

TECHNOLOGY DISRUPTION: ARE FAANGs WHAT THEY USED TO BE?

Did you know that the 4 largest technology stocks on the planet (Alphabet, Amazon, Apple and Microsoft) make up over 20% of the market capitalisation of the S&P 500?. That's just 0.8% of the companies in the index account for over 20% of its value. However, this is not the first time that a small group of very large tech stocks have dominated an index.

If we go back to the 1960s and 70s, we can find something similar. In the 50 fastest growing 'large cap' stocks making up the 'nifty 50', we would find IBM, Kodak, Polaroid and Xerox (the 'PIKX'). If we review what happened then, are there lessons that could be applied today? Let's see.

At that time, all 4 of the PIKX tried to extend their reach into each other's main operational areas. Which is similarly happening today with the FAANGs.

The Tale of the Xerox Copier.

In 1961, a company called Haloid became Xerox and the first office copier, named imaginatively the '914' was launched. Prior to this, during the 1950s, Haloid/Xerox had approached IBM to help fund development and then sell the copier after launch. Consultants A.D. Little were drafted in by IBM to assess the prototype copier's potential. The view? The kit was too big for an office and too heavy for the salesmen to transport. IBM turned the opportunity down and Xerox went solo.



The Xerox 914 copier.

Market placement was clever. Xerox placed the machines with customers free of charge but levying a monthly rental (no capital cost) and building in the first 2000 copies as part of the monthly fee. Everything copied above that was charged at \$0.05 per sheet.

A measure of company success was between 1963 and 1972, Xerox shares rose 1463%.

The lesson? Certainly many to learn but removing the corporate straightjacket thinking has to be up there. How to do this? Engage with people who aren't corporate and bring a fresh pair of eyes.

The Tale of the Polaroid Camera.

Kodak and Polaroid were serious players in imaging and office automation in the 1960s and 70s. Kodak was a world leader in photographic film, paper and related chemicals. Polaroid had invented polarisers for sunglasses and 3D imaging and produced large instant photography cameras. So far, so good.

Then Polaroid developed and launched the 'pocket-sized' colour instant camera, the SX-70 in 1972. This was marketed in a way that Apple would be proud of. At the market launch, Edwin Land the Polaroid

CEO, produced the SX-70 from his jacket pocket (cleverly enlarged for the occasion) and demonstrated the single-reflex instant camera could produce a colour print in one minute. Instant success.



The Polaroid single reflex instant colour SX-70 Camera: Image by Martin Solhaug Standal <https://pixabay.com>

The competitive response from a stunned Kodak was to dump its own prototype being developed within its 1400-person developer team and set about 'cloning' polaroid's approach. In 1976, this ended in tears when Polaroid won their court case for patent infringement; securing a \$925M payment and an order requiring Kodak to cease all instant camera and film production.

The lesson? Once more, many to see but must include corporate-think avoidance (again) and be prepared to think through out-of-the-box thinking. Be prepared to be challenged by those who adopt disruptive or alternative thinking approaches.

Kodak Misses the Digital Train.

Deep in the development bowels of Kodak in 1975, R&D engineer Steve Sasson invented the first 'portable' digital camera. Was this the 'pivot' that would enable Kodak to recover from the instant camera chaos? The short answer is 'no'. Why?



**WORLD
FIRST
DIGITAL
CAMERA**

<https://youtu.be/nU9dXqjdRNI>

A classic debate about holding onto what you already have ensued. Investing in digital would threaten Kodak's existing very large revenues from film photography. So it was shelved. It is not unreasonable to view this decision as leading to Kodak's eventual demise in 2012 (and Polaroid in 2001).

The lesson? One has to ask about the ability of the business to risk assess and consider some strategies about customer migration over time from one technology to another.

The Tale of Losing Focus and Failing to Follow-Through.

In 1972, Xerox developed the 'Alto' word processor at their Palo Alto Research Centre including mouse, locally networked and a friendly user-interface. Note this is almost 10 years ahead of the launch of the

IBM desktop PC.



The Xerox Alto Word Processor (plus mouse): designed for an operating system based on a Graphical User Interface
Photo by Joho345: Public Domain, <https://commons.wikimedia.org>

In 1975, Kodak launched its 'Ektaprint' copier aimed at Xerox's very profitable mid-range market segment. This machine was technically superior to anything Xerox was then producing.



Kodak Ektaprint 100 AF copier & duplicator.

In the 1970s, IBM held market dominance in main-frame computers used for bulk data processing and it had a typewriter division that held the heritage of the company (International Business Machines), which reinforced its dedication to hardware at that time (see 1980s for The Tale of the Lost Software Opportunity).



IBM System/370 model 165 plus IBM 3330 Data Storage facility (background). First shipped 1971

Given this diversification approach by Xerox and Kodak in particular, how did it go? It is fair to say, largely not well!

Kodak moved very tentatively, launching the Ektaprint in only 6 US cities. Xerox were given time to respond, launching a product upgrade that competed well with Kodak's new entry. This gave the commercial team the chance to retain their market position and Kodak took a further 7 years to launch the Mk.II Ektaprint, which was a year after Xerox launched its further upgraded model.

Perhaps more thought-provoking was the fate of Xerox's 'Alto' word processor. It was the forerunner technically of both the Apple Mac and the Sun Workstation, so why didn't it get commercialised?

1969 saw Xerox acquire Scientific Data Systems, a mini-computer company which proved a great distraction and a classic poor purchase. In 1975 it was closed having made a loss of over \$1bn.

Possibly even more importantly was the nature and make-up of the then Xerox senior management. Many were from Ford. Their experience was in making incremental improvements with existing mature product lines and technology. Launching new, innovative and potentially industry-disrupting products was not something they had had to deal with.

This lack of expertise extended further: Xerox never had a competitive small copier to provide a full market range of quality equipment. This was at least partly due to over-specifying the bottom of the range model which slowed the whole development process, allowing Canon and Ricoh from Japan to gain market entry and then migrate into the larger machine ranges.

The final nail in the Xerox US market dominance coffin was applied initially in 1968 when the US Federal Trade Commission charged the company with monopolistic practices (Xerox had 90% of the US copier market). Eventually in 1975 a consent decree was signed making Xerox grant other companies patent licences for nominal royalties.

Lessons to Learn.

1. First and foremost, if you do develop a world beating technology and/or product, go all out to commercialise it.
2. It is critical to be aware of existing and new competition wielding an improved version of what you have or inventing new technology that makes your offerings obsolete. How long the death throes are doesn't matter. You have to respond quickly and decisively.
3. Copying competitors' products can be done but do it through parallel evolution, not infringing patents.
4. Pay attention to your corporate culture – all the way through the organisation. It needs to be understood, aligned and strategy must be consistent with it. If they are at odds with one another, culture wins and the strategy implementation fails.

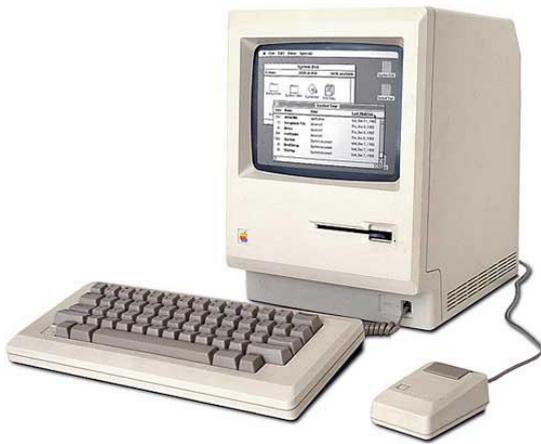
Signs of Change in the 1980s?

In August 1981, IBM launched the IBM PC running on MS-DOS. IBM had contracted out the development of its software activity to an outfit called Microsoft. At that time, a friendly user-interface for the general public was still required.



IBM PC 5150

Apple introduced the Alto/Macintosh PC in January 1984 and would not license its Mac software to others. This left a 'window' for Microsoft to develop its operating system – Windows, which was launched in November 1985. IBM did not specify exclusivity for their use, which gave Microsoft the ability to sell it to any other computer manufacturer and set the scene for what we have today.



The first Apple Macintosh January 1984

Lessons to Learn.

1. Take care not to allow 'tunnel vision' to set in. IBM were only interested shipping boxes. This was good business at the time but the thinking that 'gave away' the software and then compounded the error by not obtaining exclusive rights (to use and licence) even seemed odd at the time. (I wonder how Dell are thinking at the moment?)
2. Constantly reviewing the balance between diversifying and 'sticking to your knitting' is necessary. Doing this in an open and non-defensive manner is essential to avoid self-justification.
3. Scenario planning is a good thing. Using war-game approaches can help.
4. Mistakes are great learning opportunities – note IBM's business model and portfolio today.

New Millennium, New thinking?

For a number of years, people could listen to audio cassettes, then later CDs on the move conveniently with their Sony Walkman. In its day, a design classic and disruptive product technology. Then, in October 2001, Apple launched the iPod. This changed this segment. By 2008 42% of Apple's Q1 revenues were from the iPod.



Sony Walkman first conceived 1978



Apple iPod Launched October 2001.

As the 'noughties' progressed, mobile phones were becoming almost universal and were mutating into 'smartphones'. In 2007, Nokia were mobile phone market leaders. Their hardware was great but the software was...not. The next disruption occurred in June 2007 when Apple launched the iPhone, changing the game and rapidly taking market share.



Nokia 6301 launched September 2007.



Apple iPhone launch 2007

<https://www.youtube.com/watch?v=x7qPAY9JqE4>

Apple, being Apple, didn't share its mobile operating system, giving the opportunity for a competitor to develop an alternative. Google (born in September 1998) came onto the scene, producing its Android platform in 2007 which was first used in HTC's smartphone launched in 2008. Android is now the de facto standard in the segment globally with 86% of the market currently. Today, Samsung are the number 1 smartphone player world-wide, having sustained that position since 2012.



Samsung Galaxy S20-FE launched 2020

Legal action appears to be never far away from (US) tech giant activity with Apple suing Samsung for patent infringement in 2011. Samsung countersued. In 2018, Apple were awarded \$539M damages. That's a large sum of money but it took 7 years of effort and no doubt enormous distraction from product development for both parties involved.

Another area for serious competitive activity has been big data and the 'cloud'. In 1994, Amazon was established as an online book store and spent a number of years racking up losses ([see here](#) for background).

By 2004, Amazon had set up AWS which was officially launched in 2006 with its first cloud product – Simple Storage Service (S3). By 2015, turnover had reached nearly \$8bn/yr. This puts Amazon at number 1 in the segment (see [here](#)). Microsoft, who missed the boat with cloud storage initially, launched Azure in 2010 and now has an offering which has propelled it to number 2 in the market (see [here](#)). This in turn has breathed a certain amount of life back into a corporation which was starting to look stale.

As the last decade has unfolded, video-streaming has become a battle ground. The fight for content and hence market dominance is between the original pioneer Netflix, Amazon (prime), Google (YouTube), Disney, Apple and others (for history, see [here](#)). The potential impact on smaller players, such as the BBC, is not yet totally clear but survival in the sector will require steady and significant investment in commissioning and curating content that has very high and broad viewer appeal (US market view [here](#)). The role of 'live' content such as sport or high-profile concerts is likely to influence well beyond viewer ratings.

Lessons to Learn.

1. Spend time understanding where the market trends are, not where you would like them to be.
2. What is the competition doing?
3. What is happening in other fields that might disrupt your industry?
4. Have a regular input of disruptive thinking. It is this diversity of thought that is the true goal for any diversity programme.
5. Be attuned to your culture and understand how it might need to change to facilitate an 'agile' approach to organisational strategy and performance.
6. Culture change takes a long time. Start early and stick with it.
7. Include being dissatisfied with how things are today. Excite people about making things different and better.
8. Learn to disrupt - or be disrupted.

When is Big, Too Big?

This article was started by pointing to the market capitalisation of 4 tech giants. The FAANGs have an enormous hold over the world's electronic communications system (except in one or two places where the government sees this as a geopolitical existential threat).

To give an idea of scale here, Apple Inc has a market cap currently around \$2Trillion. This, in political terms, would give it a seat at the G20 in its own right, just making it into the top 10 countries in the world. Comparison before the Coronavirus saga.

This kind of scale makes governments nervous for various reasons, not least where the organisations choose to be taxed. Then, given the industries involved, there are real defence implications. And jobs, economic well-being, environmental concerns etc.

Not surprisingly, the FAANGs get drawn into (geo) politics. In 2013, Microsoft was fined \$561M by the EU for monopolistic practices (it deleted a pop-up browser choice in Windows 7 having previously agreed to include it).

Google, Facebook, Amazon et al find themselves in front of various house committees in the US to justify their stance on various things.

Alphabet (Google), Amazon and Apple have all been the subject of EU anti-trust investigations as the organisation attempts to offset the power of these 'foreign' organisations; whilst at home, the US Congress is thought to be considering imposing new Big Tech regulations – which are being seen as effective monopolies. Such pressure must be causing the organisations to consider breaking themselves up. But would that 'smaller tech' world be much different in terms of monopoly positions held?

At this scale, governments get involved. There is no such thing as pure capitalism or free markets. The idea that 'big is beautiful' loses its appeal – big starts to look ugly. If you are a politician or any other body that sees its power base rivalled, it looks a threat. This means 'something needs to be done' to remove that threat.

The impact on these businesses will be great; it is only a matter of time. And this is before we consider what the next paradigm shift might be which clears the product/technology game board of the current players.

If any of the above has provoked thought about your own organisation and you would like to speak to someone about 'fresh eyes' input, please speak to 7C-Consociation [here](#)