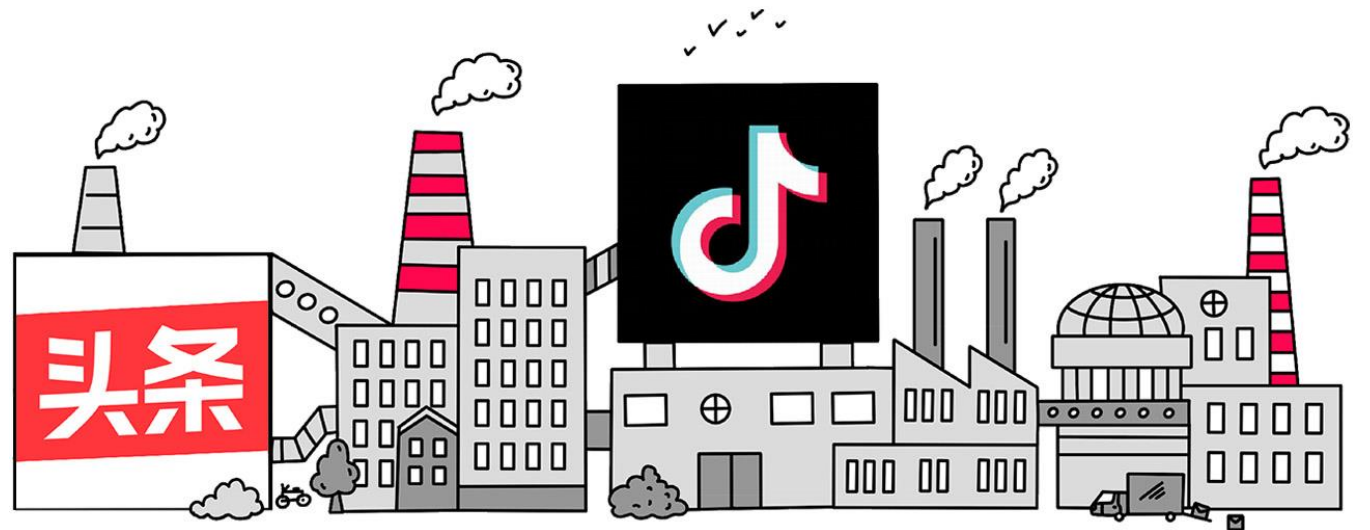


Understanding TikTok & ByteDance

China's Attention Factory



ByteDance

The Algo Wizard
Zhu Wenjia

The Ad King
Zhang Lidong

The Pioneers
Alex Zhu & Louis Yang



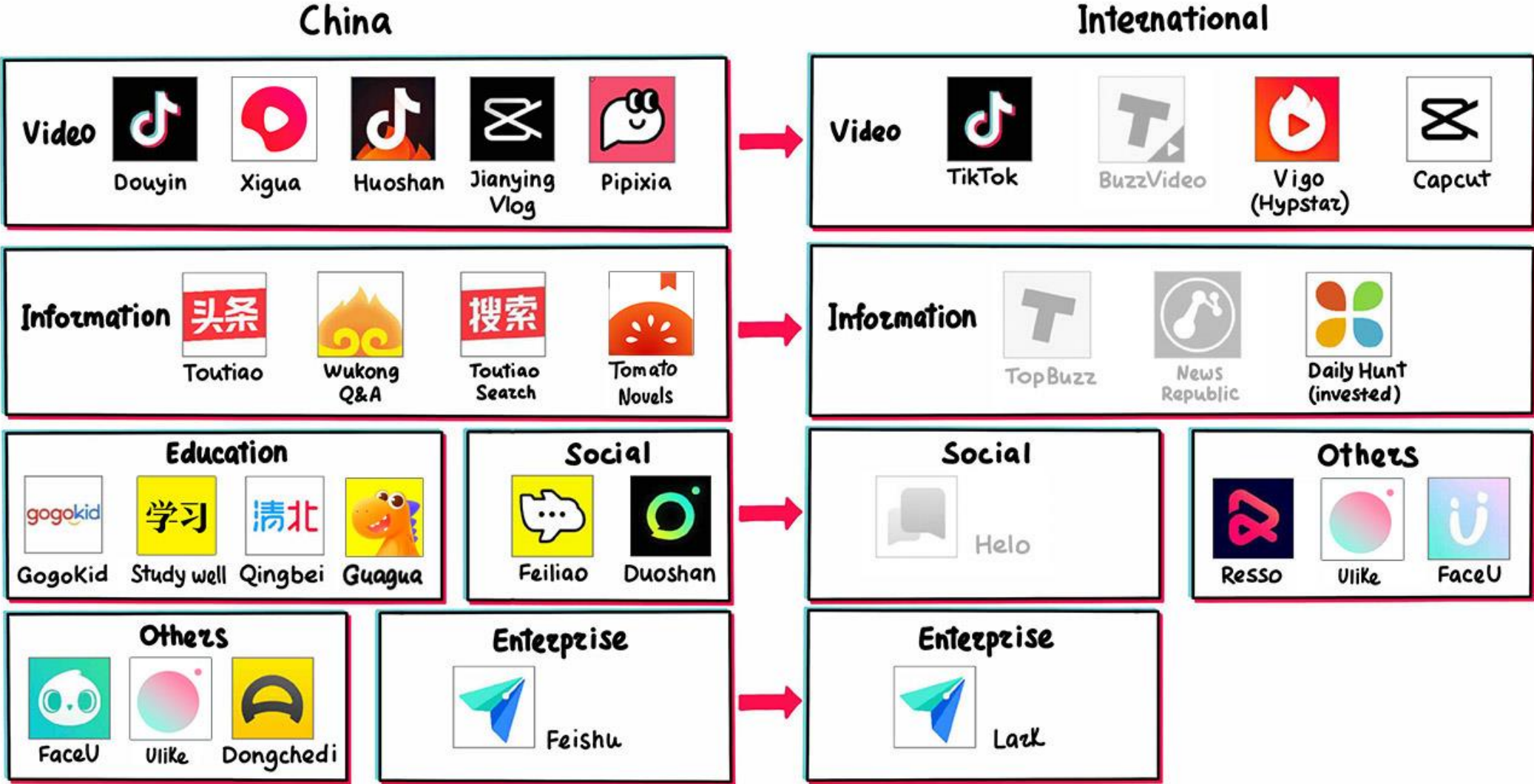
The Investor
Joan Wang

The College Buddy
Liang Rubo

The Product Queen
Kelly Zhang

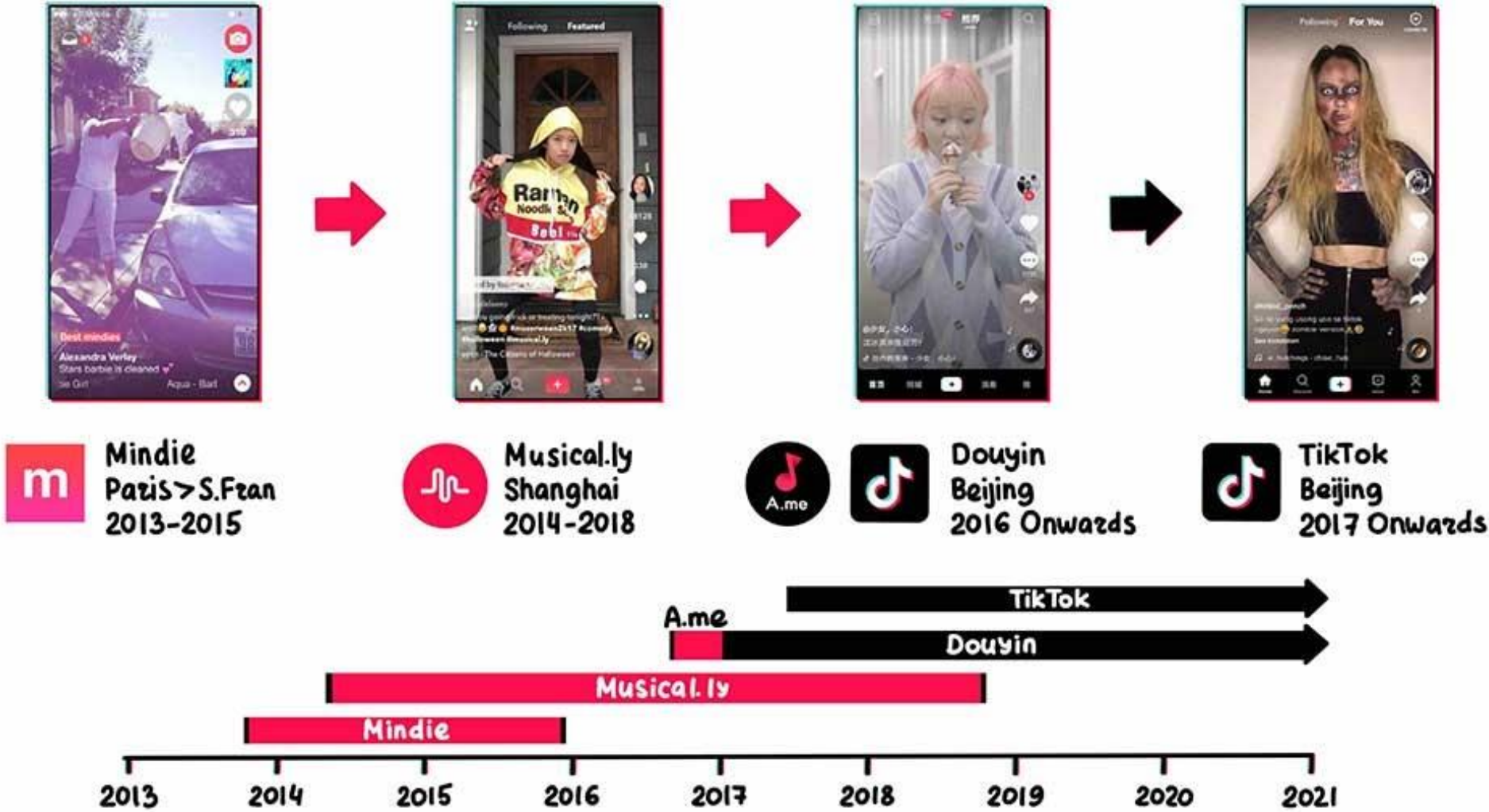
The Boss
Yiming

ByteDance Apps - Overview

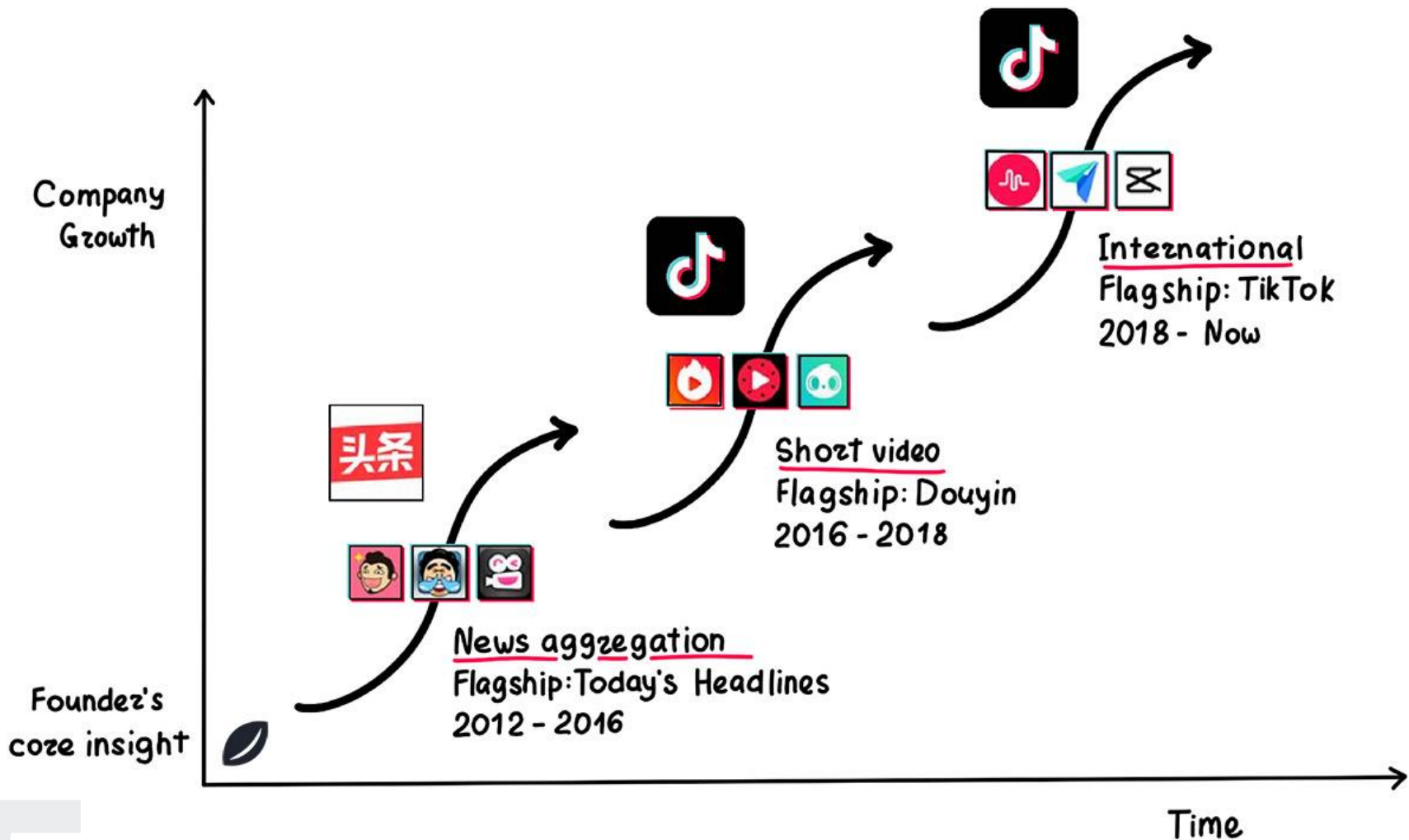


Greyed out icons indicate the app has recently shut down.

What Led Us to TikTok?



ByteDance Growth Stages



TODAY BYTEDANCE is a sprawling corporate leviathan. Much like other large internet conglomerates, it has expanded into a myriad of online services consisting of gaming, education, enterprise productivity, payments, and much more. This is made possible by **three flagship businesses: Toutiao, Douyin, and TikTok.**

These are the core drivers of the company's valuation and fast growth. The rise of these businesses reveals three distinct growth stages that enabled the company to reach hundreds of millions of new users.

Each stage featured a family of supporting applications, both self-developed and acquired, which extensively diversified the company's offerings and product categories.



This report is adapted from *Attention Factory*
Available in Paperback and Kindle e-book.

<https://www.amazon.com/gp/product/B08L1578B6?>

ATTENTION FACTORY

The Story of TikTok
& China's ByteDance

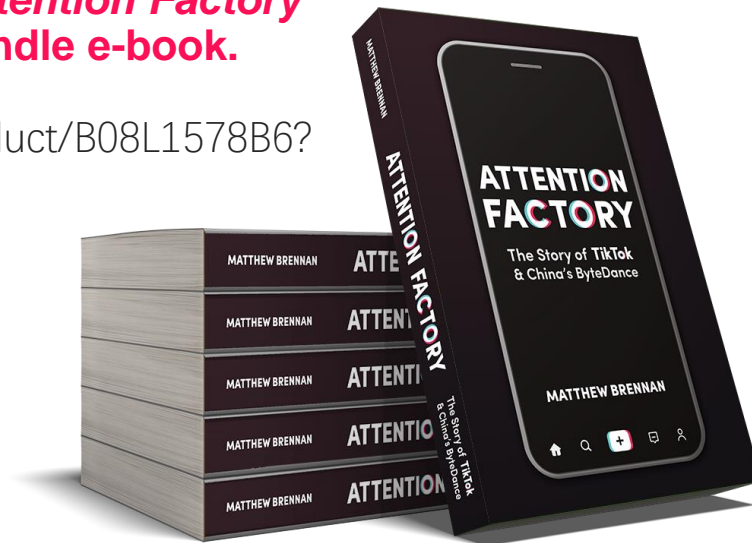


Table of Contents

I.	Structure	7
II.	People	16
III.	Products	26
IV.	Recommendation	31
V.	Monetization	41

Disclaimer and Methodology

Opinions, predictions, and interpretations expressed in this report are those exclusively of the author and do not reflect those of ByteDance, TikTok or any of its affiliate companies. This report is not sponsored or supported by any organization. All source material is drawn from the book *Attention Factory*.



Structure

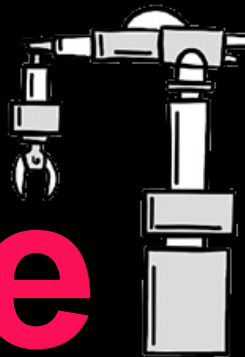
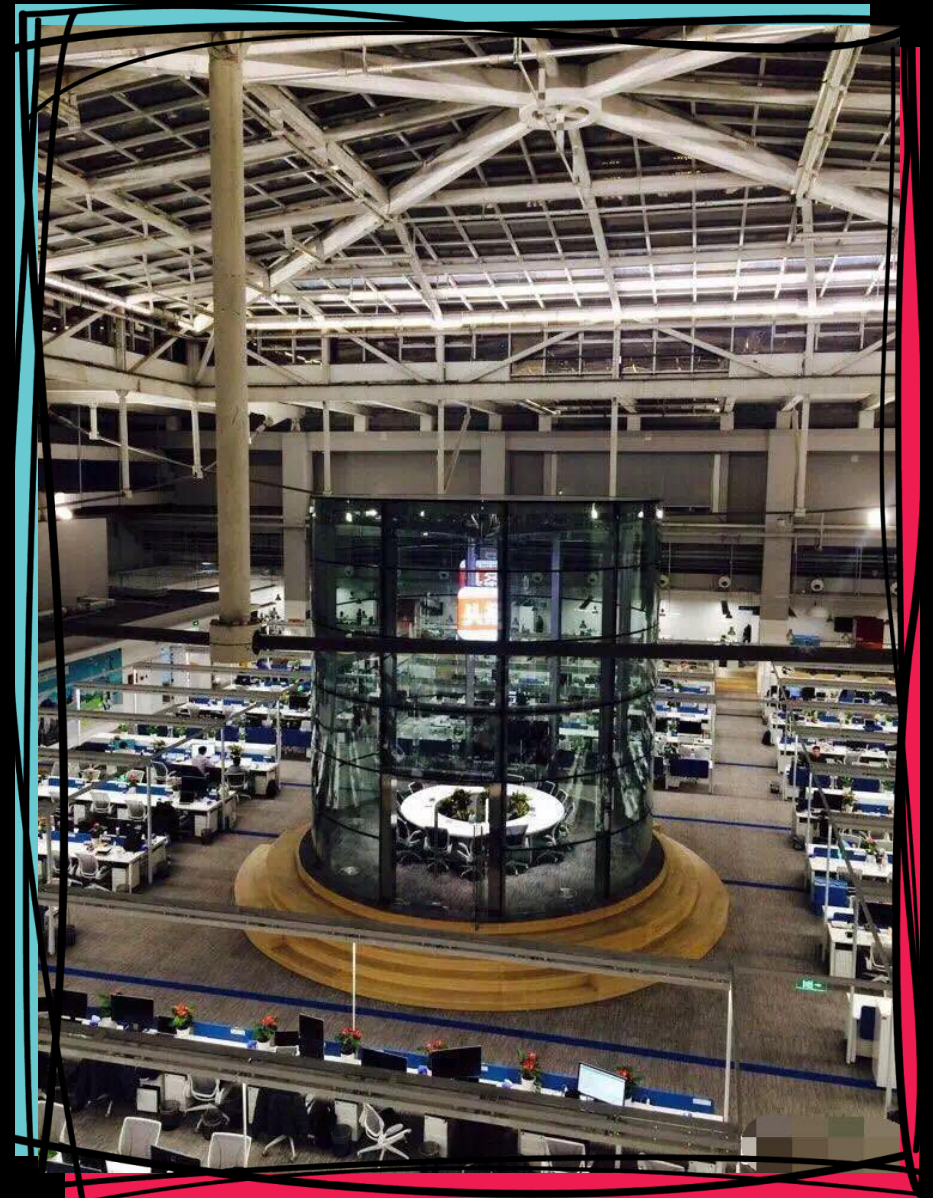
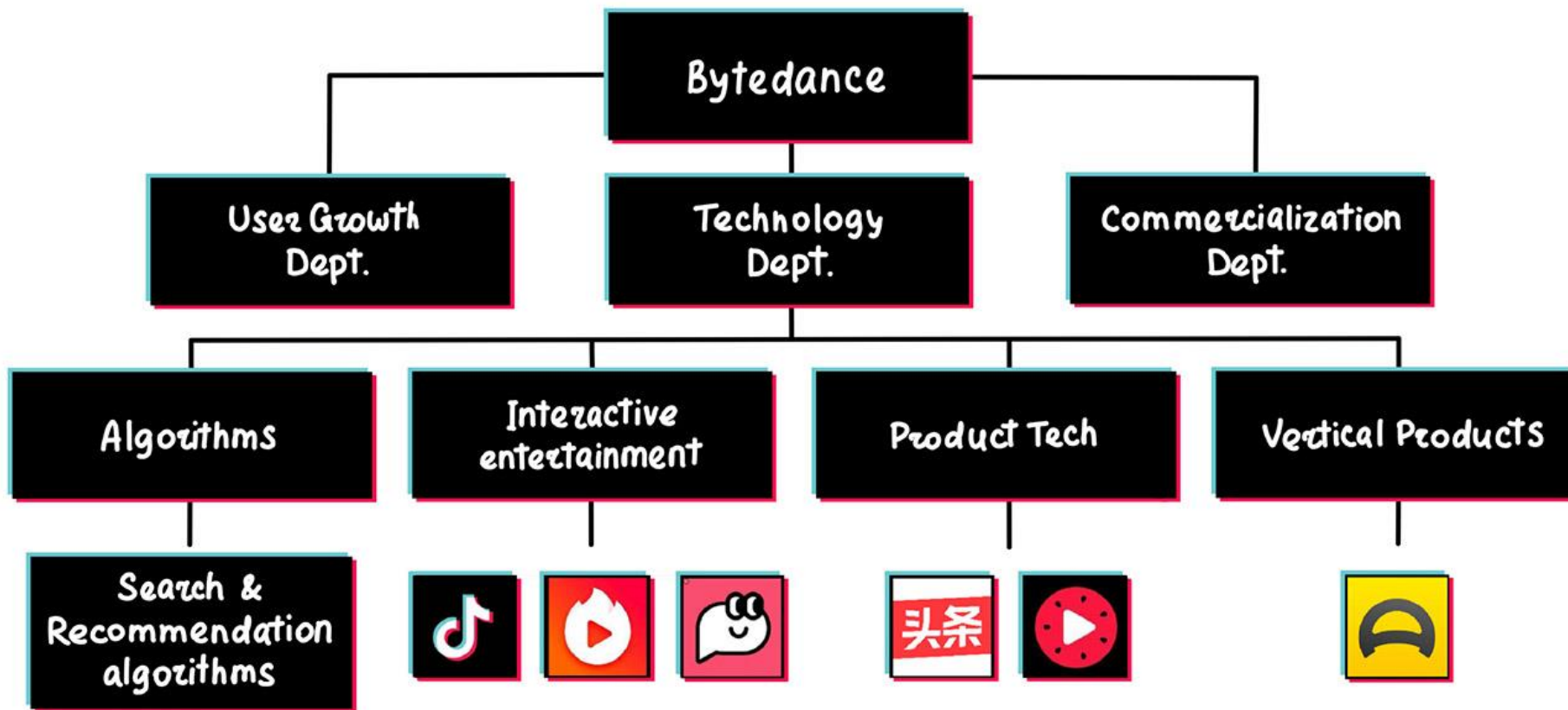


Image: the large central "fishbowl" glass meeting room at ByteDance's Beijing head offices, former aviation museum AVIC Plaza.



Bytedance Structure (Overview)

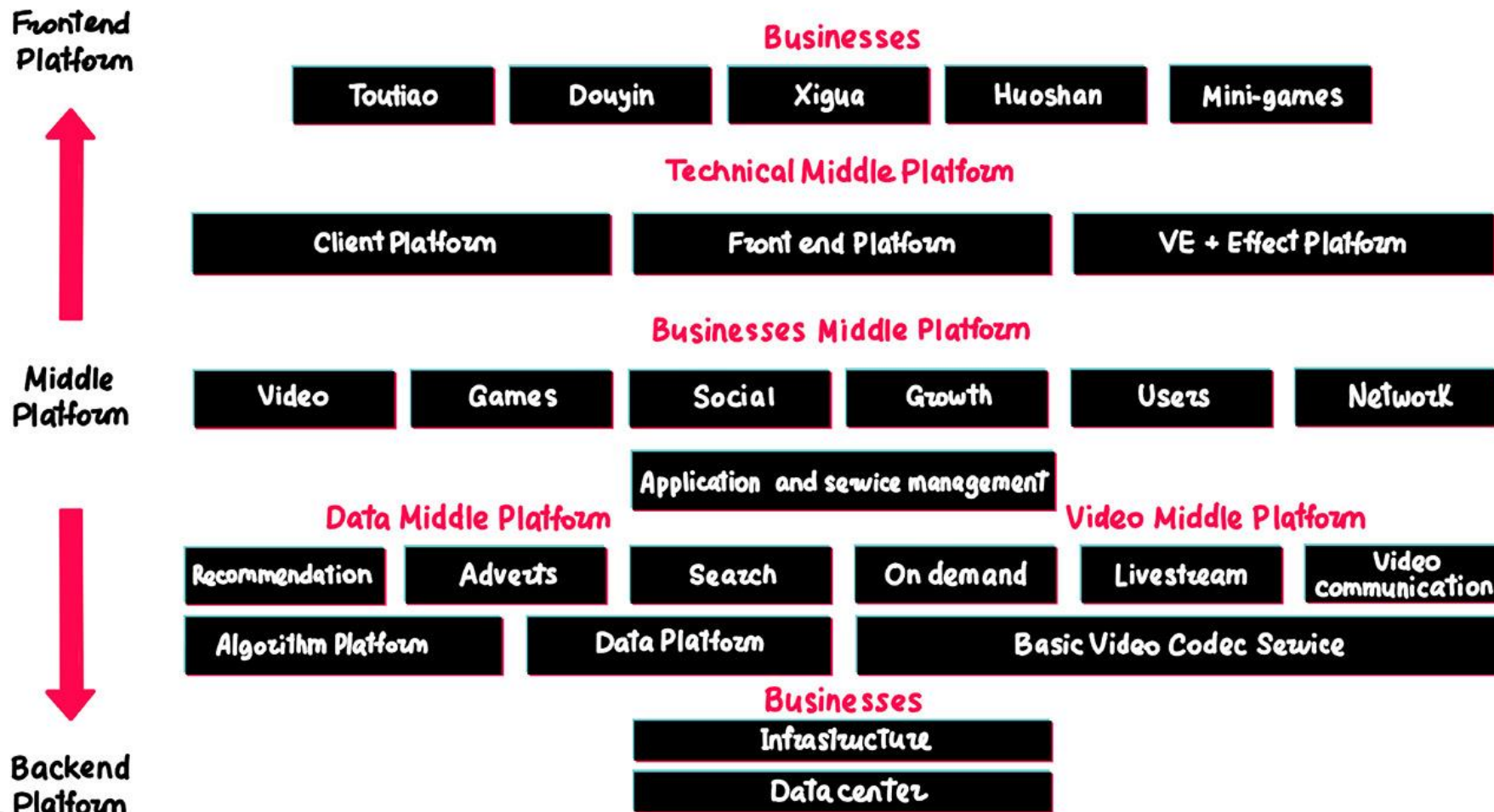


BYTEDANCE is not divided into divisions by business lines. There are only three core functional departments: user growth, technology and commercialization.

User growth is responsible for user acquisition and retention. The technology department handles product development while the commercialization department is focused exclusively on monetization.



The Legendary “Middle Platform”



EACH APP has its own team of product managers, engineers and operations staff, but will rely heavily on the services and support provided by the company’s “middle platform,” about which much has been discussed and written about in Chinese.

This structure allows every app to easily access the company’s best in class technologies such as recommendation engines, video classification, or augmented reality capabilities.

Most of the “heavy lifting” is done centrally with resources shared across the entire company’s product suite, avoiding waste and duplication of efforts.

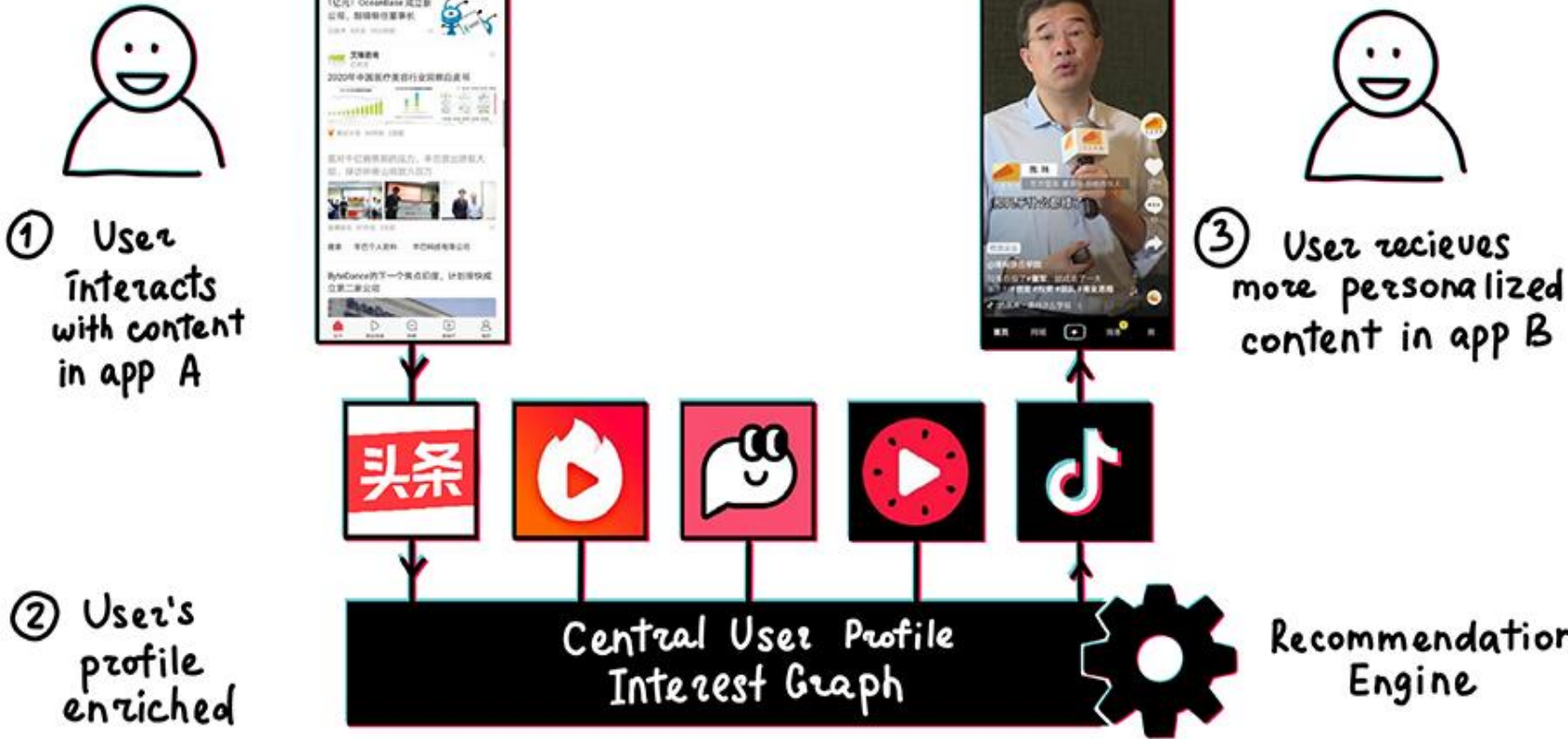


Case study – Universal Interest Graph

THE SHARING of infrastructure and systems across products leads has multiple advantages. An instructive example is the universal user interest profile.

What a user does in app A, can directly affect the content recommended to him or her in app B,

In this way, even a small brand new ByteDance app can leverage the company's recommendation engine and user profile data to offer a highly personalized experience which could potentially place it ahead of competitors.

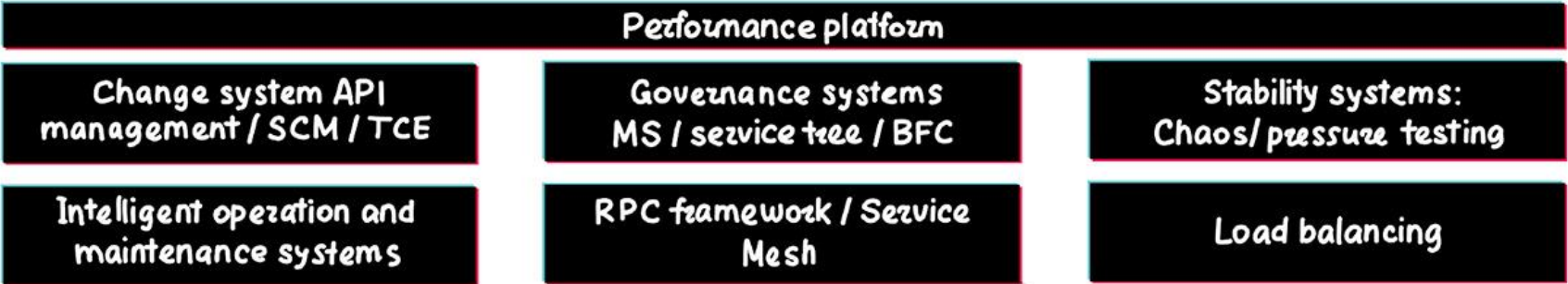


ByteDance Technology System Infrastructure Overview

Customized Business Systems



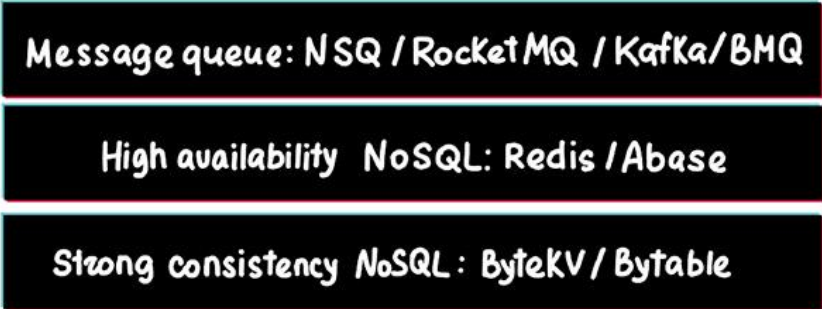
Development Systems



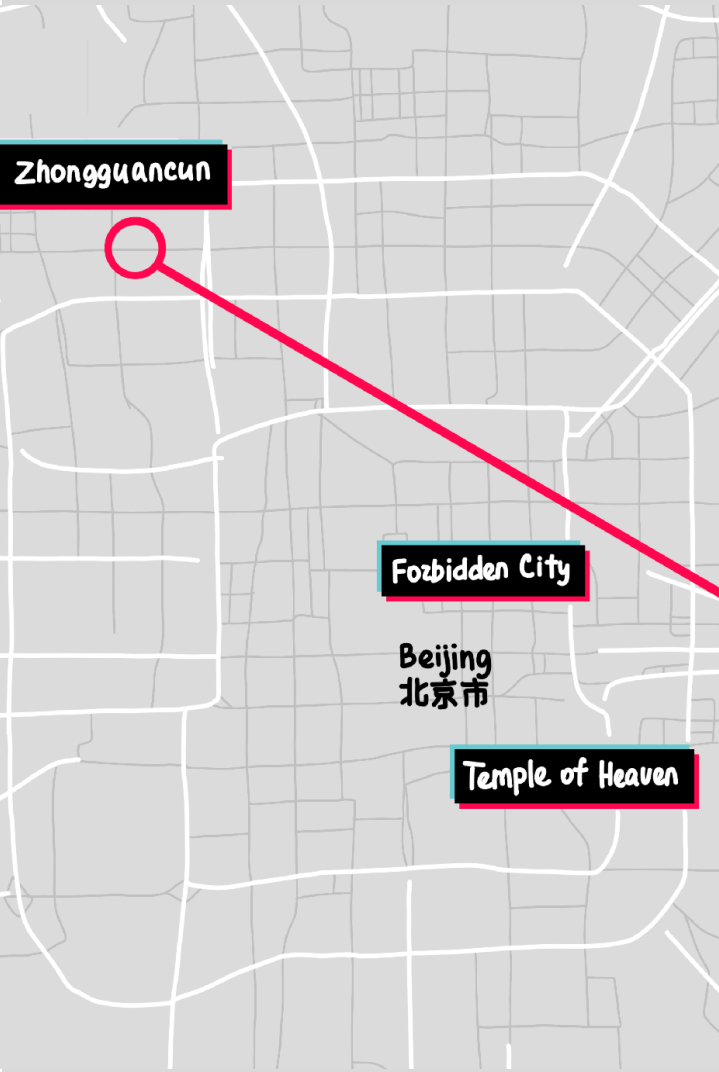
Computing



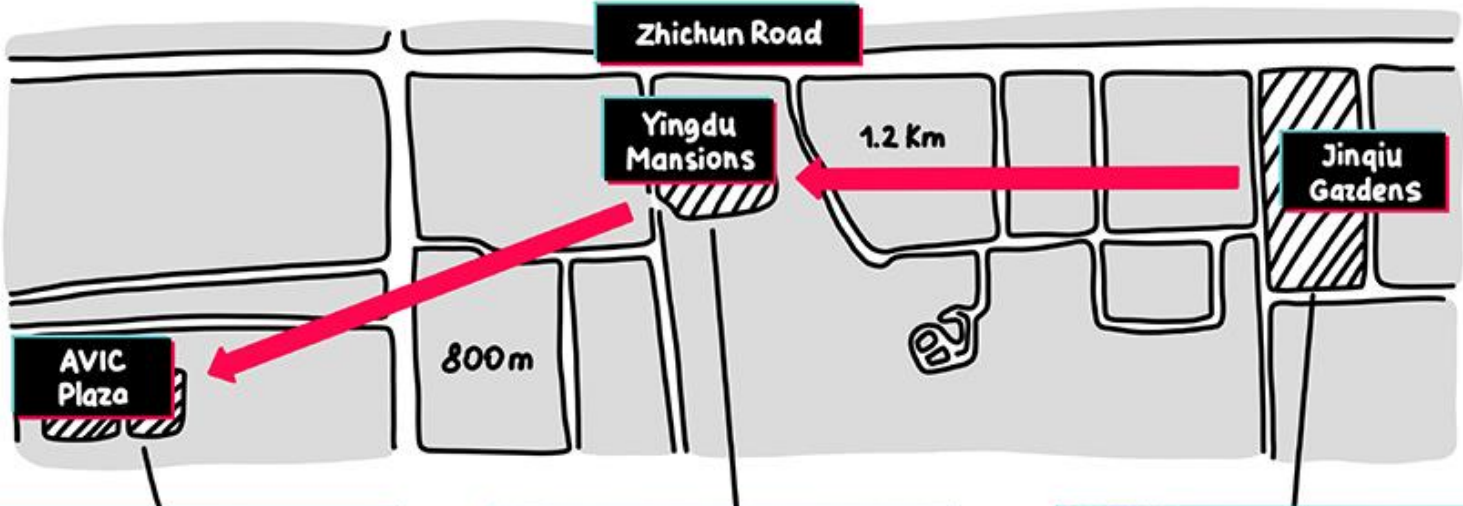
Storage



Beijing



Head Offices



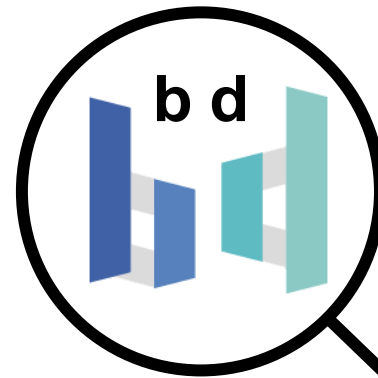
ByteBounce, ByteJump, ByteDance

THE NAME "ByteDance," is allegedly inspired by a famous Steve Jobs quote:

"Technology alone is not enough. That it's technology married with liberal arts, married with the humanities that yields us the result that makes our hearts sing."

The logic being that "byte," the unit of information in a computer, was technological sounding, and "dance" represented the liberal arts. From this, they devised the Chinese name, Zì jié tiàodòng (字节跳动), which literally translates as **Byte Bounce**, a slight change that was made in part due to concerns the company might be mistaken for an agency to hire dancers.

If you think the name sounds a little strange in English, it arguably sounds stranger in Chinese. Other names allegedly considered were **Byte Jump** (zì jié tiàoyuè 字节跳跃.)



Original logo 2012-2018

ByteDance
字节跳动

 **ByteDance**

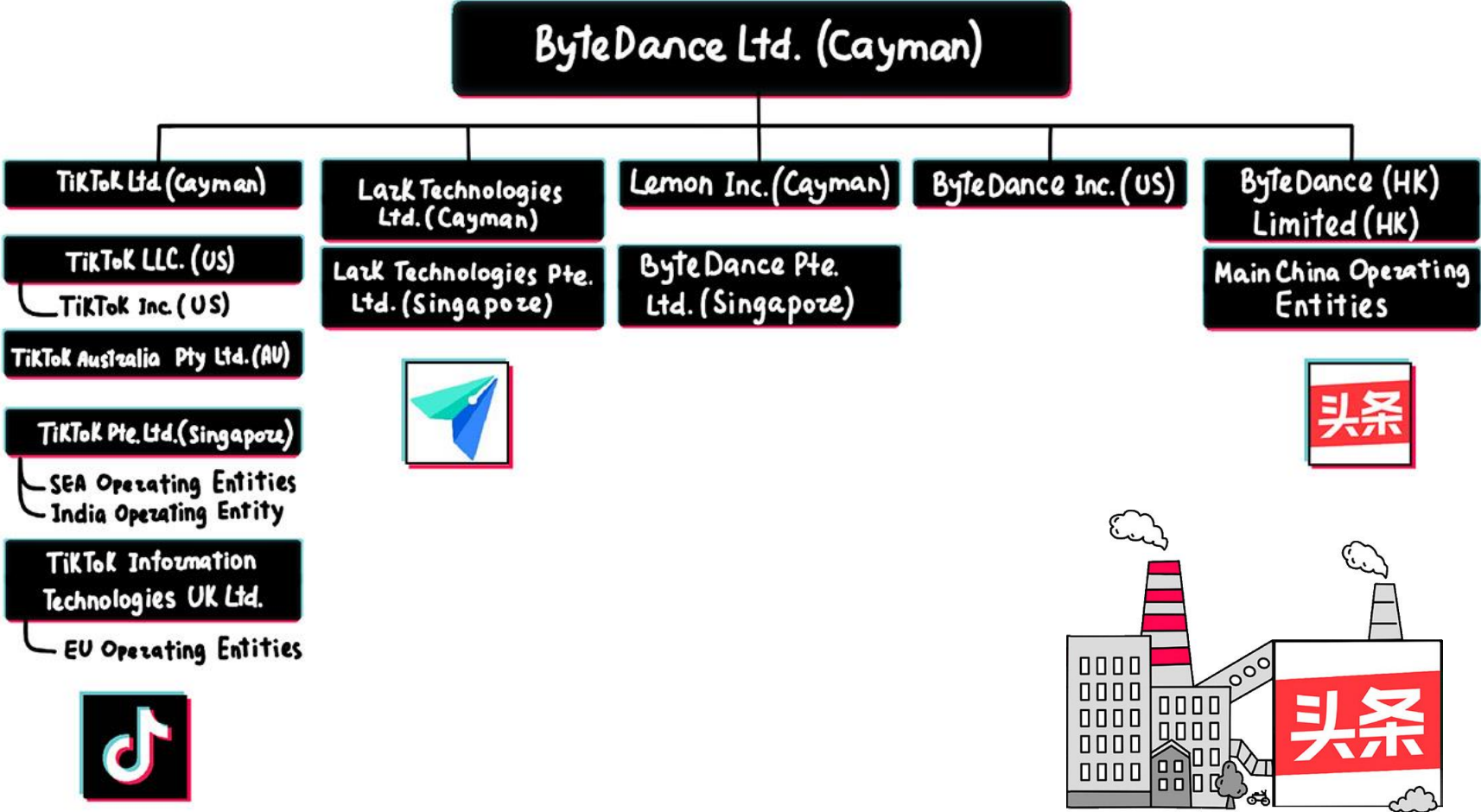
Current logo 2018 Onwards

13

ByteDance Corporate Legal Structure

BYTEDANCE IS registered offshore under a Cayman Islands entity. This approach is similar to other large Chinese internet companies such as Alibaba Group Holding Limited and Tencent Holdings Ltd.

The lion's share of revenues are generated by the Mainland China operating entities which are driven primarily by the advertising businesses of Douyin and Toutiao.



Investors

BYTEDANCE IS a privately held company which despite constant rumors for several years has yet to go public. Notable early investors are SIG Asia, Yuri Milner and Sequoia Capital China.

The company famously met with difficulty in its early years, finding it hard to secure venture capital funding. Many of China's best-known VCs turned down the opportunity to get involved in ByteDance's rounds missing what could have been a career defining opportunity. In the end, it was an outsider, Russian Physicist Yuri Milner, who stepped in to lead the company's Series B.

Date	Round	Amount, USD	Lead Investors	Valuation, USD
2012 April	Angel	3 million	SIG Asia	-
2012 July	Series A	1 million	SIG Asia	-
2013 May	Series B	10 million	Yuri Milner (Apoletto), SIG Asia Source Code Capital	60 million
2014 June	Series C	100 million	Sequoia China, Weibo	500 million+
2016 Dec	Series D	1 billion	Sequoia China, China Construction Bank International	11 billion
2017 Sept	Series E	2 billion	General Atlantic	22 billion
2018 Nov	Pre-IPO	2.5-4 billion	General Atlantic, KKR, Primavera Capital Group, SoftBank	75 billion
2020 Mar	N/A	Undisclosed	Tiger Global Management	100 billion

15



People

A peek inside at some of the most important people at ByteDance



张一鸣

The Boss Zhang Yiming

ZHANG'S YOUTHFUL APPEARANCE and mild mannered, calm exterior have fooled many. Make no mistake, the 37-year-old mastermind behind ByteDance is a battle-hardened serial entrepreneur, determined, focused and willing to make bold bets.

Computer science graduate Zhang, is known as a voracious reader and consumer of information who personally led research and development of the first version of ByteDance's now famous recommendation engine. Increasingly his focus has shifted towards optimizing company structure and organizational information flows.

“

By many quantitative metrics, Zhang Yiming is the top entrepreneur in the world.

”

Time Magazine, 2019

The Ad King 张利东 Zhang Lidong

FORMER JOURNALIST and traditional newspaper industry advertising executive Zhang Lidong is Chairman of ByteDance China. He serves as the legal representative for at least 36 different ByteDance branch companies.

Lidong joined ByteDance at a time when the company had yet to generate any revenue. He fast tracked the company's monetization drive using many of the tried and tested sales techniques and key-account connections from his years in the newspaper advertising industry

A sizable chunk of ByteDance's entire workforce consists of salespeople and staff focused on commercialization overseen by Lidong.

“

ByteDance has two irreplaceable people—one is Zhang Yiming, and the other is Zhang Lidong.

”

Lin Chufang

Former Vice President of Public Relations, Toutiao (Bytedance)



The Product Queen

Kelly Zhang

张楠

CEO OF BYTEDANCE CHINA, Kelly Zhang was hired along with her startup, Picture Bar, in 2013. She was already an internet industry veteran and serial entrepreneur having been a founding employee of two previous internet companies.

Kelly has built a reputation for deeply understanding how to cultivate online communities, an essential process for user generated content platforms.

She oversaw the key development stages of several of ByteDance's most important properties including the original version of TikTok, Douyin, short video app Huoshan, and meme aggregator Neihan Duanzi.

Zhang was also nominally head of TikTok during 2019. She is now exclusively focused on China.



The TikTok Algo Wizard

Zhu Wenjia

WHO MADE TIKTOK so damn addictive? If we must ascribe this achievement to one person, then it's probably Zhu Wenjia.

There are many extremely talented algorithm engineers at Bytedance, yet Zhu Wenjia is widely considered to be one of the very best in the entire company.

In 2017 it was Zhu's team that led a major upgrade of Douyin's backend infrastructure that led to astounding results. Shortly afterwards user numbers and engagement spiked to previously unseen levels. This same backend system is used by TikTok.

Zhu was hired from search giant Baidu in 2015. He is currently CEO of Toutiao, the company's original flagship news aggregation app.





梁汝波

The College Buddy Liang Rubo

EMPLOYEE NUMBER 3, Liang is Zhang Yiming's close friend and trusted advisor. The two were university dorm roommates for several years studying computer science at Nankai university in the Northern coastal Chinese city of Tianjin.

Before joining ByteDance, Liang worked at CEO Zhang Yiming's previous internet startup, real estate search portal 99Fang.com.

In his time at Bytedance Liang has held various senior technical roles, including Director of Technology. More recently he has shifted to focus to HR.

Liang, known for his infectious smile and positive energy, is often listed as a "founder" of Douyin, the original version of TikTok.

Douyin was set up under a subsidiary company, "Beijing Weibo Vision Technology," which was registered under Liang's name.

The Pioneers Alex Zhu & Louis Yang

ALEX & LOUIS pioneered the 15 second full screen vertical short video app experience that we now know as TikTok. The two co-founded Musical.ly, an app extremely popular with European and American teenagers.

Bytedance first cloned their app and later acquired their company, eventually merging Musical.ly together with TikTok.

The two previously held director positions at eBaoTech, a Shanghai based insurance services company.

After Musical.ly's acquisition. Louis and Alex continued to work for ByteDance. Louis currently focuses on innovative educational AI products in Shanghai.

Alex went on to lead TikTok before becoming VP of Product and Strategy in May after the hire of Disney executive, Kevin Mayer.





王琼 The Investor Joan Wang

THE MOST IMPORTANT investor in ByteDance's company history is Joan Wang.

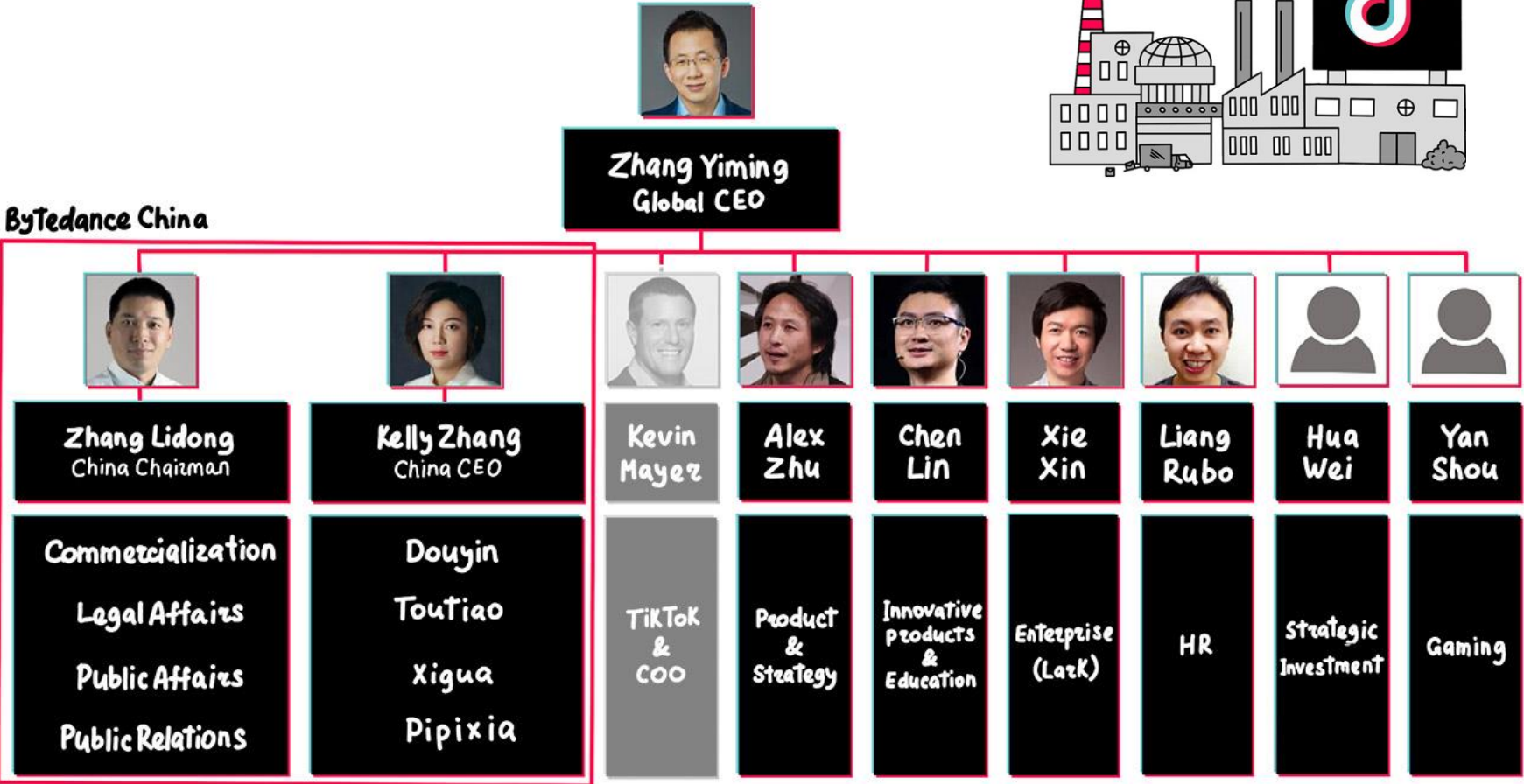
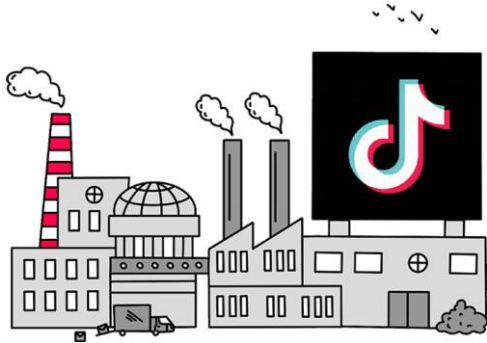
Joan works as managing director for SIG China a venture investment arm of the American financial services firm Susquehanna International Group (SIG).

She came to know Zhang Yiming through backing two of his previous startups, travel search site, Kuxun, and real estate portal, 99Fang.com.

SIG's investment into ByteDance holds legendary status in China's venture capital world. Especially given ByteDance had much difficulty securing early investments. Many of China's most prominent VCs turned them down missing the opportunity to make a career defining deal.

Joan believed in founder Yiming at a time when few fancied their chances. In 2013 SIG owned roughly 12% of ByteDance and are reported to have remained the largest institutional investor.

Higher Management (mid 2020)

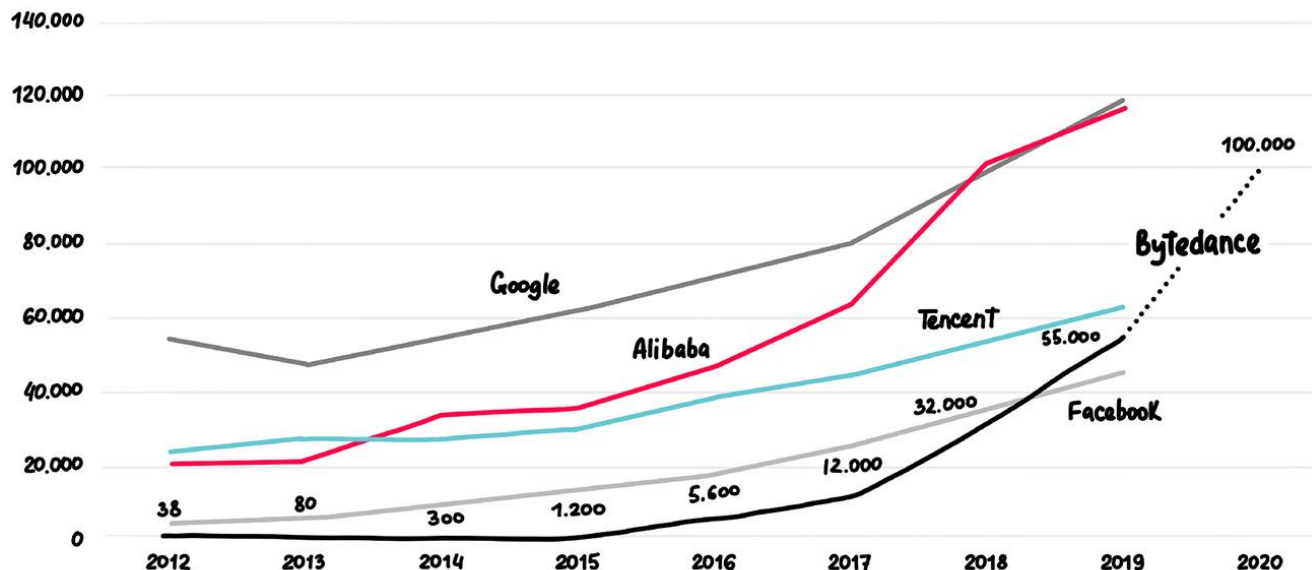


THE ROLES, responsibilities and titles of ByteDance’s higher management team change frequently.

There has been a merry-go-round of executives responsible for TikTok over the past 2 years including Alex Zhu, Kelly Zhang, Kevin Mayer and currently Vanessa Pappas with TikTok now in the midst of separating itself from the rest of ByteDance.

Other key executives include early employee and former CEO of Toutiao, Chen Lin, Xie Xin heads up the company’s drive into enterprise productivity with Lark.

Rapid Headcount Growth



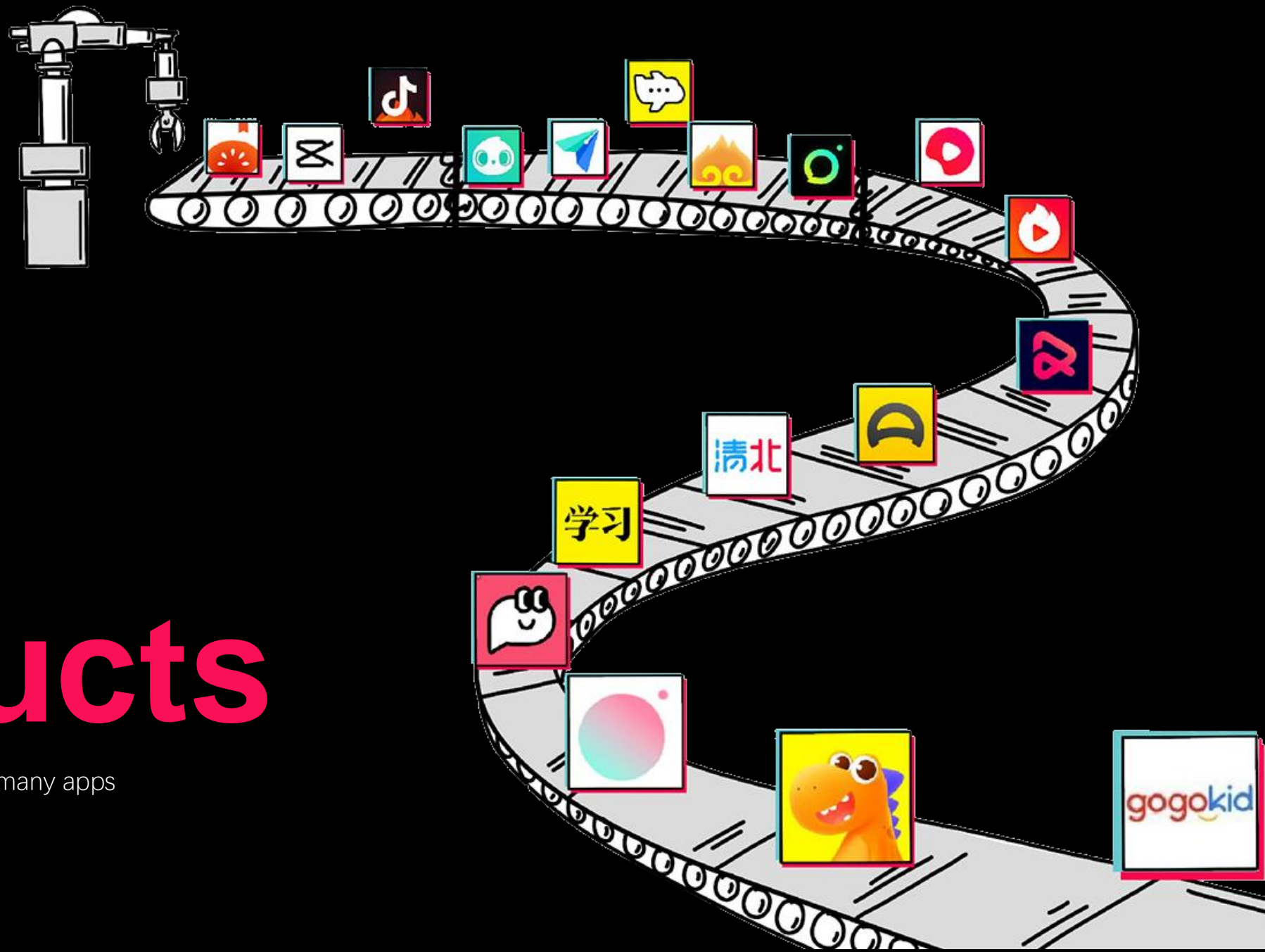
THERE ARE FEW companies, even in tech, which are growing as fast as ByteDance. Within China the company has built a fearsome reputation for aggressively poaching talent from other internet companies, offering above market

compensation and generous share options to secure top candidates. Offices in Mountain View, California and Shenzhen, China, have been set up within close proximity of wary rivals Facebook and Tencent respectively.

Picture left: Estimates of ByteDance staff head count in comparison with other industry peers.

Picture right: The entire ByteDance company in 2014.

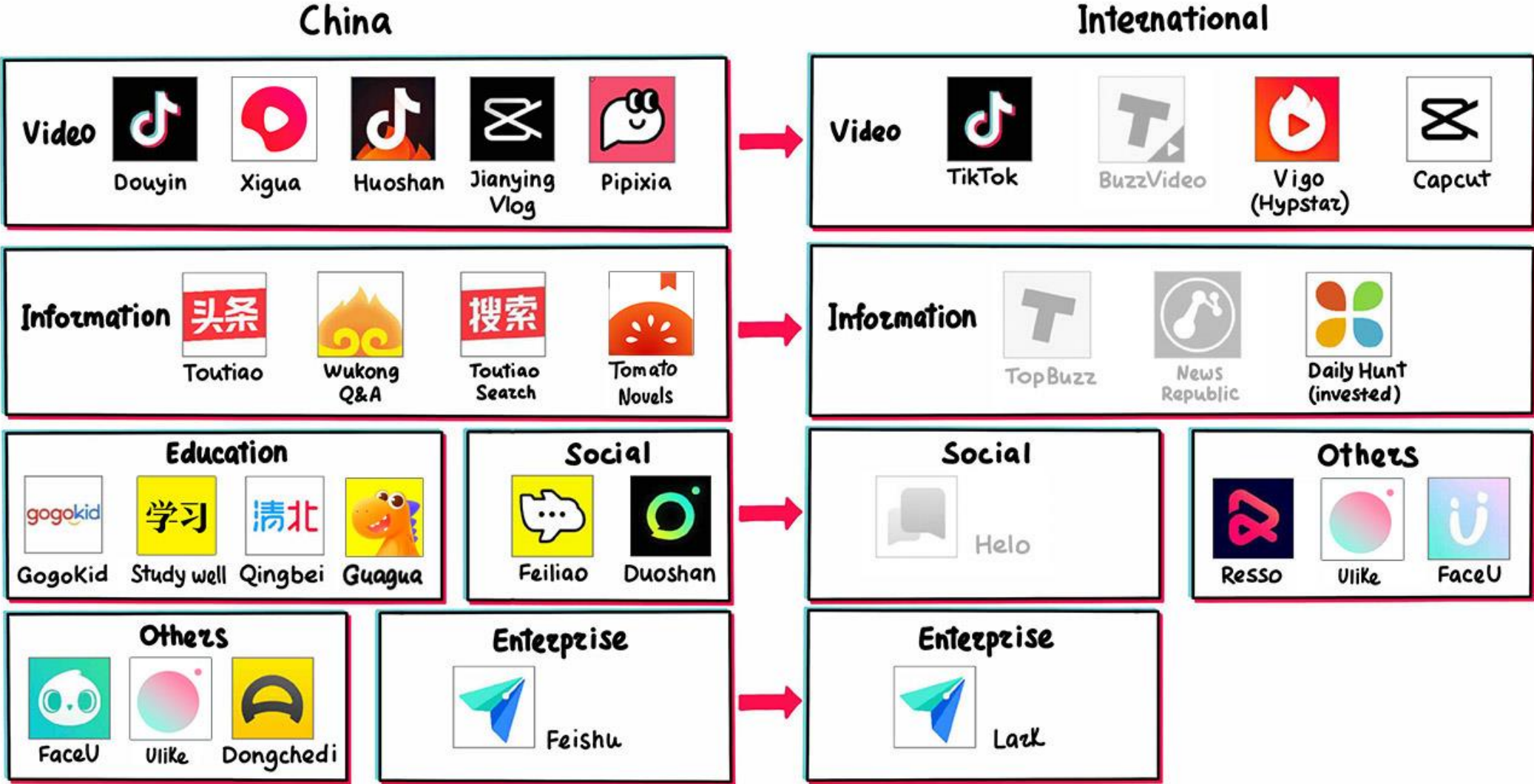
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Products

Image: just some of ByteDance's many apps

ByteDance Apps - Overview








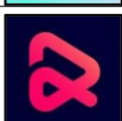
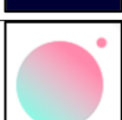
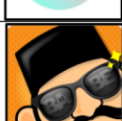
Greyed out icons indicate the app has recently shut down.

ByteDance Apps China

Logo	Name	Description	Year	Official website
	Toutiao 今日头条	News aggregator	2012	toutiao.com
	Douyin 抖音	Short video	2016	douyin.com
	Xigua video 西瓜小视频	Short video	2017	ixigua.com
	Douyin Huoshan edition 抖音火山版	Short video (CN)	2016	huoshanzhibo.com
	CapCut 剪影	Video editing	2019	lv.ulikecam.com
	Duoshan 多闪	Messaging	2019	duoshanapp.com
	PipiXia 皮皮虾	Memes & joke videos	2018	h5.pipix.com
	Feishu 飞书	Enterprise productivity	2019	feishu.cn
	Gogo Kid	K-12 education	2018	gogokid.com.cn
	Dong Chedi 懂车帝	Automotive	2017	dcdapp.com

Logo	Name	Description	Year	Official website
	Wukong Q&A 悟空问答	Question & answer platform	2017	wukong.com
	FaceU 激萌	Beauty selfie camera	Acquired 2018	faceu.com
	Feiliao 飞聊	Interest-based social	2019	feiliao.com
	Toutiao Search	Search engine	2019	toutiao.com/search
	QingBei Net School 清北网校	K-12 education	2019	qingbei.com
	Ulike 轻颜相机	Beauty selfie camera	2018	m.ulikecam.com
	Tomato Novels 番茄小说	Reading	2019	None found
	Guagua Dragon English 瓜瓜龙英语	K-12 language study	2019	ggl.cn
	Study well 好好学习	Education	2018	None found

ByteDance Apps International

Logo	Name	Description	Year	Official website
	TikTok	Short video	2017	tiktok.com
	CapCut	Video editing	2020	faceeditor.com
	Lark	Enterprise productivity	2019	larksuite.com
	DailyHunt	Indian news aggregator	Invested 2016	dailyhunt.in
	Face U	Beauty selfie camera	Acquired 2018	faceu.com
	Resso	Indian music streaming app	2020	resso.app
	Ulike	Beauty selfie camera	2019	None found
	BABE	Local news aggregator	2016	babe.co.id

ByteDance Apps Discontinued

Logo	Name	Description	Operation	Notes
	Implied jokes 内涵段子	Meme aggregator	2012 2018	Shut down due to Chinese government criticism
	Musical.ly	Short video	2014 2018	Merged into TikTok
	Flipagram	Short video	Acquired 2017 2020	Merged into Virgo video
	News Republic	News aggregator	Acquired 2017 2020	news-republic.com
	Helo	Indian market	2018 2020	helo-app.com
	TopBuzz	News aggregator	2015 2020	topbuzz.com
	Vigo video (Hypstar)	Short video	2017 2020	vigovideo.net

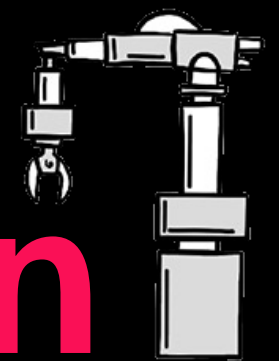
The First ByteDance App – It Started From Memes

EVEN BEFORE the company had been officially registered, the embryonic ByteDance team had cobbled together their first app entitled **Hilarious Goofy Pics**, (搞笑囧图 gǎoxiào jiǒng tú) that served an endless addictive feed of entertaining memes and silly pictures.

During ByteDance's early years the company held a notorious reputation for serving its users trashy mindless click-bait content. The company completely transformed its image with the arrival of Douyin and later TikTok.

"We must face the fact that for 96% of people, their needs are so vulgar," explained Gao Han, a senior UI designer, and ByteDance employee number 22.





Recommendation

Image: Musical.ly co-founder Louis Yang's conceptualization of short video content distribution methods

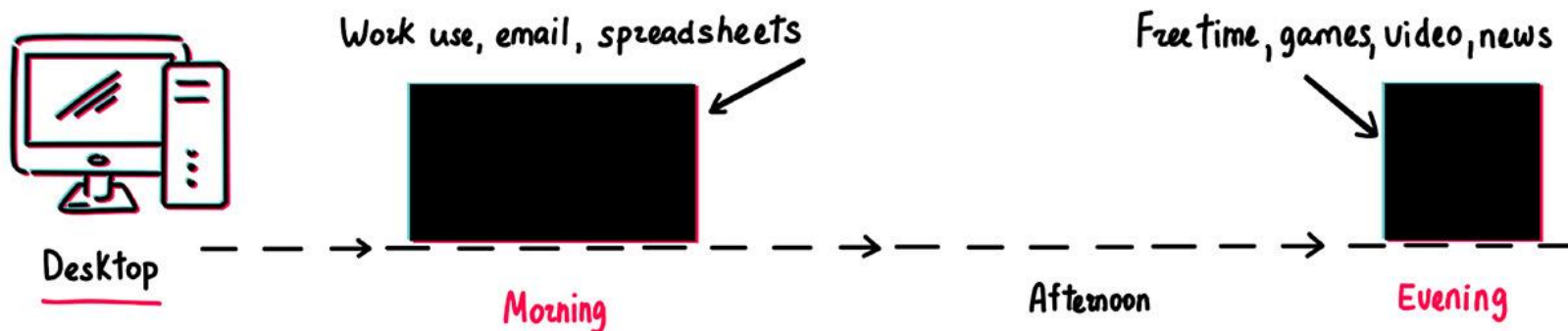
Fragmented Time

PEOPLE USE smartphones in radically different ways from desktops and laptops.

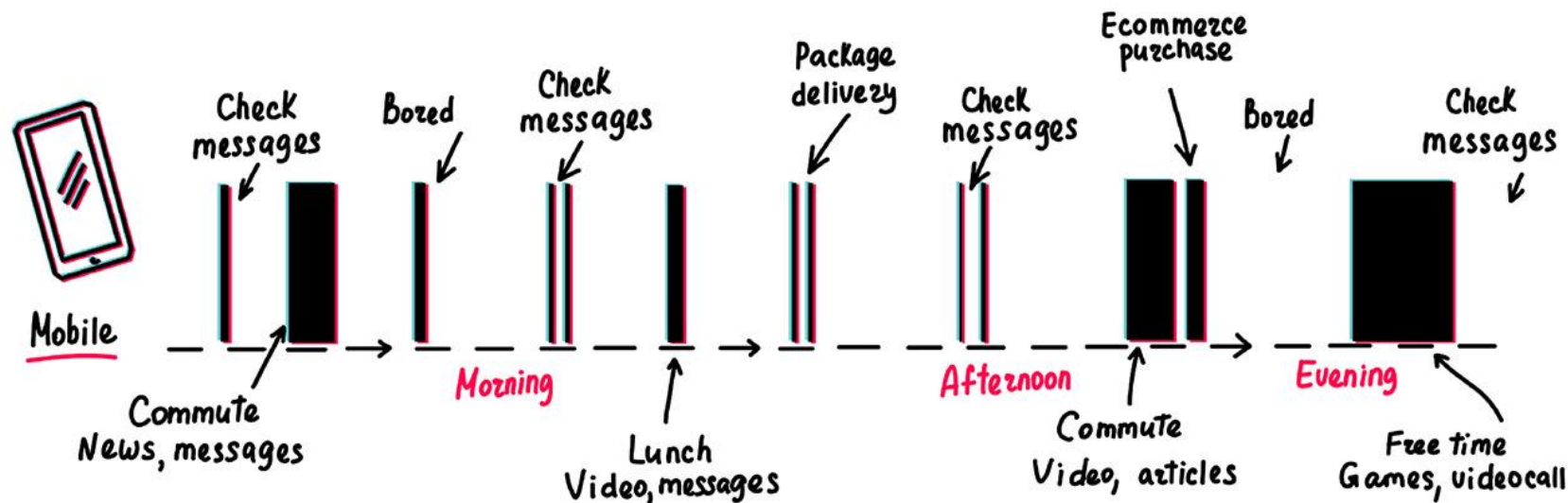
Mobile internet usage can be typically split over 30-40 shot sessions per day. Sometimes less than 60 seconds.

How does video entertainment work in such an environment?

2005

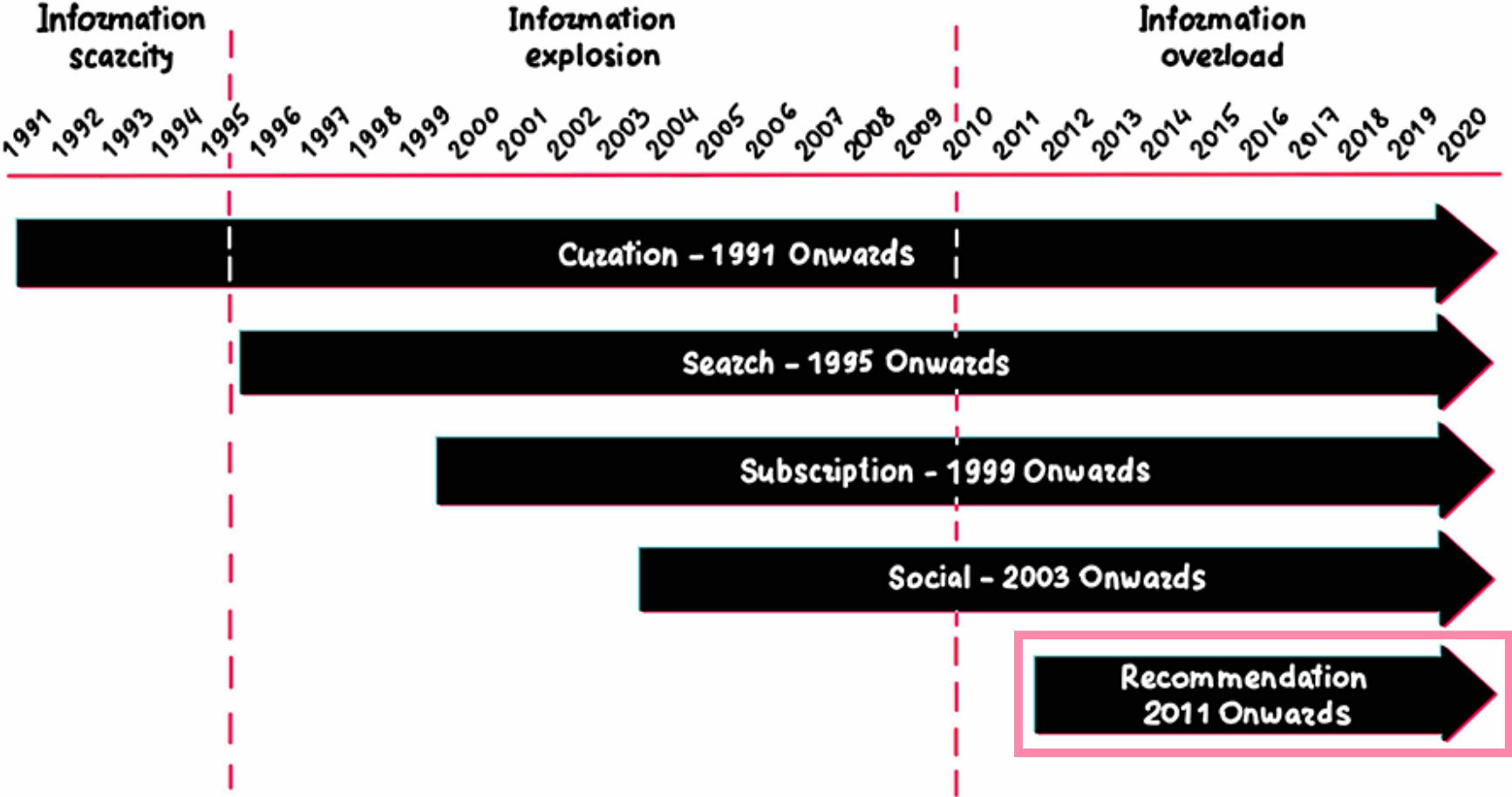


2016



32

Informational Overload – The Recommendation Era

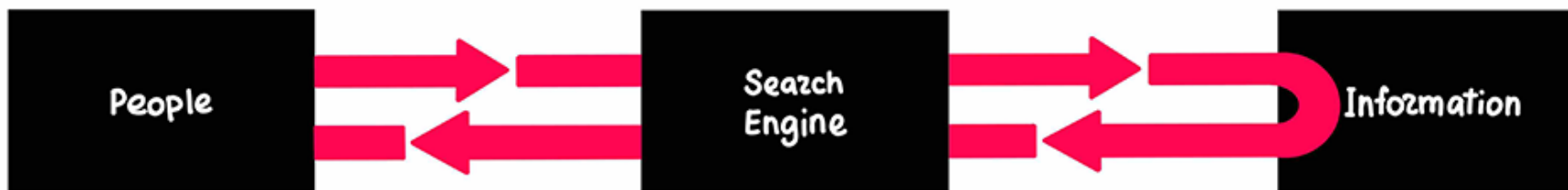


METHODS OF informational distribution have evolved over the internet's 30-year history. From the curated web portals (AOL, Yahoo!) of the 90s through to search engines, RSS, and email subscription lists, social networks and most recently recommendation engines.

The amount of information online has exploded. **Today we are bombarded with online articles, videos and more products than we can possibly choose from.** Recommendation is an efficient and accessible solution to the deluge of information.

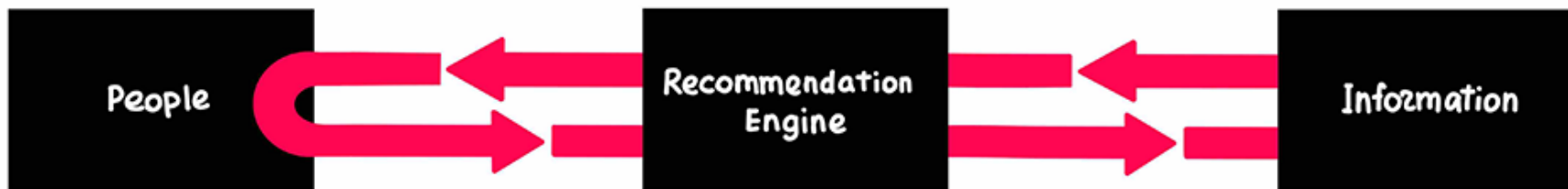
“People looking for Information” to “Information looking for People”

Pull model: “people looking for information” ACTIVE

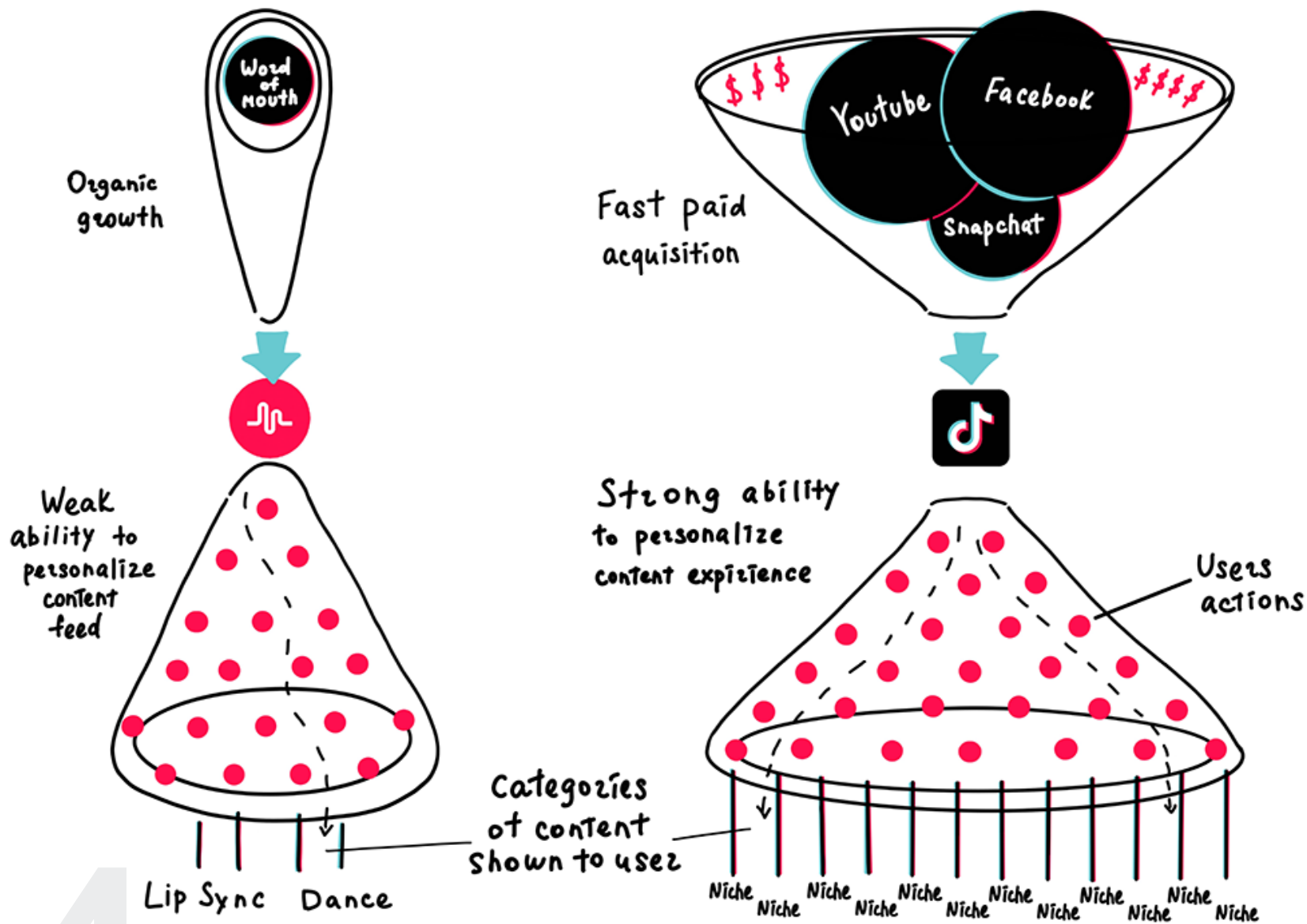


THE DIFFERENCE between search engines and recommendation engines is encapsulated by the concept of “people looking for information”, vs. “information looking for people.”

Push model: “information looking for people” PASSIVE



Search requires an explicit declaration of intent from the user, a “search term.” Recommendation infers our preferences based on our past behavior. This model is more suitable for the small screens, fragmented time and information overload issues which characterize the mobile era.



ACCURATE MATCHING of content with users was the biggest difference between Musical.ly and TikTok. Superior classification and recommendation was the key to content diversification beyond the popular categories of teen lip-sync and dance.

Without accurate video classification and recommendation niche content cannot find appropriate users. User generated videos often have poor or inaccurate metadata. Under these conditions, search is an inefficient method to match users with content.

Short Video – a Saturated Market

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2011			 GIF Kuaishou 快手										
2012	Vine		 Miaopai 秒拍							Youliao 有料			
2013			Xiaoying 小影					Weishi 腾讯微视				Molihe 魔力盒	
2014	Caishi 彩视			Xunlei yingyin 迅雷影音		Meipai 美拍			Dubsmash musical.ly			Zuiyou 最右	
2015		Qingqu 蛙趣视频				Xiaokaxiu 小咖秀						Doupai 逗拍	Bajiaoxing 八角星
2016	Huoshan 火山小视频			VUE					Kuaigeng 快更视频		A.me (Douyin)		Peaz video 梨视频

Left: Short video apps launched from 2011 to 2016 (non-exhaustive).

THE ORIGINAL China version of TikTok, was launched in late 2016 under the name A.me. It was a late mover in an already heavily saturated market.

Yet another uninspired clone destined to enjoy a fleeting moment of fame before withering away unceremoniously into internet obscurity.

Not even ByteDance's own staff were optimistic, seeing the app as somewhat of a side bet.

The original version of TikTok, A.me

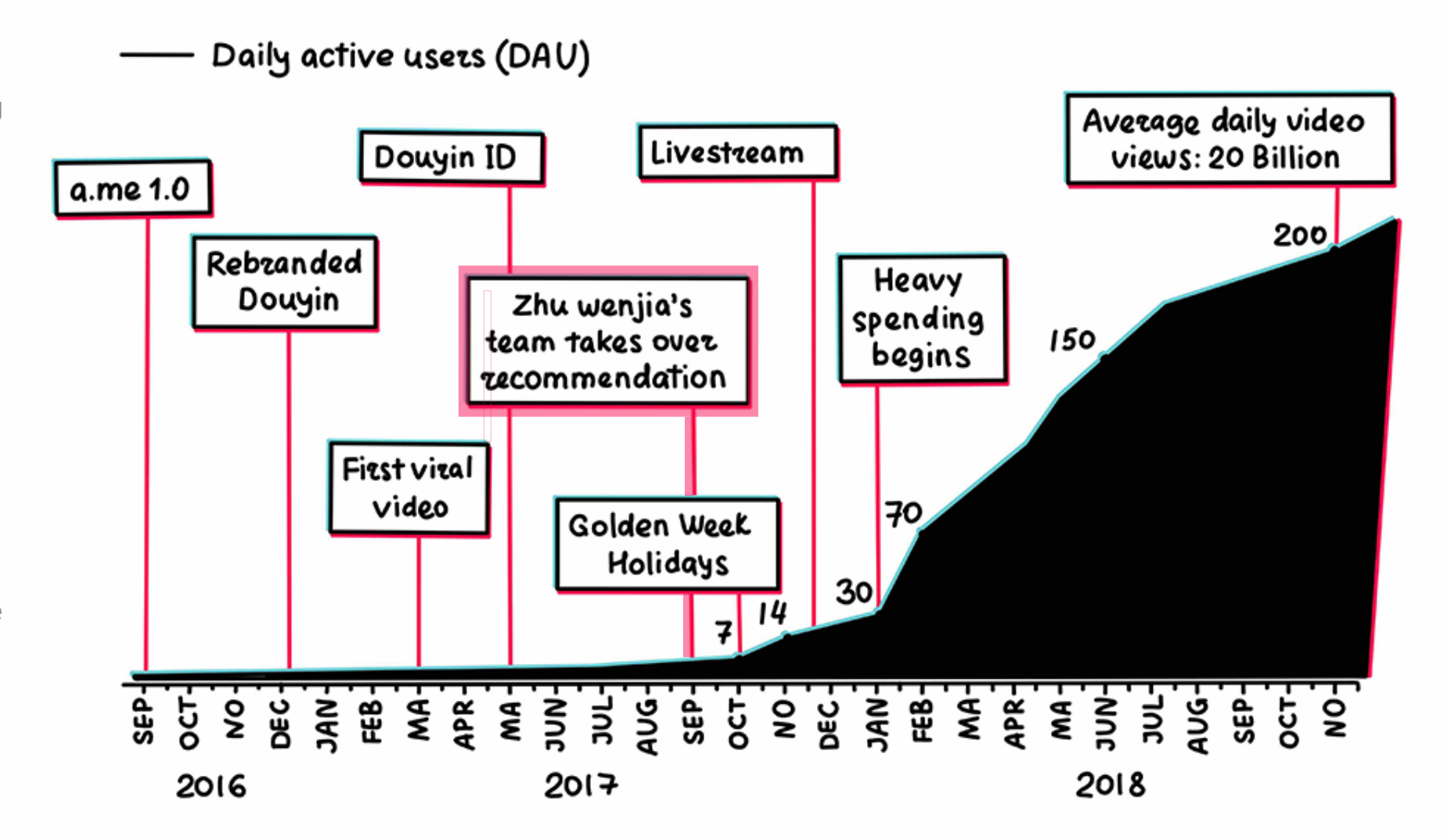
The Turning Point

Q4 OF 2017 was when everything came together a critical turning point for the fortunes ByteDance.

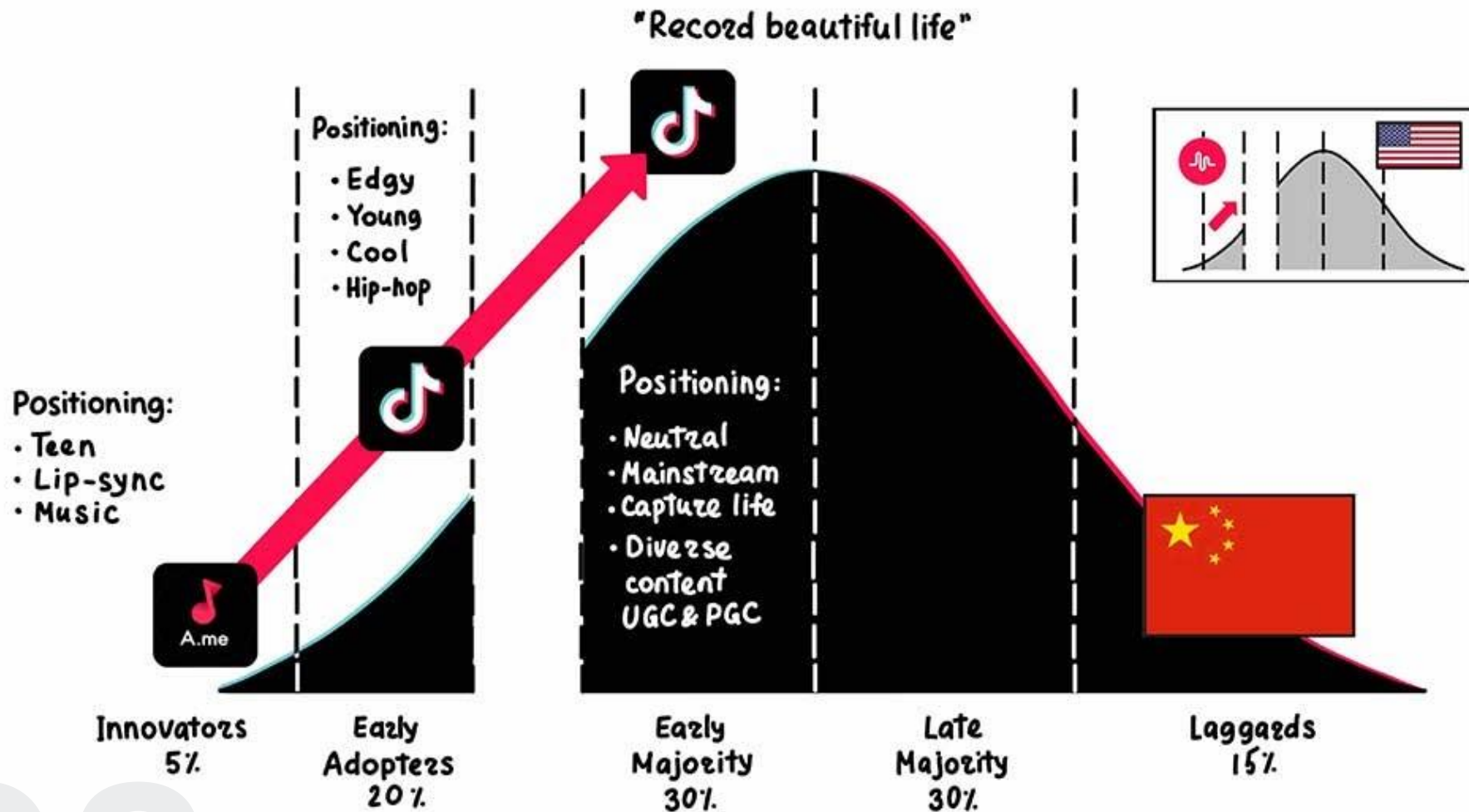
Over October, Douyin's daily users doubled, 30-day retention rates jumped from eight to over 20%, the average time spent in the app soared from 20 to 40 mins.

It was as if some magic rocket fuel had suddenly been added, boosting every key metric. What had changed?

One of ByteDance's most capable engineering teams led by Zhu Wenjia, was assigned to work on Douyin, harnessing the full power of company's content recommendation backend.



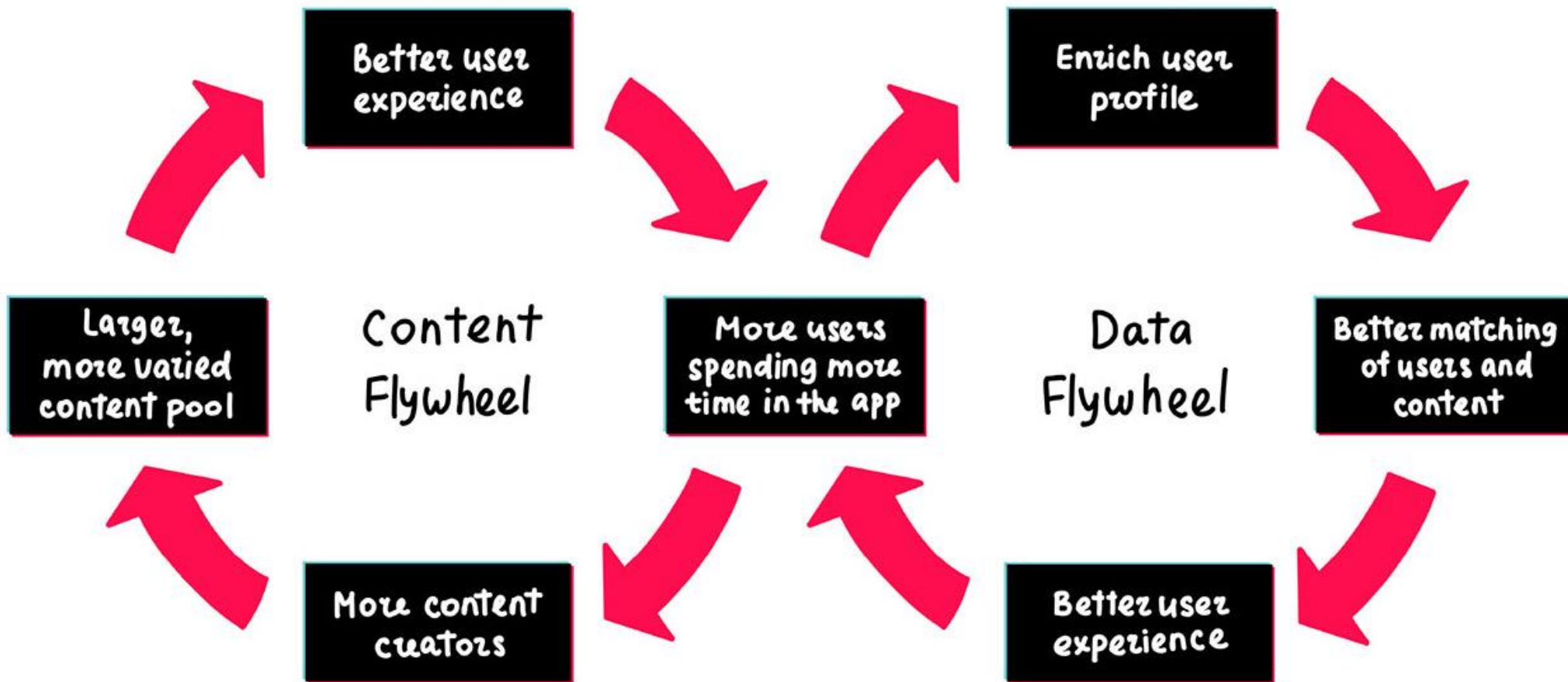
Breaking into the Mainstream



EARLY PIONEER Musical.ly, had failed to break into the Western mainstream, remaining an app used exclusively by teens.

In China, Douyin was able to reach a much broader audience in part by cleverly altering its positioning. The app originally mimicked Musical.ly, targeting female pre-teens, later shifting to become a place for young trendsetting art students and hip-hop idols. By early 2018 the app saw another significant shift in its positioning to the simpler, more neutral "Record beautiful life."

Dual Flywheels – User Generated Short Video





The Iconic Logo

THE TIKTOK LOGO is a musical note in the shape of the letter 'd' which stands for, Douyin, the name of its original sister app. The Chinese name Douyin translates as "shaky beat".

Given music played a vital role in the app's experience, the idea was that both the creators and their audience would unwittingly move their bodies to the music.

The young designer tasked with the creating the logo had his epiphany when attending a rock concert lit up by beams of swirling colorful lights with a

surrounding dark stage. Inspired by the psychedelic visuals at the live event, he set about creating an image that would capture the show's euphoric feel and decided to toy around with the musical note sign. He ran the icon through various filters and settled on using something known as a glitch effect.

The app's signature black color scheme was inspired by other popular Chinese video app Meipai

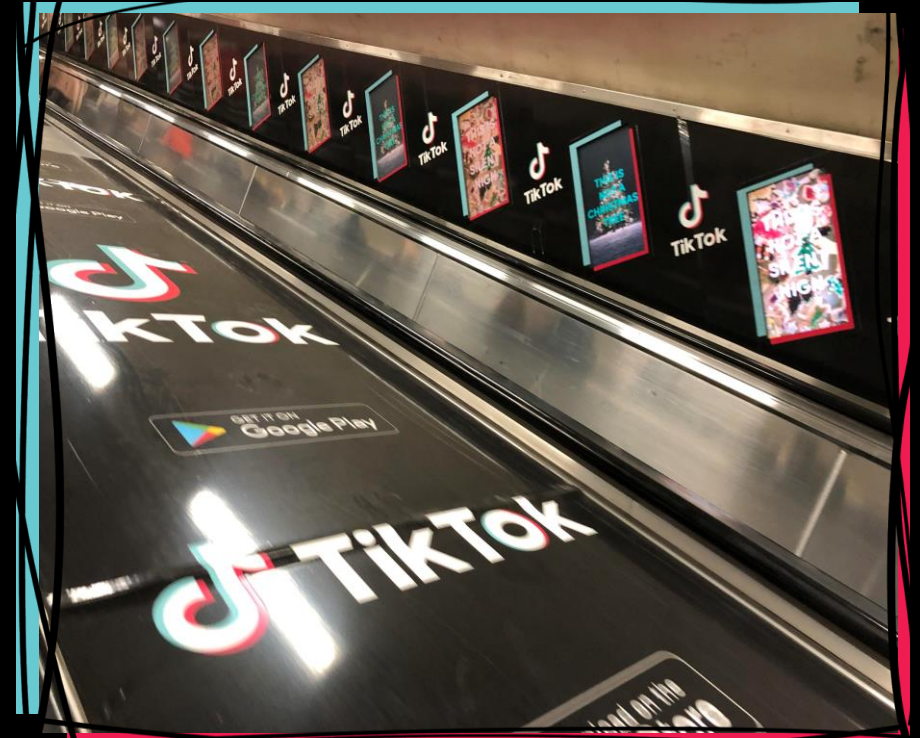
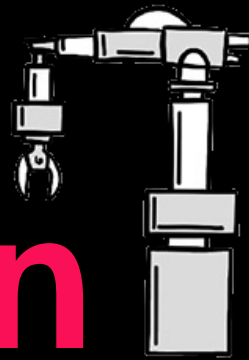
Left: original design concepts for the now iconic logo.



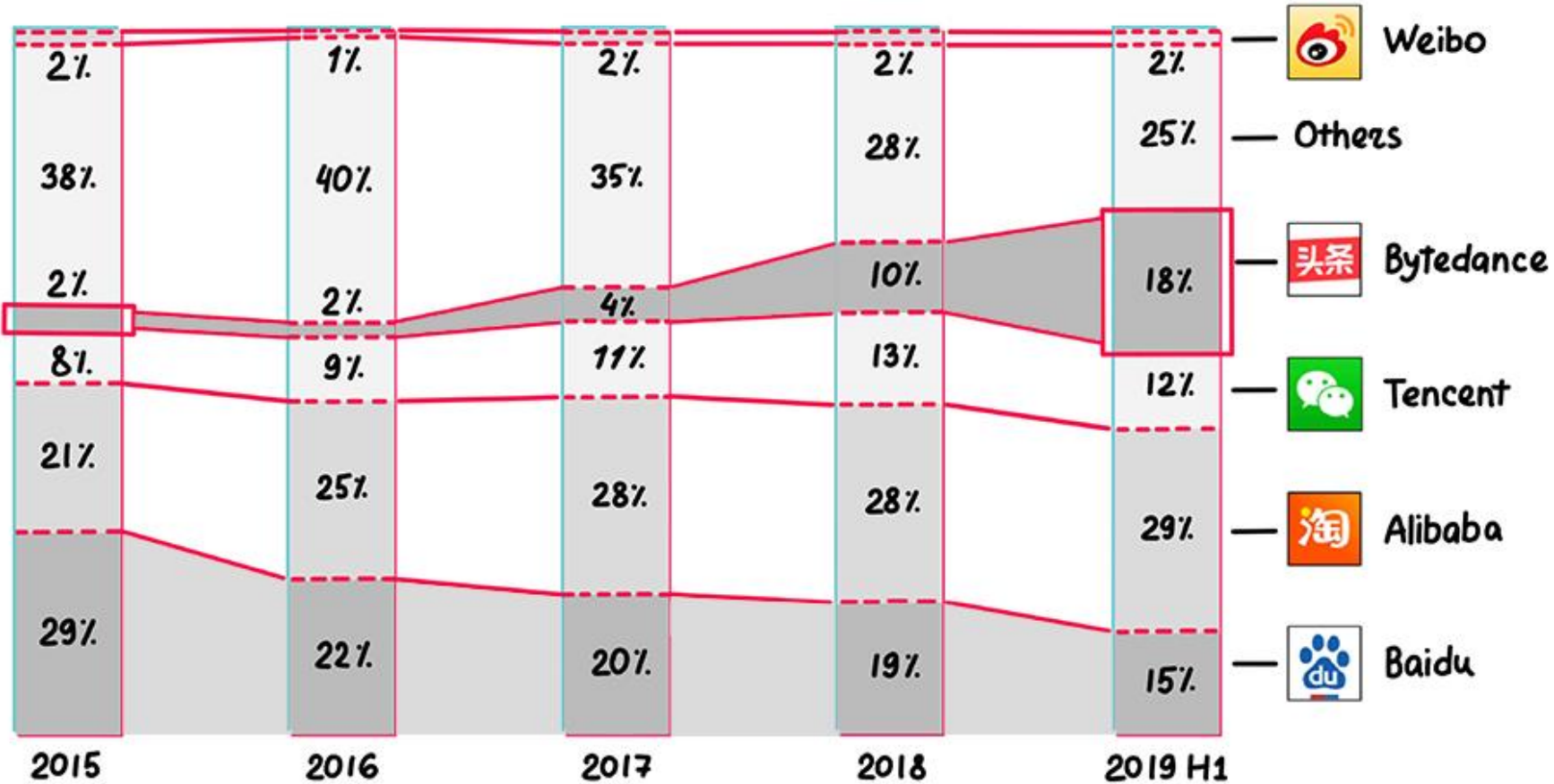


Monetization

Image: TikTok advertising on the London underground December 2018



ByteDance – an Advertising Juggernaut



BYTEDANCE'S share of China's online digital media market spend grew from just 2% in 2015 to become the second-largest player with 18% by the first half of 2019. During the same period, search giant Baidu's market share roughly halved from 29% to 15%.

The rise of TikTok represents a potential challenge to the Western market online advertising duopoly of Google and Facebook.

Source: Huachuang Securities

Douyin – a License to Print Money

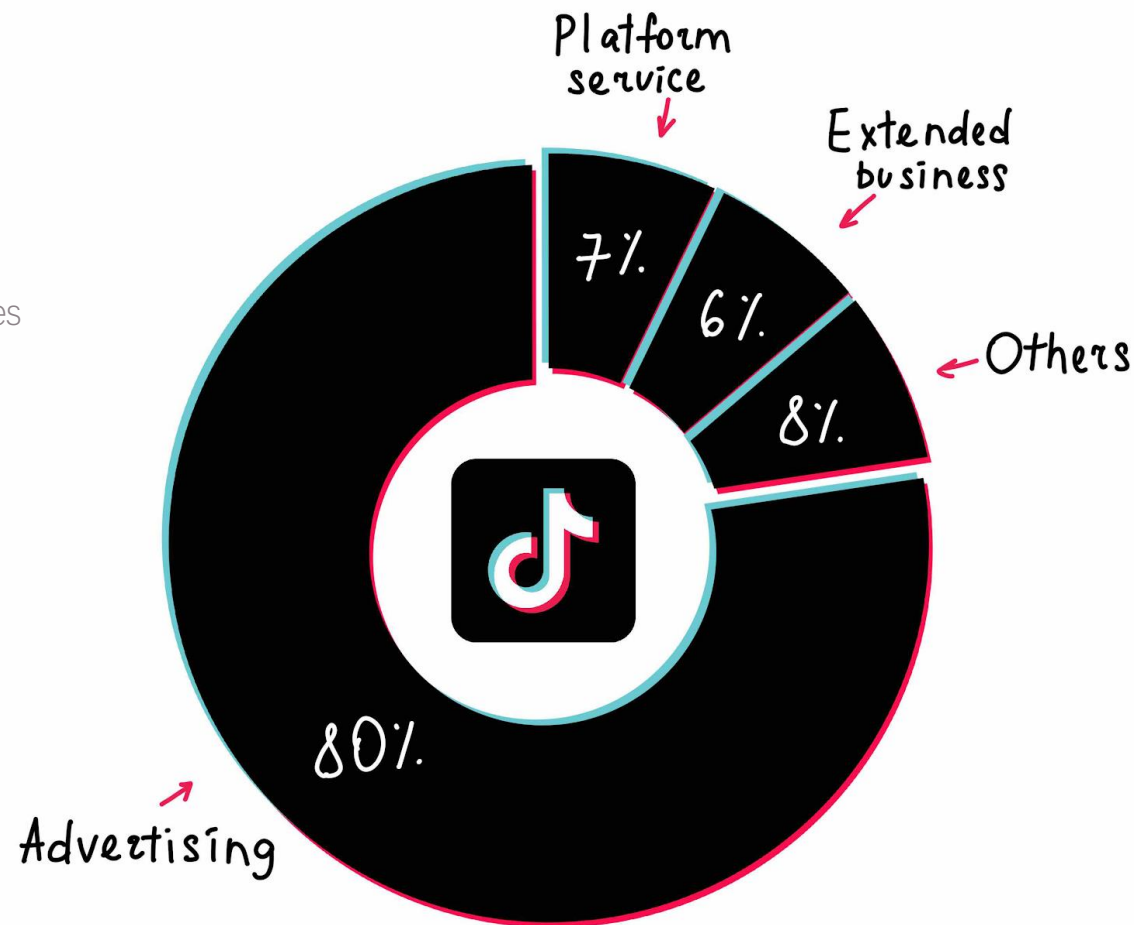
BYTEDANCE'S commercialization teams had brainstormed a multitude of ways to capture value, converting eyeballs into dollars and squeezing every last cent out of Douyin.

The lion's share, roughly 80%, was attributed to advertising but there were many other sources. "Extended businesses," included revenues generated through games, paid knowledge, and e-

commerce. "Others," includes blue tick account verification fees and "DOU+," a system through which any user or creator can pay the platform to boost a video's visibility.

Right: The estimated 2019 revenue breakdown of Douyin

Data source: EqualOcean Analysis



140 Billion RMB

Coming to TikTok Soon...?

DOUYIN offers a window into the future of TikTok given that the China short video market is 12-18 months ahead of the rest of the world. Successful Douyin features pioneered in China have a high chance of also appearing in TikTok.

Right: Screenshot examples of Douyin's various monetization models, including in-feed video ads, games, virtual gifting, and e-commerce.



In feed video ad



Gaming center



Virtual gifts



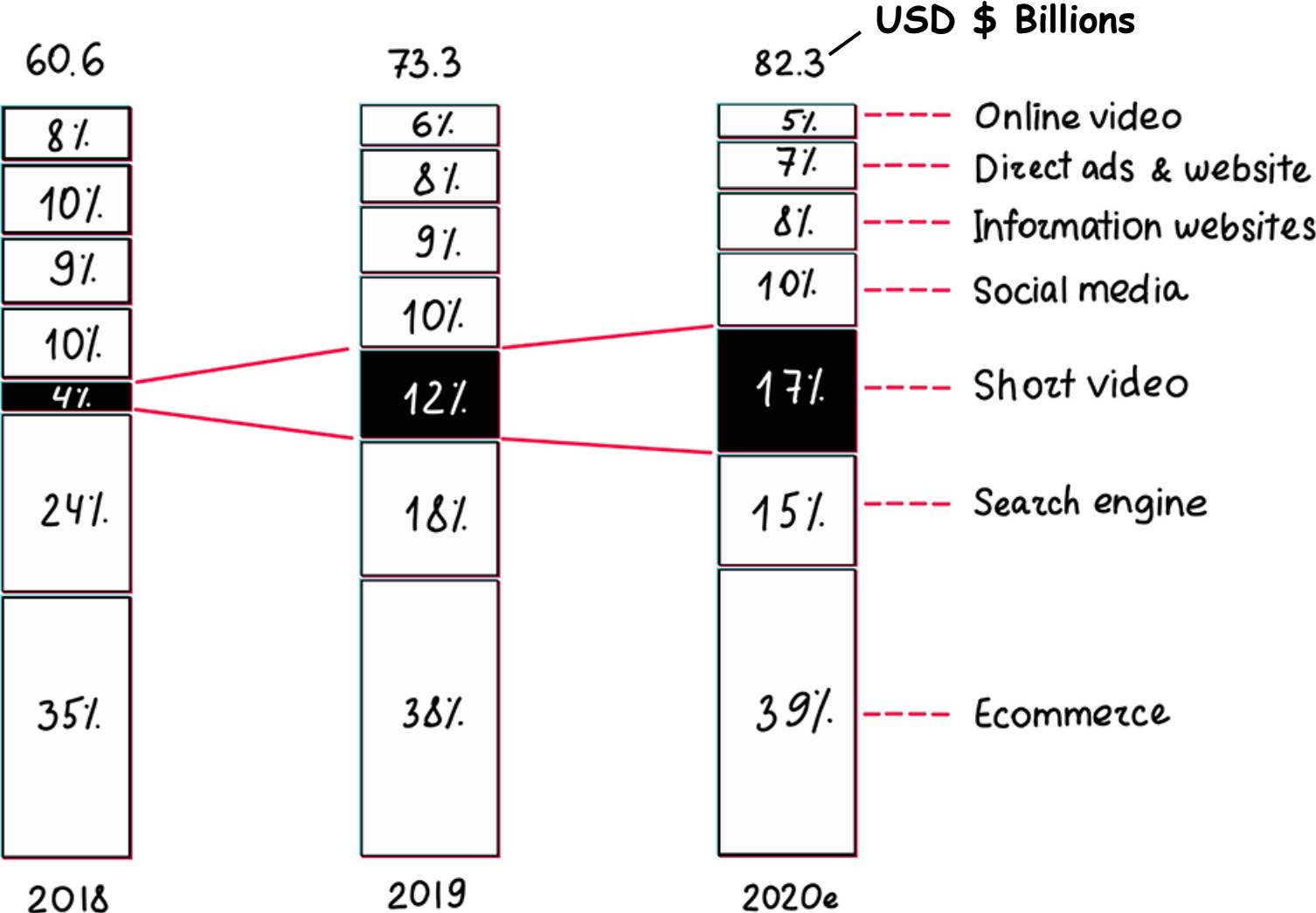
Livestream e-commerce

Short Video - Sucking up Advertising Budgets

THE RISE of short video represents a broad shift in internet consumption habits. It is a compelling format for viewers and advertisers alike.

Right: Internet advertising in China by category. Short video became China's second-largest advertising category behind e-commerce and exceeding search, a shift that was primarily led by Douyin.

Source: SCMP reporting and analysis, QuestMobile, Qianzhan Industry Research Institute, iResearch, IDC

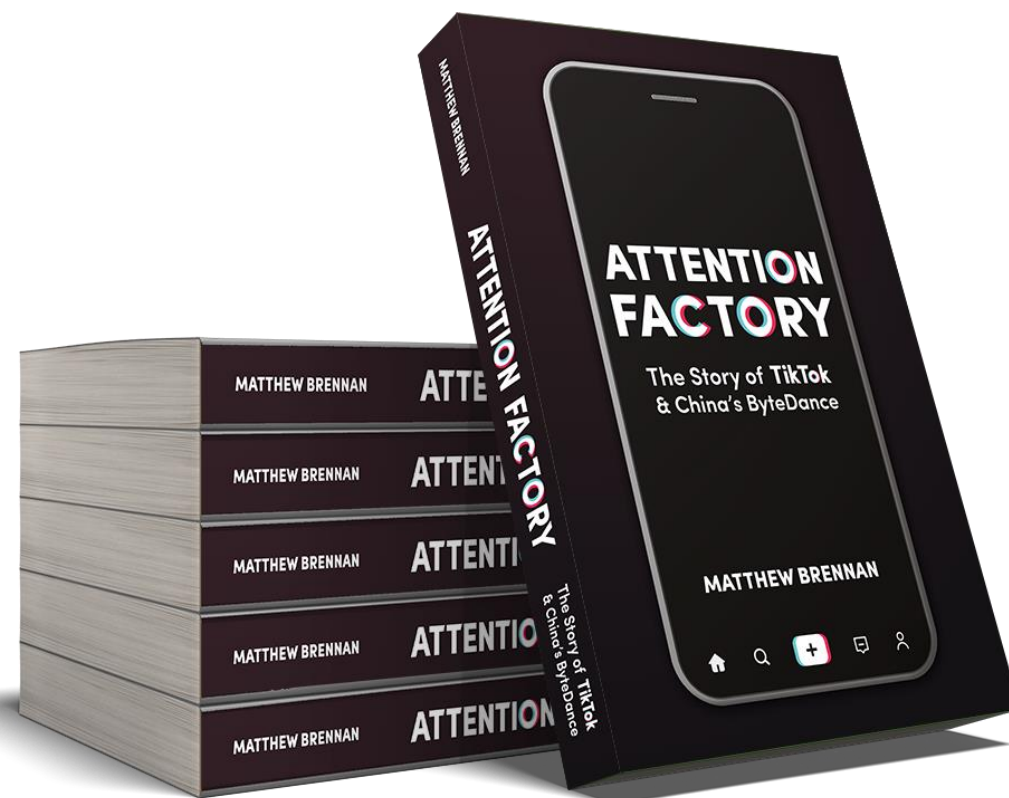


For More Insights ...

ATTENTION FACTORY

The Story of TikTok & China's ByteDance

Written by China internet specialist and internationally recognized speaker Matthew Brennan and edited by TechCrunch journalist Rita Liao, Attention Factory is packed with **over 300 pages of original analysis and exclusive reporting that you cannot find elsewhere.**



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Matthew Brennan

Rita Liao

Illustrations

Valentina Segovia

