Skydio

Fully Autonomous Drones:
The Future Is Here

Keizai Forum 2019
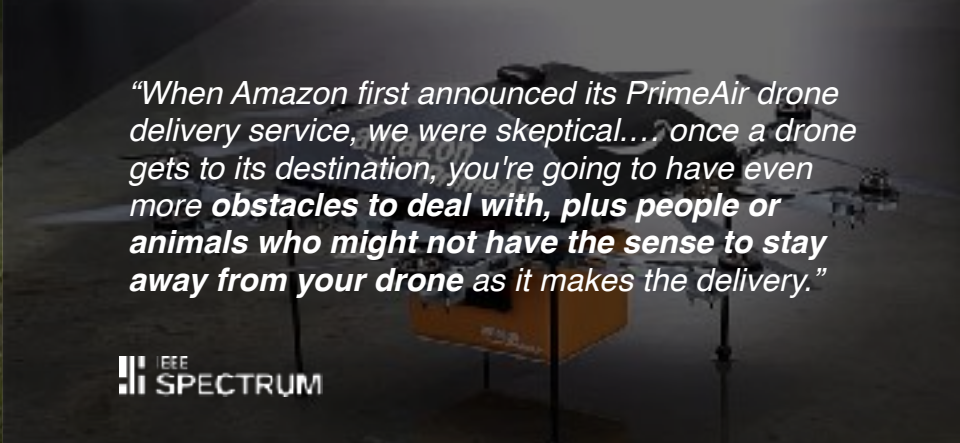
The potential of drones has been easy to imagine...

"Any suggestion that we're getting to a point where **drones are as easy to operate as, say, an iPhone is woefully overstated.**"
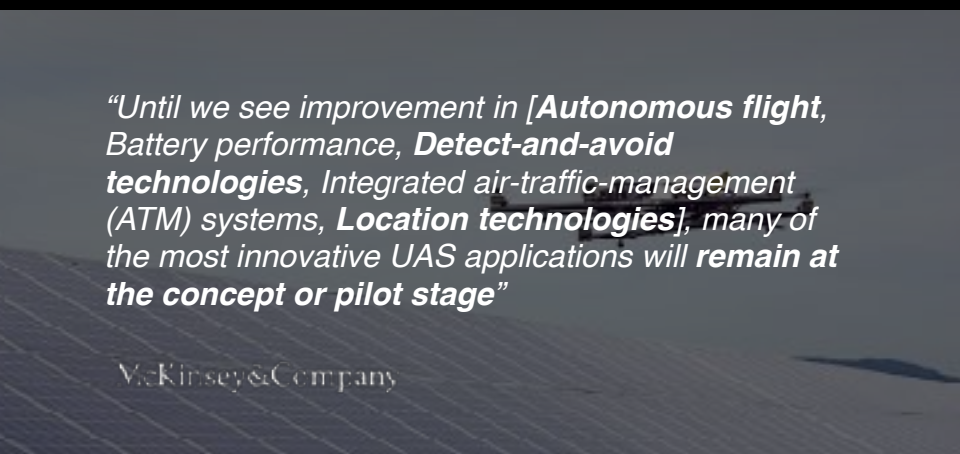
TechCrunch

"When Amazon first announced its PrimeAir drone delivery service, we were skeptical…. once a drone gets to its destination, you're going to have even more **obstacles to deal with, plus people or animals who might not have the sense to stay away from your drone** as it makes the delivery."
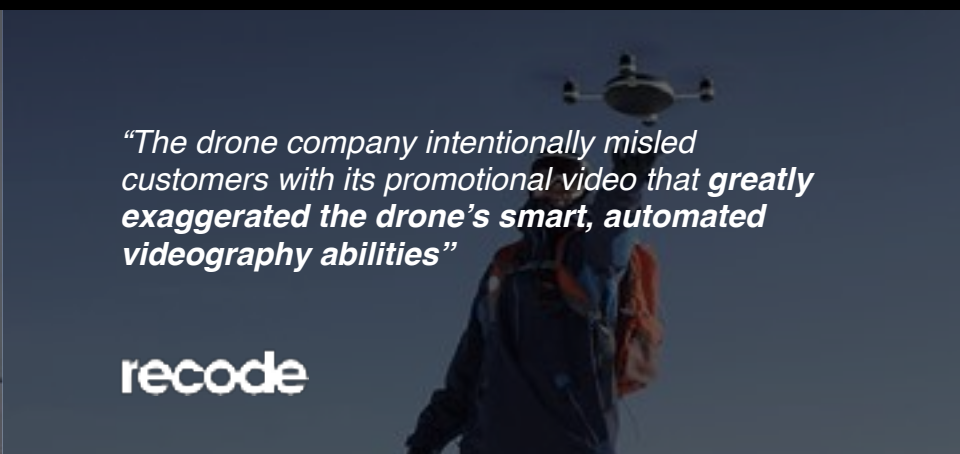
IEEE SPECTRUM

But hard to deliver...

"Until we see improvement in [**Autonomous flight**, Battery performance, **Detect-and-avoid technologies**, Integrated air-traffic-management (ATM) systems, **Location technologies**], many of the most innovative UAS applications will **remain at the concept or pilot stage**"

McKinsey&Company

"The drone company intentionally misled customers with its promotional video that **greatly exaggerated the drone's smart, automated videography abilities**"

recode

Full autonomy -
the ability to perform complex tasks without a person in control
- has been the missing technology for making drones accessible and useful
… until now

Introducing Skydio R1

The most advanced autonomous device ever shipped

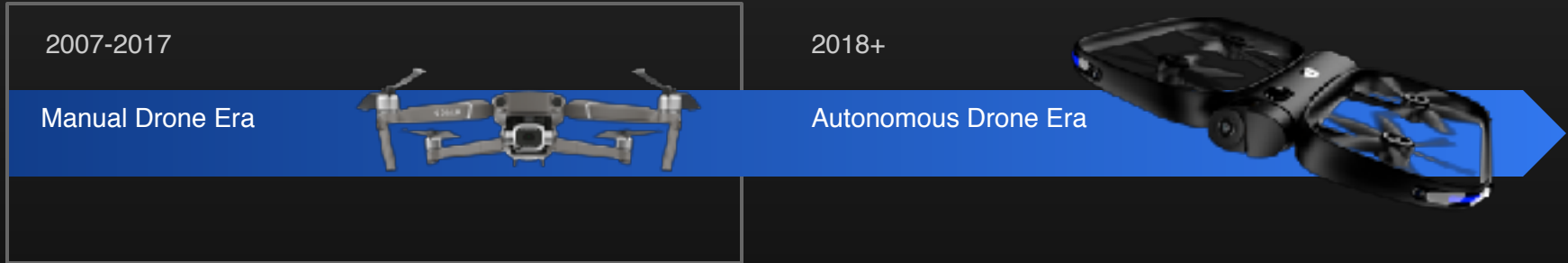The black ship (黒船) of fully autonomous drones ...
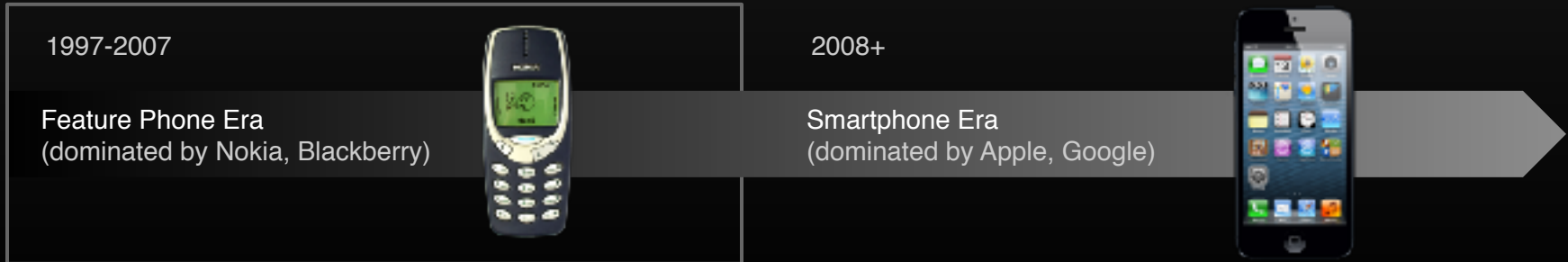
Casey Neistat
YouTube Tech Reviewer

Why does full autonomy matter?

❖ **Reliability & Safety** - removes dependency/limitations on the skill of the pilot; enables autonomous missions beyond today's "low altitude satellite"
  ➢ Full autonomy allows operations in much closer proximity, indoor operations and operations in areas dangerous to humans
❖ **Repeatability** - drones are able to fly the exact same path reliably and consistently
  ➢ Allows easy collection of changes/differences over time
❖ **Scale & Cost** - Fleet of drones can operate constantly with little to no human resources required
  ➢ Drones can coordinate in order to cover large areas quickly and stitch together a unified/ 360 view
  ➢ Enables 24/7 use cases such as security, stand-by mode, etc.

Autonomy means drone capability is defined by software rather than skill of the pilot

2007-2017	2018+
Manual Drone Era	Autonomous Drone Era

Software defined experiences unleash developer creativity

1997-2007	2008+
Feature Phone Era (dominated by Nokia, Blackberry)	Smartphone Era (dominated by Apple, Google)

Thinking about Japan

❖ Shrinking population/workforce - inspection, delivery, search and rescue in remote areas
❖ Ring of Fire - high instance of earthquakes mean constant inspections of bridges, tunnels, buildings and critical infrastructure is vital
❖ Delivery - in high density areas, elevators are clogged with deliveries, in low density/countryside cost of delivery and other services is too high
❖ Japanese companies - drones are a combination of flying robot and cameras, playing to Japan's strengths; key components/sensors already being made in Japan for smartphone market - break out of Galapagos