Integration of PRI Guidelines

JAN 2020:

The Trade Desk

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Executive Summary

The Trade Desk (TTD) is a demand-side advertising platform (DSP) that gives ad buyers access to 4.7 million ads every second across multiple media sources. The integrated, cloud-based platform equips advertisement buyers to create, manage and optimise more expressive, data-driven digital advertising campaigns across various advertisement formats. These include but are not limited to display, video, audio, native and social media on computers, mobile devices, wearables and other devices. The platform's integration with major data, inventory and publisher partners extends ad buyers reach and enhances decisioning capabilities while the enterprise APIs allow their customers to develop on top of TTD's platform.

TTD is causing significant disruption in the advertising industry because of its focus on data privacy. In gathering consumer data, TTD insists on de-identification. They know a person's age, gender, location, and buying habits but it doesn't know who they are. This is in stark contrast to Facebook and Google whose business model is inherently ingrained in personal identification.

TTD is also a market leader in match rates, the percentage of users that a DSP recognises within a given audience. That targeting ability is giving consumers less ads that are more relevant to them. Advertisers are now pulling stock from Facebook and Google and placing with TTD for the very reason that it eliminates privacy risk and has industry-leading targeting.

In completing our analysis, we found little evidence of ESG reporting. While the company is strong fundamentally and has a promising business model that aligns with major global ESG trends, we found:

- No information on the ESG initiatives on either the Company's website or their Annual Report.
- No Environmental Policy to mitigate any environmental impact the business' operations might have.

However, TTD does present good alignment with ESG factors, even if it doesn't report it. Our analysis found fundamental business strategy alignment with:

- Central value proposition of de-identifying consumer data addresses one of the most prominent social issues of today, data privacy.
- Access to content on the fastest growing media channels including Connected TV (CTV) and streaming.
- Through their partnership with White Ops, TTD became the first advertising platform to block fraudulent impressions before they are purchased, transforming the programmatic advertising industry.
- Expansion into two of the fastest growing geographies in the world, China and Indonesia.

- Despite heavy investment to support innovation and growth, TTD maintains a high operating margin.

We would like to see TTD commence formal ESG reporting, however, our analysis, in the absence of that reporting, uncovers strong ESG alignment both now and with expected changes in the future. We hold our valuation at its current level and our ESG analysis strengthens our conviction in this company.

Strategy

This section focuses on ESG issues emanating from communications around the company's strategy of exploiting opportunities and managing risks. The rise of shareholder activism, public and media attention on corporate responsibility, and increasingly informed consumers requires companies to actively consider and manage ESG risks in order to successfully execute on their given strategy. We think in terms of fundamental company strategy.

HIGH LEVEL ESG RECOGNITION

How does the company act as a positive force for environmental concerns?

A list of significant issues that relate to maintaining and creating sustainable environmental outcomes. Examples include sustainable power use, reduction and reuse of water, sustainable end of product life considerations, and pollution mitigation during manufacturing processes.

- TTD operates a digital platform. It isn't involved in manufacturing and production of goods. No significant raw materials are consumed by the company.
- They have a 'Code of Conduct and Ethics' which requires the company to comply with applicable governmental laws, rules and regulations. Given its nature of business, the company is unlikely to contravene any environmental laws, rules and regulations.

How does the company <u>not</u> act as a positive force for the environment?

This is a list of material outcomes that result in the company detracting from a sustainable environment and include examples opposite of those mentioned above.

- There is no information about the company's efforts in this direction either in their Annual Report or its websites. There isn't much information on the measures the company has taken or intends to take in the future.
- The company does not have an established environmental policy to mitigate any environmental impact the business operations might have.
- Trade Desk relies on third-party co-location providers for their data centres, and are dependent on them to provide uninterrupted power, cooling, internet connectivity and physical and technological security for their servers. There's no information to suggest the company insists on the most energy efficient products from their third parties.
- There's also no information to suggest the company uses solar power or energy efficient products at its various offices.
- Business travel will contribute to pollution.

How does the company act as a positive force for social concerns?

Here we focus on sustainable outcomes for people. Does this company act for the betterment of *individuals and society? These are broad ranging issues and topics, but some examples include improving mental health, providing engaging workplaces and appropriate remuneration, improving financial outcomes for customers, improving learnings outcomes, improving general health outcomes for customers, increasing access, and allowing human expression at a higher level.*

- By complying with local laws and regulations.
- Terms and conditions prohibit inventory suppliers from including, promoting or depicting obscene or pornographic material, illegal products or services, gambling, discrimination based on race, sex, creed, national origin, religious affiliation, physical disability, sexual orientation or language and deceptive or libelous consent. The advertisements should not violate and applicable law, rule, regulation or governmental guidelines or infringe any their party rights including but not limited to intellectual property rights or distribute or contain viruses or other malware.
- The company complies with the Digital Trading Standards Group (DTSG) Good Practice Principles.
- It protects technology and intellectual property and respects laws and regulations around intellectual property, trade secrets, copyright and trademark in the US and abroad.
- It uses contracts, confidentiality procedures, non-disclosure agreements, employee disclosure and invention assignment agreements to protect intellectual property.
- Complies with privacy and data protection legislation and regulation.
- The company does not use data to identify specific individuals, and it does not seek to associate data with information that can be used to identify specific individuals. Steps are taken not to collect or store personally identifiable information. This has changed the internet in the consumer's favor and has become a major source of competitive advantage over Google and Facebook.
- Operates a transparent platform that shows clients their costs of advertising inventory, data, platform fee and detailed performance metrics on the clients' advertising campaigns.
- They do not compete with advertising agencies and refrain from directly servicing advertisers who have a relationship with one of their advertising agency clients.
- They do not arbitrage advertising inventory. Advertising inventory is not bought to be resold to clients at a profit.
- The company has a Code of Conduct and Ethics which promotes:
  - Honest and ethical conduct, including fair dealing and the ethical handling of actual or apparent conflicts of interest;
  - Full, fair, accurate, timely and understandable disclosures;
  - Compliance with applicable governmental laws, rules and regulations;
  - Prompt internal reporting of any violations of law or the Code;
  - Accountability for adherence to the Code, including fair process by which to determine violations;
  - Consistent enforcement of the Code, including clear and objective standards for compliance; and
  - Protection for persons reporting any such questionable behavior.
- The company also has an Audit Committee Charter which oversees the accounting and financial reporting processes of the Company and the audits of the financial statements of the Company.
- Trade Desk have a Compensation Committee Charter to oversee the discharge of the responsibilities of the Board relating to compensation of the Company's executive officers and directors. The CEO's compensation is reviewed annually and recommends to the board changes regarding the CEO's compensation.
- Through their partnership with White Ops, TTD became the first advertising platform to block fraudulent impressions before they are purchased.

How does the company not act as a positive force for social concerns?

Here we consider how the company meaningfully detract from the betterment of the individual and society over the long-term. For a business model to be successful it must act as a force for good. Items in this list are a real concern for us. Some examples include business models that serve to disconnect people from physical socialisation, are detrimental to physical health, or that disempower employees.

- The company has a digital advertising platform. Advertisements placed using its platform may induce viewers to purchase items which they wouldn't have otherwise.
- The company collects consumer data. In the past government regulators and privacy advocates have advocated for a 'Do Not Track' standard that would allow internet users to express a preference, independent of cookie settings in their browser, not to have their online browsing activities tracked. While efforts in this direction have largely gone dormant lately, this issue could arise again.
- Data may be used for the purposes it wasn't intended.

How does the company act as a positive force for governance concerns?

Good corporate governance is essential to long-term performance. Here we look at the structures of committees and oversight, and remuneration policy and its links to fundamental performance. High-level, meaningful issues are listed here.

- TTD has won numerous awards for the best employer. Though there is no information about the remuneration, it can be deduced it will at least be competitive, if not above market.
- The company is subject to anti-bribery, anti-corruption and similar laws and non-compliance with such laws. They adopt policies and procedures and conduct training about the same.
- The company and its suppliers regularly conduct quality assurance checks to prevent frauds.
- Through sound financial management.

How does the company not act as a positive force for governance concerns?

Examples of points that might go here include appropriate remuneration both in terms of total amount and or incorrect alignment of incentives. We also look at the strength of the board and power of the CEO to influence governance. Another significant area is the appropriateness of response by management and the board to environmental and social issues as they arise.

- It does not provide any data about its ESG initiatives.
- They have two clients each representing more than 10% of their gross billings in 2018, and three in 2017 and 2016. However, the nature of the industry is that few, large institutions account for the bulk of advertising spend and so we would naturally see concentration in TTD clients.

What external ESG factors affect the company?

This includes domestic and international government policy, market competition forces, and micro and macroeconomic drivers.

- Media is becoming digital and artificial intelligence will continue to play an important role in digital advertising making it dynamic, targeted and its effect quantifiable. Increasing amounts of data will be sifted through to provide insights, predict outcomes and suggest next best actions.
- Audience fragmentation is accelerating. This has impacted TV content distribution the most and changed how TV advertising is monetised.
- Programmatic advertising will continue to increase the value of impressions for advertisers and inventory owners. Viewers would receive more relevant ads.
- The General Data Protection Regulation (GDPR) has proved to be beneficial. Fears of it being detrimental have been allayed. Regulations around seeking consent and protecting the privacy of user data have resulted in cleaner and more reliable data. This means lesser targets but more relevant and interested ones.

- Stricter regulations around cookies and data in general may limit digital advertising or its effectiveness.
- Digital Out of Home (DOOH) is an integrated 'home to out-of-home' programmatic advertising approach which will deliver a more seamless experience to customers. Integration between DOOH and the use of mobile locational data will drive conversions to the offline world.
- Emergence of new technology like wearables and in-home smart devices will allow for more content to be delivered, providing more advertising opportunities.
- Personalisation will remain critical as advertisers will provide more relevant content to consumers.
- Convergence of TV and the internet and 5G - The shift from linear TV to CTV with the convergence of internet and television programming will provide new opportunities for content owners to connect with consumers.
- Automation of ad buying – the growing complexity of digital advertising has increased the need for automation. Using programmatic inventory buying tools, advertisers can automate their campaigns, providing them with better price discovery, on an impression-by-impression basis. Advertisers can purchase advertising inventory they value the most.
- Privacy and data protection legislation and regulation play a significant role in digital advertising business.
- Collection of data, augmenting, analysing, using and sharing data collected through cookies and similar technologies is governed by US and foreign laws and regulations which change from time to time, especially in regards to level of consumer notice and consent required before employing cookies or other electronic tools to collect data.
- In the U.S. both federal and state legislation govern activities such as the collection and use of data, and privacy in advertising. The technology industry has frequently been subject to review by the Federal Trade Commission (FTC) or the FTC, U.S. Congress, and individual states. Much of the federal oversight on digital advertising in the U.S. currently comes from the FTC, which has primarily relied upon Section 5 of the Federal Trade Commission Act, which prohibits companies from engaging in "unfair" or "deceptive" trade practices, including alleged violations of representations concerning privacy protections and acts that allegedly violate individuals' privacy interests.
- Increasing consumer concern over data privacy in recent years.
- In the European Union (including the European Economic Area, or EEA, including countries of Iceland, Liechtenstein and Norway), or EU, separate laws and regulations (and member states' implementations thereof) govern the protection of consumers and of electronic communications, and these laws and regulations continue to evolve.
- Additionally in the EU, EU Directive 2002/58/EC (as amended by Directive 2009/136/EC), commonly referred to as the Cookie Directive, directs EU member states to ensure that accessing information on an internet user's computer, such as through a cookie and other similar technologies, is allowed only if the internet user has been informed about such access, and provided consent. A replacement for the Cookie Directive is currently under discussion by EU member states to complement and bring electronic communication services in line with the GDPR and force a harmonised approach across EU member states.
- In the past, government regulators and privacy advocates advocated vigorously for a 'Do Not Track' standard that would allow internet users to express a preference, independent of cookie settings in their browser, not to have their online browsing activities tracked.

How has the company demonstrated its awareness of ESG factors in the economy and within its industry?

- TTD keeps improving its digital platform enabling it to make decisions based on consumer and behavioral data.

- The Company sees an opportunity in the increased fragmentation of the audience and has the technology to use it to its advantage. The Koa artificial intelligence predictive engine helps platform users make data-driven decisions without sacrificing control or transparency. It makes recommendations for campaign optimisations based on its sophisticated analysis of rich data sets.
- TTD Media planner is an omnichannel solution designed for digital media professionals to generate, analyse, and launch data-driven, programmatic media plans. This tool analyzes the actions of existing core audiences with the data we see across the open internet to deliver a fully transparent, performance-focused, and ready-to-activate campaign.
- The GDPR has harmonised data privacy laws across the EU. TTD spends time, resources and finances to comply with various regulatory requirements across the world.
- The company is unable to determine the impact future laws, regulations and standards may have on the business.
- They understand that programmatic ad buying is an emerging market and their current and potential clients may not shift as expected to programmatic ad buying from other buying methods.

Where has management demonstrated its commitment to addressing ESG challenges?

By aligning its strategy to major ESG trends such as:

- Artificial intelligence is on the rise as media is becoming increasingly digital. Koa (artificial predictive engine) helps platform users make data-driven decisions without sacrificing control or transparency, making recommendations for campaign optimisations based on its sophisticated analysis.
- There is a general shift from Linear TV to CTV and TTD plans to invest significant resources in technology, sales and support staff related to the CTV growth initiatives.
- The GDPR is in force and has thus far proved beneficial. TTD continues to focus on increasing transparency and accountability, especially with regards to how data is used.
- Integrated 'home to out-of-home' programmatic advertising approach is increasing in popularity. TTD's data management platform supports offline to online audience mapping. Their platform target users based on real-time latitude/longitude location with hyperlocal geotargeting.
- Personalisation remains critical and provides opportunities for technology companies that can consolidate and simplify media buying options for advertisers and their agencies. TTD uses this to their advantage in soliciting more business from existing clients and winning new clients.

How has management demonstrated its knowledge on the company's ESG risks?

Examples and quotes of management addressing relevant ESG risks.

- No information available.

How does strategy align with ESG opportunities?

A broad look at how underlying strategy fits or does not fit with ESG trends. For example, a battery manufacturer aligns with the movement towards stored energy, an online retailer aligns with the movement from instore to online purchases.

- By insisting on de-identifying consumer data, TTD has addressed the major issue the advertising industry currently faces - privacy. Many advertisers now opt to use TTD over Google and Facebook to eliminate privacy risk concerns.
- Expand omnichannel capabilities - TTD will continue to invest across all channels and newer channels as they emerge, including the integration of new inventory sources within CTV, digital radio, social and native. The company believes the expanding omnichannel capabilities will further expand relationships with existing clients. Media consumption has also become extremely fragmented in recent years. By covering all channels, TTD becomes one of the

few DSPs that can give advertisers access to all these channels in the one vendor.

- Extend reach in CTV - television is the largest category of advertising spend and we believe that the future of television is in streaming media and video-on-demand through subscription services and connected devices. CTV is one of the fastest growing media segments globally.
- Continue innovation in technology and data - data is one of their key competitive advantages and the company will continue investing resources in growing their data offerings, both from third-party providers as well as their proprietary data.
- Expand international presence - They will expand outside of the United States to serve the needs of advertisers in additional geographies. They continue to invest in selected regions in Europe and Asia, in particular, China and Indonesia, two of the fastest growing geographies in the world.

Is there evidence of the company reporting highlighting future ESG risks and does the strategy allow for these anticipated risks?

No.

What is the extent of ESG performance reporting?

Low. No specific ESG information mentioned in company reporting.

Do reports link ESG factors to financial performance?

No.

What is the company's position in relation to current and potential operational licences, supply chain, and resource bottlenecks?

We must consider these constraints as they represent a significant risk to business operations. Has the company given these current and or potential bottlenecks due consideration? Can we see any concerns?

- The company has no current licences.
- The company is not dependent on any natural resources; however, they rely on access to quality advertising inventory at reasonable terms across a broad range of advertising networks and exchanges, video, CTV, audio and mobile inventory, and social media platforms. A few inventory suppliers hold a significant portion of the programmatic inventory either generally or concentrated in a channel, such as audio and social media.
- TDD also competes with companies with which they have business relationships.
- Suppliers are also not bound by long-term contracts. This means they may not always have access to a consistent supply of quality inventory on favorable terms.
- Inventory suppliers control the bidding process for the inventory they supply. This may not always work in TTD's favour.
- There are seasonal fluctuations in advertising activity.

What is the extent of management involvement of customers, employees, government, and other stakeholders? How do they gather data on their sentiment/opinion?

Considers how well management engages these parties in seeking their input and feedback on ESG issues. In the second part we consider the mechanism for how this data is gathered.

- **Customers** - The company has around 747 clients. The clients have access to TTD's platform. TTD's client service teams work closely with the clients during the onboarding process and provide continuous support throughout the early campaigns. Once the client has gained some initial experience, they move to a fully self-serve model and request support as needed. Client service teams constantly seek feedback from consumers and through the Trading Academy.
- No information on management's interaction with employees is available on the website or Annual Reports.

- **Government and regulatory agencies** - Annual Reports, Interim Reports and other public information
- **Shareholders and investors** - annual general meetings and other shareholder meetings, company website, press releases, annual reports, earnings calls and interim reports.

How responsive is the company to investor engagement?

- Management is very responsive to questions during earnings calls. The CEO is also involved in a series of videos called "In Human Terms" in which he discusses various trends in the industry and TTD's role in them.

Does the board support ESG issues?

How supportive and engaged is the board on ESG issues? Without their support it will be very hard for management to progress on ESG issues.

No information available.

Financial Reporting

INCOME STATEMENT

REVENUE

Identify the main drivers of revenue for both volume and price.

- Artificial intelligence is on the rise as media is becoming increasingly digital. Predictive engines like TTD's Koa allow for sifting through huge volumes of data in real time to find patterns, predict outcomes and suggest next best action making digital advertising more effective.
- Home-to-out of home programmatic advertising which allows for digital displays outside with the advertising content changed remotely. This will provide additional advertising opportunities for advertisement buyers.
- Newer technologies like voice-activated advertisements and wearables provide new opportunities for advertising matched with an individual's emotions captured through biometric features extraction. As the wearables market expands, more advertising opportunities will arise.
- Convergence of TV and the internet and 5G internet- a general shift from linear TV to CTV with the convergence of the internet and television programming will provide new opportunities for content owners to connect with consumers.
- High bandwidth of 5G - the fifth generational standard for wireless networks, will bring significantly faster data transfer speeds with less latency and better user experience. This will feed demand for CTV, including mobile video and offer new opportunities for content owners and advertisers to connect with consumers.
- Personalisation in advertising remains critical. It provides technology companies that can consolidate and simplify media buying options for advertisers and their agencies.
- The growing digitisation of media and fragmentation of audiences has increased the complexity of advertising, and thereby increased the need for automation in ad buying. Programmatic capabilities of platforms make it easier for advertisers to target customers.
- TTD will continue to acquire and forge partnerships with companies that will

help enhance its platform or bring in new clients increasing revenues.

- **International expansion** - many of TTD's clients serve advertisers on a global basis. Expanding their presence outside the United States, into select regions in Europe and Asia, especially China and Indonesia will provide substantial growth opportunities.
- **Omnichannel capabilities of the platform** - offering clients capabilities across all media channels and devices will enable advertisers to manage campaigns better, further strengthening relationships with existing clients.
- **Client services** - on-boarding of new clients and helping them as they continue to extend the use of TTD's platform will help increase platform usage.
- **Increased share from existing clients** - advertisers will move a greater percentage of their advertising budgets to programmatic channels providing TTD an opportunity to capture a larger share of the overall advertising spend by their existing clients. Promotion of additional services and data will also earn further revenue.
- **Acquisition of new customers** - TTD has extensive relationships with many advertising agencies and other service providers. A highly decentralised advertising industry provides opportunities for TTD to bring on board additional agencies and service providers.
- **Reputation of the platform** - TTD has a reputation for providing a superior platform. They will have to keep enhancing the capabilities of the platform without compromising on the security of data to do their reputation no harm. Data Privacy and security concerns relating to their technology and practices could harm their reputation.
- **Access to quality advertising inventory** - TTD must maintain a consistent supply of attractive advertising inventory to entice advertisers into using their platform.
- **Seasonal fluctuations** - seasonal nature of clients spend on advertising campaigns will affect advertising volumes.
- Privacy and data protection legislation and regulation plays a significant role in digital advertising. The company does not use the data to identify specific individuals nor do they seek to associate this data with information that can be used to identify specific individuals.

The definition of what data is personal or identifiable, however, varies by jurisdiction and continues to evolve. The TTD is required to comply with legislation and jurisdiction in various jurisdictions it does business in. Failure to comply with legislation and jurisdiction could adversely affect its reputation and revenues.

How do these drivers align with sustainable ESG factors?

- Artificial intelligence uncovers productivity gains and reduces waste. It allows highly relevant data to be shown to the consumer making way for less ads and more targeted ads that may be useful and insightful.
- Data capture by wearables may lead to product offerings that improve consumer health.
- CTV is bringing far more content options to consumers enriching their lives by giving them greater choice and relevance to their interests.
- Proper governance that upholds the reputation of the business strengthens client relationships and repeat business.
- By de-identifying consumer data, TTD can collect insights without harming people's right to privacy.

What are the future prospects for these drivers? Including the fundamental tailwinds that support their future growth.

- Artificial intelligence is on the rise as media becoming increasingly digital. Unprecedented options exist for advertisers to target and measure their advertising campaigns nearly every media channel and device. Artificial intelligence and machine learning help by sifting through huge volumes of data in real time to find patterns, predict outcomes and suggest next best action.

- Integrated 'home-to-out-of-home' programmatic advertising approach, which will deliver more seamless experience to customers.
- There is an increase in voice-based in-home smart devices.
- Voice-activated advertisements are going beyond in-home smart devices.
- Wearables will increase programmatic advertising by providing new insights to the advertising industry.
- There's a general shift from linear TV to CTV. Newer technologies are allowing more video content to be delivered over the internet.
- Convergence of TV and the internet and 5G internet will allow more video content to be delivered over the internet. 5G will make for faster downloads.
- Personalisation in advertising will remain critical as advertisers endeavor to provide more relevant content to consumers.
- With a fragmented audience, advertisements are being increasingly personalised.
- Data Privacy and security concerns must be allayed. GDPR has thus far proved beneficial. Cleaner data means lesser but more relevant and interested targets.
- **Ad-buying is increasingly becoming automated** - with the increasing complexity of digital advertising automation becoming inevitable. Programmatic inventory buying tools enable advertisers to automate their campaigns, providing them with better price discovery on an impression-by-impression basis allowing them to choose inventory that presents the best value.

What major risks exist in the potential of these future prospects to not become a reality?

- Not being able to purchase advertising inventory may impact TTD's margin.
- Global economic downturns may force advertisers to decrease their advertising budgets.
- Data breaches may also pose a risk to digital advertising in general and TTD in particular.
- Stricter data privacy and security regulations may prevent the use of cookies and other tracking technology. Companies like TTD process data in real time to push the right advertisements to customers. If they are unable to collect data, the advertising may not be as effective.
- Internet users may reject the use of "third-party cookies" or other tracking technology.
- The seasonal nature of the clients advertising campaigns will lead to seasonal fluctuations in revenue.

How might ESG trends impact this company's core markets?

- All offices across the world would need to adapt to the use of renewable energy.
- There is a strong demand for digital advertising.
- Strong tailwinds from social and governance trends across the industry.
- By de-identifying consumer data, TTD has allayed fears of data privacy risk.

What legislative or regulatory change is anticipated?

- There could be stricter legislation and regulation of online businesses, including privacy and data protection.
- TTD has agreed to adhere to Digital Advertising Alliance or DAA, and the Network Advertising Initiative or NAI, guidelines. These guidelines are subject to periodic updates and change.
- Digital advertising relies on the use of cookies, pixels and other similar technology, including mobile device identifiers that are provided by mobile operating systems for advertising purposes, which we refer to collectively as cookies, to collect data about

interactions with users and devices. TTD uses "third party cookies" to achieve their advertiser's targets. Laws and regulations regarding the use of third-party cookies or other tracking technology may limit the efficacy of digital advertising.

- GDPR has thus far proved beneficial but some governmental regulators and privacy advocates have vigorously advocated for a 'Do Not Track' standard that would allow internet users to express a preference, independent of cookie settings in their browser, not to have their online browsing activities tracked. Their demands may see the light of the day.

Are the company's key markets sustainable in terms of resource use and disposal?

- They don't use any natural resources as they aren't into manufacturing and the need for disposal doesn't arise.
- There is no data to suggest renewable energy is used at their various offices or to suggest batteries, printer toners and carton boxes are gathered and returned to recycling collectors.

Are the company's key markets sustainable in terms of consumer preferences and social trends?

Yes.

- One of the major social issues of today, privacy, is addressed by de-identifying consumer data.
- The use of artificial intelligence is on the rise as media is becoming increasingly digital. Artificial intelligence and machine learning are helping by sifting through huge volumes of data in real time to find patterns, predict outcomes and suggest next best actions.
- Integrated 'home-to-out-of-home' programmatic advertising is gaining traction and will continue delivering a seamless experience to customers.
- Voice-based in-home smart devices and voice-activated advertisements are on the rise.
- Wearables too, show an increase and provide new insights to programmatic advertisers.
- A shift from linear TV to CTV along with the convergence of TV, internet and 5G will allow for video streaming at faster speeds over the internet. This augurs well for digital advertising.
- A fragmented audience makes for a perfect case for digital advertising, where advertisements can be personalised and the right audience can be targeted.
- GDPR continues to be beneficial. Cleaner data means lesser but more relevant and interested targets.
- Growing complexity of digital advertising provides ideal fodder for automation. Programmatic inventory buying tools enable advertisers to automate their advertising campaigns and have better price discovery on an impression-by-impression basis.

COSTS

RAW MATERIALS

Consider the scarcity of main inputs and whether supply chain risks are appropriately managed. Is it possible that the company is paying more for sustainable products, which will increase immediate costs but reduce future costs associated with changing supplier or of supply being restricted?

Access to materials can be a key determinant of company earnings, depending on the industry. We assess access to materials by evaluating the strength of stakeholder relationships with, for example, suppliers, host governments, local communities, and contractors.

Are raw materials scarce?

No.

Are operations energy intensive?

No.

Are employees sufficiently motivated in the context of peers and management?

Their business and culture are anchored in four core principles:

1. No company can affect global change without passionate forward-thinking people as both employees and clients.
2. By preserving an honest and transparent culture and avoiding client conflicts, we can exert exponentially less effort to grow our business.
3. We have committed to our clients and employees that we will never stop innovating.
4. "Being profitable and changing the world can co-exist and is more likely to happen when striving for both simultaneously" - TTD Annual Report 2018.

Although there's nothing on their website or Annual Reports on employee turnover, the numerous awards listed below are suggestive of Trade Desk being a good employer.

- Named in Crain's New York Business 2014 Best Places to Work in.
- Named one of Outside Magazine's Best Places to Work 2014.
- Named in Crain's New York Business 2015 Best Places to Work in.
- Ranked Number 9 in Outside Magazine's Best Places to Work 2015.
- Ranked 7 on Entrepreneur Magazine's Inaugural Top Company Cultures List.
- Named in Crain's New York Business 2016 Best Places to Work in.
- Ranked 11th on Fortune's List of 100 Best Medium Workplaces in 2017.
- Honored as 2017 Best Place to Work - A Glassdoor Employees' Choice Award.
- Ranked 2nd on Fortune's Best Medium Size Business to work for in 2018.

Is there a risk input costs will rise?

Yes. Investment in R&D and platform technology is expected to increase.

Is the company aware of these risks?

Yes.

Do cost projections take into account these risks?

Unknown.

TABLE 1: GROSS INCOME AS A PORTION OF REVENUE

Company	FY18	FY17	FY16
TTD	76.10%	78.50%	80.40%
Alphabet Inc	56.50%	58.90%	60.80%
Verizon	44.52%	45.64%	46.54%

Gross income as a portion of revenue. Source: Factset.

Table 1 shows that Gross income for TTD has slightly decreased over the last 3 years. TTD have attributed this decrease to an increase in platform operations and technology development costs to enhance product features. They anticipate these costs to continue increasing in the foreseeable future. The gross income as a portion of revenue compares well to that of its peers despite the company being a high growth company.

LABOUR

Labour costs can account for most operating costs and careful management is required to maintain competitive advantage. Employees will consider the reputation of a company in evaluating job prospects. Company profile includes its management of social and environmental responsibilities and companies will struggle to maintain competitive advantage if talented graduates choose not to work for them. Labour efficiency is a consideration and achieved through higher productivity or lower costs and both are often achieved through non-monetary benefits. We also look at staff turnover and look at staff training spend as a percentage of gross profit. Be sure to consider the context as to the business model and extent of technology use.

In assessing a company's efficiency in labour and spend on R&D, we use these metrics as a portion of gross income. We use gross income instead of revenue as gross income are funds available for these investments. If we use revenue, then a company could be running at a loss compared to its profitable competitor and still spend a similar portion. However, it would not be as sustainable as its competitor as it did not use cash flow generated from its own activities for these expenses.

Labour is measured in gross income above and in general and administrative expenses below.

TABLE 2. PORTION OF GENERAL AND ADMINISTRATIVE EXPENSE OF GROSS INCOME

Company	FY18	FY17	FY16
TTD	23.39%	24.15%	19.72%
Alphabet Inc	10.05%	10.49%	12.80%
Verizon	Not Available	Not Available	Not Available

Table 2. General and Administrative expense as a portion of gross income. Source: Factset.

Table 2 shows TTD's general and administrative increase as a portion of gross income from FY16 to FY17 and decrease slightly from FY17 to FY18. The increase in general and administrative expense was due to increases of $25.2 million in personnel costs, including $6.9 million of stock-based compensation, and $2.7 million in allocated facilities cost, partially offset by $2.2 million decrease in bad debt expense.

NOTE: We were unable to separate the general and administrative expenses for Verizon from the overall sales, general and administrative expense.

R&D INVESTMENT

In many industries R&D drives a company's ability to exploit ESG trends. We analyse R&D spend as a portion of gross income in order to gauge commitment to R&D and technological differentiation.

TABLE 3. R&D SPEND AS A PORTION OF GROSS INCOME AND TOTAL (USD BILLIONS).

Company	FY18	FY17	FY16
TTD	23.1% ($83.89)	21.82% ($52.81)	16.75% ($27.31)
Alphabet Inc	27.67% ($21,420)	25.41% ($16,630)	25.54% ($13,950)
Verizon	Not available	Not available	Not available

Table 3. Investment in R&D as a portion of gross income and total in millions of USD. Source Factset.

Table 3 shows TTD's R&D spend increasing as a portion of its gross income over the last three years as it continues to improve the omni-channel capabilities of its platform. This compares well with Alphabet's R&D spend which, although slightly higher, has remained fairly consistent as a percentage of gross income over the years.

NOTE: The R&D spend figures for Verizon are not available.

What is the product development strategy? What is the percentage of sales from new products?

- They aim to refresh the platform weekly and operate in a transparent manner with total accountability.
- They will continue to develop additional features and functions while investing further in business automation.
- TTD will continue investment in business process automation.
- There will be an increase in technology and development expense.

TTD's only product is its platform. They generate revenue by charging their clients a platform fee based on percentage of a client's total spend on advertising. They also provide data and other value-added services and platform features.

What are the pending patent applications and is there in-house venture capital?

- There are no patents or patent applications held by Trade Desk. They believe their proprietary technology is best protected by keeping the technology architecture, trade secrets, and engineering roadmap private. They believe their platform is difficult, expensive and time-consuming to replicate.
- No in-house venture capital.

NON-RECURRING AND EXCEPTIONAL EXPENSES

Analysis of the company's exposure to risks such as litigation or weather events to quantify the threat to future earnings.

What are the organisational and incentive structures?

- The company issues shares as per the 2016 Incentive Award Plan.
- The stock options granted under the company's stock incentive plans generally vest over four years subject to the holder's continued service through the vesting date and expire no later than 10 years from the date of grant.
- Restricted stock awards generally vest over four years, subject to the holder's continued service through the vesting date.
- There is no information available regarding the incentive structure other than the aforementioned points.

What is the extent of stakeholder research?

Extensive. Annual Reports, Quarterly Reports, annual general meetings, earnings calls, company website, CEO web videos.

What is the company doing to mitigate ESG risks in regards to costs?

- They have invested in Unified ID. More than half of all header bidding auctions are completed using their Unified ID technology.
- The company has expended significant resources to develop the platform, invested in their engineering team and improving the availability and security of their platform.

Does the company report on these risks?

Yes.

What is the company's capacity to sustain or improve operating efficiency?

As seen in Table 4 below, TTD's margins compare favorably with its peers. Margins may decrease slightly as the company continues its growth.

TABLE 4. OPERATING MARGIN.

Company	FY18	FY17	FY16
TTD	22.50%	23.00%	28.34%
Alphabet Inc	23.00%	26.20%	25.80%
Verizon	22.90%	21.00%	20.60%

Table 4. EBIT/Revenue. Source: Factset.

TABLE 5. CEO REMUNERATION FY2018

Company & Market Val	Base Salary	Cash Bonus	Option Award	Stock Award	Other	TOTAL
Trade Desk ($12,941M)	$800,000	$2,083,958	$3,862,830	$3,862,390	$173,074	$10,782,252
Alphabet Inc ver ($992,947M)	$650,000	$0	$0	$0	$1,231,066	$1,881,066
Verizon ($244,631M)	$1,235,385	$3,752,250	$0	$16,600,082	$618,369	$22,206,086

Table 5. CEO remuneration compared to peers. Source: www1.salary.com.

As can be seen in Table 5 above, TTD's CEO's compensation is very competitive. The CEO Jeff Green is one of the two founders and a key employee of the company.

Growth in Shares Outstanding

Diluted shares outstanding have grown at a modest rate of 3.57% over the past 5 years.

BALANCE SHEET

ASSETS

Some balance sheet assets are easily measured and audited while others, such as intangible assets, are harder to gauge. ESG analysis helps us to provide a greater degree of certainty in relation to the fair value of some assets, e.g., the impact of energy efficiency standards on property values and the effect that changing consumer perceptions, or regulations, related to sustainability will have on the sale of inventory. ESG performance, such as employee engagement, environmental efficiency, and community investment, can indicate a company's commitment to its reputation and brand, and human capital. Integrating ESG factors highlights these issues.

What percentage of total assets are intangible assets?

TABLE 6. INTANGIBLE ASSETS AS A PORTION OF TOTAL ASSETS.

Company	FY18	FY17	FY16
TTD	0.72%	0.55%	0.52%
Google	8.60%	9.80%	11.80%
Criteo	26.90%	21.74%	21.79%

Table 6. Intangible assets as a portion of total assets comparison to peers. Source: Factset.

Intangible assets as a portion of total assets has remained stable and quite low as shown in relation to competitors in Table 6 above. This is an indication of sound financial governance as ballooning intangible assets may indicate acquisitions and a lack of organic growth or misallocation of operating expenses.

What are the environmental provisions and are they sufficient versus the company's historical costs and those of its peers?

No data regarding any environmental provisions provided.

Do notes to the balance sheet recognise environmental risks to physical assets?

No.

Do notes to the balance sheet or management discussion recognise ESG risks to reputation?

Yes.

What percentage of total assets are intangible assets? To what extent do brand, reputation, human capital, management quality, and intellectual property compromise intangible capital?

Refer table 6 above.

How strong is the company brand?

Very strong and getting stronger.

What is the strength of customer satisfaction and loyalty?

High.

Does the company have pricing power?

- TTD has a usage-based pricing model.
- The platform fee is a percentage of their purchases through their platform, like a commission.
- They operate in a highly competitive and challenging industry. New technologies and the influx of new entrants to the market present a dynamic and competitive challenge as participants offer new products and services.
- The platform fee must be competitive or TTD risks losing clients to competitors.

How are employees incentivised and what is the degree of engagement and staff loyalty?

What level of autonomy do employees have?

- No data provided

Are there flat or hierarchical structures in place?

- No data provided

How is the company recruiting talented graduates?

- No data provided.

What is the structure (relevant committees) and diversity of the non-executive board?

- Audit Committee:
  - David B. Wells (Chairperson).
  - Kathryn E. Falberg.
  - Thomas Falk.
- Nominating and Corporate Governance Committee:
  - Kathryn E. Falberg (Chairperson).
  - Gokul Rajaram.
  - Eric B. Paley.
- Compensation Committee:
  - Kathryn E. Falberg (Chairperson).
  - Gokul Rajaram.
  - David B. Wells.

How dynamic and committed is executive management?

Very dynamic and committed.

Are pension assets being managed by ESG aware practitioners?

No data.

LIABILITIES

Most examples more appropriately included in the cost analysis section. However, we consider these points below.

Are liabilities short or long-term? An ability to negotiate long-term debt agreements can signal a trusted relationship and lender confidence.

No debt.

How efficiently is working capital managed?

- DSO has remained nearly the same from 642.3 in 2014 to 640.6 in 2018.
- DSI - Not applicable as they have no inventory.
- DSP has increased from 1694.23 in 2014 to 2140.42 in 2018.

DSO has remained high. It was higher in the preceding years but has moved back to 2014 levels. The advertising agencies do not pay TTD until they receive payment from the advertiser resulting in an increased length of time between payment for media inventory and receipt of payment for the use of their platform. Also, many of the contracts stipulate that the advertising agency is not liable to TTD if the advertiser does not pay the advertiser.

How reliable are relationships with suppliers and customers?

- Clients consist of purchasers of programmatic advertising inventory and data. They consist primarily of advertising agencies or groups within advertising agencies that have independent relationships with TTD. Clients sign Master Service Agreements (MSAs) with TTD. MSAs give users constant access to the TTD platform but do not have any material commitments on behalf of the clients to purchase ad inventory, data or other features. The MSAs typically have one-year terms that renew automatically for additional one-year periods unless earlier terminated. A retention of over 95% in 2016, 2017 and 2018 is reflective of high client loyalty.
- TTD is an important business client to suppliers of programmatic advertising inventory and data as they are one of the largest sources of buy-side demand within the digital advertising industry. The relationship with suppliers remains strong.

What is the extent of off-balance sheet commitments?

No off-balance sheet commitments.

Is excessive leverage eroding stakeholder trust and raising the cost of equity?

No.

Do debt covenants specify any aspects of ESG risk management?

No debt.

CASH FLOW STATEMENT

Adjustments to sales, earnings and costs completed in the previous section impact directly on cash flow. To flesh this out further, we investigate how ESG factors can impact cash flows regarding operating expenses, working capital management, asset maintenance, and capital costs.

Cash Flow From Operations

Earnings quality: If CFFO is significantly less than net income then the income statement may have been manipulated in order to improve headline figures such as EBIT and net income growth. Earnings quality and transparency can indicate ethical and efficient business conduct.

TABLE 7. CASH FLOW FROM OPERATIONS (CFFO) AND NET INCOME (MILLIONS USD).

Metric	FY18	FY17	FY16
CFFO	189.08	136.67	49.10
Net Income	128.83	84.17	50.76

Table 7. CFFO and net income. Source: Factset.

The CFFO has increased from $75.03m in FY16 to $86.32m in FY18 while the net income has risen from $20.48m to $88.14m over the same period as shown in table 7 above. A higher CFFO than net income is indicative of good earnings quality and transparency.

Are operating expenses being reduced by investment in new resource-efficient technology?

No information found directly relating to investment in resource efficiency.

Is capital expenditure covering asset depreciation?

Yes.

Does capex investment in operational and resource efficiency today reduce the need for capex in the future and therefore point towards improvements in free cash flows?

The capital expenditure is likely to increase as the company continues to grow. There is no evidence to suggest capex in operation and resource efficiency today will reduce the need for capex in the future.

Does due diligence on acquisition targets cover long-term ESG risks? Is there a risk that inadequate ESG due diligence results in greater than expected environmental liabilities post-acquisition?

Non-applicable.

Are there favourable long-term debt facilities that indicate a good relationship with lenders? What are the available borrowing costs? Could the company qualify for a lower rate if it improved its management of ESG risks, specifically in the case of project finance?

Non-applicable.

Valuation

Looking over the factors highlighted through the analysis above, how should the cash-flow projections be altered or what margin of safety do we require to be comfortable to make a purchase?

Considering the ESG factors and industry trends which are mainly tailwinds for TTD, we believe the company is on a sustainable growth path. We'd like to see more efforts by the company to reduce its ecological footprint and more reporting on any such initiatives. We don't believe any adjustment is required to future cash flows based on our ESG analysis and, in fact, this analysis strengthens our confidence in the future of the company.

Who is Blue Oceans Capital?

Fundamental, value based investments.

Blue Oceans Capital is an investment fund driven to achieve exceptional results with meaningful purpose through dedication to uncovering truth and applying our understanding of what is known and not what is forecasted. We invest in listed equities across the globe.

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