

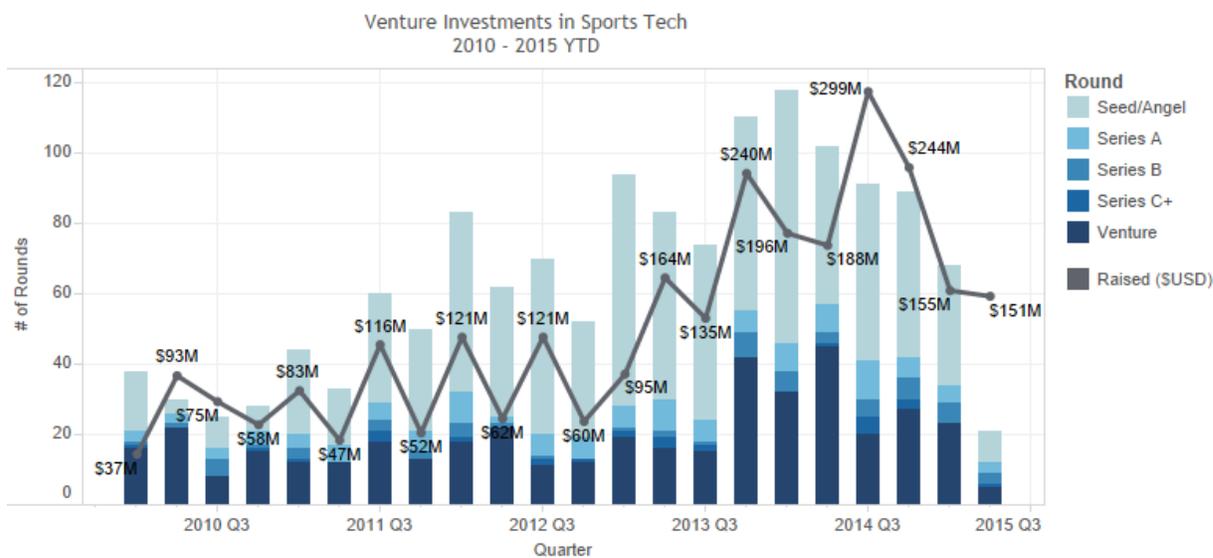
RESEARCH NOTE

FROM: David Gordon, Kapil Desai

SUBJECT: Sports Technology Research Note

The Sports Technology industry (or “Sports Tech”) focuses on technology products and services for sports players, teams, organizations and fans. Sports Tech represents the intersection of sports, technology and entertainment. This broad category includes everything from fan engagement, to eSports, to stadium technology, to athlete training and everything in between. This industry has attracted significant investment and attention from investors, and the following research note outlines the sectors, market dynamics and themes that represent a compelling opportunity for future investments.

Over \$3 billion has been invested globally in Sports Tech since 2010, with \$927 million and \$1.3 billion invested in 2014 and 2015, respectively. The vast majority of these deals are occurring at the Seed / Angel and Series A rounds.



Source: TechCrunch.

MARKET OVERVIEW

Sports Tech products and services can largely be categorized by the level of competition they serve: (i) professional (e.g., **Fanatics**), (ii) collegiate (e.g., **IMG College**) and (iii) youth and amateur (e.g., **GameChanger**). The scope of this research note includes the following sub-verticals, segmented across the aforementioned categories: Content & Media, Fantasy Sports, eSports, Commerce & Licensing, Venue, Event & Fan Management, Training & Team Management and Data & Analytics.

MARKET OPPORTUNITY

The market opportunity for sports is robust and has staying power. An October 2015 PwC report on North American sports estimates a \$60.5 billion addressable market in 2014 that will grow at a 4.0% CAGR to \$73.5 billion in 2019. These figures include:

- Gate revenues – Primary market ticket sales for live sporting events
- Media rights – Broadcast rights to sports events across mediums (broadcast and cable TV, TV networks, TV stations, terrestrial radio, satellite radio, Internet and mobile devices)
- Sponsorship – Fees paid to have a brand associated with a team, league, facility or event, including naming and category rights
- Merchandising – Sales of licensed products with team and league logos, player likenesses and other intellectual property

North America sports market by segment											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	CAGR
<i>US\$ millions</i>											
Gate revenues	16,176	16,116	15,821	17,372	17,707	18,251	18,637	19,385	19,717	20,122	2.6%
Media rights	9,423	10,858	11,743	12,262	14,595	16,366	18,427	19,150	19,949	20,630	7.2%
Sponsorship	11,820	12,615	13,257	13,900	14,689	15,309	16,140	16,822	17,635	18,306	4.5%
Merchandising	12,571	12,482	12,771	13,144	13,493	13,672	13,861	14,042	14,252	14,464	1.4%
Total	49,990	52,071	53,592	56,678	60,484	63,598	67,065	69,399	71,553	73,522	4.0%
<i>% change year on year</i>											
Gate revenues		-0.4%	-1.8%	9.8%	1.9%	3.1%	2.1%	4.0%	1.7%	2.1%	
Media rights		15.2%	8.1%	4.4%	19.0%	12.1%	12.6%	3.9%	4.2%	3.4%	
Sponsorship		6.7%	5.1%	4.9%	5.7%	4.2%	5.4%	4.2%	4.8%	3.8%	
Merchandising		-0.7%	2.3%	2.9%	2.7%	1.3%	1.4%	1.3%	1.5%	1.5%	
Total		4.2%	2.9%	5.8%	6.7%	5.1%	5.5%	3.5%	3.1%	2.8%	
CAGR: Compound annual growth rate						Source: PwC Sports Outlook (October 2015)					

Sports Tech expands the traditional sports market opportunity, especially as consumers desire new ways and mediums to access and engage with sports. We organize the following market opportunities by sub-vertical to align with the Sports Tech market map:

- **Content & Media**
 - Sports related media rights are projected to grow at a 7.2% CAGR, from \$14.6 billion in 2014 to \$20.6 billion in 2019.
 - TV is being disrupted by digital.
 - Traditionally, TV generates revenue for sports leagues and franchises as they sell the sporting event broadcast rights to networks, who in turn sell commercial space for profits.
 - However, the old TV model is being impacted by digital, as consumers increasingly demand multi-platform access to content.
 - À la carte and streaming media offerings now allow consumers to purchase specific content (e.g., media rights for a single game or season package for a specific team).
 - **MLB Advanced Media (BAM)** is an early pioneer in this space, providing live streaming infrastructure support for customers such as the MLB, HBO Now and the WWE.

- In 2015, the MLB's At Bat mobile app streamed (video and audio) 8.4 billion minutes of live games, representing 53% of the aggregate minutes consumed in the official apps of all U.S. sports leagues.
 - BAM is projected to eclipse \$1 billion in revenue in 2016.
 - Twitter recently won the right to live stream Thursday Night Football games from the NFL.
 - Though it was not the highest bid, the NFL liked Twitter's reach and demographics as well as how the platform complemented broadcasts.
 - The streaming rights are in addition to the NFL's existing deals with mobile provider, Verizon, and broadcasters, CBS and NBC.
 - Sports and sports-related content is highly engaging.
 - According to Ryan Moore of Accomplice, 60% of Twitter traffic is sports-related.
 - Sports content is able to command very significant audiences, which in turn equate to valuable companies.
 - Even with the attractiveness of sports content, publishers are wrestling with how to adapt to the platforms era (e.g., Facebook, Twitter).
 - Need for original content continues to increase as readers are increasingly likely to come across content in their congested social feeds, disconnected from the publisher's own site.
 - **Bleacher Report**, which was acquired by Turner Broadcasting in 2012 for ~\$175 million, specializes in creating and curating content about trending sports topics, with an emphasis on delivering opinion-oriented analysis.
 - Recently armed with an additional \$100 million investment from Turner, Bleacher is planning to hire 20 platform content creators towards a goal of a 35-person social content team focused on creating original content for distribution on platforms like Facebook, Instagram, Vine and Snapchat.
 - **Fantasy Sports**
 - Estimated \$26 billion total fantasy sports spending in 2015, based on Fantasy Sports Trade Association (FSTA) estimate of \$465 annual spend per player.
 - Traditional Fantasy Sports – Season-long game, where participants assemble virtual teams of real players of a professional sport
 - Yahoo, ESPN and CBSSports all provide freemium traditional fantasy sports offerings.
 - Daily Fantasy Sports (DFS) – Accelerated variant of traditional fantasy sports played across shorter periods of time (e.g., single week or day)
 - Typically played as contests subject to an entry fee, which funds an advertised prize pool that is partially raked-off as revenue for the service (generally ~10% of the entry pool)
 - **FanDuel** and **DraftKings** dominate the DFS market with over 90% of the market.
 - Materials – Premium content, applications and other materials to assist with both DFS and traditional fantasy sports
 - **Rotowire** provides premium, real-time fantasy sports content and tools.

Fantasy sports players' spending (over 12-month period)		
	2015	2012
Daily Fantasy Sports	\$257	\$5
Traditional Fantasy Sports	\$162	\$60
Materials	\$46	\$15

- Number of people playing fantasy sports in the U.S. and Canada has grown significantly over the years, accelerating in 2015 with ~37% year-over-year growth.

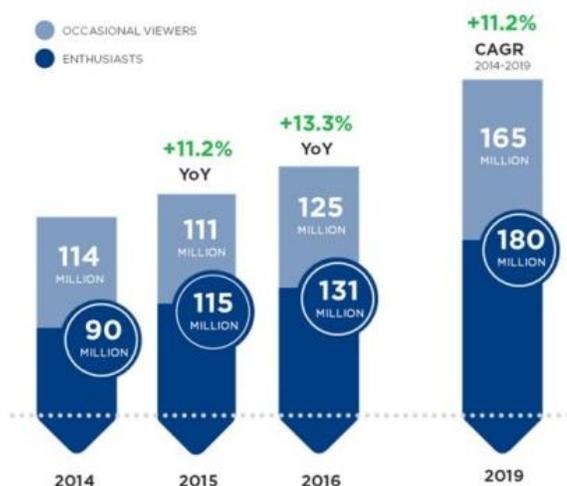
Number of fantasy sports players by year	
Year	Estimated Number of Players
1988	500,000
1991-1994	1 - 3 Million
2003	15.2 Million
2004	13.5 Million
2005	12.6 Million
2006	18 Million
2007	19.4 Million
2008	29.9 Million
2009	28.4 Million
2010	32 Million
2011	35.9 Million
2014	41.5 Million
2015	56.8 Million

- Fantasy sports fans are considered an ideal demographic for advertisers and by extension the sports leagues.
 - Fans are younger and more affluent than non-participants and they watch sports live and watch more games, since their players can be on different teams.
- According to Eilers & Krejcik, the DFS market will grow entry fees at a ~41% CAGR to \$14.4 billion in 2020.
 - In 2015, FanDuel and DraftKings collected \$1.8 billion and \$1.2 billion in entry fees, respectively, of which they raked \$174 million and \$106 million (this compares to \$57 million and \$40 million raked in 2014).
 - Despite these impressive numbers, both companies had large operating losses – Eilers & Krejcik estimated FanDuel lost ~\$137 million and DraftKings lost ~\$280 million in 2015.
 - This is largely due to the high sales and marketing expenses required to acquire and re-acquire players.
 - For example, from January 1 – October 5 in 2015, FanDuel and DraftKings spent \$75 million and \$131 million, respectively, on television ads.
 - To support this aggressive spend, FanDuel and DraftKings have raised \$361 million and \$445 million, respectively.
 - The DFS market is currently navigating a difficult regulatory environment as states (e.g., New York) are challenging the exemption of the industry under the Unlawful Internet Gambling Enforcement Act of 2006 (UIGEA).

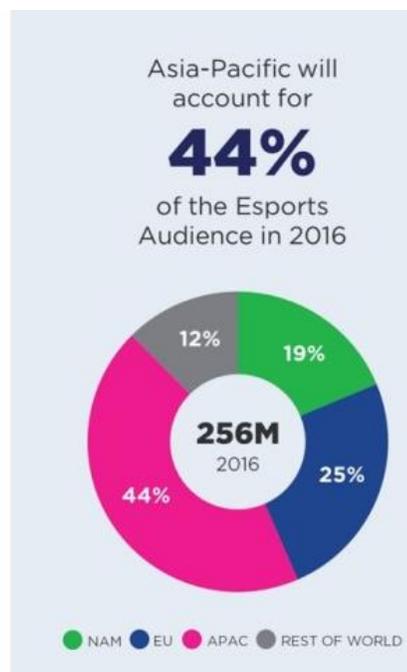
- **eSports**
 - eSports is a form of sports where participants play video games in live competition with others.
 - Mostly commonly, eSports take the form of organized, multiplayer video game competitions (e.g., League of Legends, Counter-Strike, StarCraft, Call of Duty).
 - **Twitch**, which Amazon acquired in September 2014 for \$970 million, is a leading video platform and community for gamers.
 - Global eSports market is expected to grow at a 35% CAGR, from \$325 million in 2015 to \$1.1 billion by 2019.
 - eSports revenue is generated from merchandise sales, event tickets, sponsorships, online advertising and media rights; these figures do not include gambling on eSports.
 - Of the \$463 million estimated global eSports Revenue, \$175 million (~38%) and \$106 million (~23%) will come from North America and China / Korea, respectively.
 - In 2016, the audience for eSports is projected to grow to 131 million enthusiast viewers plus another 125 million occasional viewers who tune in for the larger international events.

ESPORTS AUDIENCE GROWTH

GLOBAL | FOR 2014, 2015, 2016, 2019



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- eSports has an attractive audience demographic, skewing towards consumers with full-time jobs and higher incomes (75% are millennials aged 18-34 and 82% are male).
 - Average annual revenue per eSports enthusiast was \$2.83 in 2015 and is expected to grow to \$3.53 in 2016.

ESPORTS REVENUES PER ENTHUSIAST

GROWTH SCENARIOS & COMPARISON TO SPORTS | 2012-2020



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VS SPORTS

\$54

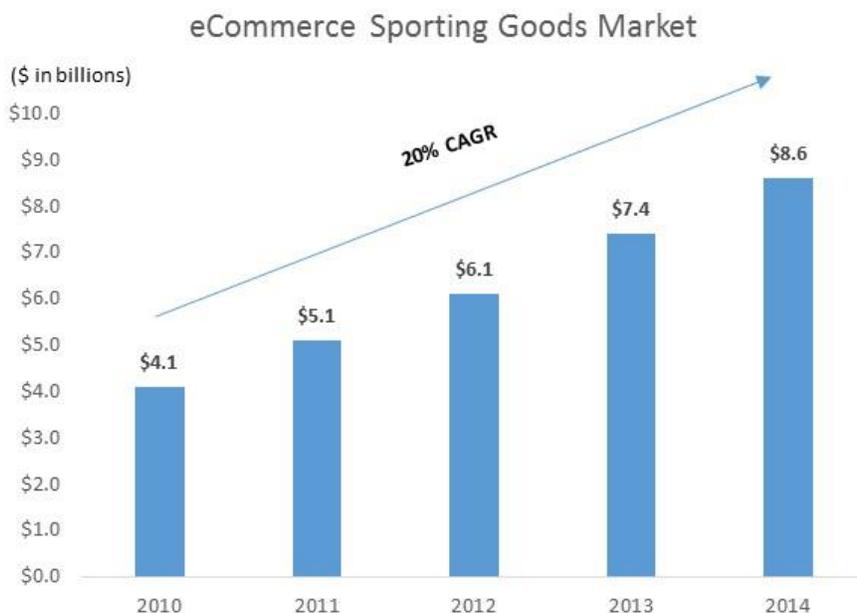
The average annual revenue per fan in 2015 for all traditional sports

\$15

The average annual revenue per fan in 2015 for basketball

- Interest in mobile eSports will accelerate in 2016 and beyond, largely driven by Asia-Pacific (APAC) consumers.
 - **Skillz** operates a cross-platform multiplayer system for real-money mobile eSports.
- According to Newzoo, over 470 million gamers watch online gaming content on a regular basis and that number will surpass 500 million viewers later in 2016.
 - Accounts for 56% of all gamers across North America, Latin America, Europe and APAC.
 - While Twitch dominates the live-streaming market, **YouTube Gaming** is the premier destination for recorded-and-edited gaming clips and is making a push into live streaming as well.
 - Approximately 50% of gamers in the U.S. watch gaming videos regularly on YouTube Gaming versus about 21% who watch on Twitch.
 - Both Twitch and YouTube are owned by well-capitalized companies (Amazon and Google) and look to continue their dominance in the online gaming content market.
- **Commerce & Licensing**
 - Licensed merchandise revenue is projected to grow at a 1.4% CAGR, from \$13.5 billion in 2014 to \$14.5 billion in 2019.
 - This segment remains a relatively saturated market and growth will be dependent on economic conditions and innovation in sales models and distribution methods.
 - **Fanatics** operates more than 300 online and offline stores, including the eCommerce business for all major North American professional sports leagues (NFL, MLB, NBA, NHL, NASCAR, PGA), major media brands (NBC Sports, CBS Sports, FOX Sports) and more than 150 collegiate and professional team properties.

- Technology offers growth potential through customized promotions, direct-to-consumer web, social media, rewards programs, in-venue mobile payments, in-seat ordering and delivery and real-time inventory production.
- Sporting Goods eCommerce market grew at a 20% CAGR, from \$4.1 billion in 2010 to \$8.6 billion in 2014.



Source: Internet Retailer 2014 edition.

- **The Clymb** is a private member network for dedicated outdoor enthusiasts, athletes and professionals that offers member pricing on sought-after outdoor brands.
- Aggregating licensing rights is a lucrative business, especially at the collegiate level.
 - **Learfield Sports** is a leader in collegiate sports marketing, managing the multimedia and sponsorship rights for over 120 collegiate programs.
- **Venue, Event & Fan Management**
 - The cost of live attendance is starting to price out the average fan.
 - The rising cost of an in-stadium experience coupled with the widespread adoption of HD television has led to many fans opting to watch live games at home, rather than paying a large amount to view them live.
 - The Fan Cost Index (FCI) is designed to estimate what a family of four would pay to experience a live, in-stadium sporting event.
 - 2014 average FCI for the North American “Big 4” professional sports leagues: MLB (\$212.46), NBA (\$326.60), NHL (\$359.17) and NFL (\$459.65)
 - Even with the rising cost of attendance dissuading some fans, gate revenues are still projected to grow at a 2.6% CAGR, from \$17.7 billion in 2014 to \$20.1 billion in 2019.
 - Growth in gate revenues is driven by ongoing industry initiatives to help offset any potential volume loss (e.g., further innovation of seat concepts, price structures, ticket policies, amenity packages).
 - Teams are focused on creating more engaging live experiences.

- **Sport Ngin** offers a complete suite of easy-to-use tools that help sports organizations manage, connect and communicate with a diverse range of stakeholders (e.g., athletes, parents, administrators, coaches).
- **TeamSnap** offers web and smartphone apps to assist youth, recreational and competitive sports with registration, scheduling, communication and coordination.

- **Data & Analytics**
 - Sports analytics market is expected to grow at a 68% CAGR, from \$125 million in 2014 to \$4.7 billion in 2021.
 - Significant growth is being driven by the proliferation of smartphones and social media in conjunction with broader cloud computing penetration.
 - Value of sports analytics largely resides in its insights and predictive capabilities.
 - For professional teams, these abilities will allow teams to improve their probability of success (e.g., optimize player fits under a salary cap, identify draft prospects with similar characteristics to successful players).
 - **Second Spectrum** creates products that combine cutting-edge design with spatiotemporal pattern recognition, machine learning and computer vision to enable the next generation of sports insights and experiences.
 - For fans, there is increasing demand for stats and analytics tools, supported by the increasing popularity of fantasy sports.
 - **Opta** (acquired by Perform Group) provides data that enhances and illuminates every area of sports, from live broadcasts and online coverage to professional performance analysis.
 - **Statmuse** has developed an artificial intelligence (AI) platform to help sports fans explore data using simple, natural language.

INVESTMENT THEMES

- **Content & Media** – As discussed in greater detail in [Catalyst’s Online Content Research note](#), we are interested in sports-focused online media & content businesses that effectively and repeatedly attract, maintain and monetize an audience.
- We are interested in both the content-creating, digital-first media businesses and also the underlying digital infrastructure companies that help support the aggregation and distribution of content.
 - Online media companies that produce engaging content for an enthusiast audience (e.g., **The Player’s Tribune**, which provides unique insight into the daily sports conversation through first-person stories directly from athletes). Truly interesting companies are those that use technology innovation in analytics to optimize what content is produced, how it is packaged, when and to whom it is served and its placement on the site. Many of these companies are evidenced by a strong social following and top viewership metrics (e.g., time on site).
 - Digital infrastructure companies that can deliver scalability and reliability for live games, events, scores, stats, shows and more (e.g., **SportsLabs**, which provides a platform that can integrate with any data source and reliably deliver full digital sports and media experiences to any device or platform). As fans continue to consume sports content in new ways, sports entities, rights holders and other organizations working across sports and digital media will need to be flexible in how they deliver and monetize content.
- **Training & Team Management** – We are interested in training & team management companies because they are similar to the SaaS and marketplace models with which we are familiar, while also providing exposure to the youth and amateur sports industry’s shift from offline to online.
 - Team management companies (e.g., **Korrio**) allow youth and amateur sports organizations to move past dated pen and paper methods of websites, rosters, spreadsheets, emails and contact lists to a single, integrated system that streamlines all the time-consuming tasks that surround sports (e.g., website and hosting, registration and payments, financials and reports, team formation and rosters, schedules and calendars and communications).
 - Training enablement platforms use software and analytics to help improve player and team performance. For example, **Krossover** provides full-service game film analysis, comprehensive statistics and streamlined sharing tools to help teams improve their own performance, learn about upcoming opponents and assess potential free agents and draft picks.
- In addition to the aforementioned two themes, we are also interested in opportunistically reviewing investments in the **Venue, Event & Fan Management** space. Specifically, we are interested in companies in the sports and entertainment CRM space that provide a centralized system for information critical to managing fan and client relationships (e.g., **Kore Software**).