Déjà Vu: Lessons for the Technology Industry, From the Oil Industry

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www.seeta.com; pradeep@seeta.com

The petroleum industry went through speculative "irrational exuberance" in the 1970s through 1981, after which came the predictable rapid disintegration through the nineteen-eighties and nineties. Having experienced human behavior during this wild bronco ride for two decades in the petroleum industry, reading prognostications of technology industry gurus gives a sense of déjà vu all over again. This industry, considered a laggard by technology aficionados offers some insights into to what is in store in the technology market. When bubbles burst, the resultant competitive and market consequences are consistent across industries.

In the seventies, the oil industry as well as the global economy was in OPEC's clutches. Then, as in the recent past, good old-fashioned greed drove up oil prices more than ten fold in less than a decade. In 1981, when oil prices were about $34 per barrel, many leading financial firms and economists predicted oil prices to hit $100 the following year. However, when the oil price peaked in September 1981, and dropped thereafter, the bottom began to fall out of the oilfield service industry, in slow motion and in waves.

The first wave was almost immediate, with a sharp drop in market capitalization for the oilfield service sector, with industry recovering somewhat through 1983, as oil prices stabilized at about $24 per barrel.

However, in 1986, the oil price dropped abruptly to about $8 per barrel. This began a second wave that decimated the industry, with the industry reaching its bottom in 1987. Since then, it has been a highly volatile ride of mini-booms and mini-busts.

Market dynamics during this thirty-year, white-water-rapids like ride give some idea about what to expect technology markets, in the future.

The most important lesson is that we are still far away from the real bottom. We are still in the middle of the first wave of decline in technology markets. There are many telltale signs that imply this:

Optimism Abounds: Like the oil industry in 1982, technology industry experts, journals and rags are forecasting minor changes in demand for 2003. These are polls of CIOs who have lost control over their purse strings. Their budgets are going through the first phase of reduction before being slashed.

Valuations across the board are still based on a fast turnaround and are over-priced if traditional or conventional wisdom is applied to them. Additionally, we have yet to see, in the technology business, the equivalent of the S&L failures of the eighties.

Global corporations are conducting evaluations based on Return on Investment. Until we see positive results of these evaluations, IT related budgets will only decline, in the near future. In short, demand has hit a wall and will decline, contrary to recent expectations of sustained, infinite growth.

There are too many competitors, excess capacity, pursuing share of a smaller pie. Each segment has yet to begin consolidating to two to three major players. Take any technology sub-sector and we find that there are far too many competitors, funded by unrealistic optimism

in growth. The other side of this coin is that prices and quality will drop precipitously, thereby hastening the demise of today's seemingly strong players.

Recent departures of tech industry CEOs are still a minority rather than a majority. Dismantling cost structures is a horrendous, emotion-draining task in ordinary times. Leaders at the helm of technology companies who led them through the growth phase are typically ill-equipped to manage cost cutting during downturns. People like "Chainsaw" Al Dunlap have yet to descend on this industry.

Employment in this sector outstrips earnings expectations. Employment levels are typically based on the unrealistic expectations of growth and are a major aspect of a technology firm's cost structure. When revenue and earnings growth numbers are disappointing, wearing rose colored glasses of optimism, people are kept on board for the inevitable turnaround in the market, and treated as assets. The transition of viewing people as an asset to a variable expense has yet to occur on a broad scale.

Industry consolidation games have yet to begin. The Hewlett-Packard and Compaq merger soap opera is a precursor to what is about to envelope the industry.

These turbulent times will be painful but there will be winners in the end. The oil industry can also provide lessons in winning in these turbulent conditions.

Demand has to turn around. In the oil industry, the motivation to absorb and use new technology grew dramatically after 1986 yielding magnitude-scale improvements in industry economics. Foremost among these circumstances was that industry economics and expectations were stabilized by oil prices. Similarly, if the entire economy is under unyielding pressure, IT will not be absorbed and adopted at previously expected rates. Until the global economy turns around in a robust manner, the bottoming out and the recovery periods in technology sectors can be painfully long.

Change in Leadership. More important, in the oil industry, departure of the old guard created an environment for change. Industry sectors have a tendency to "ring out the old and ring in the new" when faced with major economic shocks, and the oil industry was no different. This change eliminated the internal forces of inertia and resistance to change, unleashing fresh perspectives to utilizing innovation to improve industry economics.

This was a painful process, with false starts, but the next generation ultimately fulfilled its promise. This process of changing of the guard has just begun at global corporations, and its effects will only trickle down to technology companies.

Buying behaviors have to change. In the eighties, oil companies were similar to IT departments of today, selecting products and services from a smorgasbord, and then creating and managing unique solutions, and their delivery, with consultants. These processes were later discovered to be uneconomical, and were replaced by outsourcing execution to "one stop shop" service companies, improving the overall economics of the industry.

Because of this disaggregation, firms in the value chain, especially ones with point solutions, were quickly marginalized, and were either eliminated or acquired. Most firms will be not be selling to final consumers of technology but through often misbehaving channels, who will have greater leverage. All things being equal, margins are inversely proportional to

the number of degrees of separation from the ultimate customer, and many firms at the lower end of the food chain may not survive.

Mergers and acquisitions must gain momentum. In the oilfield service business, the financially perceptive big boys grew bigger through mergers and acquisitions. In the technology arena, the adage, "Them that has, gits!" will be eminently applicable, and cash-rich firms with strong balance sheets and customer franchises will be winners in the long term. Like in the oil industry, these larger firms will absorb more and more of their customers' work, responsibilities, competencies, and people, thereby reducing the rest of the industry value-chain to low-cost suppliers or specialty firms.

Focus on Customers and Financials. Amongst many, oil industry lessons show that three major dimensions will determine the survivability of technology firms. These are Strength of Customer Franchise (and position in the value chain), Strong Cash Position and Balance Sheet, and Sustainability of Competitive Edge. With technology half-lives being what they are, the value of the former two will far outstrip intellectual property as a sole source of sustainable competitive advantage.

A Battle of Business Designs (or models), and there will be three major survivors: vertically integrated full-service providers, low cost producers, and specialty firms that feed the value chain. Of course, there will be various flavors for different industry segments but this polarization is inevitable, creating huge competitive barriers to entry. Consequently, successful garage-based start-ups will be less frequent in these markets but successful ones will focus on unaddressed markets.

Consolidation of geographic clusters. North America had many regional oil centers serving the oil industry. Most saw net losses in jobs to the benefit of a few cities, such as Houston, TX. Similarly, tech regional centers can expect net job losses as the number of tech "clusters" reduce, to the benefit of two geographical areas on the West Coast.

The premise is simple. When the market is filled with irrational expectations of unlimited growth, all competitors have potential to grow. To borrow an analogy from physics, a competitor in a high growth market is like an atomic particle in a gaseous state, with high energy, and infinite degrees of freedom and space.

When demand starts to shrink, energy is removed from the system, and under sustained decrease in energy, suppliers are forced into the other extreme, approaching a Bose-Einstein condensate state, where a winner can take all.

However, during intermediate states between these extremes, markets tend to follow the power law or Pareto's eighty-twenty rule, where a few players own a dominant share of the market, and the rest just feed these giants.

The oil industry is rich in data, information, and knowledge about booms and busts. These are but a few of innumerable parallels that can be drawn, to help the tech industry through these turbulent times.

Pradeep Anand is the President of Seeta Resources (www.seeta.com). He can be reached at pradeep@seeta.com.