



Data Trends



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The good, the bad and the ugly

For the old timers in the industry, the good the bad and the ugly brings up memories of the 1966 Spaghetti Western starring Clint Eastwood. The movie became known for its unique use of long shot and close-up cinematography, as well its distinctive use of violence, tension and stylistic gunfights (kind of sounds like most analyst reports on the oil price).

In the movie, Clint Eastwood is a gun slinger ('the good' from the title), competing against 'the bad' and 'the ugly' to find buried gold in New Mexico.

I caught a 10 minute segment of this movie the other morning at 2am while researching technology trends and completing my design of a 10Tb storage platform that can be etched onto the back of a grain of rice. It instantly dawned on me that the movie and its characters were a pretty good allegory for the trends we are seeing (or have seen) in the data storage industry.

As with all commercial technology ideas, there are good ones, bad ones and downright ugly ones. In fact many can become all three given the right amount

of time, or some can be all three at the same time. Take the Ford Pinto for instance. It was good in that it was kind of sporty, it was bad because it was not the most reliable car and it was ugly because it had the tendency to explode when involved in a rear end collision.

For the oil industry, and the technology it uses to store its valuable data, I thought I would take a look at the past and present to see which main storage technologies found the buried Confederate gold in New Mexico and which ones were slain in the gun fights of time.

The first cab off the rank is the first commercial storage medium ever produced in the industry – the humble reel to reel tape. This one has become all three over time.

Good – in that it was a revolution that kick started a new industry and opened new avenues for sharing data. Bad – because with hindsight it did not hold much data in comparison to the technology we see today. And ugly – because in many cases the tapes have disintegrated, putting at risk the valuable data recorded on them.

The second wave of storage media in the industry came in the late 1980s when it moved to closed cartridge media. The fundamental design of these media is still in use today, and the evolution from 3480 to 3590 to 3592 was seamless and driven by a single manufacturer (IBM). To be fair it is a stretch to find the bad and the ugly in this technology. Even after 25 years the medium is stable and almost always readable. When push comes to shove, I can always find something bad to say about anything – but on this occasion I am going to follow my mum's advice – 'if you don't have anything nice to say about something, then don't say anything at all'. *Editor's note: Guy's mum must have been watching Disney movies whilst Guy was watching*

Westerns as this immortal line comes from the movie Bambi and is now known as 'Thumper's rule' ... unless Guy really is Thumper all grown up.

Running in parallel to developments in tape storage and vying for oil industry dollars was disk storage. This one was good, bad and ugly all at once and over time. It was good in that its capacity and speed quickly overtook tape allowing rapid access to data without the need for a tape drive or additional hardware. But it was also bad in that it became unreliable when put through the sorts of read/write pressures put to it in the oil and gas industry with its large files and continuous use patterns. It took some time, but it has also eventually become downright ugly due to the sheer number of manufacturers of this storage medium trying to create lower cost higher performing devices that now seem designed to fail.

I think it is safe to say that the reel to reel technologies of the 1980s were killed in action - with their last words before Eastwood took them out being the horrible high pitched scream of a severely deteriorated tape passing over a tape drive head.

Hard disk technology has seen its share of fights as well, but continues to battle on the reliability vs cost battle fields of New Mexico.

It is only closed cartridge technology that, in my book, has found its way to the chest of Confederate gold – both metaphorically and commercially. Whilst I believe that tape storage in general is doomed to lose ground in the coming years, it is only so because of competing technologies, and not because it has major faults.

I had better wrap this up. The garage just called and said my Ford Pinto is ready for collection.