In the Saga Partners Investor Letter sent out this week, we discussed our most recent investment in Facebook and how the spread of the platform business model has impacted the economy. Below is the excerpt on the investment thesis for Facebook.

How "platforms are eating the world" and a new position in Facebook

For any investment, we are looking for businesses that have some type of advantage or "moat" relative to competitors. Competitive advantages essentially come down to having a barrier to entry which allows a certain company to do something that is difficult to replicate. It can come from 1. customer captivity through habit, switching or search costs, 2. being a low-cost provider, 3. economies of scale, or 4. having a network effect.

In a competitive environment, moats are constantly under attack either from existing and new competitors or just from a changing economic landscape. As technological innovation impacts business at an ever-increasing rate, competitive advantages become less durable. The average age of a company listed on the S&P 500 has fallen from almost 60 years in the 1950s, to ~30 years during the 1970s, to less than 20 years today. While advances in technology is great for society and the consumer, it can be very destructive to the investor.

An interesting development has occurred throughout the economy as processing power and internet access have become more ubiquitous. In 2011, the former Netscape founder Marc Andreesen famously wrote an op-ed "software is eating the world" where he argued that software would continue to become a more important part of business. The largest companies in the world have increasingly become large tech giants. Some analysts argue it is due to their culture of innovation, entrepreneurship, and ability to attract the best talent. While this may be true to a certain extent, authors Alex Moazed and Nicholas Johnson claim in their recent book, *Modern Monopolies*, that it is actually the *platform* business model that has led to their success.

Business can be broken down into two basic operating models: linear and platform. Most companies are linear. They simply take resources from suppliers, add some type of value to those resources, and then sell their product or service to customers. Since the industrial revolution, large linear businesses have dominated the economy. Value and competitive advantages were a result of efficiently operating the supply chain by being a low-cost producer and having economies of scale. Companies like Standard Oil, General Motors, General Electric, and Proctor & Gamble thrived.

Alternatively, platform businesses connect and facilitate the exchange of value between a consumer and a producer. While linear businesses create value by manufacturing products or services, platforms create value by building connections and manufacturing *transactions*. Platforms have always been around, since the ancient marketplaces to local newspapers, TV broadcasters, stock exchanges, or even the Yellow Pages. They reduce transaction costs of time, money, and energy by making it easier to connect producers and consumers. Transactions are the product.

Platform businesses have several strong qualitative characteristics. Since the third-party network of users create the production, the platform company does not require all the resources that go into creating inventory, therefore the marginal cost of supply drops to zero. Costs of a linear business will always continue to rise as it grows, while the marginal costs of a platform tend to decline exponentially with scale.

Platforms also benefit from network effects. While there are several different types of network effects, it generally occurs when the behavior of one user has a direct impact on the value that other users get using the same service. Language, telephones, or the internet, are examples of network effects. Greater scale leads to greater value for users, which in turn attracts other users and further increases scale. This self-reinforcing dynamic allows networks to scale rapidly once network effects set in. Of course network effects also work in reverse and value can quickly implode if reverse network effects set in and users leave a platform at a rapid rate.

The highly scalable unit economics, when combined with the self-reinforcing network effects, make it theoretically possible for a platform company to expand to the total size of the market. This creates a winner take all dynamic and makes it possible for a single business to gain a majority market share as an industry matures.

A platform monetizes by capturing a portion of the value it creates. As value grows, so does earning power. Profit margins improve drastically as a platform grows to dominate a market. This does not occur because a platform is raising prices or gouging suppliers the way a traditional monopoly might, but because the overall value the platform creates grows exponentially.

As networks become a larger part of the economy it has an important impact to the competitive landscape. In the old linear model, economies of scale were a result of investing in and growing internal resources. Successful companies had scale in sales & marketing, manufacturing, and distribution. The largest companies historically benefitted from aggregating and centralizing resources under one roof and managing a lean supply chain. It was more difficult for smaller companies to reach target markets. Higher barriers to entry provided these large companies the ability to earn big margins and historically be considered "high quality" businesses.

With the ability to connect a greater number of people through the internet, today's most valuable businesses are those that can build and arrange large networks. At the end of 2018, five of the six largest U.S. companies by market cap were platform businesses: 1. Amazon.com, 2. Microsoft, 3. Alphabet, 4. Apple, and 6. Facebook. These businesses remove the gatekeepers and connect large, fragmented sources of supply, lowering barriers and democratizing access to customers.

The rise of platform companies does not mean linear businesses will no longer create value, just that barriers to entry will get lowered. Any business with unreasonably high margins and undifferentiated or commoditized products will face greater competition between products and services. Further disruption may occur for companies that historically controlled distribution. Brick and mortar retail, media outlets, industrial or medical supply chains, are among the disrupted or potentially disrupted. It's like owning the only bridge over a river between two towns and then every person is given a speed boat. The question is how soon people get their speed boats and how effective they become at crossing the river.

Facebook (FB)

All this platform talk finally brings us to our recent investment in Facebook, one of the largest platforms in the world. Unlike some of our smaller, less familiar companies in the Portfolio, you are likely familiar with Facebook as either being one of the 2.7 billion monthly users across its four platforms of Facebook, WhatsApp, Instagram, or Messenger, or just from the amount of press it has received over the past year related to its use of personal data and potential role in political elections.

Facebook might seem like an unusual investment in the Saga Portfolio. How can one of the largest and most widely followed companies in the world be "under-valued"? We'll save the extended answer to the question surrounding market inefficiencies in large caps for another letter, but a shorter explanation might be due to the market overweighting risks of recent regulatory issues and negative media headlines, underweighting long-term durable moats, and extrapolating negative sentiment far into the future. For purposes of this letter will focus on the specific investment case for Facebook.

Despite the negative headlines, Facebook is exactly the type of company we are looking for in the Saga Portfolio. Facebook may not be the most original idea given the 49 analysts that cover the stock; however, it is not important to us whether Wall Street or the investment community agrees or disagrees with an investment. Our simple, although not easy, goal is to grow capital at the highest possible rate over the long term by owning high-quality companies that compound earning power over time. If a rare opportunity like Facebook presents itself, we won't hold back.

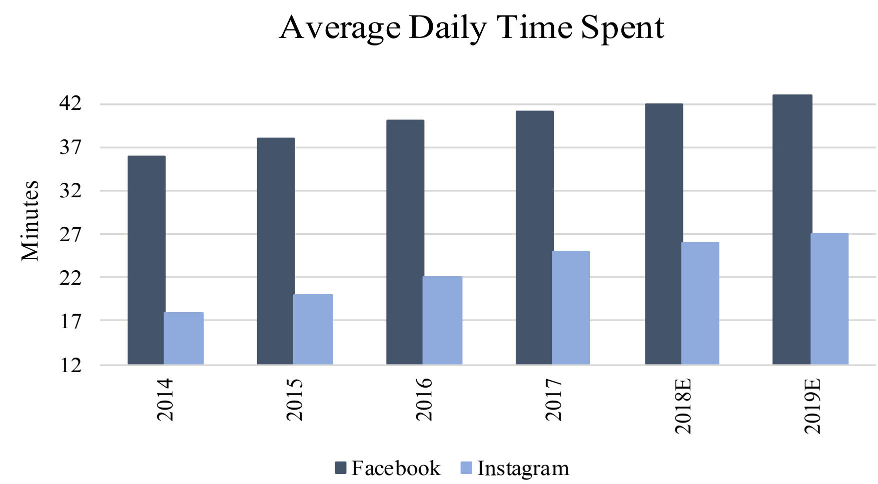
Facebook easily meets all four of our investing filters. It has a wide and growing moat, managed by a very smart and capable founder CEO with all his net worth in company stock, and importantly, we purchased the company at a very attractive valuation relative to its quality and growth potential.

While Mark Zuckerberg's management has been questioned at times throughout Facebook's history, his track record of starting and growing the company is impressive. Despite the numerous other social media companies at the time of Facebook's founding, Zuckerberg differentiated the social platform with his vision to use it as a tool to connect real people. Facebook was not going to be a place for users to masquerade behind fake accounts, but real people connecting and building real relationships. As obvious as that might sound today, it wasn't the case in the early days of the internet when people largely interacted online anonymously.

To build such a network, Facebook had to verify identities by using college issued email addresses. Zuckerberg deliberately limited growth by using .edu addresses as a way to control fake profiles and build a specific culture of real identity within the platform. Facebook grew campus by campus at a fairly controlled pace, using local network effects within each mini college community. Before Facebook scaled, it adopted strict rules to prevent bad behavior, improve quality, and establish the desired community framework. It was essential for people to feel comfortable sharing parts of their personal life on the internet.

Building a social network is not easy. Throughout Facebook's history there were doubts regarding its durability when considering the rapid rise and fall of other social networks like Friendster, peaking at 115 million users in 2008 or MySpace also peaking in 2008 at ~75 million users. There were also threats of new social media companies like Twitter and Snapchat, or the shift to smartphones from desktops. Google made several unsuccessful attempts at building a social network, first with Orkut in 2004, launching two weeks before Facebook was started at Harvard, and later with Google+ in 2011.

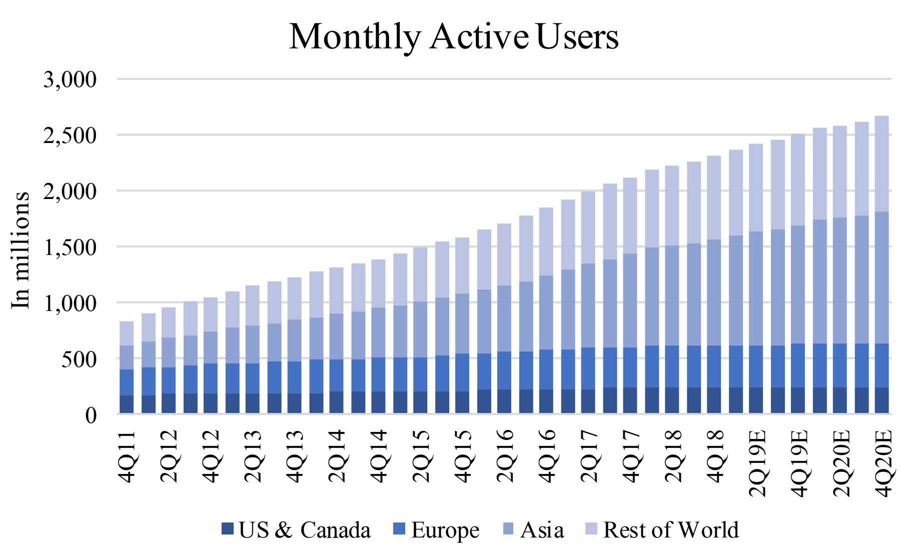
While the network effect is a significant part of Facebook's moat, there is more to its durability than just being the platform to reach other users. A user's account is a representation of the individual's life that maps their personal history. The more memories, pictures, and videos posted throughout the years, combined with the habit for most users logging in on a weekly or daily basis creates high customer switching costs. Additionally, the value users get on the platform is increased from the news publishing, video hosting, and other apps and services built within the Facebook ecosystem. While the network effect attracts new users to Facebook, it's the content that increases engagement.



Source: eMarketer

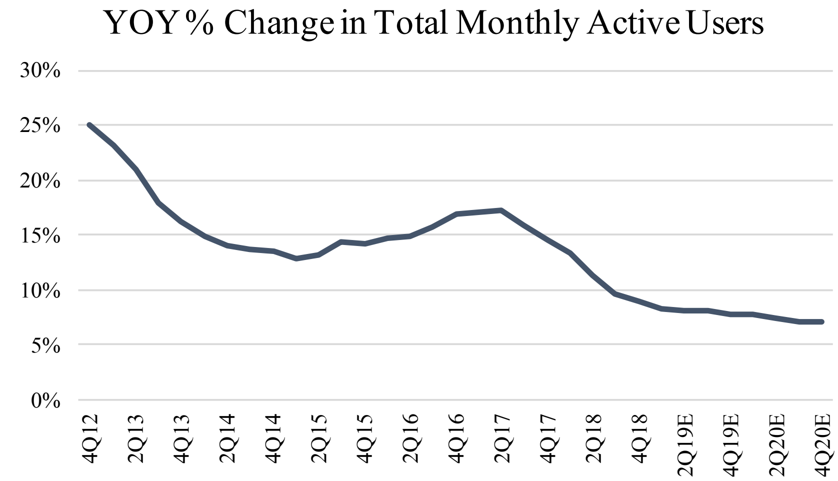
The amount of data Facebook collects from users strengthens its moat over time. Facebook collects user data, providing the ability to analyze how users utilize the platform, providing insight on ways to improve engagement. Of course this data is the primary way Facebook monetizes the value it creates by providing advertisers the ability to target very specific individuals that advertisers would otherwise have difficulty reaching. There are also unknown opportunities not reflected in current fundamentals that Facebook could monetize this data whether it's through artificial intelligence or its augmented reality segment Oculus. Simply put, Facebook's moat is wide. The more people that join, the more content that is created, the more data that is generated, and the stronger its ecosystem becomes.

The long-term trends are very impressive. There hasn't been a quarter that user growth has declined sequentially in any region.



Source: Company filings, Factset Research Systems
Note: Monthly Active Users do not include Instagram, WhatsApp, or Oculus users unless they are already considered a Facebook user based on other activities.

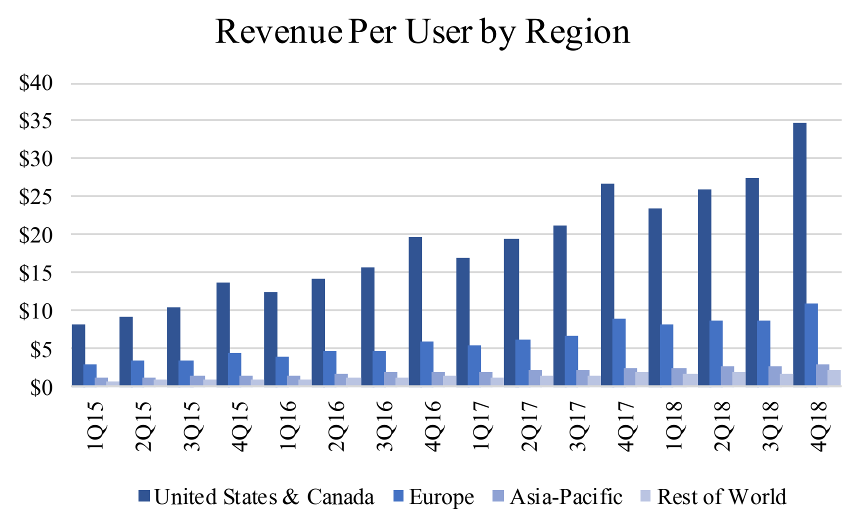
In 2018, there were 7.6 billion people in the world and 4.2 billion with internet access. Over 800 million of those internet users were in China where Facebook is restricted. With 2.7 billion active users across the Facebook platforms, user growth is expected to slow to the high single digit range.



Source: Company filings, Factset Research Systems

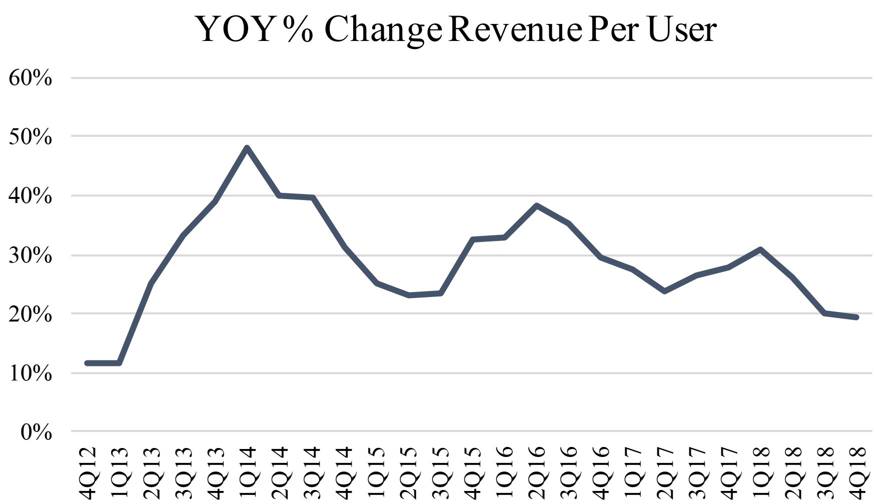
Earlier in Facebook's history, there were important questions whether the company would be able to effectively monetize their network through an ad-based model that would not hurt the user experience. Zuckerberg strategically delayed monetizing the platform until after the network and the culture was secured. When Facebook went public in 2012, average revenue per user was $5.32, primarily generated from the U.S. & Canada user base. Last year average revenue per user was $25.10.

Revenue per user is significantly higher in the U.S. & Canada and Europe and still fairly low in Asia-Pacific and the Rest of World regions.



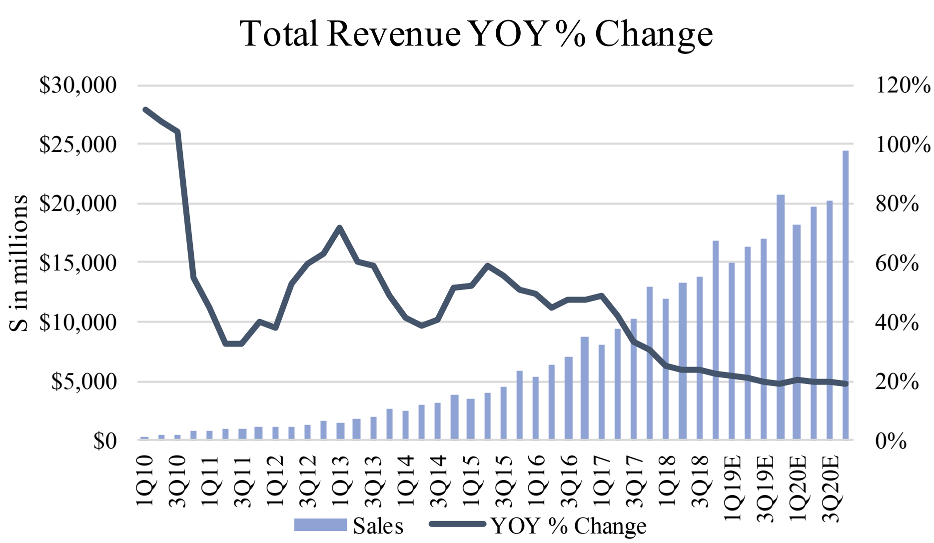
Source: Company filings, Factset Research Systems

Quarterly average revenue per user has grown at a 29% CAGR since 2012.



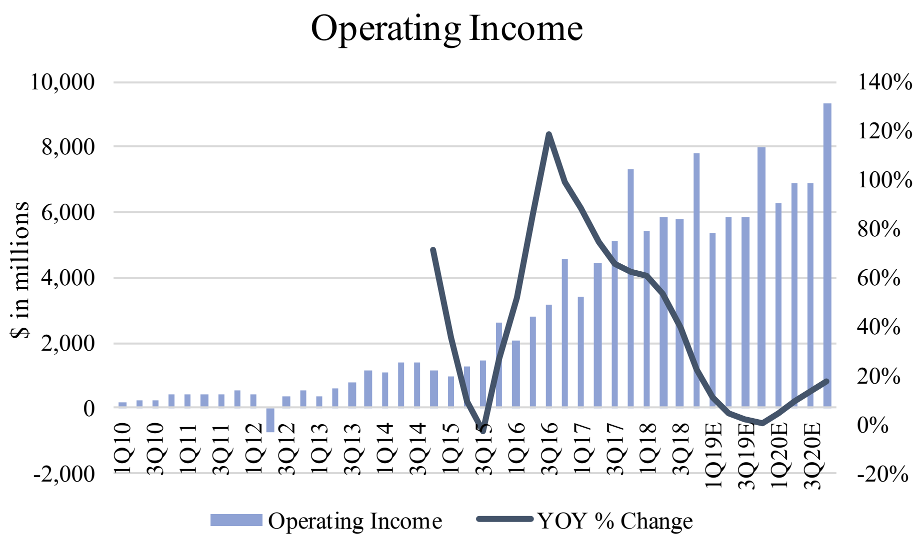
Source: Company filings, Factset Research Systems

Total revenue growth is expected to be decline to ~20% in upcoming years.



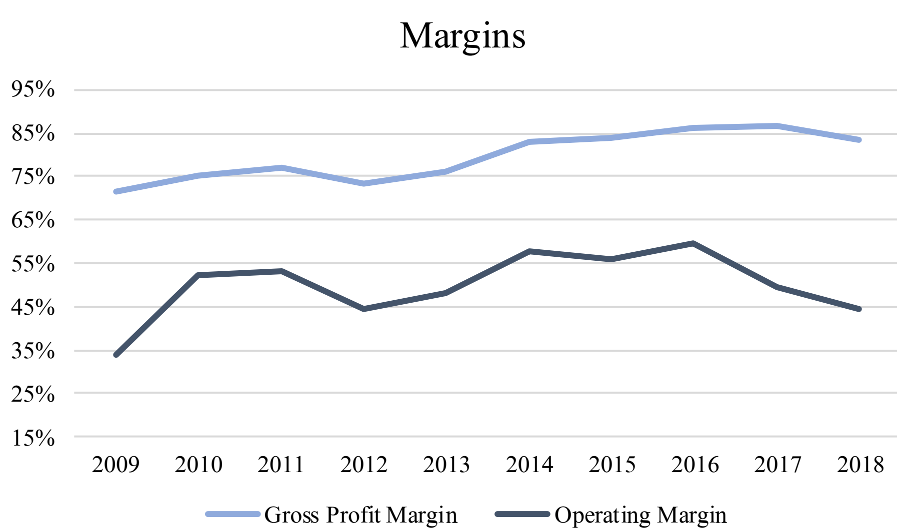
Source: Company filings, Factset Research Systems

Operating income is expected to be flat in 2019 due to increased expenses in infrastructure, innovation, and safety & security related investments. Beginning in 2020, operating income growth is expected to reach 15-20%.



Source: Company filings, Factset Research Systems

Facebook's cost structure reflects the strength of a platform company when it has become the dominant company in its space. Because its users are the producers of free content, Facebook does not require all the resources that go into creating inventory. The marginal cost to grow ad revenue is nominal, providing greater than 80% gross profit margins. After paying for R&D, marketing & sales, and G&A costs, Facebook has nearly 50% operating margins providing very strong cash flow as evidenced by the $41 billion of net cash sitting on the balance sheet at the end of the year. As a general rule of thumb, it's a good sign when a company generates a ton of cash that continues to build up over time.



Source: Company filings, Factset Research Systems, Saga Partners

Conclusion

Facebook has become the single platform that helps facilitate more connections and interactions between people that otherwise would not have existed, creating a lot of economic and social value. It is hard to know what the true earning power of Facebook will be in 10 years. We simply expect future earning power will be significantly higher than today. The opportunity to grow revenue per user outside the U.S. & Canada is significant, as well as the fact Instagram is only in the early phase of monetization and WhatsApp has yet to be monetized. We also believe there are other ways that Facebook can monetize the value of its network unknown to investors today

Last quarter provided an amazing opportunity to purchase the company at a low multiple to current earnings. At the end of the quarter, Facebook was selling for market cap of $376 billion. If you back out the $41 billion of net cash on its balance sheet, its enterprise value was $335 billion. This is only 13.5x its $25 billion of operating income or 15x its $22 billion in earnings during 2018. These multiples strike us as extremely attractive considering the durability of Facebook's platform and its growth potential. Facebook's moat is strong and growing. We are excited to add Facebook to our group of portfolio companies and slightly embarrassed it took a 40% drop in shares to help us realize what a great long-term investment Facebook truly is.

Risks

Data breach: With one of the largest data sets in the world, Facebook will continue to be a primary target for hackers. A breach could be destructive to Facebook's reputation both with users and regulatory authorities.

Regulation: Facebook operates all over the world and has many different regulators to work with. Regulations that restrict what Facebook does with what content is available on the platform, the data it collects, or how it monetizes the data could impact their earning power. We expect regulatory matters to be an ongoing work in process for Facebook into the future as it continues to push the boundaries of user privacy.

Reverse Network Effects: While Facebook arguably has one of the strongest network effects around, if users were to start leaving the platform or become less engaged for whatever reason, the strength of Facebook's current network effect could erode quickly. This could happen if users were concerned about how Facebook uses its data or started not valuing the services Facebook offered. While we view this as an unlikely scenario, network effects can work both ways.

Capital Allocation: As Facebook grows, reinvestment opportunities decline, and cash continues to build up on its balance sheet, management has a lot of discretion what to do with the cash whether it returns it to shareholders, reinvests in other potentially high returning opportunities, or wastes it away.

Saga Partners LLC is an independent, fee-only, registered investment advisory firm, providing portfolio management to individuals, retirement plans and institutional investors.

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