Drones: Transforming Media

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Drones and Media

Equipped with geo-located high-definition video cameras, drones are emerging as important new tool for broadcasting media and film-makers.



Drones and military

The term "drone” conjures negative imagery to the public, including their use in military strikes and spying (threatening privacy).

History of Drones

Drones have a long history, dating to at least the mid-1800s, when unmanned air balloons were used to deliver bombs from Vienna to Venice.

In 1915 inventor Nicola Tesla proposed creating a fleet of UAVs designed for combat (Dempsey 2010).

UAVs, or drones, have become widely used in military operations, both for surveillance and for the delivery of explosives.

Quadricopter by any other name

Quadricopters are multicopters that lift and propel via four rotors.

Quadricopters are an increasingly common, inexpensive and relatively safe form of unmanned aerial vehicle (UAV).

Regulatory Framework

The government classifies quadricopters as rotorcraft rather than fixed-wing aircraft.

Regulatory frameworks for quadricopters are still in an unsettled state in the U.S. and internationally.

Regulations

Most US regulations as of this writing (March 2014) take the form of time, place and manner restrictions.

Restrictions are based on 1) altitude (i.e., drones may not fly more than about 400 feet above ground), 2) location (e.g., drones are prohibited from flight over groups of persons or heavily populated areas) and 3) line-of-sight flight only (i.e., remotely controlled drone flight is permitted only when the pilot or operator maintains direct visual sight of the drone).

No commercial or business purposes.

FAA to issue rules by 2015

Pres. Obama has ordered FAA to issue commercial drone use rules by 2015.

In meantime, Amazon, Google are testing drone delivery outside US, including India

FAA to permit some drones

- In Sept. 2014, the FAA said it would permit filmmakers to use drones over populated areas, on sets and locations
- This is an exception to commercial ban, and suggests future rules will permit

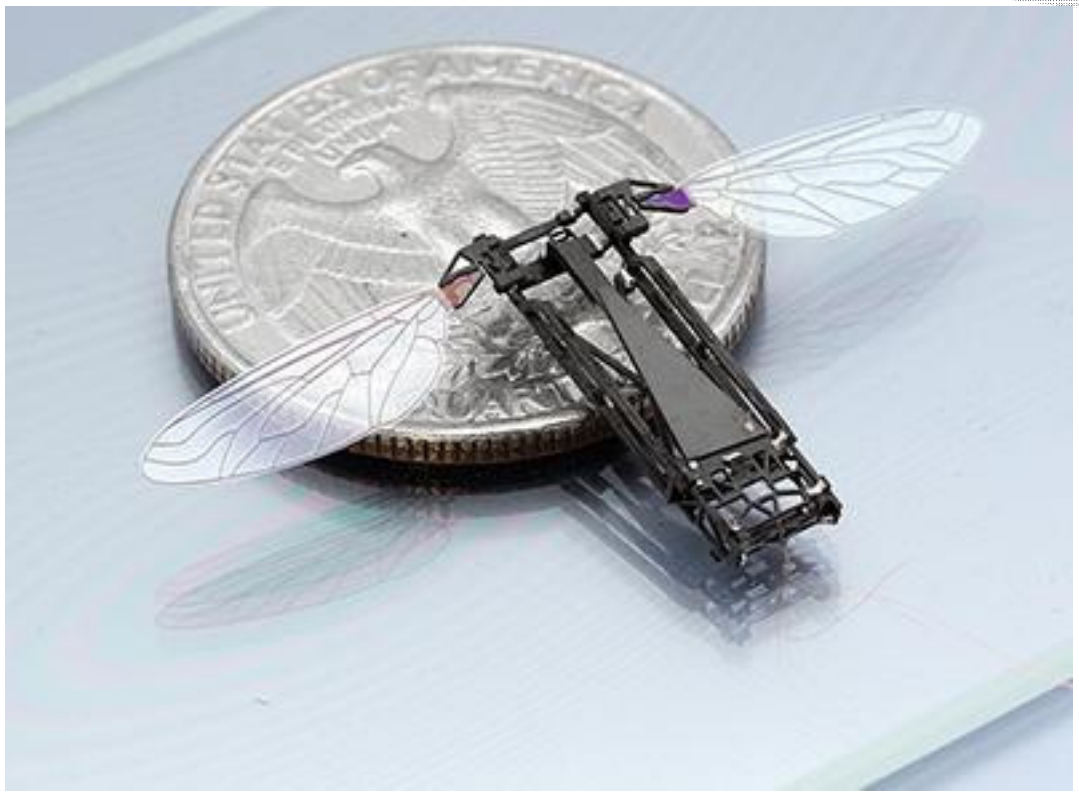
First Amendment battle

- Should drone video use be protected by First Amendment?
- Balance against privacy concerns?
- Paparazzi with drones? Would you want an uninvited drone flying near your wedding reception?
- Microdrones coming

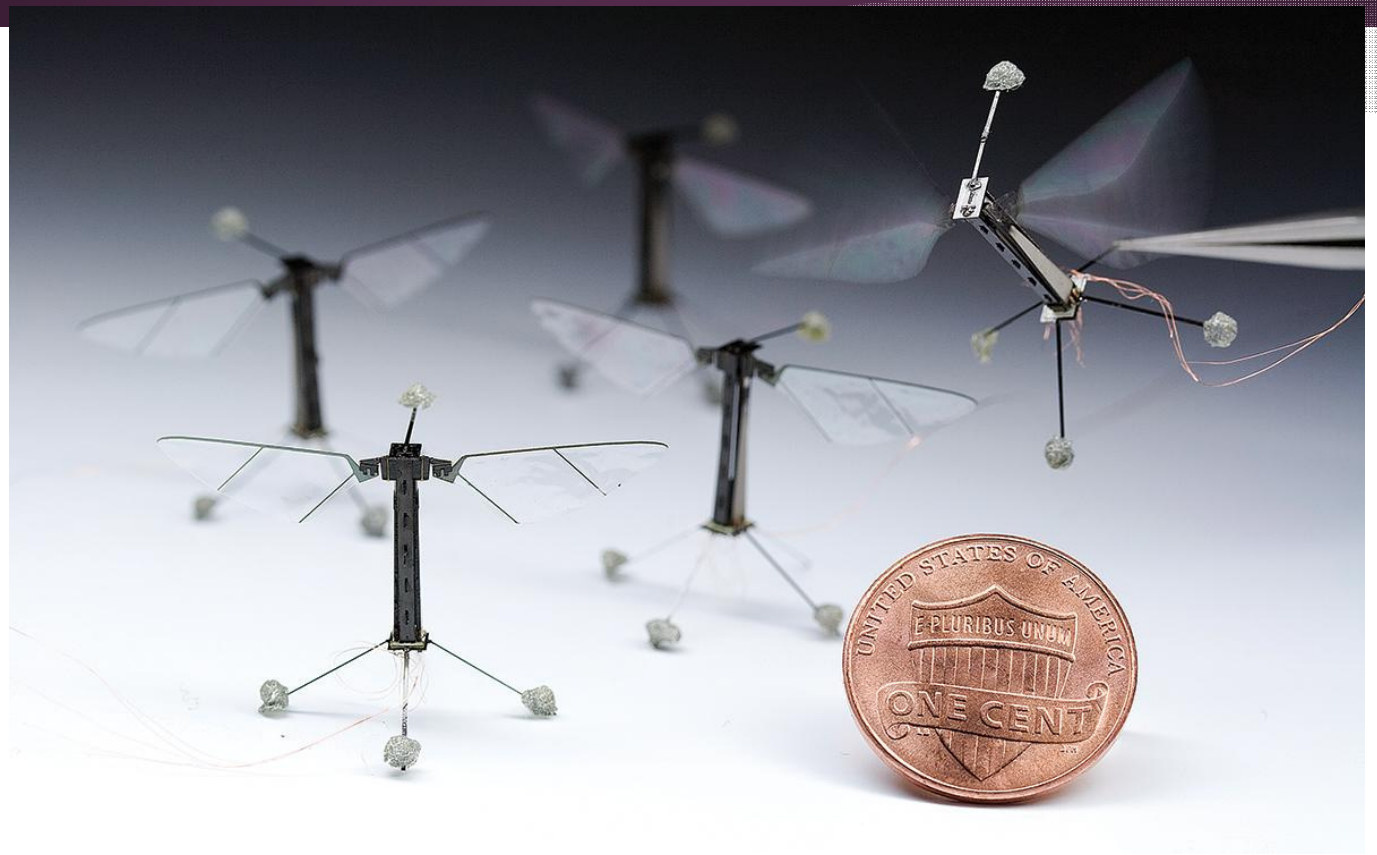
Insect sized drone…on a wire



Butterfly inspired



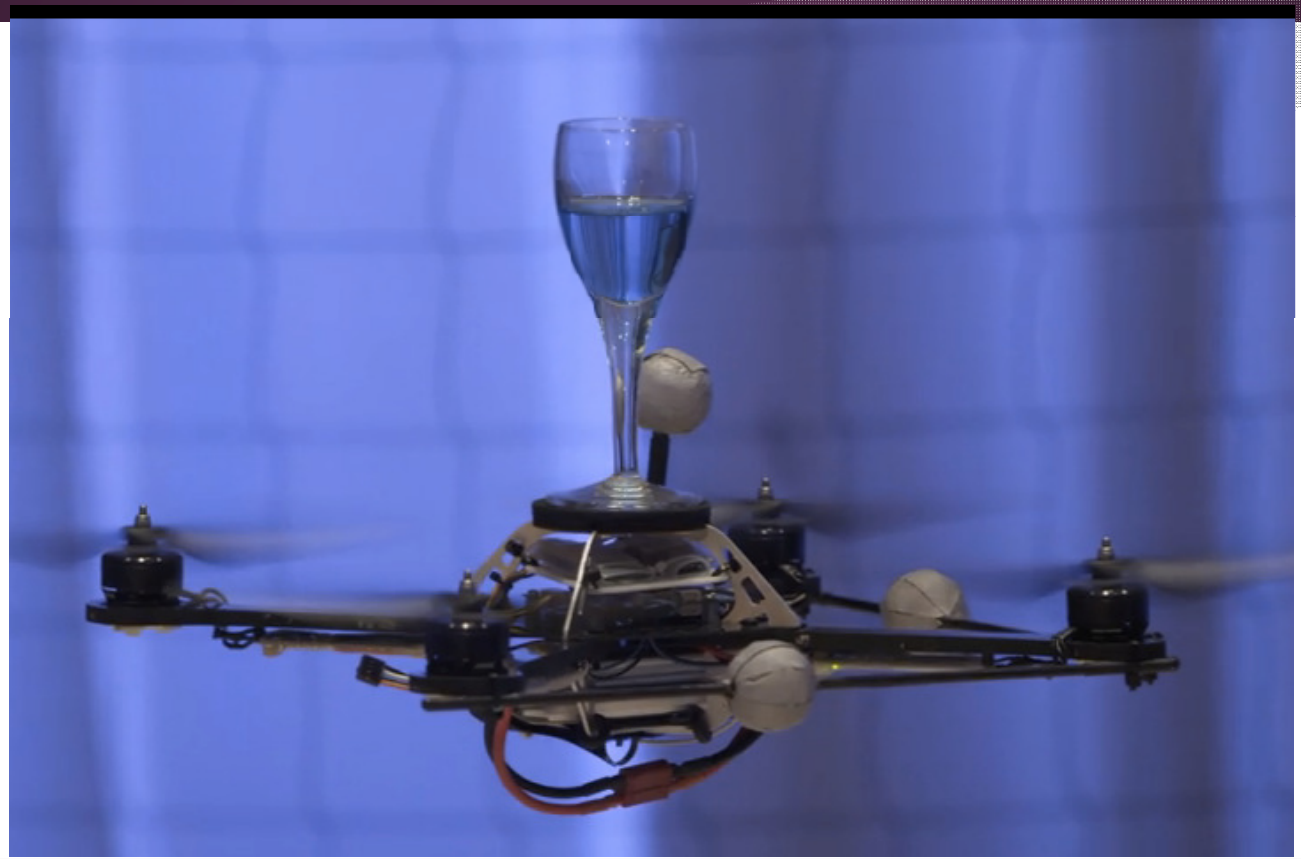
Some working prototypes

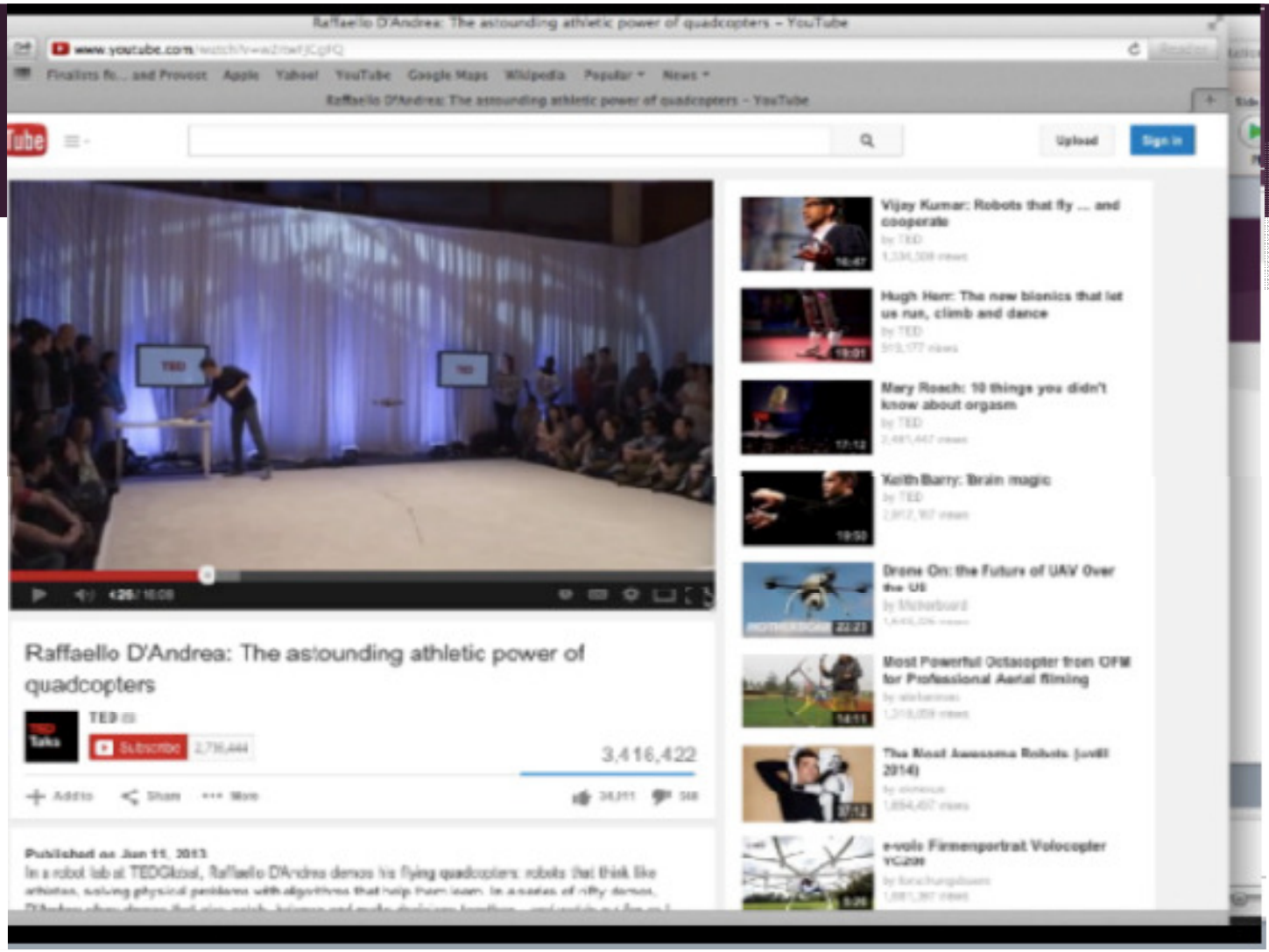


Swarming, coordinated flight



Drones as Athletes




Raffaello D'Andrea: The astounding athletic power of quadcopters – YouTube
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3,416,422
Vijay Kumar: Robots that fly ... and cooperate
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Drone On: the Future of UAV Over the US
Most Powerful Octocopter from OFM for Professional Aerial filming
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Commercial marketplace

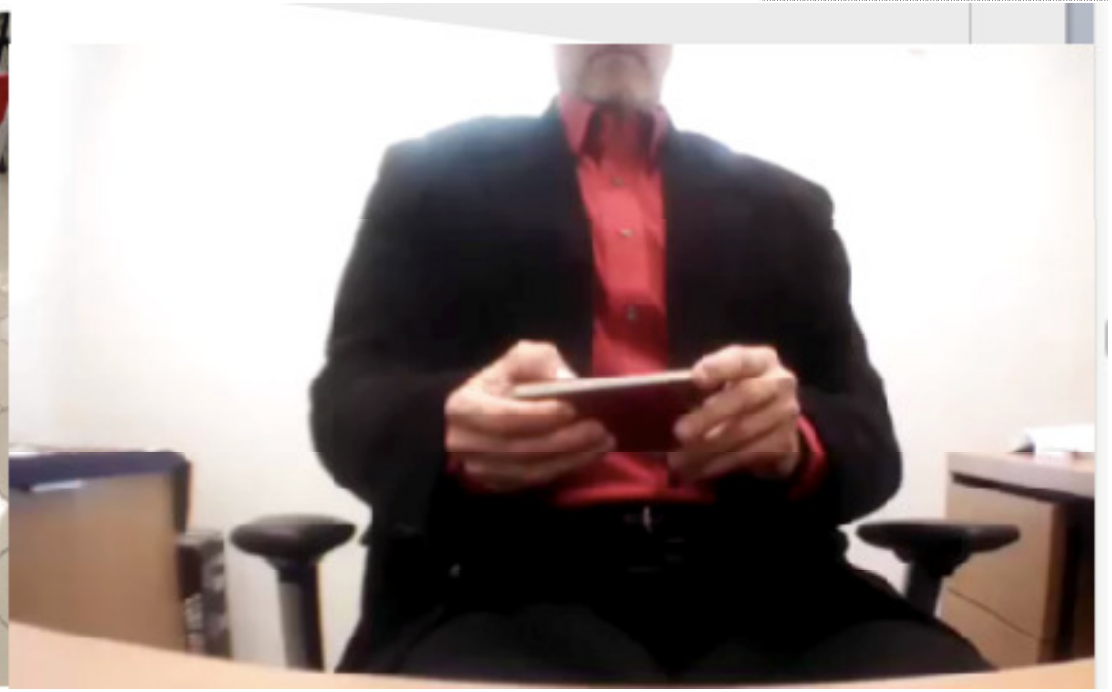
Several companies making quadricopters bring various approaches to the technology.

One company, Paris-based Parrot SA, has developed a wifi-controlled quadricopter (selling for about $299) piloted remotely via smartphone or tablet.

Features 2 cameras (forward HDTV, downward Standard definition).

Drones for Media



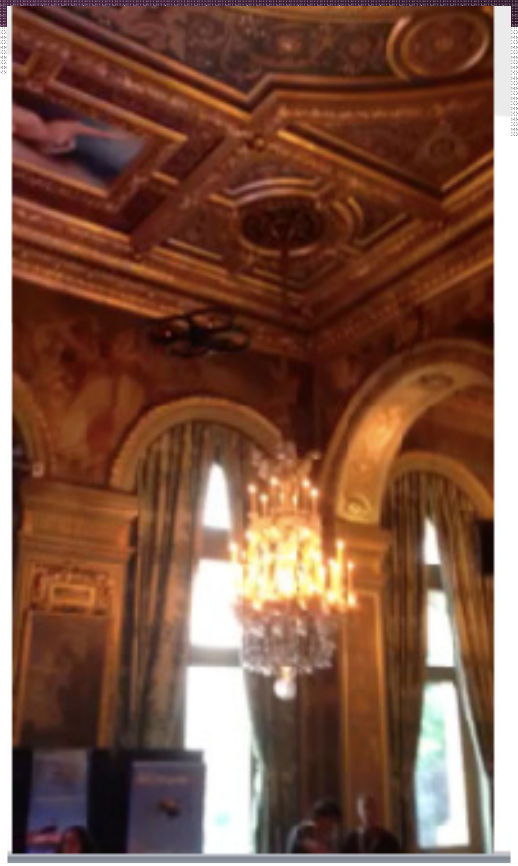


Geo-located technology

Geo-located video cameras

Camera synchs w/smartphone



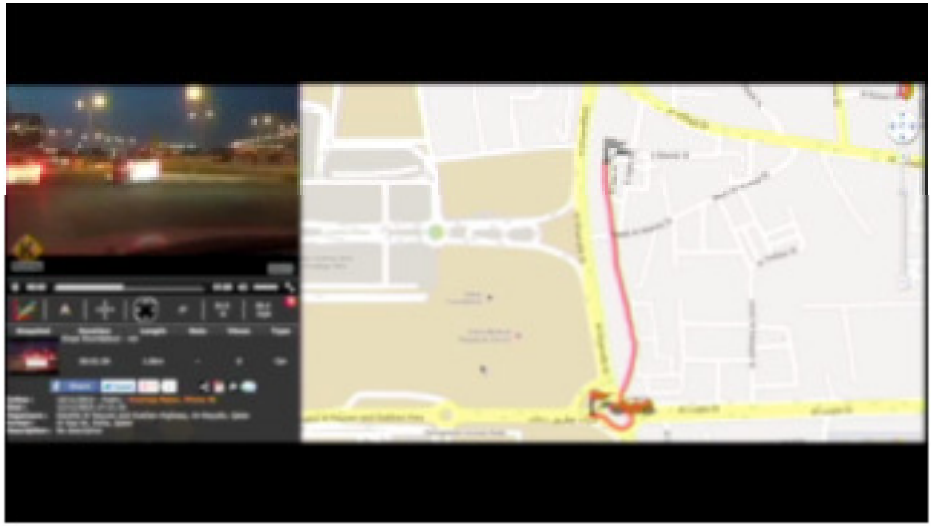


Pavlik and Vance (2013)

- **Kinomap Maker**
- **iOS iPhone**
- **Several locations in Doha**



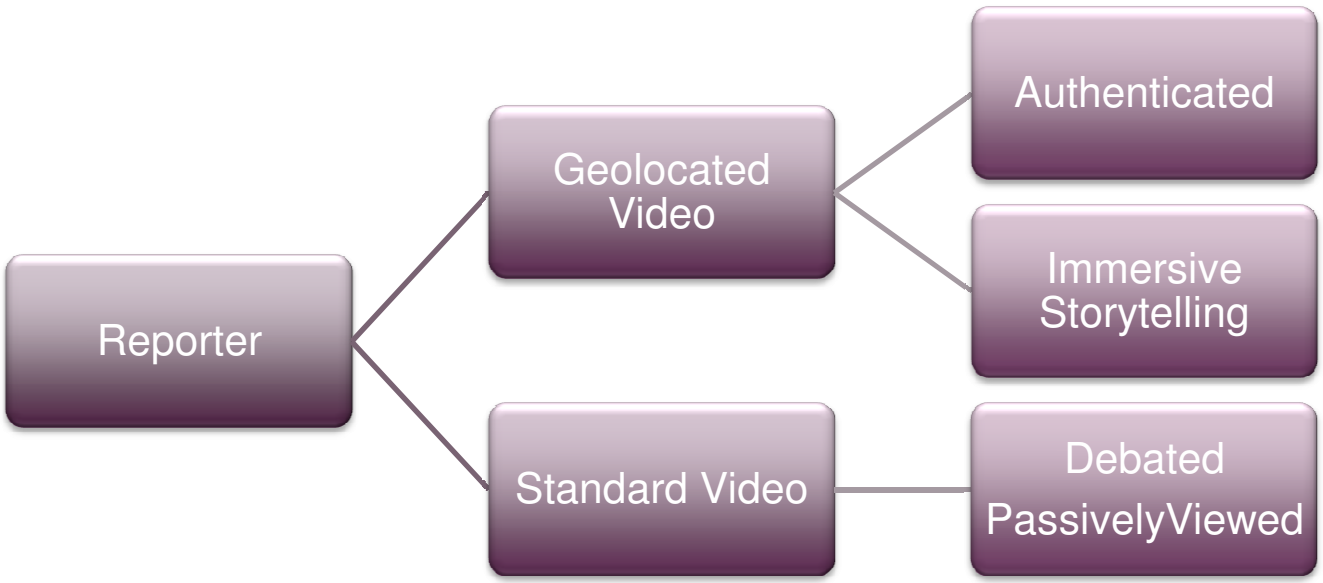
Documenting Change, Authenticating Reporting





Road has been moved.

Geolocated Video Model



Cost advantages of drones

Video-camera-equipped quadricopters offer broadcasting media and film industry important capabilities for producing aerial video at a much lower cost than traditional methods utilizing helicopters, which cost a million $ or more.

Safety

Because of their relative safety, small size (about one meter in diameter, made of mostly plastic) and ease of use, quadricopters can be used to shoot video in-doors or in other tight spaces.

Uses

Their applications range widely from making deliveries to delivering Internet access (Bilton 2014).

Broadcasters and filmmakers are making increasing and sometimes innovative use of drones in video production.

British Broadcasting Corporation (BBC) used an underwater drone to capture video. BBC producers employed a camera-equipped robotic tuna to obtain underwater video of a large dolphin pod swimming in the sea near Costa Rica.

Uses…continued

Documentary makers have already started using drones in production of documentaries.

Oscar-nominated documentary-maker, Bayley Silleck, used a quadricopter to film under low bridges over the Rappahannock River in the Chesapeake Bay watershed.

Transforming Storytelling

The BBC has used a drone (a hexacopter, or multicopter with six rotators) to capture unique aerial video shot in a port and on a farm from angles and proximity to objects (2014). This and other drone video can be viewed on YouTube http://www.youtube.com/watch?v=ZTWHP8oheio


CONDAT

Drone at Burning Man



What's drone effect on media?

1) How media pros work (e.g., news gathering)

2) Content (e.g., storytelling)

3) Organizational structure (e.g., management, funding)

4) Relationships with public (e.g., engagement, citizen drone video)