Wheels up.
Consider the wheel.

Is there a more fundamental and important technology? Transportation, manufacturing, clocks, controls — where we would we be without the wheel?
Getting technology to market.

The wheel wasn’t invented for transportation. Wheels were first used for pottery. They spun sideways.
It took 1,300 years before someone thought up rotating a wheel 90 degrees, and to use it to power a wagon or a chariot.
Transportation as the killer app.

“Love that wheel. Let’s get the military to buy some first.”
Drop-in please.

“Your wheel needs to be compatible with my horse.”
No price premium, thank you.

“I’m not paying a darn cent more for your dang chariot. What do you want, a government hand-out?”
Oh, my. New materials, anyone?

Bad news, we ran out of wood. Then bronze.
Sorry you have supply chain issues.

Iron, great idea. Your problem figuring out how to get enough.
Consider the whale.

Is there a more beloved mammal than the whale? Tourists come from all over the world to see them.
The killer app.

Great looking animal. Let’s kill some and make candles.
It took years before someone thought up using whale oil for lamps instead of whale blubber for candles.
Supply chain crisis.

Thereafter, demand exploded. Soon, the world was running out of whales.
Eventually, a technology emerged to convert rock oil into kerosene.
Drop-in please.

“Please don’t make me buy a different lamp, thank you.”
Waste management crisis.

For every gallon of kerosene we made, we made 3 gallons of waste.
Transportation as the killer app.

Finally, someone developed a use for a waste product from petroleum distillation called gasoline.
No price premium, thank you.

Gasoline was priced at just 2 cents per gallon when introduced. The aim? To compete with the cost of feeding a horse.
Demand skyrocketed, and oil industry officials thought the US would run out of oil by the 1960s.
We’ve heard it all before.

The wheel turns, and we hear it again. Supply chain crisis. Oh, my. New materials, anyone? Drop-in please. No price premium. Transportation is the killer app.
What makes people desire change?

Try these: “faster and farther.” Preferably both.
Good news.

Biobased fuels take us faster and farther.
To excite people, make it a race.

The sprint. The world’s oldest contest.
Races unite.

Race for the Moon.
Races tap the power of emotion.

The thrill of bio-victory, the agony of petro-defeat.
Make it a race.

For example, what about New York to Sydney, one jet type? Bio vs Petro.
Master. Reach. Endure.

Be ready, aim high, stay the course.

Jim Lane, October 2016
It’s all just a wheel.
To everything, there is a season.
Wheels up.