Issue XXXIV

AMERICAN MONEY MANAGEMENT, LLC
SEC Registered Investment Advisor

The Ostrich Paradox

In 2011 the Japanese city of Miyako was destroyed by the Tsunami created by the Tōhoku earthquake. Sadly, this was not the first time a Tsunami destroyed the city.

In 1933 Miyako was destroyed by another Earthquake and Tsunami. 42% of the city's population died as a result.

Surrounding Miyako and the Iwate Prefecture Coastline are many stone markers, some centuries old, indicating the high water marks from previous Tsunamis. One marker inscribed in Kanji states[1],

> High dwellings are the peace and harmony of our descendants. Remember the calamity of the great tsunamis. Do not build below this point.

The stone tablet on the edge of the [village of Aneyoshi.]

It is a warning to future generations that are thinking about resettling the port valley. "Avoid our suffering. Please keep to higher ground".

It was ignored.

Why do we, humans, in spite of all the lessons from the past keep making the same mistakes? Repeating avoidable tragic disasters again and again?

Psychological Factors

Politics and economics play a role but our psychological biases play an important part too.

Myopia Bias

We treat rewards that are immediately present far more favorably than rewards that are well into the future. We focus more on our short-term actions than long-term ones. This makes it very hard to stick to behaviors that protect us from low-probability but high consequence events that could occur sometime in the future. Like paying for flood or earthquake insurance.

Amnesia Bias

Memories of pain are short-term and easily replaced by more positive memories. This quirk helps us overcome short-term setbacks and to learn. We'll never forget a disaster but we will forget the pain. Forgetting helps us in the short-term but harms us when we need long memories, sometimes multi-generational, to avoid repeating the trauma from a natural disaster.

Optimism Bias

We tend to believe we aren't as susceptible to harm as other people. Do you have an emergency supply of food, water, and other essentials in case of a destructive earthquake or wildfire? How many people in Florida stayed home to ride out the recent hurricanes instead of heeding evacuation orders?

Inertia

When we have to make tough decisions based on an uncertain future our brains get stuck in a state of "analysis paralysis". In this state, we fall back on the default option. The default option is usually doing nothing.

Herding

A lot of what we do is based on social clues from others. We look to the group to determine the appropriate action. If our neighbors are not preparing for a disaster or evacuating we tend to do what they are doing. People living in high potential flood areas will buy or not buy flood insurance based on if their neighbor has bought it or not.

Bear Markets Are Like Natural Disasters

These same psychological biases are part of the reason for the boom-bust cycles in the stock market and why the average investor get hurts repeatedly.

When stocks are going up we forget that they will go down. When we're making money it feels good and we forget the psychological pain market declines cause.

During bull markets it is easy to make money and how easily we make money makes us think we're smarter than we are. Of course we'll be able to avoid the next bear market, because we are investing so smartly now.

If our friends and family are buying the current hot stock, Bitcoin or

Ether we will too even if we don't really understand how the company makes money, how the blockchain works, or why people are investing in a Civil War anesthetic.

Once we're invested we're faced with a lot of unknowable decisions. Our rational thinking system is overwhelmed so it relies on its default answer. Do nothing.

We can never fully insulate ourselves from bad decisions or the next bear market. Especially since we don't know when they will happen. But like preparing for a natural disaster, we can set-up systems and plans to be prepared and to help lessen future pain.

Rebalancing to Target Asset Allocation

We often state that the first and most important decision is Asset Allocation. In fact, this rule is our firm's first of five core principles that we use in making investment decisions on behalf of clients. Having a target allocation that is consistent with your risk tolerance, phase in life, and return objectives can help you to stay calm and make unemotional decisions throughout the life of your portfolio.

For example a target of 50% stocks and 50% fixed income would be considered a moderate investment approach, some exposure to risk but an equal exposure to less volatile fixed income investments. If stocks go up more than fixed income and the portfolio becomes weighted 60% stocks and 40% fixed income, then it would be important to sell 10% of stocks (i.e. take profits) and buy 10% of fixed income to bring the portfolio back in to balance so that it remains consistent with the investor's predetermined long-term objectives.

It feels painful in the short-run to take money out of an asset that does nothing but go up and put that money into an "underperforming" asset class. But these trends will inevitably switch. When they do we will thank our past self for consistently rebalancing.

Maximum Position Size Rules

This is very similar to rebalancing but focuses on a single position and not an entire asset class. This is a rule that sets a predetermined maximum allowable size of a position as a percentage in your portfolio.

When a position becomes too large the rule triggers a sell. Not a complete sell. A sale to trim the position back down to its target percentage weight.

This system keeps you invested in a company that you like but without it becoming too dominant in your portfolio. The rule helps remove emotion from the decision too. It is hard to trim a stock that has been going up. It feels like it is just going to keep going. Someday, you don't know when, the stock will go down. If the position is too large it will hurt your overall portfolio. But if you've been following the maximum position size rule, you will have been taking profits on the way up and any subsequent downturn will help limit the harm to your portfolio.

It is January, the start of another new year, and our crystal ball remains as cloudy as ever. However, by sticking to our firm's core investment principles and following the portfolio management systems described above, we don't need a crystal ball to help you achieve your investment objectives.

Wishing you and yours a very happy, healthy and prosperous 2018.

[1]*This story and the list of psychological biases are from The Ostrich Paradox: Why we* Underprepare *for Disasters*

Dividend Stock in Focus:

Microsoft (MSFT): $87.82*

**Prices as of the close January 10, 2018*

Do you remember this?

The release of Windows 95 was a really big deal.

It is also the epitome of how software used to be built and sold.

Spend years building and improving your current software with a specific launch date. Then sell the upgrade to current users of the old software while attracting new users. Then your new users will buy future upgrades too.

Windows 3.0 was released in 1990. Microsoft spent the next 5 years improving their operating system and released Windows 95 to worldwide excitement on August 24, 1995 (see photo above).

When you're the dominant desktop computer operating system, upgrade sales and new user sales are all but guaranteed. Also, back in the late 1990s, personal computers were constantly improving. The upgrade cycle, the time it took a consumer or business to buy new computers, was very short boosting sales of Microsoft Windows.

The old way of selling software was very profitable. The majority of your costs went into producing the first copy of your software. Then the incremental costs to copy and sell your software were very cheap. The problem with the old way of selling software was its one-time transactional nature. Software companies like Microsoft were very dependent on repeat sales.

Then the desktop computer upgrade cycle slowed. Computers lasted longer and improvements to operating systems became more incremental.

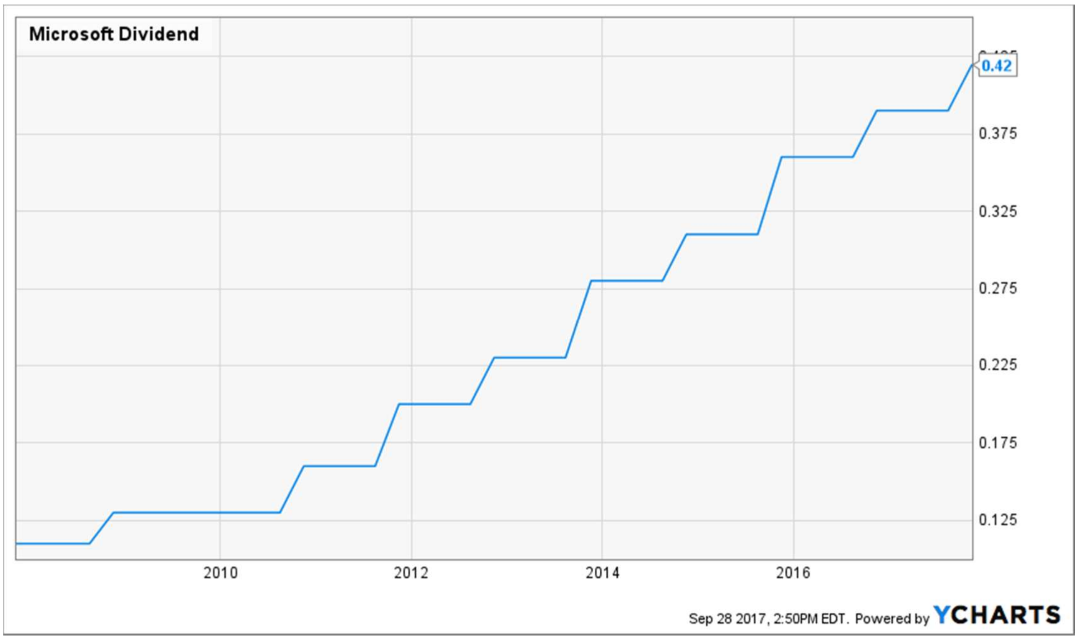
The strength of the internet and the rise of cloud computing also reduced the desire for big one-time software launches.

Microsoft under new CEO Satya Nadella is **shifting Microsoft's focus from highly repeatable revenue towards highly recurring revenue**.

Dividend History:

Microsoft started paying a dividend in 2003 because they had a problem: too much capital. Microsoft started returning some of their excess capital back to shareholders in the form of cash dividends.

Over the last 10 years Microsoft has increased its quarterly dividend by 281%.



Catalysts for Dividend Growth & Capital Appreciation:

Recurring Revenue Greater Than Repeatable Revenue

The new way to sell software is to sell a subscription. The term is **Software as a Service (SaaS)**. Software updates are released as they are finished. No more downloading a whole new operating system.

The drawback is that SaaS is not as profitable at the beginning. The customer acquisition costs are high. Discounts and promotions are offered to get current users to switch over and to gain new users. The upside to SaaS is the lifetime value of each user is much higher than a onetime software transaction.

Eventually, the promotional prices will roll off and the average revenue per user (ARPU) will increase. ARPU will also increase as current customers add on more services raising their monthly bill

The large benefit to SaaS companies is the highly recurring revenue. You know with a large degree of confidence what your monthly revenue and cash flow will be. Because of the switching costs associated SaaS (more on this below) your revenue and cash flow over the next couple of years is highly predictable too.

Under Satya Nadella Microsoft has shifted its software towards the Saas model with

- Dynamics

- Office 365
- LinkedIn
- Azure (it is also IaaS and PaaS - more below)

Switching Costs

How difficult and/or costly is it for you to switch to a competing product?

If you had a bad experience with your current car mechanic how hard is it to switch over to a new mechanic?

If you recently had a bad experience at your local bank branch how hard is it to switch your accounts to a new bank and then update your direct deposit, enter all your bill pay and electronic transfers with your new account, get new checks, a new debit card, get a new credit card, etc.? Your bank has switching costs. It keeps you there.

There are costs involved with switching Software as a Service providers.

1. **The Industry Standard**: Microsoft's suite of office products are the industry standard. Another office competitors exist but because Microsoft is so dominant and almost every business runs Microsoft there is no desire to switch. Even if an individual does switch to something like G Suite this person will still have to have access to Microsoft's Office because everyone else still uses Microsoft Office. If you need a Microsoft Office-like product you will end up using Microsoft's Office.
2. **Learning Curve Trap**: When you have spent a lot of time learning how to use a specific software you don't want to learn a whole new system. You would have to have an incredibly bad experience with your existing software to force the move. People have spent years learning how to use Microsoft's suite of office products. The same learning curve trap applies to all of Microsoft's SaaS offerings. Dynamics is a robust CRM software. Once a firm or person has become proficient in its use it is extremely hard to switch over to a competitor.
3. **Data Trap**: This usually applies to companies like Apple and iTunes. To leave the iPhone and iTunes ecosystem is to forgo all the music, movies, and apps you have purchased. This

is an expensive move. There is also a data trap with SaaS. Yes, it's your data and you can move it whenever and to wherever you want. But it is an expensive move and a time consuming move. The data trap plays a role in Microsoft's Dynamics CRM software and its public cloud computing platform Azure.

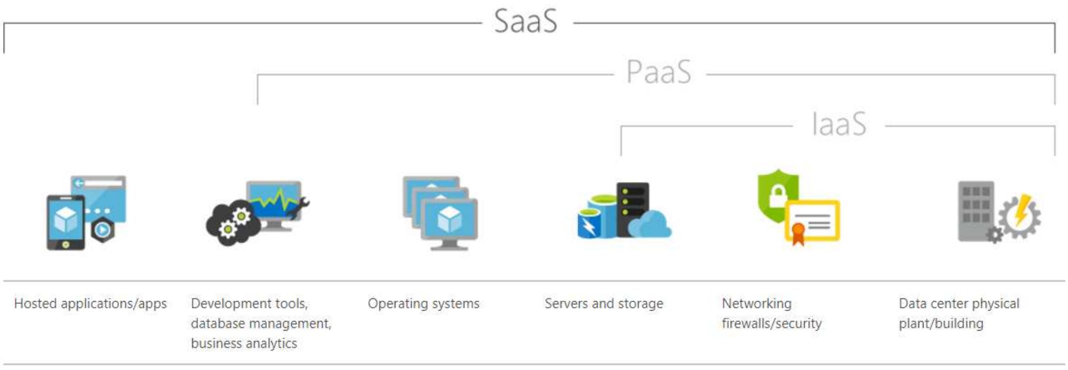
Azure

Azure is Microsoft's public cloud computing division. Azure provides Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

With IaaS, Instead of buying and building your own servers and data centers you use Azure. You pay only for each service you use and only for the time you use it. You still build your own software, applications, and anything else you need to add to build up your business. Building and maintaining your own servers and data centers is extremely costly and they're usually underutilized. Cash is tied up in unused computing power. Renting Azure's servers reduces your operating costs.

PaaS include IaaS but it also includes all the software, applications, and other development tools to build your business. It is a pay-as-you-go model too. Instead of buying and managing 100s of software licenses to build and run your business, they are included with Azure. You only pay for the amount of time you used Azure's built-in applications.

SaaS is moving software off your computer and accessing it through a web application. You can access your critical software anywhere you have an internet connection. This is a pay-as-you-go model too.

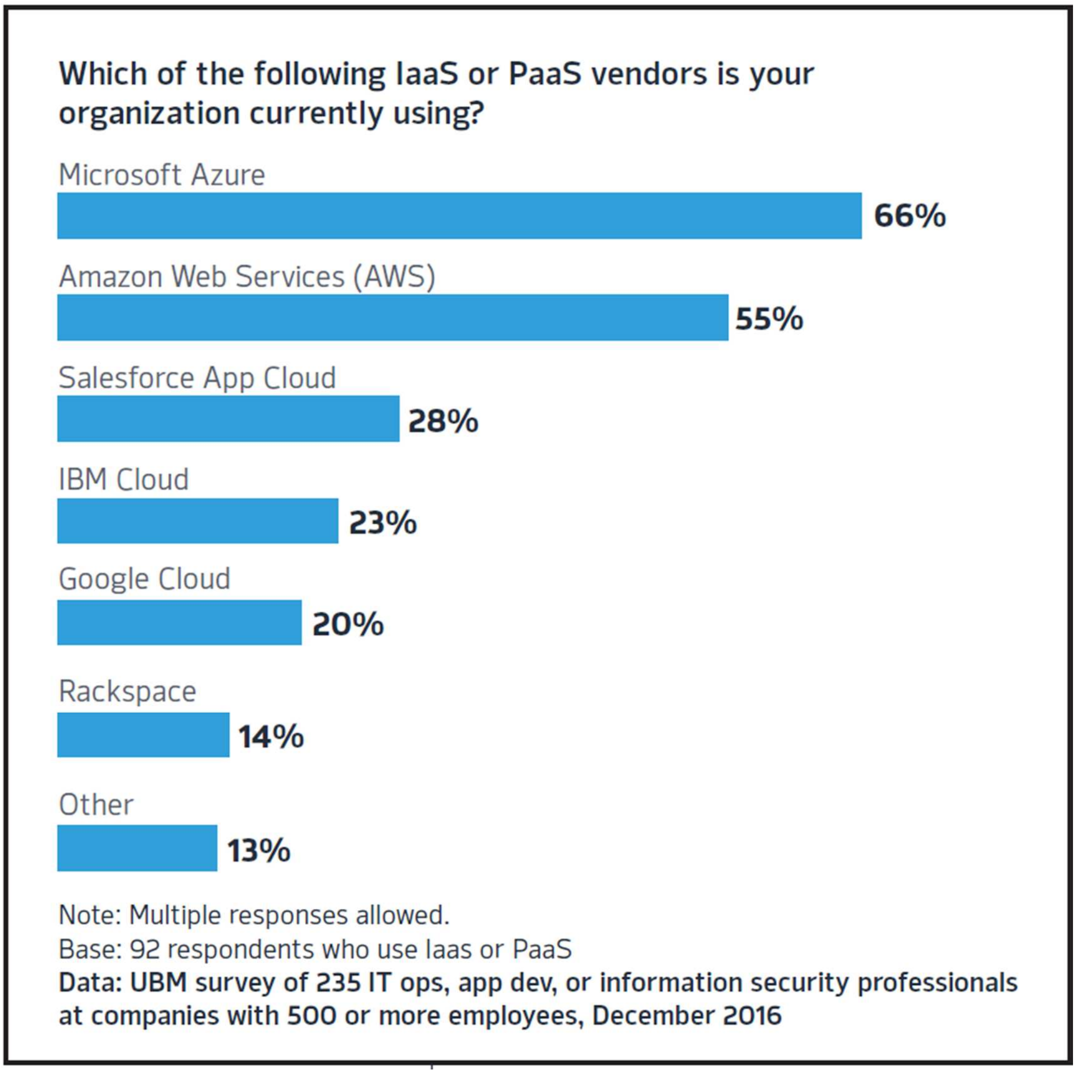


Once a company is built on the server it is extremely costly to switch and could lead to disruptions that could harm the viability of your business. Switching public cloud providers is a large switching cost. Microsoft's goal is to get as many companies as possible to build on Azure's platform. Once a company is on Azure it is unlikely to switch providers.

Also, the more companies that build on the Azure platform the better the platform gets and the cheaper it gets. The large network of users attracts developers who create more and better services. The cost curve for users declines because the incremental costs for Microsoft decline. It is very cheap for Microsoft to plug-in additional hardware to its existing infrastructure. Microsoft's cost per additional GB decreases. Microsoft will pass the incremental savings on to its customers because it will keep and attract new Azure users. More users drive the value of Microsoft's network upward.

Amazon's AWS is the leading public cloud computing business. Microsoft's Azure is the clear number 2 public cloud provider. However, Azure is gaining ground on AWS in the enterprise market.

> "In fact, while other reports show that AWS still has a lead in cloud market share, the top cloud vendor in this survey -- which included only organizations with at least 500 employees -- was Microsoft Azure."



Pre-Mortem (Potential Risks to our Thesis):

Poor Capital Allocation

Microsoft still has the problem it faced back in 2003. It generates a lot of excess capital.

Excess capital in the hands of poor management can lead to poor capital allocation and value destructive behavior.

Steve Ballmer did a lot of things well while leading Microsoft but capital allocation and dancing weren't two of them.

Steve's low-lights:

- Bought Danger, the maker of the sidekick cell phone, for $500 million. Then took operating charges when MSFT canceled its next cell phone The Kin.
- $6.3 billion for aQuantive. Then 5-years later wrote it off as a $6.2 billion loss
- Buying Skype for $8.5 Billion in 2008. 32x Skype's then operating profit
- Trying to buy Yahoo! for $45 billion in 2008.
- Buying Nokia and then writing it off as a $7.6 billion loss

It is a testament to Microsoft's dominant tech position that it could still increase its intrinsic value as billions of capital were wasted on poor capital allocation decisions.

Steve Ballmer is now gone and Satya Nadella is the CEO. Mr. Nadella has made three acquisitions: Minecraft, Xamarni, and LinkedIn.

The acquisition of LinkedIn is intriguing because it is an asset with network effects. But it remains to be seen if Satya's capital allocation and acquisition strategies are better than Steve's. Will Satya create value for shareholders or will he destroy value?

Azure Adoption Rates

Azure is a very intriguing asset. It has potentially strong competitive advantages protected by high switching costs and network effects. Public cloud computing also has a very long runway for growth. Being the number 2 public cloud computing company means Microsoft is positioned extremely well in this trend.

Being number 2 and remaining number 2 are two different things.

If potential customers go to Amazon, Google, or IBM then the value of Azure's network declines. Microsoft needs to build the best possible cloud infrastructure now and win as much business as possible from Amazon, Google, and IBM.

Death by a Thousand Paper Cuts

Being the industry standard means your product has to be good at a lot of things. A broad reach means your product will be mediocre for each specific niche.

The internet and cloud computing lower the barriers to entry for new software companies. They also allow these companies to focus on specific niches and to be the best software available for that specific niche.

These new small competitors don't want all of Microsoft's business just a small percentage. Enough hyper-focused small competitors each taking away a small percentage of Microsoft's business can potentially add up to a large amount of lost business.

Valuation:

We value Microsoft utilizing two methods. The first is running an Economic Profit Model which solely focuses on invested capital and returns on invested capital. The second method is to value Microsoft using a Discounted Cash Flow Analysis. We make reasonable assumptions as to how much free cash flow Microsoft will generate over the next few years. Then we discount Microsoft's future cash flows to today. Next we determine the price we would pay today for Microsoft's future free cash flow.

Between the two valuation methods we are estimating Microsoft's fair value to be **$86 per share**.

All previous letters are archived here.

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