Two Horses´ Butts

Stockholm (HedgeNordic) – It is probably not much more than a decade ago that many quant managers took pride in repeatedly claiming that their basic trading system and models were essentially the same as they were when initially coded. Certainly this was the case in the CTA industry where I took my first steps in the hedge fund space.

Since then, more often than not, these beasts have become much more complex. What used to be rather simple and plain trend-following strategies are now more sophisticated and complex multi-strat approaches supported by artificial intelligence and machine learning components.

There have been massive technological advances in trading and execution, computing power, available data and many more areas and today's quant strategies are among the most sophisticated and advanced available. With all the advances, evolutions and revolutions though, what is left of the original philosophy and rational systems. Bear with me while I drift off a little to make my point. And agreed, a part of this story falls into the urban-legend category. Even if not entirely true, I find it to be a good story and it does paint the picture I want to show.

The standard US railroad gauge, the distance between the left and right rail, today is 4 feet, 8.5 inches (1435mm). Even by metric system-refusing American standards, that seems an exceedingly odd number to settle for. Maybe it just occurred randomly. Spoiler: it did not! Up until the US civil war, there were multiple different gauges in use, which complicated the logistics for moving large numbers of troops and goods i as trains had to be loaded and unloaded when non-matching tracks met. A standardization was urgently needed. It was around that time that 4 feet, 8.5 inches was defined as the uniform standard across the United States for railroad gauges. A proactive, deliberate decision.

BUT WHY?

Well, those in charge of unifying the US railroad system were engineers who previously had built the wagon tramways in England. At that time, the most modern and sophisticated form of transportation. While there is some persistence and consistency, it does not explain the odd gauge. So why was that used?

Everyone seems to agree that this odd track size did originate in England from railway pioneer George Stephenson, who used the 4 feet 8-1/2 inch track gauge when building the first public rail line, the Liverpool & Manchester Railway, in 1830. In its day, it was the most modern and sophisticated means of transportation on the planet.

BUT WHY?

It was simply cheapest and most efficient to use the same jigs and tooling readily available and been used and produced by engineers making horse-wagons for centuries. But why that spacing? Put simply, it worked; when trying to use other wheel spacings, the wheels would break more often on the old long- distance roads in England, which were shaped by the ruts on the roads that give a firm and safe underground for the wheels and carriages. These ruts were well established and quite old.

In fact, they were nearly 2.000 years old and initially built by the Roman Empire's legionaries for transporting their goods and troops with their horse carriages. Over time, the constant and repeated traffic in the same line formed a pretty solid track, or rut, into the landscape. Everyone else was

smart to adapt to that standard or risk slipping, getting stuck in the mud or just having a very bumpy ride.

The width of the ruts was simply defined by the width of those Roman carriages, at the time one of the most advanced and sophisticated forms of transportation. The width of a Roman carriage consequently was the width of the behinds of two horses next to another pulling those heavy cars. As simple as that.

BUT THE STORY CONTINUES:

Picture the mighty space shuttle, in her days the most advanced and sophisticated form of transportation, sitting on its launch pad and the two massive booster rockets to the left and right of the main fuel tank. The designers of these boosters would have preferred to build them a little fatter, but were restricted. Take a wild guess what diameter they settled for on the boosters. Yup!

Space Shuttle´s solid rocket boosters (SRB) were built by a factory called Thiokol, in Utah. Due to their size, the SRB had to be transported to their launch pad by train. The railroad though had to pass some tunnels through the mountains, and those tunnels were spaced to allow the passing of a train with a 4 feet 8.5 inch wheel gauge (and a little margin). One of the most distinguishable elements of the Space Shuttle was designed based on guidelines determined by the width of two horses' butts, two millennia ago.

I wonder what forgotten heritage the ruts are that set the tracks and are buried and forgotten within today's most advanced and highly sophisticated quant manager's systems – what are their "two horses butts?"