Innovation Matters

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INVESTMENT RESEARCH SERIES

Innovation

It is desired and sought after by many. It is claimed by most everyone. It is used as a label by a majority of companies in most industries. It is the subject of countless books,[1] business symposiums, magazine articles and advertising campaigns. But, in fact, it is quite rare. It is innovation.

It can be tricky to define innovation, but to paraphrase Justice Potter Stewart, we know it when we see it.[2] Wikipedia defines innovation as "…the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies or ideas that are readily available…"

Innovation is often confused with technology, specifically the tech industry. And while this is understandable given the rapid advances in technology over the last 50 years, the truth of the matter is that innovation is nothing without the intelligent application of ideas; it isn't the technology that is innovative, it is the creative application of ideas, which often involves technology, that is innovative. Innovative companies are found in virtually all industry sectors.

Innovation can mean a new business model or way of doing business. For instance, ZipCar has completely reinvented the car rental business. Innovation can mean new business systems. WalMart reinvented the retail industry in part by keeping inventory (and inventory costs) low through a system of inventory management that was extremely innovative. Innovation can take the form of a groundbreaking product. TiVo empowered television viewers to take control of their television viewing (which in turn has reduced the value of television advertising).[3] Nike has been cited as a leader in innovation by producing an application that allowed them (and others) to measure the environmental impact of materials used in the production of their goods.

Recall the definition of innovation that refers to using processes and services that are readily available. This puts a premium on creative thinking. The US postal system was founded by Ben Franklin. The first web page

1. A search for innovation (restricted to books) at Amazon.com produces 63,458 results. So maybe "countless" is a bit of hyperbole.

2. Writing in the concurring opinion in Jacobellis v. Ohio (1964) Stewart was referring to obscenity.

3. The success of TiVo and has led to subsequent innovations in the distribution of media as consumers have realized that they can (and should) be in more control of their media consumption. We're referring to the race to deliver on demand television and companies and products such as Apple TV, Hulu, Netflix streaming and Roku boxes.

was created in 1991.[4] DVDs were being produced in 1996. Netflix's combination of these elements effectively killed the video rental store and a major business in Blockbuster.[5]

Returning to our paraphrasing of Justice Stewart, most can identify innovation when it is encountered. The ability to get movies through the mail is a prime example of innovative thinking applied to existing products and systems.

Innovation isn't just represented by dramatic product innovations or fancy new business models. We think it is best to think about innovation as a philosophy or way of thinking or doing business.

Tesla Motors is often cited as an innovative company, and indeed they are well poised to disrupt the automotive industry. But what makes Tesla innovative isn't their product; electric cars date back more than 100 years. Their cars are powered by stock batteries. The core technology for the motor used in Tesla's electric vehicles was subject to a patent application filed in 1888.[6] Tesla Motors has been granted a number of patents and they have been credited with developing an innovative battery management system.

Having innovation as a core part of a company's culture is an important distinction contrasted against occasional innovative product introductions.

But what really makes Tesla Motors innovative, and what has led to their remarkable success, is their innovative way of thinking and their corporate philosophy. This philosophy has led Tesla to break with industry convention, including direct sales to consumer and standardized pricing.

Having innovation as a core part of a company's culture is an important distinction contrasted against occasional innovative product introductions. Companies with an innovative culture are more likely to continue to innovate.

Innovation Is	Innovation Is Not
A way of thinking	A marketing slogan
The intelligent use of technology	Technology itself
Consistently applied	A one-time thing
Found in virtually all industry sectors	Limited to the tech sector

4. We know the Internet is older than this but for most non-technical users the Internet didn't offer sufficient utility and ease of use until web pages and the web as we now know it were developed. Source: http://sixrevisions.com/resources/the-history-of-the-internet-in-a-nutshell/

5. Blockbuster itself can be considered an innovative company which, for a while, dominated the video rental business. Lesson: don't stop innovating.

6. http://www.teslauniverse.com/nikola-tesla-patents-555,190-alternating-motor

Innovation Matters: Innovative Companies Outperform

Innovation matters. Innovation can drive increases in productivity and can create profits. The benefits also accrue to the consumer; better processes, better products, and better services are key ingredients that can drive profit growth because they can mean enhanced consumer benefits.

Apple is often, quite rightly, cited as a fantastically innovative company. That has meant a lot to their profits and stock price, but the satisfied consumers of Apple's products are also winners.[7]

Management consulting firm Arthur D. Little has found that "Top quartile innovation performers obtain on average 13% points more profit from new products and services…"[8]

In addition, Arthur D. Little's study found that "…the top quartile innovators enjoy more than twice the proportion of new sales for new products/services (based on sales in the last three years), nearly twice the EBIT[9] and a 30% shorter time-to-break-even than the rest. This is a good illustration of financial (or economic) benefits of excellent innovation performance."[10]

> It may be best to think about innovation as a philosophy or a way of doing business.

In another report, Arthur D. Little found that "achieving innovation excellence can boost EBIT-margin by 4 percentage points through

7. Consistent with our argument that technology isn't synonymous with innovation the key element of Apple's innovative success comes from enhancing the user experience which is largely a function of design. When the iPod was introduced it did not utilize any new technology; MP3 players had been in existence for several years before the iPod was launched. But the user experience was such an improvement over what had come before that the iPod seemed like a new product category despite the fact that it wasn't. The same can be said of the iPhone. Combining the user interface of the iPod with the cellphone allowed Apple to virtually destroy industry leader Nokia's handset business.

8. Getting a Better Return on Your Innovation Investment, Arthur D. Little 2013. http://www.adlittle.com/reports.html?&view=561

9. Earnings before interest and taxes.

10. Getting a Better Return on Your Innovation Investment, Arthur D. Little 2013.

both top line growth and bottom line improvements."[11]

Top line growth can come about by shorter time to market, increased sales or successful product launches. Bottom line improvements can come from reduced development cost or reducing product costs. Consistent with our view that innovation benefits the consumer, Arthur D. Little found that innovative companies perceived that effectively meeting customer needs was their most important goal.[12]

"Top quartile innovation performers obtain on average 13% points more profit from new products and services…"

A University of British Columbia study has compared innovation "leaders" and innovation "laggards" finding that innovation is "…strongly associated with firms' expected returns."[13] In particular they found "…that more innovative firms have lower exposure to systematic risk."

This isn't the only study to highlight the negative implications of being an innovation laggard. Another academic study found that, "Innovation activity raises productivity and aggregate output. The benefits of innovative activity, however, are unequally shared."[14] In particular, the study found that innovation can lead to increasing competitive pressure on certain workers as well as existing firms.

These findings are what we have come to expect. Innovative companies innovate to improve customer value and in doing so are able to gain a competitive edge which manifests itself in higher earnings and better stock performance. Companies that don't innovate are often not able to provide the same level of customer value and may find themselves at a competitive disadvantage which manifests itself in sub-par earnings and stock performance.

Identifying Innovative Companies

Identifying Apple, Netflix or Amazon as innovative is, particularly in hindsight, easy. The trick is doing so in less obvious cases. This is especially difficult because innovation can be hard to define.

So how do we identify innovative companies? We approach the challenge on a number of fronts, but the first step is to recognize that any individual innovative company can be at any stage within its business lifecycle; from a start-up raising seed capital, right through to a decades-old multinational conglomerate. The process of identifying in-

11. Innovation Excellence 2005, Arthur D. Little. http://www.adlittle.com/downloads/tx_adlreports/ADL_Global_Innovation_Excellence_Survey_2005.pdf

12. Innovation Excellence 2005, Arthur D. Little.

13. Jan Bena & Lorenzo Garlappi, University of British Columbia, 2012. The study examined US public firms. Note that they ascertained innovation leaders based on patent activity.
http://www.ckgsb.edu.cn/Userfiles/doc/Garlappi_Paper_BG_April_1_2012.pdf

14. Displacement Risk and Asset Returns, Nicolae Garleanu, UC Berkley, NBER and CEPR; Leonid Kogan, MIT and NBER; and , Stavros Panageas, University of Chicago Booth School of Business and NBER, 2012.

novative companies must therefore take this fact into account and cannot simply be boiled down to a one-size-fits-all methodology.

We do believe, however, that innovative companies can broadly be split into two distinct classifications:

- Smaller, earlier stage, more disruptive companies or…
- More mature companies that are using innovation to continue to create profitable growth

For simplicity, we classify the smaller, more disruptive companies as ‘Group 1’ and the more established, seasoned companies as ‘Group 2’.

Defining early stage Group 1 companies can be highly subjective as by definition they may not yet have had the time to prove themselves. It is also easy to fall into the trap of confirmation bias when looking at these types of company by only recognizing and giving credit to ideas and processes that you already believe in or have seen work in the past. We therefore try and seek third party acknowledgement of a company’s innovative status and also look for ideas from as wide a range of sources as possible. For example, there are several academic and business reviews that aim to identify, or quantify in some way, innovative companies. We regularly scour these publications to add to our list of Group 1 companies.

Identifying the more mature companies in Group 2 is slightly less subjective as they have a longer history of financial results to analyze and have had ample time to demonstrate their advantageous qualities. We believe that innovative companies that have successfully transitioned through the initial growth phase are much more likely to be able to earn a higher return on their investments than their non-innovative peers and that they should be able to maintain this advantage over time if they continue to remain innovative.

> Innovative companies perceived that effectively meeting customer needs was their most important goal.

In order to quantify these characteristics we search through companies’ reports and accounts and try to identify only those companies that have consistently earned a high return on capital for an above average period of time. This may not prove they are innovative (they might simply just have a monopolistic advantage, for example) but it does provide a consistent marker that, in our experience, frequently identifies innovation. Despite their size and maturity these companies have shown an ability to adapt and react to changing market forces. These companies can create fairly steady profits, are able to continue to operate well in most economic environments, and often have strong balance sheets.

Simply being identified as an innovator is not in itself sufficient to be selected for our portfolio

Companies that only have a few years of success don't make it into this category as they still don't possess the long track record we look for. A company like BlackBerry would have made it into Group 1 during the rapid growth phase of the company but would not have made it into Group 2 when it matured as it did not continue to innovate and certainly did not continue to earn an above average return on capital. In fact it was quite the opposite. Apple and Android touch screen smart phones were miles ahead of BlackBerry in terms of technology innovation, and the company could not catch up. On the other hand, a company like eBay was identified in Group 1 and has matured into a Group 2 company as it has managed to continue to adapt and evolve and defend its high returns on capital.

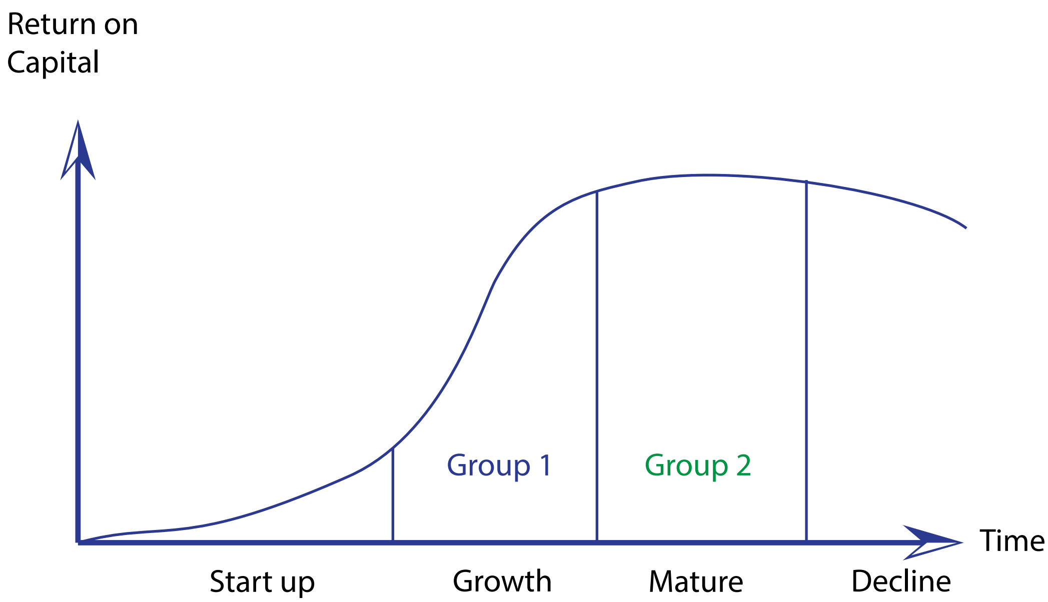
Investing in Innovative Companies

The first thing to note when thinking about investing in innovative companies is that in some instances it is impossible to do so. For example, if a company is at a very early stage it is quite likely to be privately owned and not listed on a public exchange. In our search for Group 1 companies we sometimes come across unlisted firms, and in these instances we make a note to keep an eye on how the company evolves in the future. If a company is listed but is still very small we also prefer to keep an eye on the company rather than invest. We know that some of the companies in Group 1 will grow into highly successful businesses while others will fail. Group 1 companies are therefore higher risk than Group 2 and as such we want to try and limit this risk by avoiding those very small companies that may be difficult to trade and whose prices are more prone to move wildly on little information. We define very small companies as those with a market capitalization of less than $500 million.

The second thing to note when thinking about investing in innovative companies is that valuation matters. One should not just ask "is innovative company X a good investment?" but rather "is innovative company X a good investment *at this price*?" This can be particularly prescient when thinking about innovative companies as they can sometimes garner a lot of attention and be swept up in a media storm proclaiming the "next big thing". This usually coincides with their stock prices being bid up to high levels as investors clamour for exposure. Occasionally, reality matches the hype, but often the anticipated growth does not match the heightened expectations and speculative investors late to the game are left disappointed, and usually out of pocket.

Our approach is, and will always be, to look for compelling valuations at all times and not be drawn in to paying up for overly optimistic growth expectations that we know often fail to materialize. Our experience has shown that there are always plenty of great, innovative companies out there that the market can temporarily overlook, and our aim is to take advantage of those instances and purchase those companies at a discount to their true worth.

Simply being identified as innovative is not in itself sufficient to be selected for our portfolio.



Four Stages in Typical Company Lifecycle
This conceptual illustration shows the lifecycle of a typical company from startup through decline. In looking to invest in innovative companies we classify companies as either Group 1 or Group 2.

Case Studies: Examples in Innovation

There is no single path to innovation and innovation comes in a variety of styles and flavors. To illustrate this point we've chosen to highlight two companies that couldn't be more different from one another. One is US-based, the other is based in China. One is a household name; the other is behind the scenes. One is over 100 years old while the other is in its second decade. While they are both innovative companies, they innovate in different ways.

Li & Fung

Not all innovative companies are household names. In 2005 Wired magazine identified Google, Apple and Amazon among its Wired 40 list of innovative companies, Their stories are well known. Also included in that 2005 list was a company that is much less known: Hong Kong based Li & Fung.

Li & Fung started as a trading broker in Guanzshou in 1906 during the Qing Dynasty, developed into a Hong Kong based exporter and today is the world's largest multinational outsourcing company. Despite the fact it does not own one factory, it orchestrates a network of thousands of suppliers in over 40 countries. Li & Fung indirectly provides employment for over 2 million people in its network of suppliers, with only a tiny fraction on Li & Fung's payroll. As you read this, freighters and cargo planes carrying goods conceived by Wal-Mart and Target only a few weeks ago and manufactured in factories that Li & Fung partner with but do not own are cruising towards their destinations around the world.

Sometimes, in order to be more innovative, companies have to unlearn deeply entrenched views. For years, many clothing companies were reluctant to allow outsourced manufacturers to add the price tags on the clothing they were manufacturing for fear that this information could be used as a bargaining tool by the manufacturer in order to take a greater share of the profits. This reluctance meant clothes would often be shipped to a depot in the US, unboxed, sorted, price tags added, then reboxed and sent to the network of stores, increasing time to market and costs. The reality was that factories already knew the price of clothing goods, as it was very public information. Li & Fung helped to convince clothing companies and coordinated the manufacturers to add price tags during the manufacturing stage. Combined with the use of barcodes and more recently Radio Frequency ID (RFID) tags to track shipping, the speed to market became much faster, which is very important for a fashion retailer. The speed, specification and flexibility with which this process can now be done was simply not possible ten or twenty years ago. And Li & Fung was the company that initiated this innovative approach to the retail manufacturing process, contributing to the continued success of the company.

Netflix

In fast moving industries it isn't enough to innovate yourself to a market leadership position, it is imperative to continue to innovate to maintain your position, or indeed, survive. In the late 1990s Blockbuster video dominated the US video rental business. This dominant position was achieved, in part, through innovation in what had previously been a marketplace populated primarily by small local businesses.

On the surface, Blockbuster was simply in the video rental business. In reality it might be better to think of the industry as the media delivery business, in particular the delivery of video media to residential consumers.

Netflix, an upstart company that was founded in 1997, was able bring a few readily available technologies and processes together in such a manner that the consumer benefit was so vastly superior that retail video rental outlets were not able to survive. The DVD, the US Postal

Service and an Internet based ordering system were the key elements.[15] After a shaky start, Netflix was able to deliver one billion DVDs before it reached its tenth anniversary. We don't mean to oversimplify here; Netflix faced a number of challenges, including reaching scale and being able to build out its logistics and fulfillment system.[16]

One of its key innovations was the introduction of the flat rate rental plan; subscribers pay a monthly fee for two or three DVDs outstanding at any time. This pricing concept eliminates late fees and allows customers to keep their DVDs as long as they like enabling them to watch at their convenience.[17]

Netflix isn't really in the DVD delivery business; they are in the media delivery business and this industry is locked in pitched battle for access and a meaningful share of residential television sets and consumer eyeballs. Realizing this, Netflix introduced a video on demand streaming service in February 2007. Competitors in this space include Apple, Google, satellite and cable providers, HBO and a host of other well-resourced competitors. The battle for streaming television supremacy isn't over yet, but Netflix has already become the largest generator of Internet traffic, suggesting that, for the moment at least, they are the leader in on demand video. To protect this market leadership position, Netflix has begun to offer its own generated content, creating the popular *House of Cards* and *Orange is the New Black*, among other original programs.

As we've mentioned, true innovation is pervasive and inherent in a company's culture. One example of this is seen in the Netflix vacation policy which provides unlimited amounts of vacation to all workers.

Conclusion: Innovation Matters

Innovation, be it in the manufacturing process, supply chain management, product development or any other aspect of a company's business can (and does) provide companies with a competitive edge that often translates into greater financial performance and superior stock performance. Companies that understand and embrace innovation, are more likely to survive... those that can't adapt may not. Innovation matters.

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15. Netflix press release. https://pr.netflix.com/WebClient/getNewsSummary.do?newsId=831

16. If you're a Netflix subscriber you know they've cracked these issues; most subscribers get their DVDs through the USPS the day after they are shipped.

17. With the multi-day rental plan, which was industry standard prior to the flat rate plan, customers often rented a video and felt compelled to return it unwatched simply to avoid an escalating rental fee which could exceed the value of the DVD (or VHS tape) itself.

ABOUT THE FUND MANAGERS

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Co-manager

Joined Guinness Atkinson Asset Management in 2006.

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2.	Roper Industries	3.97%
3.	Cognizant Tech Solutions	3.89%
4.	Boeing Co/The	3.74%
5.	NVIDIA Corp	3.64%
6.	Taiwan Semiconductor.	3.61%
7.	Danaher Corp	3.61%
8.	Cisco Systems Inc.	3.59%
9.	Oracle Corp.	3.50%
10.	Bntercontinental Exchange	3.50%

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