



China Transformed ByteDance

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US CHINA S E R I E S

ByteDance

ByteDance is currently the world's most valuable start-up, with a valuation estimated at \$400 billion. Founder Yiming Zhang seized on China's push to mobile and believed in providing users with machine learning recommendation algorithms that propose relevant information to consumers versus traditional search. The result was ByteDance, a company that is constantly looking to reinvent itself but remains centered around dominant apps such as Douyin, Tik Tok, and Toutiao.

US-China Series and our China Transformed Series was joined by

Rui Ma – Venture Capital / Early-Stage Investor.

Rui has fifteen years of experience in technology and finance, spanning seed stage to pre-IPO investing spread evenly between the U.S. and China. She is also the founder of the media/podcasting company Tech Buzz China.

Rui's deep dive into ByteDance reveals a company that has always trail-blazed. It found funding challenging to come by in the early stages as its products/technologies were new, untested, and went against the grain of copying existing business models from Silicon Valley. This quickly changed with the success of the news app Toutiao, which swiftly grew to 100 million daily active users, contributing to the bulk of the company's revenues. ByteDance's willingness to experiment was apparent when implementing many new features in Toutiao, including video content; this innovation set the stage for its biggest success: Douyin. The rest is history.

With a possible IPO this year, ByteDance could be worth half a trillion dollars in the post-IPO period. It is unclear which assets will be made public by ByteDance, and it is improbable that the entire business will be public. To do well, ByteDance will have to offer other apps in the pipeline that could become the next Douyin and Toutiao, given that their most successful apps have slowed down in growth.

Moreover, the question remains as to how will ByteDance monetize its existing suite of products; Douyin is undoubtedly the most obvious one with its potential for e-commerce. Despite the turmoil around the Ant Group listing, it is very unlikely that anything will happen to ByteDance before an IPO because they do not operate in sensitive market segments like consumer lending.

Regardless of your sector, as with Google, Facebook and Apple, ByteDance is a company that every investor needs to understand.

ByteDance: The Vision of Yiming Zhang

Rui Ma: ByteDance is currently the world's most valuable start-up, with a valuation estimated at \$400 billion. The company was started by Yiming Zhang in 2012, who studied computer science in college and became an entrepreneur. Zhang began his career at a travel start-up before working briefly at Microsoft; he then became the CEO of a real estate start-up before creating ByteDance.

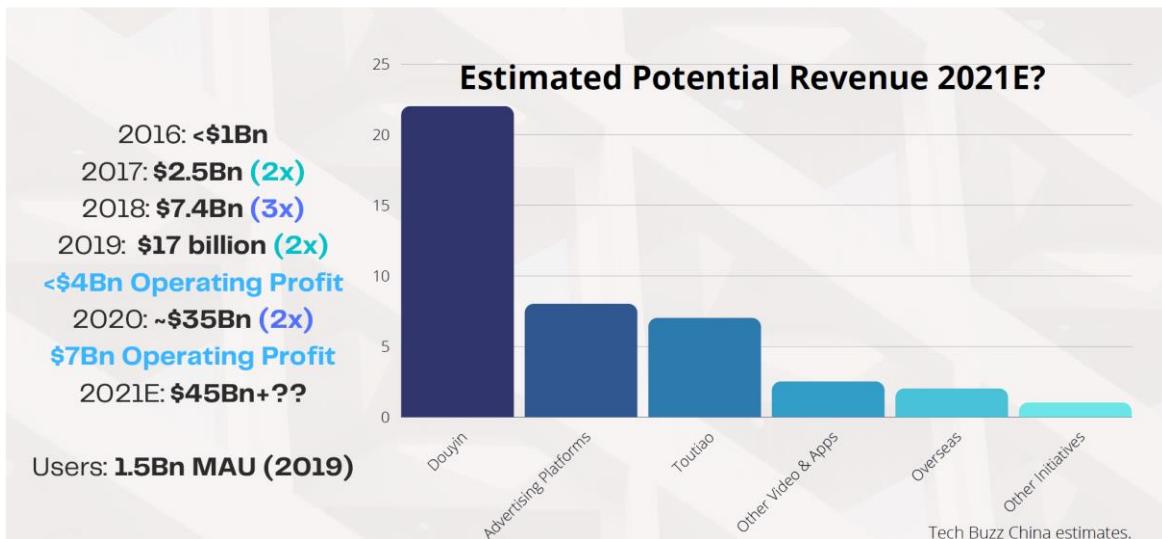
At that time, Zhang's most important insight was to shift the paradigm of the search business: instead of users proactively looking for information, machine learning recommendation algorithms could propose relevant information to users. Despite having no formal training, Zhang learned from the Internet and hired people to work on this; and this belief in a shift was the idea behind ByteDance's initial products.

Zhang's second insight was the observation that China's tech development was becoming mobile-first. A decade ago, China became the world's leading supplier of smartphones. His thinking was part of an obsession with capitalizing on trends, which would also influence his other strategies. In guiding ByteDance, Zhang pursued a strategy of launching multiple products around the same time to test which platform would work best. He learned from his previous experience that iteration was crucial.

As a leader, Zhang also believed in taking the best things from each company, integrating best practices from around the world at both the management strategy and product levels of his company. ByteDance's company culture was cobbled together by implementing features from successful Silicon Valley firms. He ran the company like a product, constantly trying to discover the next thing and disrupting itself. Along these lines, one could observe that ByteDance constantly builds internal tools and sells them externally, and despite its past success in algorithms, the company is constantly looking to reinvent itself.

His practical philosophies were not apparent to everyone at the time. Fundraising was difficult, as Chinese venture capital firms would only invest in proven business models, and ByteDance was a trailblazer in its own category. When ByteDance's news app Toutiao became a hit, the company found it much easier to raise capital. ByteDance raised \$2 billion in its latest round of funding with a rumored valuation of \$180 billion.

There are also hints that the company will go public on the Hong Kong Stock Exchange later this year. The company's valuation is remarkable, with secondary market transactions as high as \$400bn. Media reports suggest that the company earned about \$35 billion in revenue and \$7 billion in operating profit in 2020. ByteDance may be much smaller than Facebook and Alibaba, but it has been doubling its revenue. Reliable estimates suggest that this year's revenue will exceed \$45 billion.



ByteDance's Products

Rui Ma: ByteDance operates many apps. Toutiao was its first hit product, its name meaning “today’s headline” in Chinese. Toutiao proved the success of ByteDance’s core recommendation algorithm, which was very different from its peers on the market at the time.

The app is a decentralized publishing platform where individual writers or organizations can publish and monetize their content via advertising. Toutiao was monetized within a few years after its inception and quickly became popular among users. By 2017, Toutiao had over 100 million daily active users, contributing to the bulk of the company’s revenues. ByteDance’s willingness to experiment was apparent when implementing many new features in Toutiao, including video content; this innovation set the stage for its biggest success: Douyin.

Douyin was founded in 2016 after the company saw the success of video on Toutiao. Management decided to dive into the video space despite fierce competition among its peers, and alongside Douyin, ByteDance launched several other video products around the same time. Douyin, however, was different: it featured full-screen HD video, music, and filters. Douyin also brought personalization to users, thanks to its recommendation algorithm. In summary, it is a domestic version of TikTok, which places a heavy emphasis on live-streaming for entertainment and e-commerce purposes.

Today, the platform is one of the country’s most popular apps with over 600 million DAU, and revenue may top \$20 billion this year. The average time spent by users is around 90 minutes a day and boasts a user base of different demographics across China.

ByteDance has numerous other video apps as well as projects in development. Some of these platforms have only several million users, comparably smaller than Douyin, Toutiao, or TikTok. Examples include Xigua, a mid-to long-form video content platform, Dongchedi provides automobile content, Tomato provides users with e-novels, and Pipixia is a jokes and memes app.

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ByteDance also created separate platforms for advertising, most notably Pingo, a mobile app ad network that allows developers to monetize or acquire new partners, and Xingtú, which connects brands and influencers on Douyin and other ByteDance apps. These two platforms account for several billion dollars in revenue for ByteDance.

Other Video & Apps

Probably 100+ apps / projects under development at any given time

Some Notable Hits

- Xigua: mid to longform video
- Dongchedi: auto platform
- Tomato:
- Pipixia: Jokes & memes
- Zhuxiaobang: Houzz clone
- Xingfuli: Real estate
- Acquisition: FaceU

Finally, overseas projects and B2B services also contribute to ByteDance's total revenue. TikTok is the primary overseas revenue source, while an English-language equivalent of Toutiao, known as Top Buzz, was launched in 2015 to much less fanfare. TikTok itself has not surpassed Douyin in terms of DAU, while it may have if India had not banned TikTok and several other Chinese apps.

ByteDance's cloud service platform is a core growth area of the company's B2B services. Known as Volcano Engine, the platforms have made internally-developed functions available for outside users: some examples include ByteDance's content recommendation solution, A/B testing, etc. ByteDance also offers Lark, an office collaboration product that brings together the functionalities of platforms such as Google Suite, Slack, Zoom, and other services. In both of these cases, ByteDance is following Amazon's lead in a cost center like in-house tech into a revenue center. While these operations may not be revenue drivers now, they have the potential to grow in the near future.

ByteDance is expanding its reach to sectors including e-commerce, local services, tools, B2B, healthcare, and others through acquisitions and investments. Education and gaming are two particularly important segments in which the company has spent much of its resources.

Both sectors see fast growth and high-profit margins, and some of ByteDance's most profitable customers by ad spending have come from the education and gaming spaces. For instance, ByteDance has made acquisitions and added over 10,000 employees to their education sector to capitalize on the boon in education. In the gaming space, the company also recently spent \$4 billion acquiring a gaming studio.

Outlook and Risks

Rui Ma: The near-term outlook for the company is optimistic. It has an extremely profitable core and is doing well by expanding and looking for more significant markets. ByteDance uses both top-down and bottom-up innovation, integrating best practices worldwide while keeping the company and its management evolving. I am confident in its technology, notably their algorithm, and they are developing other competencies that may be profitable.

For its mature platforms, there are still opportunities for monetization. Toutiao's growth has stalled after reaching 100 million DAU in 2017, while Douyin has hit a ceiling of around 600 million DAU. For both apps, the next phase of growth will be the further monetization of existing traffic and finding new pockets of growth.

While ByteDance's early success came from its recommendation algorithm that set itself apart from its competitors, the company is now exploring search as a complement to its algorithms: Douyin Search has reached 400 million MAU, and they want to begin monetizing it shortly. E-commerce also represents a significant opportunity. Sub-data shows that both Douyin and Kuaishou — the latter being a direct competitor to Douyin — can gain double-digit percentages of Tmall's total GMV. For both, the opportunity to monetize short videos and gaming has significant potential.

Near Term Outlook

Core domestic apps are nearing saturation



Search: (Baidu)

New business, 400mm MAU

Ecommerce: (Alibaba)

Double Digit % of Tmall GMV in Feb. 2021, different category mix from Kuaishou

Local Services: (Meituan)

Some monetization for coupons

Gaming: (Tencent)

Making big splash with acquisitions, but empire takes years to build



Education: Near term uncertainty around primary and pre-school education

Fintech: increasing government regulations

International: continued geopolitical risks

B2B: slower progress and intense competition

ByteDance faces several near-term risks:

- There is uncertainty surrounding education and fintech, which have faced regulatory crackdowns. These could slow down growth.
- On the international level, there are continued geopolitical risks that could result in more bans on TikTok.
- ByteDance's B2B business is progressing slower than expected, as there is intense competition in this realm.

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- The company is also experiencing worker dissatisfaction, as long working hours have led to cases of employee burnout. At ByteDance and other companies, workers only get two full weekends off a month and must work every other Saturday.
- There is an ongoing debate as to whether existing management can keep up with the growth.

Zhang has acknowledged these challenges, and for ByteDance, the key is to maintain its management's ability to execute strategy.

Yiming Zhang has built an extraordinary platform with algorithms and machine learning despite not coming from such a background. How was he able to build this culture and infrastructure?

Rui Ma: Zhang was gifted in hiring high-level algorithm engineers from places such as Microsoft and Baidu. One of his biggest fears was not being able to hire enough talent to compete with Baidu, but since Baidu did not compete with ByteDance in this space, ByteDance ended up being very successful.

Discuss whether Douyin is reaching a level where it will produce steady profits and remain so, or could ByteDance innovate and disrupt itself to transform?

Rui Ma: Zhang's strategy for his companies is to go and grow in new areas. For Douyin, the near-term strategy is to increase its monetization in e-commerce. Its main competitor is Kuaishou, which has a \$150 billion market cap, and as Kuaishou is developing its e-commerce capabilities, it is most likely that Douyin will try and do the same.

However, Douyin could reach into the separate components of e-commerce that could all provide additional revenue, such as charging transaction service and advertising fees. The benefits would be substantial if ByteDance could create a streamlined e-commerce experience by implementing its payment system and increasing reasons for users to complete more transactions.

As Douyin embraces e-commerce, how strong are Kuaishou and Alibaba as competitors?

Rui Ma: The two companies present different challenges for Douyin. Some key points:

- Alibaba is very good at transaction services, customer service, and the platform experience itself. The company remains a dominant force in e-commerce as it has built many more brand relationships.
- Kuaishou and Douyin are still emerging players, representing less than 20 percent of Tmall's GMV. These two platforms will have to work harder in getting brands to use their platforms since few individual live-streamers can achieve billions of dollars in GMV. To achieve consistent growth, Kuaishou and Douyin need more brands.
- In comparison to ByteDance, Kuaishou has done little to monetize its platform through advertising, which presents an immediate revenue opportunity.
- From a demographic perspective, Kuaishou and Douyin also serve slightly different audiences, with Kuaishou being more popular among rural audiences.

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- As a platform, Kuaishou gives more power to the creators on its platform compared to Douyin, which is much more centralized. Kuaishou is more transparent in how many fans top creators have, the number of views, while Douyin is more algorithm-driven.

Given that Walmart once had an interest in a stake in TikTok, could Walmart take an equity stake before ByteDance's IPO?

Rui Ma: From a monetary perspective, ByteDance would have little reason to accept an equity stake from Walmart. For Walmart, distributing through a platform like TikTok may not be the best way to capitalize on the e-commerce sector. After all, the e-commerce ecosystem is different in the US compared to China, where e-commerce is around 40 to 50 percent of the retail sector, and Alibaba has 60 percent of the e-commerce market share.

Are there concerns over ByteDance's consumer privacy protections? Could revenues across the e-commerce space be capped by regulations, as China sees a stricter regulatory environment?

Rui Ma: There have been new regulations concerning live-streaming, including limiting the length of live streams and forbidding certain types of promotions. While the regulations limit the supply of live streams, they do not threaten the overall viability of the practice. There have also been stricter regulations on fraud, which have been welcomed as means to protect consumers. Thus far, it seems that there are few signs that the regulatory environment would adversely affect revenues.

When it comes to consumer privacy, there have been no addressable concerns regarding ByteDance's practices. I am not aware of any recent news regarding these apps with questionable practices regarding data collection. Apple's new rules on data may affect Tik Tok's advertising, but it is unlikely to affect the platforms' own operations.

Taobao and Pinduoduo received around 40 percent of the external e-commerce traffic through Douyin in 2020. As Douyin builds up its own e-commerce platform, is this flow at risk?

Rui Ma: In the near term, traffic from Douyin represents a fraction of visits to these big platforms. However, there are potential long-term risks. At the same time, it is important to remember that Alibaba pioneered live-streaming, as the company realized several years ago the need for content to drive traffic to its platforms. Alibaba's live stream was very successful, reaching \$60 billion in GMV last year, and it has some of the largest stars in the business. In the long-term, Kuaishou and Douyin could become serious competition for Alibaba in the e-commerce sector.

How does Douyin's advantage in machine learning, when applied to e-commerce, compete with Alibaba, which has years of experience and investment on its side?

Rui Ma: Douyin's recommendation algorithm is often perceived as unique, but Alibaba retains some key advantages. Some key points:

- Alibaba has a higher quantity as well as more valuable data compared to Douyin. Alibaba has accumulated data such as payment information over many years.

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- Alibaba has an entire ecosystem as its advantage, providing live-streaming, Tmall, logistics, and payment that have created habits among consumers. These all form a formidable moat to which Douyin will have to catch up for some time.
- Douyin's advantage lies in its user demographic. Data also shows that the two platforms deal with different types of transactions: Alibaba's Tmall has higher AOV, average order volume, so a higher-priced, more diverse set of goods across different categories.
- In contrast, one-third of sales in Douyin consist of clothing, followed by small gadgets. Each responds to different needs. For Douyin to be competitive, it needs to get more brands to sell on its platform.

Could ByteDance challenge Tencent's dominant position in gaming, given ByteDance's streaming platform, its distribution expertise, and other possible advantages?

Rui Ma: ByteDance has very few of its own best-selling games. The few that are profitable have come from acquired studios, but they are smaller games with short life cycles. To succeed in the gaming sector, the product usually consists of franchises that can become eSports properties, and Tencent is undoubtedly the leader in this field. Building a successful game series requires time, and the road to success overall seems less clear and less linear than e-commerce. In this way, Tencent is extremely capable in this space.

ByteDance's current strategy is that they are willing to pay high prices for acquisitions. While it could compete with Tencent thanks to its large audience, the company has to develop its own in-house assets.

Discuss the importance of ByteDance's cloud services going forward. Are they trying to compete with Ali Cloud and Tencent Cloud?

Rui Ma: ByteDance's cloud operations appear to be a less complete solution than its counterparts under Alibaba and Tencent. Overall, the cloud business is relatively more difficult in China; few traditional businesses are willing to utilize these services. Since ByteDance's other operations are so much more profitable, cloud services so far have been insignificant. However, Zhang has stated publicly that ByteDance will remain in the business, especially as enterprise software, including cloud, can take off very soon. Among venture capitalists, one has noticed a shift to emphasizing enterprise software over consumer products. Even so, it is unclear whether ByteDance will be a major contributor to this space.

With a possible IPO this year, ByteDance could be worth half a trillion dollars in the post-IPO period. What must ByteDance do to have a successful IPO?

Rui Ma: It is unclear which assets will be made public by ByteDance, and it is improbable that the entire business will be public. If the offering includes Douyin and Toutiao, that would be a very significant part of the company. To do well, ByteDance will have to offer other apps in the pipeline that could become the next Douyin and Toutiao, given that their most successful apps have slowed down in growth. Moreover, the question remains as to how will ByteDance monetize

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its existing suite of products; Douyin is undoubtedly the most obvious one with its potential for e-commerce. Despite the turmoil around the Ant Group listing, it is very unlikely that anything will happen to ByteDance before an IPO because they do not operate in sensitive market segments like consumer lending.

Overall Optimistic ...

Extremely profitable core business line

- Allows for experimentation, new business

Strategy-led expansion

- Where are the greatest sources of traffic and monetization?
- What can technology solve and scale?
- There are no boundaries
- Combination of top-down and bottoms up decision making

Integrating Best Practices from all over the globe

- Founder DNA of obsession with **company building**
- Flat culture and transparency

Confidence in Technology

- Betting on the algorithm, but not reliant on it (ie Search!)



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