These Israeli-Developed Bullets Don't Kill - They Observe

A long time ago, I spoke to a man working for an Israeli defence company about the strange and curious devices the company had developed, or was developing, for the Israel Defence Forces (IDF). I found one device he described particularly interesting; it was a grenade, but not for blowing people up. It was to be fired at range, from a rifle – but it wasn't for destroying enemy vehicles or equipment, either. In fact, it wasn't designed to damage or destroy anything at all.

It didn't emit smoke or gas, or produce a blinding flash of light. As grenades go, it was a little less… aggressive.

Its purpose? To observe.

The Israeli military, at that time and since, has often operated in urban environments full of narrow alleys and cramped souks. These lend themselves to ambushes – walking down a main street, armed guerrillas could be waiting for the IDF around any corner.

This constant threat spurred odd Israeli innovations like the [Corner Shot](), which as its name suggests, allows the user to see and fire a gun around corners.

The grenade was another such innovation. Full of cameras, it could be fired over risky areas, streaming video and images of the area back to the soldier who fired it, to prevent them from stumbling into a trap.

It was only recently that I realised it was a glimpse into the future… where bullets are surveillance devices. But I'll come back to that in a second.

Endless threads to "Things"

"I want to network everything to everything."

Admiral John Richardson, chief of US naval operations, earlier this year

Whoever taps into the data flows of large and active networks wields great power. We see this in the case of the internet, with companies like Google and intelligence agencies like the CIA analysing colossal quantities of data to make a profit or identify enemies.

The next evolution of this "surveillance capitalism" lies in the Internet of Things, or IoT, where all your domestic appliances are "smart" and importantly, communicate with one another in a grand network. Imagine a home where your fridge, thermostat, oven, smoke alarm, phone, and door locks all acknowledge each other and work together to become more efficient.

Such a network would save you time and money… but would give the data gluttons even more information to feast upon.

Those with the know-how could analyse the data yielded by the IoT to learn more about users, and sell that data to advertisers. The authorities could also use the data to identify anomalies in a population, like outsiders behaving strangely, to investigate them.

Companies developing IoT devices and software have become a huge target for venture capitalists in recent years, who see massive investment opportunities in the sector.

But it's not just tech investors who see the advantage of networking devices together. It's the military too. The US Army has launched a program to develop applications for what it calls the Internet of Battle Things, or IoBT.

Here are a few excerpts from [the announcement of the IoBT program]() (emphasis mine):

*The prospect of **everything in and related to the battlefield being a networked entity, regardless of how small or large**, significantly increases the potential for improved situation awareness at multiple levels.*

*… The ability of the Army to **understand, predict, adapt, and exploit the vast array of internetworked things** that will be present of the future battlefield is critical to maintaining and increasing its competitive advantage.*

*… The IoBT is the realization of pervasive computing, communication, and sensing where **everything will be a sensor and potentially a processor, where subsequent information is of a scale unseen before.** The battlespace itself will consist of active red (enemy), blue (friendly), and gray (non-participant) resources, where deception will be the norm, the environment (e.g. megacities and rural) will be dynamic, and ownership and other boundaries will be diverse and transient.*

In the IoBT, everything will be networked, no matter how small. Everything will effectively be a surveillance device. And the quantity of information gathered by the network will be enormous.

Snap-shot!

As miniaturised sensors and cameras decrease in cost, I expect bullets themselves to become part of the network, relaying data of their surroundings to gain just a little more battlefield information before impact. The grenade I mentioned earlier was an early form of this: a sensor, but without the network, and non-lethal.

To predict enemy behaviour and detect hidden threats from IoBT data, the military would do well to recruit from the ranks of Facebook or Google (although considering the salaries of such quantitative analysts, it may be hard to lure them away).

For those who see the IoBT as an investment opportunity, you might want to start with the "interested vendors" for the program. Cybersecurity firms stand to receive significant government contracts to protect such networks, which would become a vital element of the US defence apparatus.

It's not just the US Army that is taking an interest in the IoBT. Admiral John Richardson of the US Navy (quoted earlier in this letter) has proposed networking every single weapons platform in the navy together to make the force "exponentially" more effective.

We saw a glimpse of what this might look like last year, when in a training exercise, an F-35 fighter jet destroyed a drone without using any weapons on board the aircraft. The pilot launched a missile remotely from a nearby destroyer to shoot it down.

Imagine a *totally* connected US Navy. More than 400 ships and 1,000 aircraft around the globe, all with the ability to use each other's weapons.

What could *possibly* go wrong?

Until next time,

Boaz Shoshan
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PS Today is the big day of our "The War on You" conference. If you're attending, or even if you're not, you can get an inside view on the important ideas we're discussing with the hashtag **#WarOnYou2017** on Twitter.

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