

Peer-to-peer infrastructure for underserved populations

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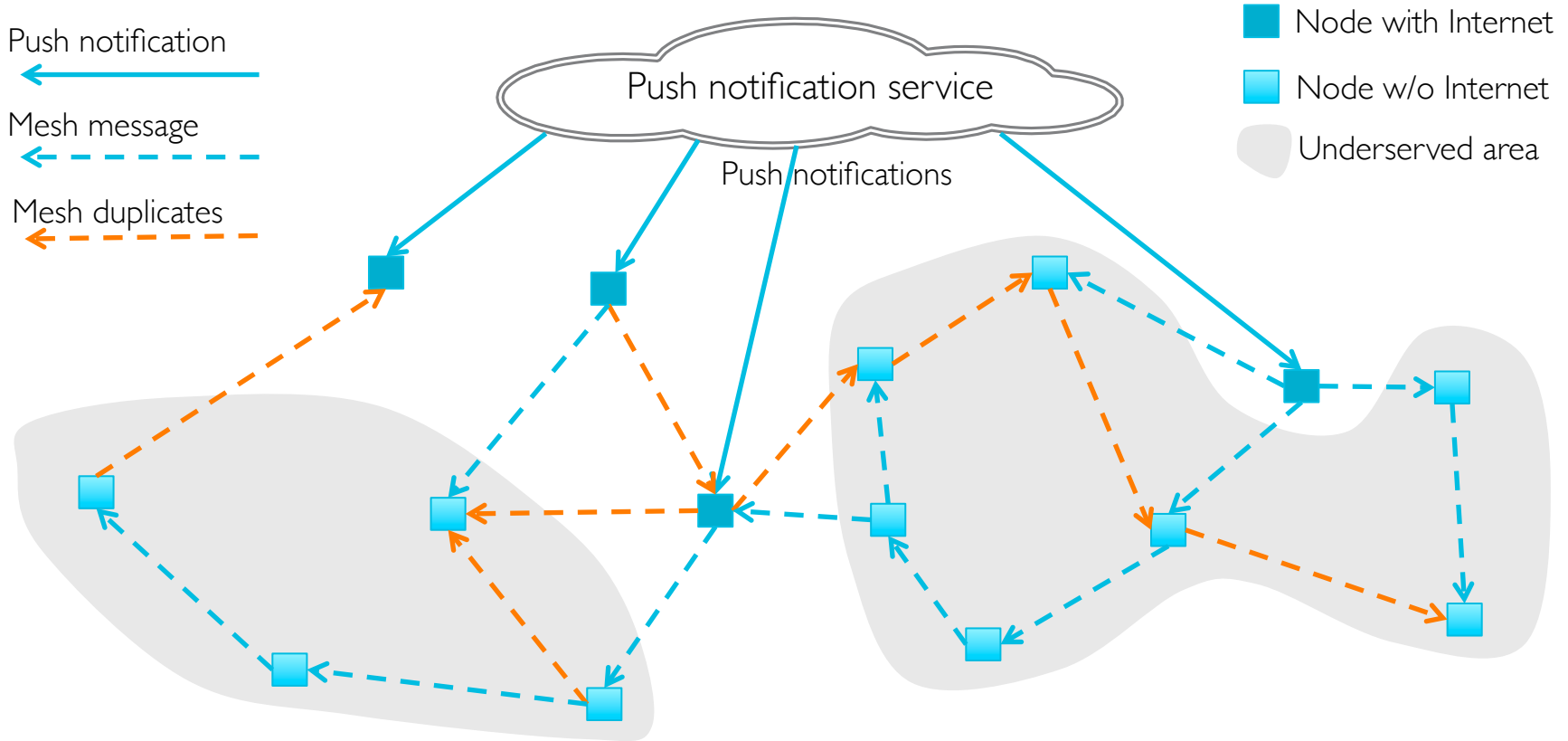
Nov 14, 2017



Challenges with MANETs in practice

- Focused on routing optimizations (OLSR, AODV) and analytical characterizations
- Assumed complete control of node design (hw / sw)
- Limited support for p2p comms on commercial devices
- Focused on “p2p only” mode as a silo’ed network

Mesh Network Alerts --- Trusted broadcasts over DTN of smartphones with hybrid connectivity

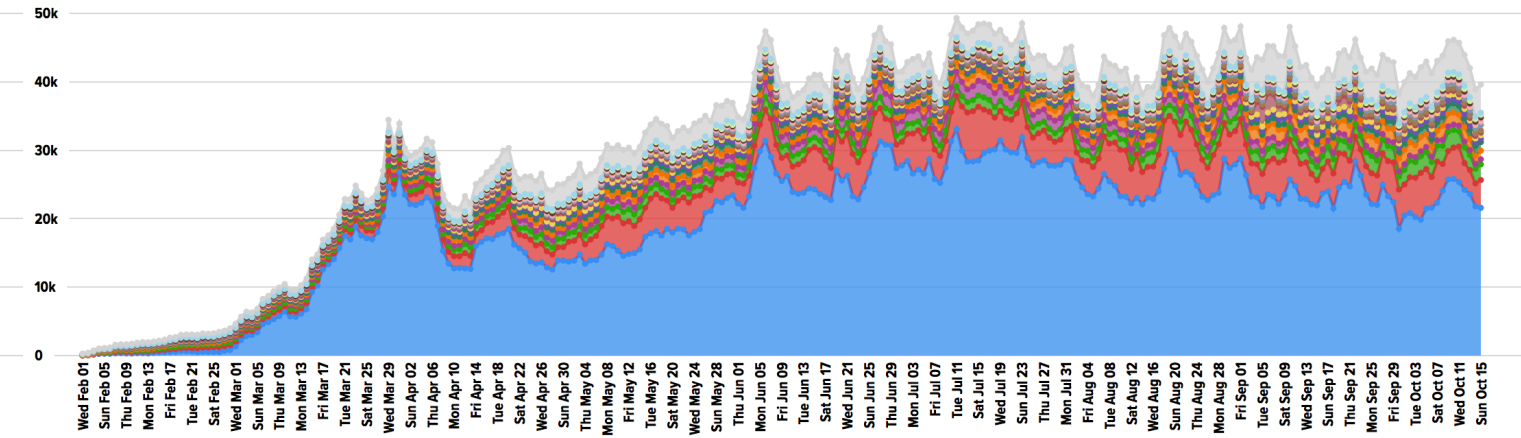


Launched with weather apps, > 1M unique users

USAGE STATS

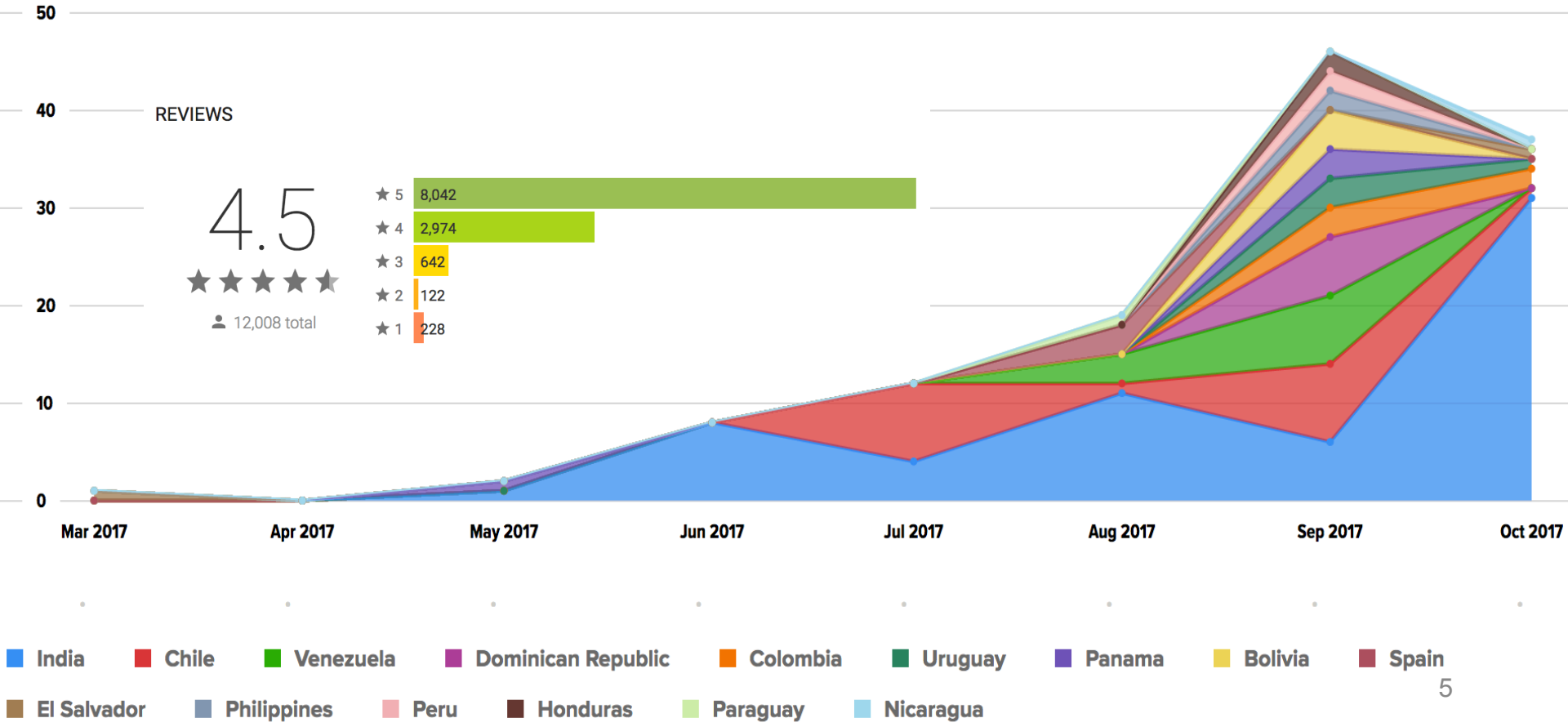
19,142,589 Sessions 56,301.3% ▲ 1m Avg Session Length -46.9% ▼ **1,059,104** Unique Users 32,669.3% ▲ 100% New Users

Users by Day split by Country Choose Shortcut ▾ VIEW SAVE ?



- India
- Chile
- South Africa
- Pakistan
- Uruguay
- Thailand
- Colombia
- Paraguay
- Dominican Republic
- Peru
- Brazil
- United States
- Viet Nam
- Morocco
- Bolivia
- Others

MNA increasingly delivering alerts, positive reviews



Open challenges for enabling “smart services”

1. Viability requires critical node density, we need a single network across multiple apps and providers, standards body?
2. Higher throughput needs better support on Android / iOS
3. Fake information: p2p systems exacerbate the trust deficit problem in open systems, e.g., anyone can broadcast anything
4. Focused on “p2p only” mode as a silo’ed network

Backup

Fact sheet: Android

	Channel	Status	Throughput	Battery % / hour	Device Support	Range LoS (ft)	Caveat	Cross Platform
WiFi	p2p NSD	Deployed	Low	0-2%	~100%	~600		No
	WiFi Direct	Dev Complete	High	0-3%	~100%		Req. p2p NSD	
	WiFi hotspot	N.A.	High					
BT	BT Classic	Shelved	Medium	0-2%	~100%	~600	User pop-ups	No
	BT Nearby	Dev Complete	Medium	0-2%	~100%	~600		No
	BTLE	In Development	Medium		~70%		Classic + LE?	Yes

Fact sheet: iOS

	Channel	Status	Throughput	Battery % / hour	Device Support	Range LoS (ft)	Caveat	Cross Platform
WiFi	p2p NSD	Shelved	Low	5-6%	~100%		Loc. updates	No
	WiFi Direct	N.A.	High		~100%		Client-only	
	WiFi hotspot	N.A.	High					
	Apple MPC	Shelved	High	6-7%	~100%	~150		No
BT	BT Classic	N.A.	Medium					No
	BT Nearby	N.A.	Medium		~100%			No
	BTLE	Dev Complete	Medium	0-1%	~100%	~800		Yes