This Is the Modern Manhunt: The FBI, the Hive Mind and the Boston Bombers

In an earlier era, law enforcement might not have identified the suspects in the Boston Marathon bombing so rapidly.

When the smoke literally cleared on Monday, investigators had a huge problem and nearly no leads. No individual or organization claimed responsibility for the bombings that killed three and wounded more than 180. So they took a big leap: They copped to how little they knew, and embraced the wisdom of The Crowd.

Hiding in plain sight was an ocean of data, from torrents of photography to cell-tower information to locals' memories, waiting to be exploited. Police, FBI, and the other investigators opted to let spectator surveillance supplement and augment their own. When they called for that imagery, locals flooded it in. They spoke to the public frequently, both in person and especially on Twitter. All that represented a modern twist on the age-old law enforcement maxim that the public's eyes and ears are crucial investigative assets, as the Internet rapidly compressed the time it took for tips to arrive and get analyzed.

But the FBI and police have been reluctant to embrace what the hive mind can provide: it implies the authorities don't always have the answers. Veteran law enforcement officers remember cases from the '90s when the bureau clammed up to the public and local cops, at the expense of receiving greater public cooperation. "If law enforcement didn't share any information — [as with bombers] Terry Nichols, Ted Kaczynski — if your intel is shared with no one, that is the consummate investigative challenge," says Mike Rolince, a retired FBI special agent who set up Boston's first Joint Terrorism Task Force.

As of this writing, police, FBI agents, National Guardsmen and state troopers are still combing the streets of Watertown, trying to find 19-year old University of Massachusetts-Dartmouth student Dzhokhar Tsarnaev. His older brother, Tameran, a former boxer, lies dead after a chaotic pre-dawn chase with police. But they might never have been identified so rapidly, the ex-investigators tell Danger Room, had investigators not decided that their best resource wasn't in their own pockets. It was in everyone else's.

"The great advantage here is the number of cameras out there," Rolince says. "Without the cameras, I don't know where we are." The cameras were *everywhere*. It wasn't just the surveillance cameras looming on the tops of buildings at Copley Square. Bostonians and out-of-towners who came to the Marathon, one of the most celebrated civic events in the city, pulled their phones out throughout the race to feed their Instagram addictions and keep their Flickr pages current. It would become a reminder that the public enthusiasm for documenting their lives can outpace even the vast surveillance apparatus of the government.

On Monday, the FBI-led investigation had little more than a crime scene, one that had just been trampled by thousands of people attempting to flee Copley Square after the twin bombs detonated. An intact, pristine crime scene is something investigators desperately want and too rarely find. "Twenty thousand people milling around screws it up," says Juliette Kayyem, a former homeland security adviser to Massachusetts Gov. Deval Patrick. Yet first responders very rapidly cleared the square of people.

The area was filled with clues. One of them would be crucial: the remnants of a dark backpack near

the blast scene. The day after the bombing, FBI Special Agent in Charge Rick DesLauriers made a critical decision. He and his team called for "assistance from the public" to submit any and all types of media taken by Marathon spectators. The team set up a website for tip submissions. DesLauriers confessed that it would "take some time" for leads in the case to develop. DesLauriers might have wanted to level with the public, but the statement raised some anxieties that the investigation was far behind the curve.

If so, the call for public assistance helped get it over the hump. Within two days, DesLauriers received what he would describe as "thousands" of photos and videos, showing different vantage points of the Copley Square spectators. Once investigators arranged them by the time they were taken, they could piece together a mosaic of the scene, allowing them to check behavior they considered suspicious — and apply imaging tools to focus the accumulation of data.

Numerous law-enforcement sources were reluctant to get specific about those tools. ("We wouldn't discuss this specific detail at this stage," FBI spokesman Paul Bresson demurred.) But a former FBI technology official who didn't want to be quoted by name cautioned that there isn't a tech-intensive secret sauce behind the manhunt. Facial-recognition tools may be growing more advanced, but their limits are still on display: "If you don't have a high-quality photo, you can't use that," the ex-official says. But there's "all different types of [relevant] data — pixels, the cell tower data, any records that might exist."

What agents can do instead is assemble the public's pictures digitally and dig through them to find patterns of suspicious behavior — someone with a backpack; someone with a backpack who might be milling about; someone with a backpack who might be milling about in a certain pattern; all of which intersects with the scene of the blast. "Twenty years ago, we had to put a photo spread together using hands-on-pics, pasted together," the ex-official says.

The actual secret sauce remains what it's been for years: "blood, sweat and tears" of FBI investigators, Rolince says. "The most effective thing is put your eyes on it and review it." The threat of a big-data problem is evident — the military confronts it every day, from terabytes of aerial surveillance data — but investigators "working backward" from the imagery of the crime scene at the time of the explosion are trained to focus on things they perceive as anomalous once the mosaic of what's *normal* at the scene emerges from the crowd-provided images.

"Now the digital technology allows us to disseminate that stuff much more rapidly and efficiently," the ex-FBI technology official says. By Thursday, investigators believed they had clear pictures from a Lord & Taylor surveillance camera showing their two suspects. DesLauriers again called on the public to help identify and locate the two men, publishing the images and relying on the Internet to spread the equivalent of a Wanted poster far and wide.

Several law enforcement sources told Danger Room that DesLauriers would not have made that decision without the blessing of FBI Director Robert Mueller and possibly Attorney General Eric Holder. Rolince believes that the furious outpouring of public photography and videography meant that if the two suspects were still in the Boston area, putting their photos on the Internet meant they would be tracked down in a matter of hours — if the suspects didn't make a hasty error to expose themselves to law enforcement first.

"Someone lives next to him, works with him, his kids play soccer with him," he says. "Once you got that first photo out, it's only a short amount of time before more photos come in." Reportedly, the FBI tracked down the names of the Tsarnaev brothers with the aid of State Department immigration records.

There was another element to the modern manhunt: the Boston Police's social media presence.

All through the week, the @Boston_Police Twitter account has provided surprisingly rapid factual information about the manhunt. Yael Bar-Tur, a social media and law-enforcement consultant, says Boston bucked a trend among cop shops to shy away from the unfamiliar terrain of Twitter and Facebook. "It's so unusual for police departments to do this," she says.

"I live in New York City. There are 40,000 cops here, and none of my friends know any of them. There's huge disconnect between regular people and police," she continues. So when something suspicious happens, they're "not going to call the police unless there's familiarity." By putting out regular Twitter updates, the Boston police department opened a new avenue of communication, one that Bar-Tur believes got information back to the Boston police rapidly. "The community trust is incredible," she says, noting that @Boston_Police now has over 200,000 followers.

All of this is a modern update to a very old story. Law enforcement has always relied on tips to do its job. It's always had to balance the needs of transparency and operational security. The Boston manhunt is nowhere near over, as the ongoing clampdown on the city shows.

And there are messy precedents emerging from mass photo and video data emerging from an era of ubiquitous cellphone cameras augmenting police surveillance: the ex-FBI technology official says that "legal and ethical questions" cause investigators to hesitate before launching big data-mining projects, even with all the broad leeway they have to violate citizens' privacy. That hesitation doesn't have to apply when citizens volunteer the data.

"Nothing has really changed," Bar-Tur says, "just the medium has changed." That might be enough for a new model manhunt to emerge.