

The Crisis in First Responder Communications

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**What is the
interoperability
problem?**







**What is the cause
of the problem?**

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Knowledge?



PSWAC

Sept. 11, 1996

“[U]nless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, public safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner.”



PSWAC
Sept. 11, 1996



NTFI
9/11 Commission
2003 - 2004



Hurricane Katrina
Independent Panel
2006

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Money?

NTIA Grants

\$1 Billion

DHS Grants

\$5.6 Billion

H.R. 1

\$3 Billion

“Although some New Orleans and Louisiana state officials attribute the lack of true interoperability for first responders to in the region to financial limitations, this flies in the face of the massive amounts of federal grants to Louisiana.”

-House Katrina Committee

Spectrum?

MHz

100

75

50

25

0

T-Mobile

22M

Verizon

54M

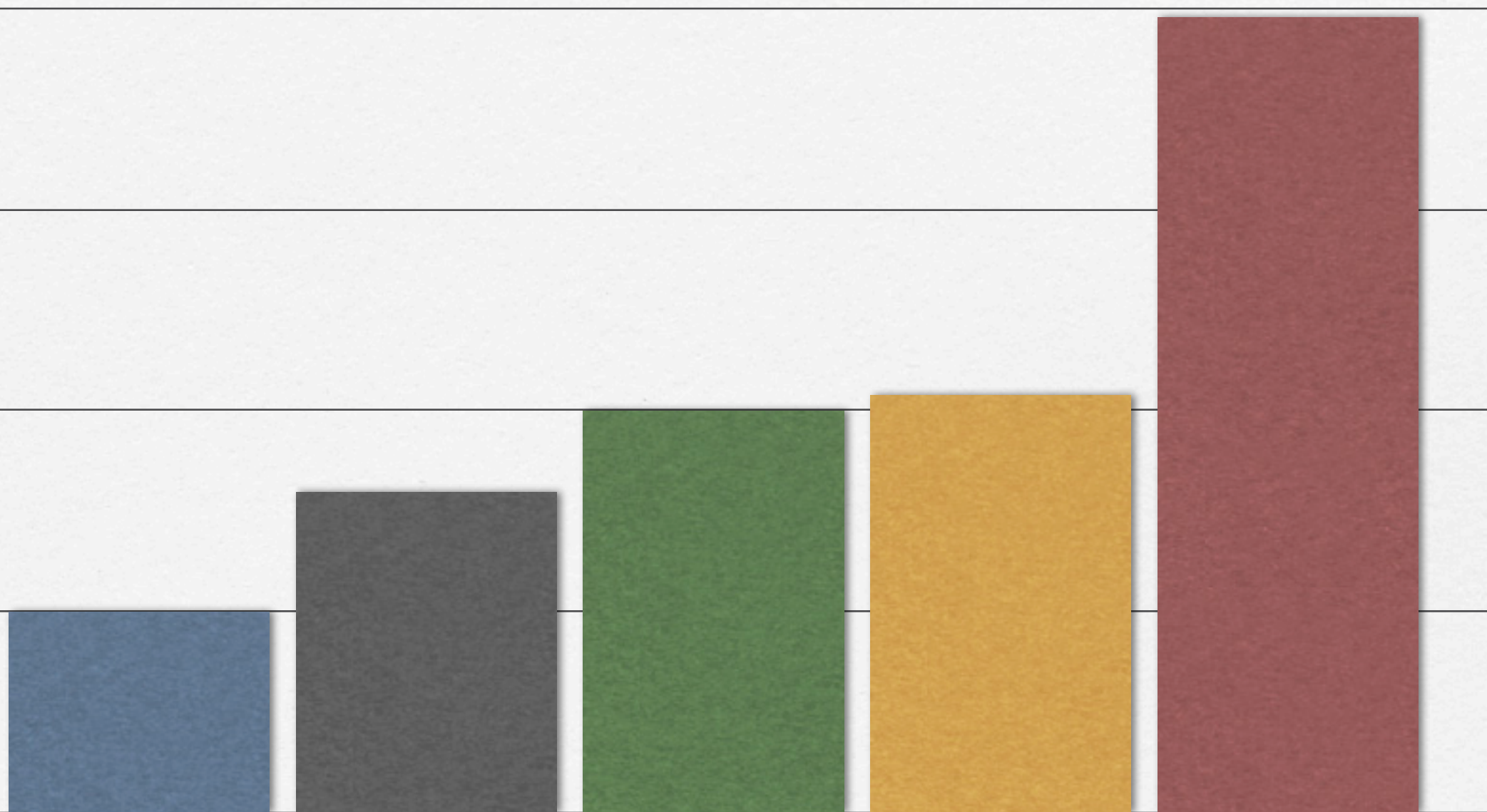
Sprint Nextel

AT&T

51M

Public Safety

2M



Policy.

WARNING:

Egg Head Content

Collective Action

- ❑ Activities that, in order to be successful, require two or more actors to coordinate their efforts.
- ❑ Collective action is therefore group action meant to further an interest of the group.

Collective Action Problem

- A situation in which the rational course of action for the individual members of the group does not coincide with the group-oriented course of action necessary to obtain the “collective good”

Mancur Olson & Group Theory

- ❑ **Small Groups**
 - ❑ Privileged
 - ❑ Intermediate



Mancur Olson & Group Theory

- ❑ **Large Groups**
 - ❑ Latent



Public safety = large latent

Over 50,000 public safety agencies

Selective Incentives

- Negative
- Positive

Selective Incentives

☐ Negative

☐ Positive



Selective Incentives

☐ Negative

☐ Positive



Selective Incentives

- ~~❑ Negative~~
- ❑ Positive



**How can we have
complete interoperable
mobile communications?**



Case Studies



Walky-Talky

- ❑ Radios were obsolete and failing
- ❑ Entrepreneurs built network for police and fire
- ❑ Opened to other public service groups
- ❑ Interoperability is part of package



02 Airwave

- ❑ Radios were obsolete and failing
- ❑ Ofcom sharers' list
- ❑ Guaranteed network availability
- ❑ Local flexibility through tiered services
 - ❑ Core service
 - ❑ Menu exclusive services
 - ❑ Menu competitive services
- ❑ Interoperability is part of package



RACOM

- ❑ Radios were obsolete and failing
- ❑ Proposition: “We can build you your own network, or you can join ours.”
- ❑ Shared with commercial customers
- ❑ Interoperability is “a take it or leave it proposition.”

Recommendations

- ❑ License PS spectrum to commercial carriers
 - ❑ Auction licenses, use revenue for PS
 - ❑ Allow PS to sell/lease their spectrum
- ❑ National footprints
 - ❑ At least two carriers
 - ❑ Require interconnection
- ❑ Allow shared use with private users
 - ❑ Priority for public safety

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Thank you.