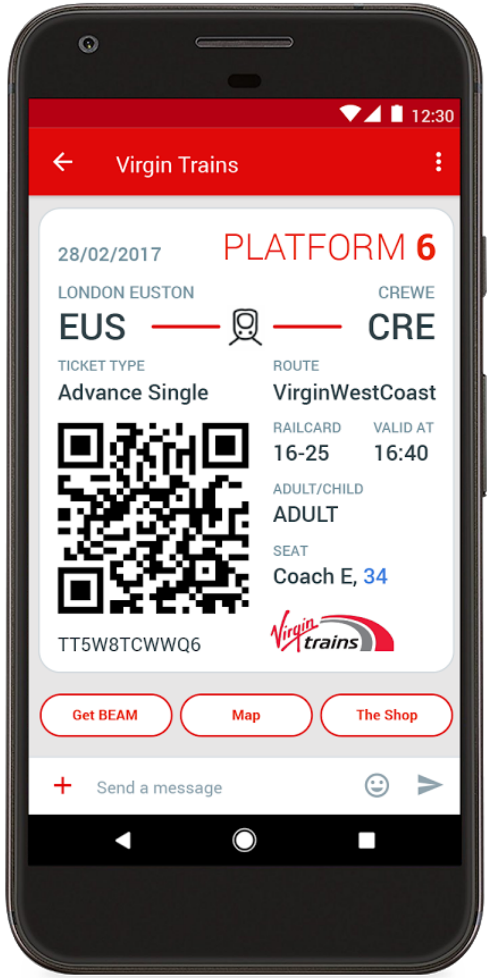
1 Walgreens • 1851 Clint Moore Rd, Boca Raton, FL 33487

2 Walgreens • 3900 N Federal Hwy, Boca Raton, FL 33487

3 Walgreens • 3003 Yamato Rd, Boca Raton, FL 33487

2. Walgreens, 3900 N Federal Hwy

Alright! Your product is in stock and avaliable for purchase at 3900 N Federal Hwy.



28/02/2017 PLATFORM 6

LONDON EUSTON EUS — CREWE CRE

TICKET TYPE: Advance Single

ROUTE: VirginWestCoast

RAILCARD: 16-25

VALID AT: 16:40

ADULT/CHILD: ADULT

SEAT: Coach E, 34

TT5W8TCWWQ6

Rich Cards

Images, videos, GIFs

QR Codes

Tickets, tracking, redemptions

Suggested Replies

Customized response options

Image courtesy of GSMA

RCS SAFETY

Areas for Planning

- **Verified Sender Onboarding**
  - Vetting requirements
  - Verification procedures
  - Proof of identity/impersonation prevention
- **Entity and Message Blocking**
  - Thresholds for blocking implementation
  - Prohibited behaviors
  - Abuse pattern establishment
  - User-level vs. operator-level blocking
- **Abuse Reporting and Spam Control**
  - Recipients
  - Attack data sharing
  - Systems and implementations
- **Interactivity Management**
  - Redirection
  - Downloads
  - File transfers

QUESTIONS?

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