DISPATCH: SECURE MOBILE JOURNALISM


Stanford University*, Columbia University**, Tumblr, Inc.***
JOURNALISM?
CITIZENS + JOURNALISTS

A long-lasting connection
CITIZENS + JOURNALISTS

A relationship that is changing the world today

• Recent links between citizen reporting and journalists have had a profound impact
AWESOME, RIGHT?
PERVASIVE RISKS

• Citizen and professional journalists are threatened

• People jailed because of Facebook messages exchanged during the Arab Spring, and many citizen and professional reporters alike are unaware of the risks of using social media until it’s too late

• Source protection is broken

• By law, journalists don’t have to reveal their sources (in the US)

• What if the source contacts them by email or Twitter and the government has the right to see the messages without any warrant?
"When your computer can be confiscated and your emails be viewed, there are times when meeting in person, taking notes on a notepad and hiding the notepad is the most secure way to conduct journalism"

- Rebecca MacKinnon
former CNN journalist, co-founder Global Voices Online
NEED FOR PROTECTION

- **Journalists**
  - Extend reach of what can be reported
  - Validate trustworthiness of source
  - Maintain integrity and security of sources

- **Citizen Reporters**
  - Avoid negative repercussions of reports
  - Communicate regardless of the censorship situation
  - Establish reputation
HOW?
THE TEAM

Journalism
Susan McGregor (Columbia)
background with WSJ
Madeline Ross (Columbia)
specializes in digital communication

Computer Science
MobiSocial team at Stanford
secure group communication
Networking lab at Columbia
opportunistic networks

Publishing
Chris Haseman (Tumblr)
commitment to publish
PROJECT CONTRIBUTIONS

• Raising awareness of security among journalists

• **Dispatch:**
  
  • Production-quality secure communication/publication system for journalists
  
  • Experimental disconnection tolerance
  
  • Real-life field tests with journalists on Dispatch to inform difficulties in the use and adoption
SECURE COMMUNICATION

Trusted Pseudonym
PUBLISHING
PUBLISHING
PUBLISHING

Looks like a user

Instant or after approval
PUBLISHING

Looks like a user

Instant or after approval
IDENTITY-BASED ROUTING

• Messages are encrypted and signed using Identity-Based Cryptography (IBC)\(^a\)

• The system routes by hashed identities rather than by IP addresses, allowing users to send and receive messages from anywhere

• The message contains all necessary recipient information, allowing for ad-hoc message routing of signed and encrypted messages\(^b\)


\(^b\) T. J. Purtell, I. Vo, and M. S. Lam. A Mobile Social Network on ESP: an Egocentric Social Platform
SYSTEM ARCHITECTURE

Identity-Based Routing

Publisher = signed and encrypted by identities

Publishing Server

SSL

Identity Provider

SSL

Key Issuer

SSL
SNEAKERNET
SNEAKERNET
SNEAKERNET
SNEAKERNET
SNEAKERNET
SNEAKERNET
APPROACHES

• Reputation building
• Forgery protection
• Interception protection
• Expand reach
APPROACHES

- Reputation building
- Forgery protection
- Interception protection
- Expand reach

- Messages cryptographically signed by pseudonyms
- Identity-based encryption
- Sneakernet built on identity-based routing
WORKING WITH JOURNALISTS
DISPATCH ON ELECTION DAY

• We want journalists to use Dispatch regardless of danger level

• Thus, we recruited some journalist contacts to report the elections in NYC

• The day before, we held a brief tutorial
DISPATCH ON ELECTION DAY

- 96 posts
- 21 text posts
- 75 image posts
- 10 unique contributors
- 3 users with 5 or more posts each
- 1 MVP user
- Usage throughout the day
DEMO
COMMUNITY BUILDING

dispatch-politics.tumblr.com
@Dispatch_App
dispatchapp.wpengine.com
SUMMARY

• We’ve assembled a diverse team to tackle problems

• We’re continuing to map clever technical approaches to challenges journalists face today

• An iterative process is critical when working with journalists

• We’re on iOS and Android app marketplaces!