

Market Wake-Up Call

Jeff Yastine: Hello everyone, I'm Jeff Yastine substituting for Steve McDonald. And this is your Market Wake-Up Call video. Our guest this week is Peter Singer, Director of the Center for 21st Century Security and Intelligence, and a Senior Fellow at the Brookings Institution. Peter, welcome to the program.

Peter Singer: Glad to be here.

Jeff Yastine: Peter, you talk a lot these days in your speeches about security and intelligence, and specifically about the use of drones. Tell us a little about that.

Peter Singer: We have this technology that was very recently just in science fiction, that has become all too real. Just in the US military we've gone in 10 years from having a handful of drones – a popular way to describe unmanned aerial systems – remotely piloted aircraft; however you want to describe them. We had a handful 10 years ago. Now the US military has 8000 in its inventory. On the ground we went from zero to more than 12 thousand unmanned ground vehicles. We're seeing this global proliferation. Besides the US there are 76 other militaries out there who also started to use it. But what's fascinating is it's starting to move over to the domestic side. It's a lot like what played out with the computer and the airplane.... it was a technology that was once science fiction, then military, then goes across to the domestic side. And it truly is a killer application in both meanings of the term. It is a technology that can be lethal, but it's also a technology that has a disruptive effect, creating new industries and shaking up old industries.

Jeff Yastine: Peter, where would you expect to see these new industries, these new businesses, the entrepreneurs that would emerge from this new industry?

Peter Singer: It's fascinating because Bill Gates, the founder of Microsoft, said at one point that he sees where robotics is today is where the computer was in 1980. I think it's an interesting parallel, both in terms of in 1980..computers were these big bulky devices, they could only do limited functions. Military was the primary spender on R&D and the military was the primary buyer of computers. And then they get smaller and more usable, and people think about new functions for them. The same thing with drones we're seeing other

industries look at it..everything from agriculture...looking at it for surveillance of fields to see when the crops should be brought out. But also crop dusting...other things like cargo delivery, and personal recreation. For example, taking pictures of your kids when they're out skiing or soccer games, to journalism and environmental monitoring. It goes on and on, people coming up with new roles. That's why the scale of this new industry the estimates are just all over the place. On the low end, some consultants say it will be a 10 billion dollar industry, on the high end others say 90 or 100 billion plus. Those numbers are fuzzy in my mind, because it's like saying, "How big is the marketplace for computers going to be in 1980?" We just don't have a sense of it yet, other than to say it's going to take off in some manner.

Jeff Yastine: Peter one thing that's holding back domestic use of drones is FAA regulations, which severely restrict their usage right now, correct?

Peter Singer: Exactly. When you move this science fiction like technology into the real world you have a series of questions to figure out which are almost science fiction in nature. The FAA is very focused on air safety. It's very important, but strange sounding, with questions like "How do you keep a robotic plane from flying into a manned plane? How do you give it the same kind of awareness of its surroundings...the safety protocols. That's what they're working out right now.

Jeff Yastine: Peter, give us the time frame..how much time needs to elapse before we get the appropriate regulatory environment, as well as the base, the foundation industries, that would allow an industry like this to flourish? Albeit from a small base but growing and based on the growth rates that you see?

Peter Singer: Well it's interesting because you could say that we're already here. There is a booming set of companies in this field. There are smaller companies..down to individual startups, companies that are manufacturing them by the scores, for example, in the US military in the smaller end. You also have an interesting thing playing out in the traditional aerospace and defense sector where the Pentagon budget is flat and most likely going down. But there are two areas of growth within it. One is cybersecurity and the other is unmanned systems. So a lot of the bigger companies, traditional aviation companies, also see this sector as their growth opportunities for the future. So they're expanding what they're doing and cherry picking...buying up smaller companies. It's a very active marketplace. The key regulatory item is 2015, at least as its set right now. Congress told the FAA by 2015 "We want you

to figure out how to open up the domestic side of aerospace, to civilian-commercial use of this technology, which has not been allowed before.

Jeff Yastine: Peter is it too early to be talking about opportunities for investors those opportunities may not be here this exact moment, but are on the horizon. I'm talking about investors in publicly held companies.

Peter Singer: I think it's a shift in the technology and marketplace that we all need to be aware of. It's an industry where there's activity and a lot of promise. And you see that in universities, when you talk to young engineers "What's the hottest field?" Robotics is that. That means it's something we all need to be aware of. The challenge is how do you ride those trends to success? And everyone has their answers, I wish I had the gazillion dollar answer myself, but the point is, it's a game changer.

Jeff Yastine: I'll note here that you'll be speaking at our Investment U Conference coming up next week in St. Petersburg. I'll be there and I can't wait to watch your keynote speech. Peter thanks very much for joining us. I'm Jeff Yastine, and this is your Market Wake-Up Call.

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Dr. Peter Singer only had enough time to scratch the surface of this robotics boom so we are giving you a special way to hear more from him – [click here for details](#).

To order Dr. Singer's book, *Wired for War*, [click here](#).