APPLOVIN CORPORATION
(Ticker: APP)

APP LOVIN

GREEN LIGHT   YELLOW LIGHT   RED LIGHT

LBIR Recommendation

Stock Price: $93.5 (12/03/2021)	Company Size: $35.0B	Author: Madhu Chaudhary
Company Rank: -	Sector: Information Technology	Industry: Software

AppLovin offers software platform that enables mobile application developers to market and monetize their mobile apps globally. It also owns mobile games content.

IN THIS FIRST FOCUS WE'LL COVER:

▶ **Summary of the Business**

APP is one of the leading ad discovery and content recommendation software service providers and caters primarily to mobile game developers. It also has a large mobile games content business.

▶ **Recent Developments**

Its top-line grew due to increased software platform adoption and in-app purchases. Profit margins expanded due to higher operational efficiencies.

▶ **Competitive Environment**

In the software platform segment, company faces intense competition from well-scaled brands including Facebook, Google, Unity, ironSource, etc. In consumer app business, it competes against Tencent, Zynga, and several other businesses.

▶ **Conclusions/Recommendations**

Operating both as a creator of mobile games and a provider of ad-network, the company has benefited from large first-party data for ad-placements and secular growth in demand for mobile applications. However, intense competition, potential for COVID related tailwinds to unwind, and premium valuations keep us at bay. We assign a **"YELLOW LIGHT"** rating to AppLovin Corporation (APP).

Grab-and-Go™ THESIS

An investment in AppLovin is a play on increased demand for marketing and monetizing software services by mobile app developers. The company has grown to become one of the leading providers and developers of ad discovery software solutions as well as casual mobile games globally. Its success will depend on its ability to expand its pool of first party data by adding more of its self-developed content which will make it less exposed to scrutiny around third-party data for building ad-network.

Data as of 12/03/21 unless specified

Enterprise Value:	$35.7B	Market Cap:	$35.0B	Revenue Fwd (TTM):	$3.7B ($2.5B)
YTD Return:	NA	Fwd (TTM) Price/Sales:	9.5x (13.9x)	RSI:	44.1
Gross Margin (TTM):	63.3%	Revenue Growth (TTM, YoY):	105.7%	ROIC (TTM):	8.2%
52-Week High:	$116.1	52-Week Low	$49.4	200-day Moving Avg.	$60.2
Adj. EBITDA	$643.4M	CFO	$377.0M	FCF	$375.6M

Insider Transactions: In 2021, Vasily Shikin (CTO) sold 268K shares., Adam Foroughi (Co-founder & CEO) bought 100K shares, Herald Chen (President & CFO) bought 50K shares

SUMMARY OF BUSINESS

AppLovin is a leading mobile technology company that helps mobile game application developers grow their app reach worldwide. The company provides a software platform that allows developers to know their customers, perform targeted marketing, create multiple monetization opportunities etc. Its software platform is built on Axon, App Graph, and its cloud infrastructure. App Graph acts as a storage system where a large amount of data is stored in anonymous form from mobile devices the company reaches every day. Axon leverages the data stored in App Graph to make predictions and provide focused automated advertising opportunities for developers using ML algorithms. The company's core technologies are robust and have achieved significant scale as evidenced by processing of over 5.9 petabytes of data, 29.6T events, and 4T predictions per day in September 2021. Besides, company's acquisitions including MAX, Adjust, etc. have further augmented its software platform functionalities such as real-time in-app bidding, increased availability of ad-inventory, performance measurement, etc. In 2018, the company also

launched its own first-party content, AppLovin Apps to create an ecosystem of mobile game applications similar to what Netflix did with movies and television series. Currently, its mobile game app ecosystem consists of over 350 free to play casual mobile games across five genres, run by eighteen studios including self-owned and partnered and is accessed by nearly 37M users every day. Founded in 2011, the company is headquartered in Palo Alto, CA and employs a total of 1,527 full-time employees as of September 30th, 2021.

The company derives revenue by offering following services:

Apps Revenue: Apps revenue is earned from two operating segments namely Business Apps and Consumer Apps. Revenue from business apps is derived from selling digital advertising inventory of company's portfolio of apps to business clients and individual developers. Consumer apps revenue is earned from in-app purchases of virtual goods by users that play company's developed or acquired mobile games. In Q3 2021, Consumer apps accounted for 71% of total apps

revenue whereas business apps contributed 29% of total segment revenue. Overall, Apps revenue accounted for 73% of total consolidated sales in Q3 2021.

Apps Revenue Mix - Q3 2021

- Consumer Apps
- Business Apps

29%
71%
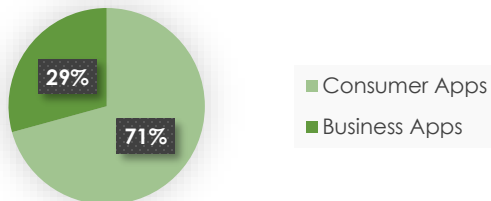
Source: Q3 2021 Shareholders' letter

Business-Software Platform Revenue: In this segment, company sits in middle as an agent connecting a wide range of advertisers and publishers including individual developers and large business clients to facilitate advertising and publishing of ads. Through its core and value-added software services such as Axon, MAX, Adjust, etc., company offers automated and optimized marketing, monetization, analytics, and other related services enabling mobile game app developers to successfully expand their product reach worldwide. Revenue is earned from advertisers typically on a performance and cost per install basis of which a certain percentage is shared with ad publishers based on cost per impression. Investors must note that company's software platform reaches over 478M users per day signifying its scale. This business segment contributed 27% of total revenue in Q3 2021.

Revenue Mix - Q3 2021

- Business Software Platform
- Apps Revenue

27%
73%
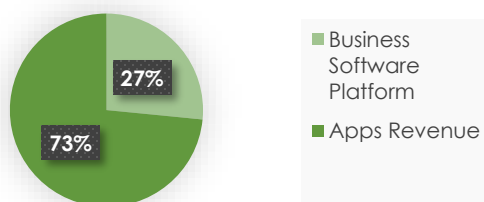
Source: Q3 2021 Shareholders' letter

LB•LOGIC While increased privacy measures around third-party user data has caused several large digital advertising agencies and ad-network operators to struggle, we believe that AppLovin is somewhat hedged against this risk considering availability of large first-party data due to company owned mobile game applications that are used by millions of users every day.

Since 2018, the company has been actively engaged in developing a large pool of first-party data and enhancing its software platform capabilities primarily through acquisitions and partnerships. In fact, it has invested over $2.5B in 26 strategic acquisitions and partnerships with app studios, games, and software platforms. In October 2021, the company agreed to acquire Twitter's MoPub business which will further augment its software platform functionalities by combining advanced ad-bidding feature of MoPub and over 1B of first-party user data. The increased reliance on first-party data has helped company partially mitigate risk related to increased user data privacy concerns.

AppLovin uses its software platform to help other gaming developers grow the reach of their mobile applications. This includes understanding of end-users i.e., game players' tastes and preferences, geography, etc. As such, company can leverage the same data to develop its own mobile game content, creating a potential conflict of interest. Having said that, the company states that it is creating its own mobile apps to make its software better rather to compete against its clients.
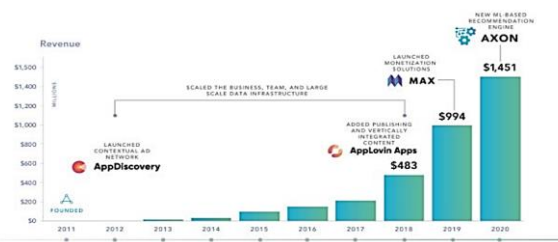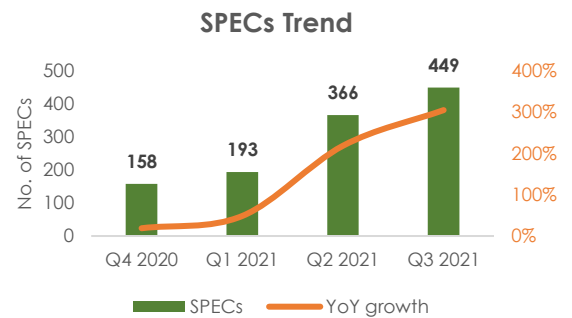
Source: Company's S-1

The company has over 8,000 customers that use its software platform. Out of 8,000 total users, majority of company's revenue is derived from enterprise clients that generate $125K per account in annual revenue. In fact, approximately 96% of total revenue was brought in by 325 enterprise clients in Q3 2021 signifying company's reliance on enterprise-scale businesses. Total number of enterprise clients grew 108% YoY from 156 in Q3 2020 to 325 in Q3 2021. Besides, company's offerings are highly sticky in nature as evidenced by the 176% net dollar-based retention rate for enterprise clients for the TTM ending Q3 2021.

Enterprise Clients Trend
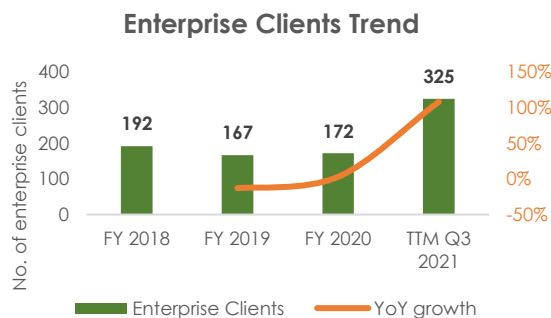
Source: Company's S-1

Segment-wise customers growth also remained robust for the company. In fact, No. of Software Platform Enterprise Customers (SPECs), or those that used company's software and contributed over $31,250 in quarterly revenue grew 305% YoY from 111 in Q3 2020 to 449 in Q3 2021. Additionally, company's existing SPECs are highly satisfied with its software as evidenced by

a 255% net dollar-based retention rate in Q3 2021. Moreover, Monthly Active Payers (MAPs), or those users that completed at least one in-app purchase also increased 93% YoY from 1.5M in Q3 2020 to 2.9M in Q3 2021 signifying increased traction among end users for company's developed mobile games.

**SPECs Trend**

Source: Company's S-1

LB•LOGIC Through acquisitions, AppLovin has emerged as a one stop solution for mobile application developers. The company offers highly integrated end-to-end software services to mobile app developers ranging from app development to monetization and analytics. This has led to a highly loyal base of customers as evidenced by over 150% of net dollar-based retention rates for enterprise clients.

As per IDC, mobile application ecosystem market was valued at $189B in FY 2020. This market is estimated to register a 4-year CAGR of 10.6% to reach $283B by FY 2024. As such, company's TTM revenue of $2.5B represents a market penetration of just 1% and an immense headroom for growth.

RECENT DEVELOPMENTS

In Q3 2021, AppLovin reported $727M in total revenue as compared to $382M in Q3 2020, translating into 90% YoY growth. Top-line improved mainly due to growth in both software platform as well as apps segment of the business. In fact, business software platform segment grew 385% YoY from $40M in Q3 2020 to $193M in Q3 2021. On an organic basis i.e., after excluding the impact of Adjust acquisition, software platform segment registered 316% YoY growth due to expanded adoption of company's App Discovery and MAX products by new third-party clients as well as existing customers. Apps segment of the business grew 56% YoY from $342M in Q3 2020 to $534M in Q3 2021 due to continuous advancement in company's owned content that provided its business clients with increased ad inventory and users with a variety of mobile games. However, there also has been a positive impact from the pandemic as consumer engagement metrics on gaming apps see a surge. Finally, this segment was negatively impacted by lower pricing of in-game ad inventory due to the adoption of increased user privacy protocols by Apple.
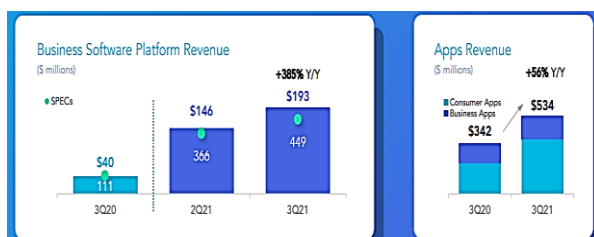
Source: Q3 2021 Shareholders' letter

Business software platform revenue also grew due to increased number of Software Platform Enterprise Clients (SPECs) as already discussed. Besides, 11% YoY growth in revenue per SPEC from $360K in Q3 2020 to $398K in Q3 2021 also had a positive impact on segment revenue. Moreover, 343% YoY growth in Total Software Transaction Value (TSTV) from $62M in Q3 2020

to $276M in Q3 2021 was a significant driver for growth in this segment. On the app side of the business, growth was largely driven by increased Monthly Active Payers (MAPs).
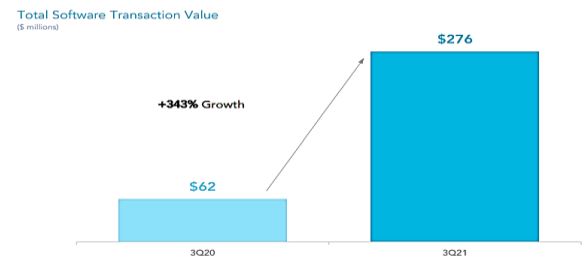

Source: Q3 2021 Shareholders' letter

The company recorded $473M in gross profit in Q3 2021 as compared to $219M in Q3 2020. On a margin basis, gross profit margin expanded 800-bps YoY from 57% in Q3 2020 to 65% in Q3 2021. Gross profit margin improved primarily due to higher cost efficiencies driven by growth in the software side of the business. Gross margin was negatively impacted by increased third-party payment processing costs due to strengthened in-app purchases.
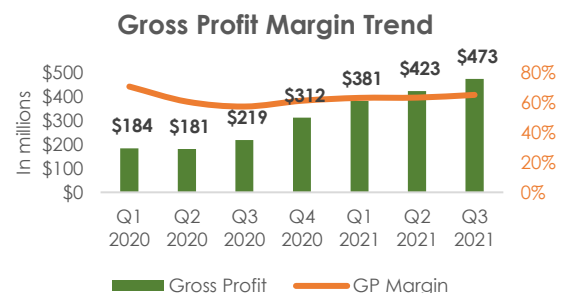
Source: Company' filings

Adjusted EBITDA increased $106M from $84M in Q3 2020 to $191M in Q3 2021. Based on percentage of revenue, adjusted EBITDA margin improved 400-bps YoY from 22% in Q3 2020 to 26% in Q3 2021 due to robust top-line growth and higher operational efficiencies.

Adj. EBITDA Margin Trend
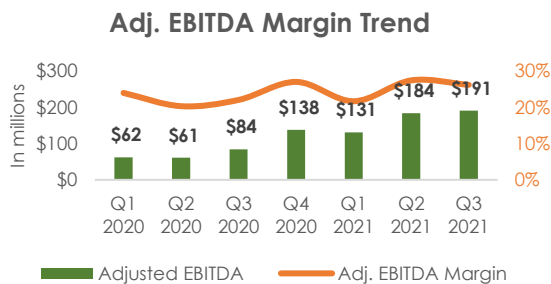
Source: Company' filings

> **LB•LOGIC** AppLovin's strong results over the last few quarters are a function of organic growth, meaningful acquisitions as well as tailwinds from the pandemic. As such, while the company operates in a growth sector and is likely to see above average growth in the future, we may see slowdown in growth momentum in the near-medium term.

The company ended Q3 2021 with $1.05B in cash and cash equivalents and $600M available from undrawn revolver. It recorded $1.7B in total long-term debt in Q3 2021 bringing its leverage ratio i.e., net debt to adjusted EBITDA ratio of 1.1x. However, the company has recently raised a new seven-year, $1.5B term loan to finance its MoPub acquisition which has caused its leverage ratio to jump above 3x drawing some concerns. That being said, company generated $377M in Cash Flow from Operations (CFO) and $376M in FCF (excluding acquisitions) on a TTM basis positioning it well to fulfill its contractual obligations on time.

COMPANY MANAGEMENT

Co-founder, Adam Foroughi has been serving as the company's CEO since its inception in 2011. He was also designated as Chairman of company's board of directors in March 2021. Prior to co-founding AppLovin, Mr. Foroughi co-founded two advertising technology companies namely Lifestreet Media Inc. and Social Hour Inc. He holds B.A. in Business Administration from the University of California, Berkeley.

Herald Chen currently serves as the President and CFO of the company. Prior to joining AppLovin in 2019, he worked for KKR, a global investment firm for over two decades serving at various senior level positions including the latest as head of technology, media, and telecom. Mr. Chen holds a B.S. in Economics (Finance) and a B.S.E. in Mechanical Engineering from the University of Pennsylvania and an M.B.A from Stanford University Graduate School of Business.

> **LB•LOGIC** We like the fact that AppLovin is a founder-led business. Besides, Adam Foroughi, Founder & CEO has sufficient skin in the game as evidenced by 7% shareholding as September 30th, 2021.

🌎 INDUSTRY AND COMPETITION

Mobile applications have undoubtedly become an integral part, assisting people in their day-to-day operations such as making purchases, monitoring health, and accessing entertainment. While use of mobile apps has proliferated, app developers find it difficult to market and monetize their apps in an extremely crowded space. In fact, as per research from SensorTower, out of over 4.8M total mobile apps available on google and apple play stores, 80% of all mobile app downloads were generated by only 1% of developers in Q3 2019 underscoring challenges that developers have to face in order to grow their app reach.
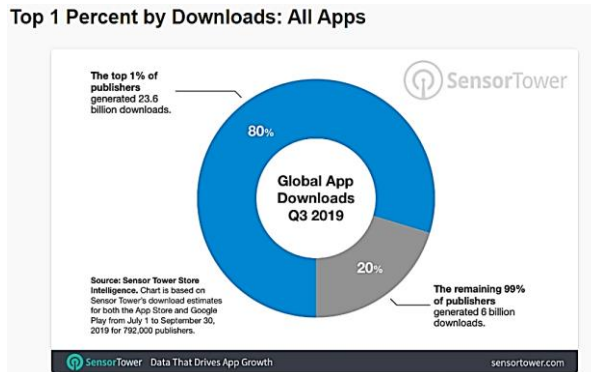
Source: SensorTower

Despite a demanding market, mobile game applications space which is one of the largest and fastest-growing subset of mobile app ecosystem presents a massive growth potential for app developers. As per IDC, there are about 2B mobile game users whereas Statista estimates that there are just over 1.3M mobile gaming apps on Google and Apple play stores signifying a massive potential for growth. Besides, monetization opportunities are also immense with mobile gaming accounting for almost 72% of all app store consumer spend in FY 2020 by value as estimated by SensorTower.

The company faces intense competition in both of its segments. In software platform segment, APP competes against some of the well-known and financially robust peers including Facebook, Google, Twitter, Unity Software, Tapjoy, ironSource, and several others. In business and consumer apps segment, it faces fierce competition from Activision Blizzard, Tencent, Zynga, as well as other public and private companies. While the company's differentiator remains its data from its own content, it is important to note that its first-party content development is still at a very nascent stage and company relies in large part on Apple and Google for publishing its apps and sourcing data. Besides, AppLovin also lags Unity software in terms of data and ad-inventory. Unity based ads reached a total of 3.3B devices as per Sekkei Studio which is significantly higher than AppLovin's devices. Additionally, in mobile hyper-casual genre market share by US installs, AppLovin was behind Tencent's acquired Voodoo which held a 28% market share between Q1 2020 to Q3 2020.

Source: SensorTower

LEFT BRAIN LENS
FIRST FOCUS
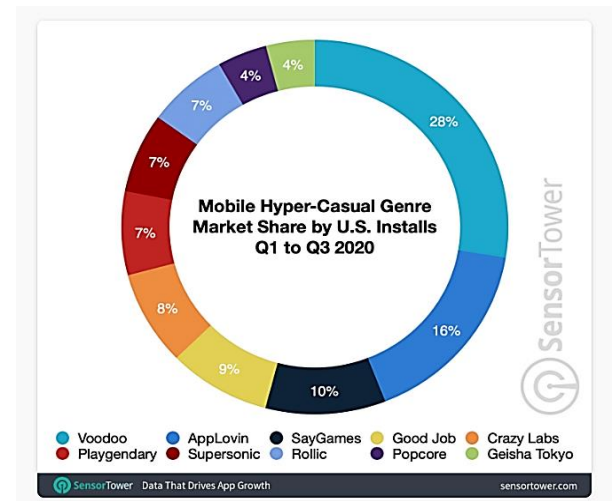
TREND ANALYSIS: VALUATION

The company went public in mid-April 2021 and priced its shares at $80. However, on the first day stock dropped by about 18% and closed at $65 per share. Since then, it has followed an upward trajectory driven by strong financials. This has led it to trade at 9.5 times its forward sales. We believe the multiple is fair considering the company is in part a software platform and in part a publisher.

Company name	Revenue Growth TTM	Revenue Growth FWD	EBITDA Margin	Price-to-Sales FWD	EV-to-Sales FWD
Unity Software Inc.	42.9%	36.9%	-41.5%	38.5X	38.8X
ironSource Ltd.	83.1%	13.7%	18.7%	14.9X	14.4X
Tencent Holdings Limited	21.0%	24.8%	33.3%	6.3X	6.6X
AppLovin Corporation	**105.7%**	**47.0%***	**20.3%**	**9.5X**	**9.7X**
Zynga Inc.	54.3%	32.8%	27.7%	2.5X	2.4X

Source: Seeking Alpha, * - Revenue FWD estimate taken from yahoo finance

CONCLUSION / RECOMMENDATION

Leveraging tailwind evolving from increased mobile applications usage and particularly growth in demand for casual mobile games and first-party data for ad-placements, AppLovin has registered strong growth. Besides, company's recent acquisitions have also enabled accelerated growth in software side of the business creating long-term margin expansion opportunities. While addressable market remains large, intense competition from much more scaled businesses is a cause of concern. Additionally, at current valuation, some of the robust trends have already been priced in. Therefore, we assign a "YELLOW LIGHT" rating to AppLovin Corporation (APP).

Stock Chart for AppLovin Corporation (APP)

Left Brain®
INVESTMENT RESEARCH
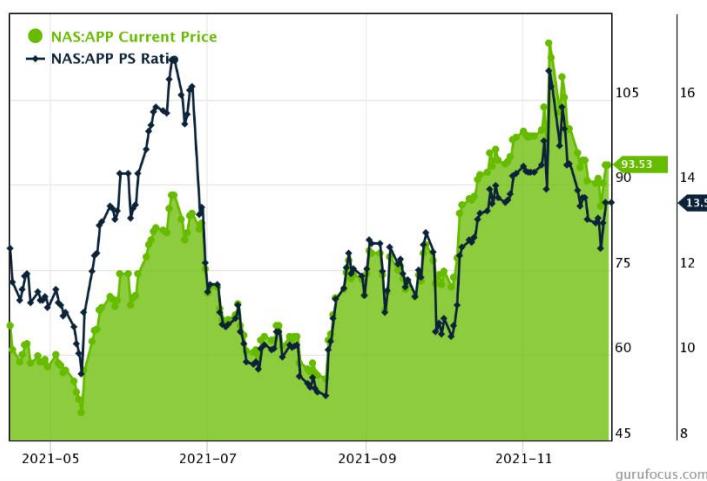
Performance Data

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
RETURN ON INVESTED CAPITAL (%)	-	-	-	-	39.1%	14.6%
GROSS MARGIN (%)	-	-	-	88.9%	75.7%	61.7%
ADJ. EBITDA (MILLIONS USD)	-	-	-	255.6	301.4	407.5
YoY EBITDA Growth (%)	-	-	-	-	17.9%	35.2%
REVENUE (MILLIONS USD)	-	-	-	483.4	994.1	1451.1
YoY Revenue Growth (%)	-	-	-	-	105.7%	46.0%

Valuation Data

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
SHARE PRICE (USD)	-	-	-	-	-	-
SHARES OUTSTANDING (MILLIONS)	-	-	-	-	-	-
MARKET CAP (MILLIONS USD)	-	-	-	-	-	-
PRICE/SALES RATIO	-	-	-	-	-	-

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