The Student List Business

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1 Executive Summary

TEXT TEXT

2 Introduction

On February 21, 2020, represented by counsel, we issued a public records request to a public research university (herein "Stonewall University") seeking information about "student list" purchases. Student lists contain the contact information of prospective students that meet the criteria (e.g., test score range, zip codes) specified in an order. Sometimes referred to as "names," student lists are the fundamental input for recruiting campaigns, which target individual prospects by mail, email, text, and on social media. Our records request sought (A) "order summary" – which lists the criteria specified – and (B) de-identified student list data for each student list purchase made by the university over the prior four years.

On April 27, 2020, Stonewall University responded to our request, "The university has a substantial and proprietary interest in maintaining the confidentiality of the documents you have requested. Accordingly, with the exception of the attached slide, the records requested will not be produced." The slide, titled "2016-2020 Name Purchases by Source," indicated that Stonewall University purchased about 816,000 names in 2016, including about 517,000 from College Board and 246,000 from ACT. In 2020 Stonewall University purchased about 1,251,000 names, including about 648,000 from College Board and 220,000.

Curiously, the footer of the attached slide read "©EAB Global, Inc." We learned that EAB, an education consulting firm known for enrollment management, purchases student lists on behalf of Stonewall University. This became a barrier to our records request. Stonewall University General Counsel stated, on 12/7/2020, that "while [Stonewall University] indeed purchases student lists, the University does not actually have physical possession of such lists" and, on 1/27/2021, that "this is because [Stonewall University] does not receive anything directly from College Board or from ACT or other list sources. Rather, EAB, on [Stonewall's] behalf, places the order, receives the data, and then [Stonewall University] is billed directly for it." Later, we asked Stonewall University to ask EAB to produce the records but we were told on 8/13/2021 that "EAB also doesn't have or keep these materials." As of December, 2021 – following X months of emails, conference calls, and officious letters on firm letterhead

– we have not received the requested order summaries or student lists. An interesting aside, the Vice President for Enrollment management came to Stonewall University after working as an enrollment consultant for EAB.

Our request to Stonewall University is part of a larger project – funded by the *Joyce Foundation* and the *Kresge Foundation* and in partnership with the *Lawyers' Committee for Civil Rights* and the pro bono offices of four law firms – that issued public records requests to XX universities in five states in order to collect quantifiable data about student list purchases (and also off-campus recruiting visits). Each request is a protracted negotiation, often several negotiations.

We began this project on the heels of a project that used web-scraping and public records requests to collect data about off-recruiting visits made by public research universities (Han, Jaquette, & Salazar, 2019). Most universities in our sample made fewer in-state than out-of-state visits and these out-of-state visits focused on affluent, predominantly white high schools, but a few universities did a "good" job of visiting schools across their state and without evidence of racial or socioeconomic bias. We initially approached the student list data collection with a similar focus on identifying which universities do a "good" vs. "bad" job of reaching out to their surrounding community. However, we made two realizations that helped us see that the focus should be on the student list products themselves and on the organizations that sell student list data.

First, while universities choose which names to purchase, these choices are structured by what the product allows. Moving beyond choices by individual universities, systematic inequality in purchased versus excluded names is a function of (A) which prospective students are included in the underlying data base and (B) the set of filters that customers (universities) can utilize to select prospects. The dominant vendors of student list data are the testing organizations, College Board and ACT. Prospective students who do not take College Board or ACT assessments are excluded from the underlying student list databases. Filters on College Board and ACT student list products encourage customers to purchase prospects based on their score range in a particular assessment. Our data collection yielded many student list purchases that filtered prospects based on achieving some score on some set of AP exams. But which students attends high schools with widespread access to AP classes? Geographic filters additionally enable to customers to filter prospect based on state, county, metropolitan area, zip code. A more recent creation is filters that enable customers to select prospects based on the characteristics of their high school or their neighborhood (e.g., how many students from this school attended an out-of-state university).

[NEED A TOPIC SENTENCE THAT SAYS WHAT THIS REALIZATION IS; RIGHT NOW IT IS SORT OF TWO DIFFERENT OBSERVATIONS; IS IT SOMETHING LIKE FOR-PROFIT ENTITIES HAVE BECOME BIG PLAYERS IN THE STUDENT LIST BUSINESS?] Second, over the course of data collection we noticed that many universities outsourced student list purchases to an enrollment management consulting firm. Our records requests tended to be less successful in these cases. Following our experience with Stonewall University, we initially suspected that universities were using consulting firms as a wedge to withhold data. Over time, we realized that many universities simply did not understand what we were asking for because they had not purchased the lists themselves. EAB, an

organization previously unknown to us, was the name that popped up most often, so we decided to learn more.

The EAB origin story begins in 1983, when Bill Royall founded Royall & Company to provide direct marketing and fundraising for political campaigns. Royall & Company did not sign its first university client until 19XX, but buy 1995 universities became the primary focus. In 2015, the Advisory Board Company acquired Royall & Company for $850 million ("The Advisory Board Co (ABCO) to Acquire Royall & Company in $850M Cash, Stock Deal," 2014). In 2017, Vista Equity Partners acquired the Royall & Company business for $1.5 billion and renamed it EAB. Under Vista Equity Partners, EAB has utilized acquisitions (e.g., Cappex college search engines) and alliances (e.g., Naviance software used by high school students) to become a substantial supplier of student list data. Like College Board and ACT, EAB controls proprietary student list data. But whereas any university can buy names from College Board and ACT, only EAB clients have access to the names controlled by EAB.

2.1 The Effects of Student Lists

What is the effect of student lists on college access outcomes for students? Howell, Hurwitz, Mabel, & Smith (2021) analyzed the college access outcomes of SAT test-takers who graduated from high school between 2015-2018. When registering for any College Board exam, students are given the opportunity to opt-in to the College Board Student Search Service, which enables universities to purchase their contact information. Howell, Hurwitz, Mabel, & Smith (2021) merged the database of SAT test-takers to college enrollment data from the National Student Clearinghouse in order to assess whether the college access outcomes of students who opted in to Student Search differed from those who opted out, controlling for covariates such as gender/sex, race/ethnicity, parental education, SAT score, and the high school they attended.

After controlling for covariates, 58.0% of students who participated in Search attended any college compared to 50.2% of students who opted out of Search, representing a 15.5% relative increase in the probability of college enrollment ((58-50.2)/50.2=15.5). 41.1% of students who participated in Search attended a 4-year college compared to 32.8% of students who opted out, representing a 25.3% relative increase in the probability of attending a 4-year college. Furthermore, change in the relative probability of attending a four-year college associated with opting in to Search out was higher for students who identified as Black (24.5%), Hispanic (34.4%), American Indian or Alaska Native (AI/AN) (23.8%), and Native Hawaian or Pacific Islander (26.1%) than it was for students who identified as White (21.6%) or Asian (15.2%). Similarly, change in the relative probability of attending a four-year college was higher for students whose parents did not attend college (40.6%), and students whose parents had some college but no BA (30.1%), than it was for students whose parents had a BA (18.9%).

Howell, Hurwitz, Mabel, & Smith (2021) also analyzed the four-year BA completion rates of SAT test takers from the 2015 and 2016 high school graduation cohorts. 20.6% of students who participated in Search obtained a BA compared to 15.7% of students who opted out,

representing a 31.2% relative increase in the probability of obtaining a BA within four years ((20.6-15.7)/15.7=31.2). Additionally, this relative increase in the probability of obtaining a BA was higher for Black, Hispanic, and AI/AN students than it was for White and Asian students and higher for first-generation students than for students whose parents had a BA.

In a separate study, J. Smith, Howell, & Hurwitz (2021) employ a clever natural experiment strategy to estimate the causal effect of a university buying a particular name on the probability the student will attend that university. The design strategy is based on the fact that when universities make a student list purchase, they can set an upper limit on the number of names they buy. When the number of prospects that satisfy the filter criteria – let's say 15,000 names – exceeds this upper limit – let's say 10,000 names, the university would receive a random subset of 10,000 names from the 15,000 names that satisfied the filter criteria. These conditions create a natural experiment. J. Smith, Howell, & Hurwitz (2021) found that students were significantly more likely to apply a college that licensed their name and to enroll in a college that licensed their name compared to a college that did not license their name. The effect sizes are large in terms of relative change (e.g., 23% for "apply") but they are tiny in terms of percentage point change (e.g., 0.1 percentage point for "apply"), perhabs because a given name may be purchased by dozens of universities. The effect sizes are also larger for first-generation students, low-income students, and students who identify with a historcially underserved racial/ethnic group.

Although the authors are current or former College Board employees, the Research division of College Board has a long track record of high quality empirical research. Therefore, we believe the findings from these studies are credible.

2.2 Why Should Policymakers Care About Student Lists?

Why should policymakers care about the student list business? Universities expend substantial portion of their recruiting budget on student lists each year because buying names is the primary way universities identify the set of prospective students who will receive subsequent targeted recruiting interventions (Noel-Levitz, 2020a, 2020b). With the exception of prospects who contact universities on their own, names that a university does not purchase will not be recruited by the university. Drawing from research by Howell, Hurwitz, Mabel, & Smith (2021) and J. Smith, Howell, & Hurwitz (2021), student lists affect college access outcomes and degree completion outcomes of millions of students. Furthermore, findings indicate that the effects are larger for low-income students, first-generaton students, and students from racial and ethnic groups that have been historically under-served by higher education.

However, our analysis of the student list industry suggests that students from underrepresented populations are the ones most likely to be excluded from student list purchases. Furthermore, this systematic exclusion is not merely a function of individual university preferences. Rather, it is substantially a function of the student list products themselves, particularly who is included in the underlying databases and how the products enable to filter prospective students based on criteria that are highly correlated with race and income.

We believe that the student list business is an equality of opportunity issue because the processes that determine which names are purchased by which universities have consequences for student enrollment opportunities. Many universities hire enrollment management consulting firms to develop and implement recruiting campaigns, including student list purchases. Consulting firms are not primarily motivated by equality of opportunity; rather, they are charged with meeting university enrollment goals. University enrollment goals are often concerned about the racial and socioeconomic composition of the student body, but these concerns are different from the idea that every talented, hard-working student should have equal opportunity to attend a high-quality university.

In contrast to enrollment management consulting firms and individual universities, policymakers have a clear responsibility to the goal of equality of opportunity. Therefore, we believe that the policy community and the research community must take an interest in the student list business. The student list business is an opaque and increasingly dynamic market that is understood by a small number of insiders. As outsiders, a definitive analysis is beyond our capabilities. Our task is the initial analysis that begins the conversation.

This report is divided into four substantive sections. First, "Student List Basics" describes .....TEXT. Second, "Student List Market Dynamics," discusses recent dynamics in the marketplace for student data, focusing on data generation processes and associated student list vendors, the growing role of acquisitions, and the blurring of boundaries between student list vendors and enrollment management consulting. Third, "regulating the student list busines," XXXXTEXTXXXX, with a focus on regulating product attributes that contribute to systematic inequality in who is targeted and on the trend towards exclusive ownership of data about prospects. Fourth, "replacing the student list business," develops the contours for a "public option" student list product that would be free to universities and would overcome equality of opportunity concerns of the current system.

3 Student List Basics

The student list business is a match-making intermediary that connects universities to prospective students. What problem does the student list business solve and for who?

Universities must enroll students in order to survive. Beyond survival, universities want to maximize some set of enrollment goals (e.g., tuition revenue, academic profile, racial diversity, selectivity), while also meeting the needs of various campus constituencies (e.g., the college of engineering needs majors and the marching band needs players) (Stevens, 2007). Universities cannot realize these goals solely from prospects who find the university on their own, so they must find desirable prospects who can be convinced to enroll. The problem is, universities don't who these prospects are, where they are, or how to contact them. The student list business overcomes the problem faced by universities, providing the contact information (e.g., mailing address, email address, cell phone) of prospects who satisfy criteria specified by the university. From the perspective of students who want to attend a university, students face the problems of not knowing all their options and not knowing which universities are interested in them. The student list business can help overcome this

problem by enabling interested universities to contact prospective students. In practice, however, the student list business is responsive to the problems faced by universities because universities purchase student lists.

This section describes how the student list business works, focusing on the basic College Board and ACT student list products that have dominated the market for decades. First, we situate the student list business by comparing how other industries use lists to identify customers and by differentiating list-based leads from behavioral-based leads (e.g., ads that appear on a Google search results). Next, we situate student lists within the broader process of recruiting students in the higher education industry. Finally, we describe how student lists are purchased, what data they contain, and how student lists are utilized.

3.1 Situating the Student List Business

3.1.1 List-Based Leads

The student list business is based on the direct mail business model. Therefore, when considering why certain prospective students receive certain marketing material from certain universities, it useful to ask yourself, why did I receive that student loan refinancing offer from SoFi or that catalog from Pottery Barn? Once you begin purchasing products from a company, they learn a lot about you – your contact information, your preferences, etc. – and can develop campaigns that target to your tastes. Before you make that initial purchase, companies must buy lists that contain your contact information and indicators of your customer preferences.

Singer (1988) described the U.S. names business in the 1980s. List data are produced from many sources, including company sales records and small businesses that compile original lists. For example, Fred Woolf List Company – a husband and wife team – are "list manufacturers." Mr. Woolfe said,

> Every year we collect hundreds of directories – industrial, manufacturing and Government publications and yellow page directories from around the country. We tap other sources, such as buying privately published directories - of, for instance, high school and college coaches. The more data you have on a name, the more salable it becomes.(Singer, 1988, para. 25)

"List-management" companies are wholesalers who manage lists owned by their clients. David Florence, founder of Direct Media, said " 'Companies give us the exclusive right to manage their lists, which are a byproduct of main businesses. The revenues they generate by renting out their lists is found money' "(Singer, 1988, para. 10). Finally, "list brokers" buy or rent lists from list management companies and sell them to companies looking for customers.

The market described by Singer (1988) is similar to "Chegg Cloud" student list business promoted in 2015:

> Chegg has partnered with 18 of the top college search websites and mobile apps to aggregate student data and requests for information, and connect those students to the institutions they request information from"[pg 5; CHEGG 2015 SOCIAL ADMISSIONS REPORT].

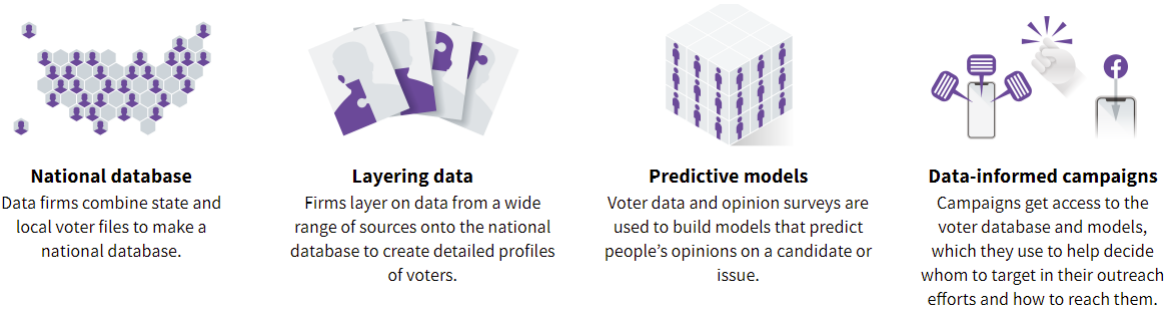
In this business model, college search engines produce student list data when prospects voluntarily enter the data in exchange for information about best-match universities and scholarships. Chegg plays the roles of list-wholesaler – buying names from list produces – and the role of list broker – selling lists to individual universities looking for customers. By contrast, the student list businesses of College Board and ACT contain fewer intermediaries. The testing agencies produce list data as a byproduct of their assessment products and sell lists directly to universities looking for customers.

The names business in political campaigns also offers a useful comparison. Like the student list business, the political names business is based on the direct mail model (Perlstein, 2020). Richard Viguerie is considered the modern pioneer of political direct mail. He founded the "Richard A. Viguerie Company, Inc" in 1965 after copying the contact information of all 12,500 donors that had given over $50 to Goldwater's 1964 presidential campaign. [maybe a sentence about how Viguerie acquired lists]. Perlstein credits Viguerie as "the guy who figured out that the bigger the mailing list you had and the more terrifying the letters you sent to this mailing list about how liberals were going to, you know, end Western civilization as we know it, the better youcould do for politicians." (Davies, 2020, p. 25:22).

The link between political direct marketing and higher education marketing is most clearly represented by the career of Bill Royall, founder of Royall and Company, which later became EAB. After graduating from college in 1972, Royall became a republican political operative, serving as a campaign manager and press secretary for Virginia Governor John Dalton and as Executive Director of the Virginia Republican Party (Jump, 2020). In 1983 he founded Royall & Company to provide direct marketing and fundraising for political campaigns. Royall & Company did not sign its first university client until 19XX, but buy 1995 higher education bacame its primary focus.

Culliford (2020) depicts how contemporary US political parties create and utilize voter databases, highlighting four sequential steps, depicted in Figure 1 [REQUEST PERMISSION FROM REUTERS]. First, "data firms" create a national database by cobbling together public voter files created by state and local governments. Second, data firms "layer on data from a wide range of sources onto the national database to create detailed profiles of voters" (Culliford, 2020, para. 6). For example, "political data firms buy data from companies like Experian or Acxiom, which can include real estate property records, estimated income levels, consumer purchasing patterns" (Culliford, 2020, para. 15). Third, after layering data, predictive models are developed to predict the opinions and behavior of prospective voters. Fourth, the database and predictive models are used to inform campaign decisions. Both the Republican National Committee (RNC) and Democratic National Committee (RNC) have developed processes by which these data can be shared with campaigns and outside political organizations.

Figure 1: National voter database



3.1.2 Behavioral-Based Leads

Advances in digital technology have yielded behavioral-based targeting, which is both an alternative and a complement to list-based targeting. List-based marketing proceeds in two sequential steps, first, obtaining contact information and, second, serving marketing material via this contact information. Most ads we see on websites and social media are served based on a behavioral based strategy. In behavioral based targeting, users of a platform are served advertisements based on their user profile – which includes prior user behavior – while they are on the platform. For example, a Google Search elicits organic results and paid Google Ads. Alternatively, users of a platform are served advertisements when they visit a website that partners with the platform. For example, Google users are served display ads when they visit websites that are part of the Google Display Network. In contrast to list-based targeting, lead identification and serving ads occurs simultaneously, and without necessarily knowing the contact information fo prospects. However, Google Ads enable advertisements to target users based on geographic location and based on audience "segments," defined as

> groups of people with specific interests, intents, and demographic information, as estimated by Google... For example, these segments could include fans of sport and travel, people shopping for cars, or specific people that have visited your website or app. Google Ads will show ads to people who are likely in the selected categories("About audience targeting," n.d., para. 9) (https://support.google.com/google-ads/answer/2497941?hl=en#)

[QUESTIONS: IN PRACTICE, DOES BEHAVIORAL BASED TARGETING INCORPORATE KNOWING YOUR CONTACT INFO?]

To what extent does higher education marketing and recruiting depend on list-based versus behavioral-based identification of leads? The article "Making Your Digital Ads Count" by EAB (2018) provides insight (p.9):

> For industries outside of higher education and for non-freshman recruitment, a primary aim of digital marketing is often that of identifying a pool of potentially interested customers ... [By contrast] Where the recruitment of college-bound high school students is concerned, digital channels are less important from a

> lead-generation perspective, because the vast majority of likely candidates are already readily identifiable via testing and survey services (ACT, College Board, etc.). Digital marketing is, instead, of greatest value in further stages of the recruitment funnel, including inquiry generation and application generation.

In other words, product markets that do not have customer lists are forced to rely on behavioral-based targeting to identify leads. Behavioral-based targeting is often the primary source of leads for community colleges, for-profit colleges, and more generally for many degree programs that target working adults because most prospects do not take College Board/ACT assessments. By contrast, public and private non-profit universities can purchase customer lists of college-bound high school students from College Board and ACT. Thus, for "freshman recruitment" – the focus of this policy report – EAB (2018) argues it is more efficient to identify leads by purchasing student lists. Subsequently, purchased names are served digital ads using both "direct" targeting (e.g., Facebook allows advertisers to serve ads directly to purchased names) and "retargeting" (e.g., serving Google Display ads to "inquiries" via their IP address) approaches.

During background conversations, enrollment management consultants indicated that large, well-resourced universities often deploy a dual approach for freshmen recruitment, with the enrollment management office using list-based recruitment and the marketing department engaging in behavioral-based marketing designed to promote the brand. By contrast, smaller institutions often rely solely on list-based advertising because they lack in-house marketing operations.

3.2 The Enrollment Funnel

Figure 2 depicts the "enrollment funnel in order to situate the student list business within higher education enrollment management. The enrollment funnel is a conceptual heuristic that identifies stages in the student recruitment process – prospects, inquiries, applicants, accepted applicants, and enrolled students – and is used by the enrollment management industry to inform interventions that target one or more stages."Prospects" are "all the potential students you would want to attract to your institution" (Campbell, 2017). We define "leads" as prospects whose contact information has been purchased. "Inquiries" are prospects that contact your institution. Inquiries consist of two types, first, those who respond to an initial solicitation from the university (e.g., email) and, second, "student as first contact" inquiries who reach out to the university on their own, for example, by sending ACT scores to the institution, by filling out an online admissions inquiry form, or by taking a "virtual tour" that records IP addresses. Applicants consist of inquiries who apply plus "stealth applicants" who do not contact the university before applying.

INSERT FIGURE 2 ABOUT HERE

The enrollment funnel has an upside-down pyramid shape – wide at the top and narrow at the bottom – in order to convey the assumption of "melt" at each stage, for example only a subset of inquiries will apply, a subset of applicants will be accepted, and a subset of admits will enroll. Thus, if a university wants freshmen enrollment – the final stage of the funnel –

Figure 2: The enrollment funnel

to be 5,000 students, the university must first identity and target a much larger number of prospective students.

Where does the student list business fit within the enrollment funnel? Universities are tying to maximize some combination of enrollment goals (e.g., total enrollment, tuition revenue, academic profile, racial diversity, selectivity) while minimizing the recruiting cost expended to achieve these goals. Enrollment management operations require data to deliver and to inform interventions that target specific stages of the enrollment funnel. Universities identify "leads" by purchasing student lists from College Board, ACT, and other vendors. The sum of purchased leads plus student-as-first-contact inquiries (e.g., filled out an online admissions inquiry form) constitutes the set of all prospects the university has contact information for, who are eligible to receive targeted recruiting interventions from the university.

The enrollment management consultancy Ruffalo Noel Levitz publishes a series of reports about recruiting practices, based on survey responses from their clients, which tend to be public and private non-profit universities of mid-level size and mid-level status. Ruffalo Noel-Levitz (2018) asked universities to rate different "first contact" interventions (e.g., off-campus recruiting visit, website form) as sources of inquiries and enrolled students. For the median private non-profit university, student list purchases were the highest source of inquiries, accounting for 32% of inquiries and were tied with off-campus recruiting visits as the highest source of enrolled stduents, accounting for 18% of enrolled students. For the median public university, student list purchases were the highest source of inquiries, accounting for 26% of inquiries, and accounted for 14% of enrolled students, which ranked fourth after "application as first contact" (19%), campus visit (17%), and off-campus visit

(16%).

With respect to number of names purchased annually, Noel-Levitz (2020b) reported that 34% of private universities purchased less than 50,000 names, 24% purchased 50,000-100,000 names, 23% purchased 100,000-150,000 names, and 19% purchased more than 150,000 names. For public universities, 28% purchased less than 50,000 names, 44% purchased 50,000-100,000 names, 13% purchased 100,000-150,000 names, and 15% purchased more than 150,000 names. These responses, based on Ruffalo Noel Levitz clients, may not be representative of the number of names purchased by public research universities and selective private universities. For example, Belkin (2019) reported that Tulane bought about 300,000 names from College Board in 2018. [ADD ADDITIONAL EXAMPLES FROM OUR RESEARCH?]

Noel-Levitz (2020a) reports the percentage of undergraduate recruiting budget allocated to different marketing/recruiting activities. The median private university spent 14% of its recruiting budget on student lists, which was ranked second after off-campus recruiting visits (17%). The median public university spent 12% of its budget on student lists, which was ranked fifth after "prospective student communications" (17%), off-campus visits (16%), "recruitment publications" (15%), and "web services and digital advertising" (13%). To make things more concrete, we provide a back-of-the-envelope calculation, albeit one that is not representative of the population of public universities. Stonewall University reported purchasing 1,251,000 names in 2020, including about 648,000 from College Board and about 220,000 from ACT. In 2020, both the College Board Student Search Service and the ACT Encoura product charged \$0.47 per name. Thus, we calculate that University of X spent $\$304,560 = 648,000 \times \$0.47$ on names from College Board and $\$103,400 = 220,000 \times \$0.47$ on names from ACT.

3.3 Buying and Using Student Lists

How do universities purchase student lists from College Board *Student Search Service* and ACT's Encoura platform ? Each purchased list is a subset of prospects from the population of test-takers. The filters available in a student list product enable universities to control which prospects are included in a particular list. For the ACT Encoura student list product, for example, commonly specified prospect search filters include high school graduation year, high school GPA, test score range (ACT or PreACT), gender, ethnicity, intended major, and geography (e.g., state, county, zip code)(Schmidt, 2019). As a hypothetical example, a university could purchase a student list from ACT that consisted of all prospects who scored between 30 and 34 on the ACT, have a GPA higher than 3.5, live in one of 10 metropolitan areas, and are in the high school senior class of 2023. The College Board *Student Search Service* offers similar sets of filters. More recently, College Board Search products enable universities to filter prospects based on the college-going characteristics of the neighborhood a student lives in or the school a student attends (e.g., what percentage of recent graduates from the school attended an out-of-state university).

What data do purchased student lists contain? Each purchased student list is essentially a spreadsheet that contains one row for each prospect that meets all criteria specified in the purchase. The columns of the student list includes detailed contact information (name,

address, email, cell phone) and detailed student characteristics dervied from the pre-test questionnaire (e.g., ethnicity, race, gender, high school GPA, graduation year, high school code, intended major, first-generation status). The data template for an ACT student list can be found HERE [LINK] and the template for a College Board student list can be found HERE [LINK]. These fields represent a small subset of the information the testing agencies know about prospective students and contain very little data about performance on assessments (e.g., SAT score). As we discuss later, College Board and ACT provide more detailed student list data to universities that pay for their enrollment management consulting services.

How do universities use student lists? Enrollment management consulting firms and sophisticated in-house operations use algorithms to inform recruiting interventions. Both the algorithms and the interventions must be fed data (e.g., cannot send an email without an email address). Because student lists are costly, decisions about student list purchases are also informed by algorithms. Purchased lists are the basic building block for data-informed recruiting. These lists are layered with additional data sources, such as consumer data about prospects from credit companies, records of interactions with prospects (e.g., visiting virtual tour), historical application/enrollment data about students who attended the same high school, etc. These layered data are the input of predictive models that inform decisions about which recruiting interventions to send to which prospects (e.g., who gets a $0.50 postcard and who gets a $7 brochure). A key takeaway is that the way enrollment managers utilize student lists is nearly identical to the way political parties utilize public voter files as the basic input to national voter databases. However, voter files are free but student lists are not, which turns out to have important implications for college access.

3.4 The Cost of Efficiency

As of 2021, College Board changes $0.XX per name and ACT charges $0.XX per name. The cost of student lists creates an incentive for "efficient" name buys, whereby universities only purchase the names of desirable prospects that are likely to apply and enroll. For example, the consultancy Ruffalo Noel Levitz states the "RNL Student Search and Engagement" product enables universities to "Target the right students in the right markets" by making "the most efficient name purchases using predictive modeling"[cite] the consulting firm Fire Engine Red states that their "student search modeling" product "can save your school money, by helping you purchase only the names of students who are most likely to apply and enroll" ("Data services," 2021, para. 3). Student list vendors develop student list products that cater to this desire for efficiency. For example, College Board states that their "Search" product suite "allows you to filter your queries on the characteristics that matter most to you. New filters are coming soon to help you connect with students based on attributes about their hometown or high school, like the rates of AP engagement and student [geographic] mobility" [CITE; PDF SAVED].

The emphasis student list products place on efficiency has important implications for college access because purchases that attempt to maximize efficiency (e.g., based on neighborhood characteristics) may systematically exclude talented students from low-income rural communities and communities of color. For example, a prospective student with a 4.0 high school

GPA from a poor, rural community is likely to be purchased by fewer universities than a 4.0 prospect from an affluent suburb because many universities view rural communities with low college-going rates as inefficient name buys. This systematic exclusion is a function of student names costing money. By contrast, while political campaigns have an incentive to be choosy about who receives expensive interventions (e.g., a glossy brochure targeting donors), they have no incentive to exclude people from their database – or from inexpensive interventions like email – because voter names are free.

4 Student List Market Dynamics

The market for student list data is surprisingly dynamic. Advances in data analytics spawned the "EdTech" sector. Over the past decade, private equity firms and publicly traded corporations used product development and acquisitions to compete with College Board and ACT in the market for student list data. Some of these efforts flopped famously, while others appear to have gained a foothold. More recently, consistent with the surge of mergers and acquisitions in EdTech [CITE], the market for student list data has shifted back towards oligopoly, though with a stronger for-profit orientation. This section discusses changes in the market for student list data, analyzing who are the players and what do they want, with a particular focus on student list vendors and the processes of generating student list data.

4.1 A Resource Dependence View

Our analysis of the market for student list data draws from resource dependence theory (Pfeffer & Salancik, 1978), one of several theories of organizational behavior that provides insight about "make or buy" decisions by firms, which we refer to as "in-house" (make) or "contract-out" (buy) decisions. Resource dependence theory begins with the assumption that organizations require resources from the external environment in order to survive. The central concept of resource dependence theory is dependence, as defined by Emerson (1962). Actor A depends actor B to the extent that B controls goals important to A values that A cannot obtain outside the A-B relationship. Resource dependence theory states that an external resource provider has power over an organization to the extent that (a) the resource is essential for organizational operations, (b) few alternative sources of the resource exist, and (c) the external organization has discretion over how the resource is allocated.

For example, universities depend on a stable flow of names to achieve enrollment goals. The dependence of a university on a student list vendor is greater when there are few suppliers of names. In markets defined by oligopoly, such as the student list business, suppliers capitalize on market power by forcing customers to pay higher prices than they would pay in a competitive market. While College Board and ACT control each own a unique set of names, every Title IV institution has the right to buy these names at a set price. By contrast, dependence on the supplier of a unique set of names would increase if the supplier had arbitrary discretion over which universities have access to names and the price charged to each university.

Pfeffer & Salancik (1978) describes several strategies organizations may deploy in response to the problem of dependence on a particular resource exchange. For example, *compliance* is the strategy of acquiescing to the demands of the resource provider. One strategy is finding an alternative supplier of the same resource (e.g., a different names vendor) in order to reduce reliance on a particular provider. *Resource diversification* is the strategy of reducing reliance on a particular resource by finding substitute resources, for example reducing reliance on names by using behavioral based marketing to identify/target leads and using brand marketing to grow inquiries. *Cooptation* is the strategy of socializing external resource providers to the goals of the organization through shared participation in organizational activities. For example, enrollment management consulting firms depend principally on universities. If a firm places a consultant in a vice president of enrollment management position, it becomes more likely that the university will retain the consulting firm. Another strategy, for similar organizations that rely on a common resource provider, is to form a *professional association* in order to exert collective control over the resource provider. Although choice of strategy is contextual, resource dependence theory generally recommends choosing "the least-constraining device [action] to govern relations with your exchange partners that will allow you to minimize uncertainty and dependence and maximize your autonomy" (Davis & Cobb, 2010, p. 6).

Acquisitions are the "most resource-intensive means" (Scott & Davis, 2007, p. 237) of exerting control over the external environment, but have become very common in the market for student list data. To explain the motivations behind acquisitions, consider the market for college search websites. These websites generate student list data by asking prospective students to enter data in order to receive recommendations about best-match colleges and scholarships. For simplicity, assume this market consists of two activities: building the website and selling the data to universities looking for names. "Vertical integration" refers to whether two distinct activities are done by two organizations (contract-out) or done by one organization (in-house), which develops or acquires internal capacity for the second activity. A firm that specializes in building college search websites must decide whether to sell lists directly to universities (in-house) – the way Tesla sells direct to consumer – or whether to contract-out sales to another firm. Similarly, a firm specializing in selling student list data to universities must decide whether to build/acquire the college search website (in-house) or whether to buy student list data from firms that own college search websites (contract-out).

A "vertical acquisition" – the acquisition version of in-house – occurs when a firm acquires an organization that controls an essential resource/activity. The primary benefit of vertical acquisitions is reducing reliance on external organizations for a key input. For example, when a firm that sells student lists buys a college search website, it becomes less dependent on contracting with firms that own college search websites in order to obtain the names it sells to universities. Somewhere between contracting-out and vertical acquisitions is the strategy of forming *alliances*, defined as "agreements between two or more organizations to pursue joint objectives through a coordination of activities" (Scott & Davis, 2007, pp. 236–237). Alliances are less costly than acquisitions and can be mutually beneficial when each organization performs an activity that is an important input for the other organization.

A "horizontal" acquisition occurs two firms that perform similar activities merge, for ex-

ample a firm that builds college search websites buys another firm that builds websites. Horizontal mergers increase market share and reduce competition, potentially enabling the firm to charge higher prices. More generally, larger firms can exert influence on their external environment, including the ability to control suppliers, buyers, and regulators [CITE]. Finally, our analysis of the student list market reveals many "related" acquisitions – not quite vertical, not quite horizontal – where the firm acquires an activity that increases the value of another activity. For example, when a company that owns a college search website buys a company that builds virtual college tours for universities, the college search website can push users to the virtual tours of its client universities.

4.1.1 Universities as Customers

The primary customers of student list data are universities looking for students (other customers include third-party scholarship programs looking for scholarship recipients). University enrollment goals include tuition revenue, academic profile, racial composition, and also the enrollment demands of internal campus constituents (e.g., academic majors, athletics, clubs). Additionally, universities may want more applicants as a means of raising selectivity or obtaining lower interest rates on bonds, which are often tied to indicators of student demand.

Postsecondary institutions serve several different student markets. In the market for college-going high school students, university enrollment goals depend on a stable flow of names. Universities are more dependent on student list vendors that own large, unique sets of names and less dependent on a particular vendor to the extent that the set of names they sell are also sold by other vendors. Student-as-first-contact inquiries are a university-specific substitute for purchased names. Universities that receive many student-as-first contact inquiries because of strong brand recognition (e.g., Harvard, UCLA) are less reliant on purchasing names. For student markets served by community colleges and for-profit institutions, lists of prospective customers are less readily available. Therefore, these institutions may rely more on behavioral-based marketing approaches to identify prospective students.

Across all student markets, achieving enrollment goals requires marketing and recruiting. As the process of recruiting students become increasingly sophisticated and competitive, many universities have adopted the contracting-out approach of hiring an enrollment management consulting firm to develop and implement recruiting campaigns. Contributing to this trend, university administrators often approach the enrollment management office like the impatient owner of a professional sports team, firing senior enrollment professionals if they fail to meet this year's enrollment targets. In turn, turnover within the enrollment management office reduces in-house capacity, making universities more reliant on contracting-out with consulting firms.

4.1.2 Enrollment Management Consulting Firms

Enrollment management consulting firms depend on universities as their primary source of revenue. These firms also depend on student list vendors, for a couple different reasons.

First, making recommendations about student list purchases is a core service offered by consulting firms. Second, names are an essential input to many of the predictive models and recruiting interventions (e.g., email, mail, text messages) these firms provide.

Anecdotally, the number of consulting firms increased substantially from 2000 to 2010, following the growth of digital technologies and data science analytics. Beginning in the 2010s, there have been a growing number of horizontal-acquisitions [CITE ROGERS 2014], such that the market for enrollment management consulting firms has become more concentrated. Increasing market concentration makes universities that lack in-house capabilities more dependent on the remaining set of enrollment management consulting firms. At present, the market for enrollment management consulting firms consists of two larger firms – Ruffalo Noel Levitz and EAB – and many smaller firms (e.g., Fire Engine Red, Capture Higher Ed, Whiteboard Higher Education). Additionally, as we discuss below, College Board and ACT have leveraged their position in the student list market to entered the enrollment management consulting market market.

4.1.3 Sources of Student List Data

Student list data are created by several different data generating processes. First, student list data are generated by students completing standardized assessments (e.g., SAT, ACT, AP test, GRE, TOEFL) developed by testing companies College Board, ACT, and ETS. Before completing the SAT, for example, test-takers are asked to complete a voluntary background questionnaire that, "collects information about your grades, interests, intended major, college plans, and other things" LINK FOR CITE. For students that opt-in to Student Search Service, "your name and other information, including your address, high school grade point average, date of birth, grade level, high school, email address, intended college major, and extracurricular activities, will then be available to participating colleges and scholarship services." [CITE SAT REGISTRATION BOOKLET]. Although most College Board and ACT assessment names for universities seeking US high school students, TOEFL yields names of international prospects, and the GRE yields names for the graduate student market.

A second source of student list data consists of survey data students voluntarily submit to websites/applications, along with data these sites collect about the behavior of users on their platform. One subset of platforms (e.g., College Bound Selection Service (CBSS), Cirkled In, Zinch) have the explicit goal of sharing profiles created by students with the universities the student expresses interest in attending. For example, Cirkled In's website says "Go beyond test scores and connect directly to colleges. Cirkled In's portfolio platform showcases students' entire educational story." Another subset of platforms have the explicit goal of helping students identify "match" universities and scholarships (e.g., myOptions, cappex, and Going Merry). These sites are often less clear on whether/how data entered by students will be shared, except for the privacy policy page. For example, Cappex – a recent acquisition EAB – helps students "find colleges and scholarships that are right for you." The Privacy Policy statement reads, "services require us to collect detailed personal information from you and in many cases to share your personal information with colleges, universities, counselors, scholarship administrators, EAB, employers, marketing partners and advertisers."

A third set of student list data comes from software used by high schools and high school students. For example, Naviance is software purchased by high schools/districts that enables students to plan for college and enables guidance counelors to help students with the college search process. In turn, Naviance user data feeds into Intersect, a software product that connects prospects to universities looking for students. Another example is Parchment, "the digital credential service," which... [NOT SURE HOW IT WORKS EXACTLY https://www.parchment.com/recruit-self-serve/]

A fourth (potential) source of student list data consists of student records from statewide longitudinal data systems, which have been developed by nearly all states CITE. Most state longitudinal data systems posesss contact information and detailed information about academic achievement in high school courses, which could be the basis for student list data. The state of Arizona provides the contact information of all high school [GRADUATES? STUDENTS?] for free to Arizona [public?] universities. To our knowledge, other states do not provide similar data to universities.

4.1.4 Student List Vendors

Until 2017, the three largest student list vendors were College Board, ACT, and the National Research Center for College and University Admissions (NRCCUA), which generated student list data by asking high school students to complete a survey during school hours. New sources of student list data – made possible by advances in technology – have created opportunities for existing student list vendors and for new players, who have entered the market through a combination of product development and acquisitions. By 2021, the market for student list vendors looked quite different. In the following pages, we analyze the moves of several of the major players.

4.2 EAB Enters the Student List Business

By 2021 EAB, formerly Royall & Company, arguably joined College Board and ACT as one of three most important student list suppliers. Whereas College Board and ACT student lists can be purchased by any university, only EAB clients have access to names owned by EAB. How did this come to be? From our perspective as outsiders – relying on the financial news, press releases, and background conversations with industry insiders – the EAB story is substantially a story about acquisitions.

In 2015, the Advisory Board Company – a publicly traded (NASDAQ:ABCO) technology and consulting company, operating primarily in the health sector – acquired Royall & Company for $850 million [CITE StreetInsider]. Advisory Board purchased Royall as the centerpiece for its entrance into the higher education consulting market. StreetInsider [2014; CITE] reported that "central to the Advisory Board's higher education growth strategy is developing service offerings to aid members across the entire student lifecycle." StreetInsider [2014; CITE] described Royall as "the higher education industry leader in strategic, data-driven student engagement and enrollment management solutions, financial aid optimization, and alumni fundraising. Royall's solutions help non-profit colleges and universities achieve such critical

institutional goals as strengthening national reputations, broadening student enrollment, improving overall academic profiles, and enhancing revenue." Given that Royall had about 350 clients at the time, the price tag of $850 million speaks to the value the investment community placed on the business model and proprietary platform developed by Royall. Robert Musslewhite, CEO of the Advisory Board said that the acquisition

> creates a one-of-a-kind resource to enable higher education executives to apply data and analytics to both engage and enroll the right students and help those students graduate on time. Royall's leadership position in higher education, its track record of delivering measurable ROI, its exceptional and experienced staff, and its analytics-driven, scalable business model -— which translates into highly recurring revenues and strong bottom line performance —- make it a compelling strategic and financial fit... Over time, we also expect to realize additional value by expanding member relationships across the portfolio and developing new programs and technologies based on the joint assets.

This last sentence contains two nuggets – "expanding member relationships across the [Advisory Board] portfolio" and "developing new programs... based on joint assets" – that remain prophetic although the Advisory Board Company no longer exists. In 2017, the Advisory Board sold its healthcare business to a subsidiary of UnitedHealth Group for $1.3 billion and its education business to Vista Equity Partners for $1.5 billion [CITE WASHINGTON BUSINESS JOURNAL]. The Royall & Company division was renamed EAB and operates as a standalone business. Under Vista, the largest private equity firm in the world, EAB pursued acquisitions that increased the value of existing activities and also leveraged relationships with other subsidiaries of Vista, particularly PowerSchool.

YouVisit and Cappex acquisitions. In 2019, EAB acquired YouVisit, which EAB [CITE EAB PRESS RELEASE] described as "the leading provider of virtual tour and interactive web content for higher education," stating that the acquisition "further enhances EAB's ability to help colleges and universities find, engage, and enroll new students." EAB CEO David Felsenthal said that "'Integrating EAB's enrollment platform with YouVisit's market-leading student-centric content will help to drive even greater success for our partners"'"

In 2020, EAB acquired Cappex, a college/scholarship search search website reportedly used by 1.5 million students each year [CITE PRESS RELEASE]. The EAB [CITE] press release cites EAB market research indicating that more prospective students are using college search sites and also notes that test-taking behavior is changing as more universities adopt test-optional admission policies. Chris Marett, President of EAB Enrollment Services, said the Cappex acquisition " 'will enable EAB partners to identify and engage prospective students who do not interact with schools through the traditional channels, such as campus visits or standardized tests. By expanding schools' inquiry pools, we can help institutions grow and diversify their student populations."' Cappex CEO Alex Stepien, said " 'Leveraging EAB's enrollment data and analytics expertise and experiential marketing services, such as YouVisit virtual tours, we can deliver more personalized and impactful student experiences' "

We analyze these deals using concepts from resource dependence theory. Cappex generates proprietary student list data. To the extent that Cappex users do not take College Board

or ACT assessments, Cappex provides names that cannot be purchased from College Board or ACT. Let us conceive of EAB as simultaneously being a vendor of student list data and an enrollment management consulting firm. Focusing on EAB as a student list vendor, the Cappex deal is a vertical acquisition because EAB is acquiring a firm that provides a key input. As a consulting firm, only EAB provides the names of Cappex users to EAB clients, rather than selling names to any university the way College Board and ACT do. Access to Cappex names make EAB clients – and prospective clients – more dependent on EAB. Although EAB price schedules are not publicly available, the price universities pay for access to Cappex names may be built into the contract they sign with EAB.

EAB virtual tours are an inquiry engine in that "individual data for each Virtual Tour inquiry based on submitted information and network behavior" LINK, helping clients know "who your visitors are and where their interests lie so that you can effectively recruit them." If we conceptualize inquiries as a university-specific lists, then EAB virtual tours is a product that produces university-specific student lists. The Cappex and YouVisit acquisitions – now fully integrated within the EAB platform – are synergistic in that prospects searching for colleges on Cappex are served the virtual tours of EAB clients. Therefore, purchasing Cappex increases the value of the YouVisit virtual tour asset in that Cappex users are fed YouVisit virtual tours, which yield inquiries for clients that pay EAB for virtual tours.

Naviance/Intersect Partnership with PowerSchool. EAB's most profound foray into the student list market occurred in 2021, when Hobsons was broken up and split between EAB and PowerSchool, another subsidiaries of Vista Equity Partners.

Hobsons was an education technology/consulting company and a subsidiary of British media company the Daily Mail and General Trust. Hobsons provided consulting services to schools and universities. Hobsons also operated three software-as-service products. First, Naviance – founded in 2002 and acquired by Hobsons in 2007 – is a college and career readiness platform for high school students, reportedly used by "40% of U.S. high schools" [CITE]. Second, Intersect is a student recruitment platform that connects universities to high school students using Naviance to plan for college. Third, Starfish is a "student success" platform for colleges and universities that "provides advising, communication and nudges to support student engagement and retention" [CITE EDSURGE].

ADD A PARAGRAPH ABOUT NAVIANCE, FOCUSING ON HOW THEY USE/SELL DATA BASED ON NAVIANCE WEBSITE PRIVACY POLICY FROM PRIOR TO POWERSCHOOL ACQUISITION

ADD A PARAGRAPH ABOUT INTERSECT, FOCUSING ON HOW THEY USE/SELL DATA BASED ON NAVIANCE WEBSITE PRIVACY POLICY FROM PRIOR TO POWERSCHOOL ACQUISITION

PowerSchool acquired Naviance and Intersect for $320 million and EAB acquired Starfish for $90 million. Given that EAB already had its own student success platform, the Starfish acquisition can be read simply as the horizontal acquisition of a competitor that increases market share and reduces competition within the student success market. Additionally, universities that contracted with Hobsons for recruiting services became EAB clients, increasing EAB market share in the recruiting market.

The Naviance and Intersect acquisitions require more nuanced analysis. Upon completing the acquisition, Powerschool and EAB announced an agreement "that makes EAB the exclusive provider of the Intersect student recruitment platform... This partnership will allow EAB to connect its higher education partners to millions more high school students" [CITE]. In July, 2021 PowerSchool became a publicly traded company (NYSE: PWSC) and the IPO prospectus describes the terms of the partnership:

> we entered into a reseller agreement with EAB Global, Inc. ("EAB"), a portfolio company of Vista, for them to serve as, among other terms, the exclusive reseller of the Intersect student recruitment platform in the United States and Canada. [The agreement] has a ten-year term and includes annual minimum revenue commitments from EAB. The commitment amount for the first 12-month period was $32.4 million, and will increase upon anniversary of the Agreement CITE IPO

How do we analyze this partnership from the perspective of EAB? We begin with the premise that EAB is simultaneously an enrollment management consultancy and a student list vendor that provides names to clients. From this perspective, the partnership can be seen as a vertical integration by which EAB obtains exclusive access to a key input resource. Just like College Board and ACT are exclusive providers of the unique set of names generated by College Board assessments, the Intersect agreement grants EAB exclusive control over the unique set of names and behavioral data generated by Naviance users.

Whereas College Board and ACT use their oligopoly position in the supply of names to charge oligopoly prices, we expect EAB will utilize the Intersect agreement to attract new clients and to charge clients higher prices for the right to recruit Naviance users. Consistent with these expectations, promotional material on the EAB website reads, "With access to the 6.5 million high school students on Naviance, Intersect is the preeminent provider of high-intent student inquiries and candidates for colleges" CITE.

Furthermore, we expect that EAB will funnel Naviance users towards client universities. For example, the EAB website states that "80% of high school students who connect with a college through Intersect apply to that institution." These issues raise important questions for policymakers. Should access to a substantial share of college-going high school students be restricted to clients of a private firm? Are we concerned that these students are being funneled towards clients of a private firm and away from other universities?

Future, Business Model. In May 2021, BC Partners – a British private equity firm with over $40 billion under management – announced an investment in EAB CITE. In June 2021, Moody's Investor Service "assigned B2 ratings" – a speculative, not of investment grade rating – to EAB debt "consisting of a $745 million term loan and a $125 million revolver," but stated that upon completion of the investment by BC Partners "Moody's expects EAB's existing debt to be repaid and ratings on these instruments to be withdrawn" [CITE MOODY'S]. In August 2021, the "plan by global investors BC Partners and Vista Equity Partners to acquire joint control over U.S. education company EAB Global Inc. received EU antitrust clearance" CITE. Terms of the deal were not disclosed because all parties are privately owned. One interpretation is that EAB was highly leveraged and that the investment by BC Partners enables EAB to pay for past acquisitions and perhaps for future acquisitions.

Analyzing the EAB business model is difficult because privately owned companies have neither the requirement nor the incentive to disclose information. The IPO prospectus of PowerSchool, formerly a Vista subsidiary, may provide insight about EAB. PowerSchool [CITE IPO] states that,

> Many of our customers begin their journey with us by using only two of our 15 products on average... As customers begin to appreciate the benefits of an integrated software platform across student data, classroom learning, office functions and talent management, they increase the number of solutions they buy from us over time, with over 1,000 customers owning 5+ products and over 3,000 customers owning 3+ products.... Our future revenue growth is dependent upon our ability to expand our customers' use of our platform, and our go-to-market efforts are designed to drive cross-sell growth.

The PowerSchool quote is consistent with the assessment – made by enrollment management vice presidents and consultants speaking on background – that EAB is constantly trying to "upsell" clients to add new products to their consulting agreement. The PowerSchool quote is also consistent with how EAB frames their *Enroll360* "recruiting ecosystem" as realizing the synergy between YouVisit, Cappex, Naviance/Intersect, Wisr (a peer-to-peer engagement platform acquired in 2021), and the EAB Enrollment Marketing Platform, as depicted in Figure Figure 3 [CITE]:

Figure 3: EAB Enroll360

> Imagine a high school student today. Let's call her 'Emma.'... Fast forward to Emma's junior year. She has begun to think more seriously about college and like many of her peers, she turns to Google to explore options. Emma quickly comes across Cappex, where she's prompted to fill out her ideal college location—close to her hometown in Rhode Island—and her intended major—computer engineering
>
> ...After connecting with her counselor during her senior year, Emma has narrowed down her list of schools to five and enters her shortlist in Naviance. From there, she explores your university's website, she comes across a link to your

virtual tour... After the tour, she starts to see Instagram ads for your school depicting students in that same lab. And after receiving an email from your school with an invite to apply via a personalized application, she applies.

Emma is admitted to four of her five top schools, including yours. But to help her decide where to enroll, she wants to hear what student life is actually like. Through Wisr, Emma connects one-on-one with Kayleigh, a current junior and student ambassador at your institution studying computer engineering. Kayleigh talks about her favorite classes, professors, and places to eat off-campus, and Emma begins to see just what her life could be like as a student there, too.

4.3 College Board and ACT

College Board and ACT are non-profit, mission-driven organizations. The College Board mission is "to connect students to college success and opportunity" [CITE] and the ACT mission is "helping people achieve education and workplace success" CITE. The core activity of both organizations is developing and delivering standardized assessments. College Board revenues were $1.049 billion in 2019, with $490 million coming from "AP and Instruction" and $404 million from "Assessments" [CITE COLLEGE BOARD FORM 990 2019]. ACT total revenue was $302 million in the fiscal year ending August 2019, with $262 million coming from "educational assessment" [CITE ACT FORM 990 ENDING AUG 2019]. [NONE OF THE REVENUE FIGURES ADJUSTED FOR INFLATION YET. I THINK!]

The student list business of College Board and ACT are byproducts of their core assessment businesses. Student lists sold by College Board are generated from the SAT, PSAT, SAT subject test, and AP assessments. Lists sold by ACT are generated from the ACT and PreACT assessments and, more recently, from the "myoptions" college and career planning program. Data about the annual revenue College Board and ACT generate from selling names is not publicly available. However, College Board recorded $130 million in revenue from "College Opportunities & Enrollment" in 2019 [CITE COLLEGE BOARD FORM 990 2019] – the business that includes selling names – compared to $100 million in 2017 [CITE COLLEGE BOARD FORM 990 2017] and $63 million in 2010 [CHECK; GOT THIS FIGURE FROM BELKIN 2019 WSJ STORY].

This section describes the sources of competitive advantage of College Board and ACT student lists, and then analyzes moves made by each organization over the last decade.

Competitive advantage. Why do College Board and ACT have a competitive advantage compared to other student list vendors? The obvious answer is unparalleled coverage. Until recently, the vast majority of college-going high school students took the SAT or ACT. Most states can be categorized either as "SAT states" – meaning that the majority of college-going high school students take the SAT – or ACT states [CITE NICH BLOG]. Contributing to this either-or dichotomy, a growing number of states have adopted either the ACT or the SAT as a requirement for high school graduation CITE. Depending on the geographic markets a university recruits from, they buy names from College Board, ACT, or both.

However, the diffusion of test-optional admissions policies threatens the coverage competitive advantage. If fewer universities require the SAT/ACT for admissions, fewer students will take the tests. [1-2 SENTENCES PROVIDING STATS ABOUT TEST-TAKERS?] If fewer students take the tests, College Board and ACT databases will contain a shrinking share of prospective college students, lowering their value in the eyes of universities and encouraging market entry by other vendors of student list data. How have College Board and ACT responded to test optional movement? A fundamental strategy seems to be convincing states to adopt the SAT/ACT as a statewide requirement for high school graduation [CITE].

A second source of competitive advantage is data quality. Compared to student lists generated from college search engines, list data from College Board and ACT possess more-reliable indicators of academic achievement and less missing data with respect to contract information, student characteristics, and preferences. Higher data quality enables universities to filter more precisely when deciding which names to purchase and also makes the lists universities receive more useful for recruiting purposes.

A third competitive advantage is timeliness. Names generated from the PSAT and PreACT assessments enable universities to begin recruiting high school students early in their high school career, which is viewed as important for successful recruiting campaigns [CITE]. By contrast, lists generates from college search engines can only target prospects who have already begun their college search process. In Fall 2021, College Board introduced the new "Prospect Notifications," which provides Search clients with monthly notifications about new prospects who meet the criteria of recent student list purchases. Prospect Notification enables universities "to connect with students as soon as they join the program" CITE, improving on the competitive advantage of College Board Search in targeting prospects as early as possible.

4.3.1 College Board

In contrast to EAB and recent acquisitions by ACT, College Board has developed student list products more gradually and built them internally. As of 2021, "College Board Search" is an interrelated product suite – tagline "the best way to reach and recruit high school students" – consisting of three primary products, "Student Search Service," "Segment Analysis Service," and "Enrollment Planning Service."

Student Search Service is the foundational product. As we described previously, Student Search Service allows universities to purchase the contact information of PSAT, SAT, and AP test-takers, filtering on geographic, demographic, achievement, and college/major preferences criteria. Originally created in 1972 "at the request of school counselors who wanted a wider array of students to have access to information about more colleges" [CITE BELKIN], College Board [CITE] describes Student Search Service as

> the largest, richest database of college-bound students, and new students are added each week as they join the program online or through a College Board assessment. With College Board Search, you can reach students long before it's

> time to apply, building a relationship with students early enough to create a real pipeline of best-fit prospects CITE.

In Fall 2021, Student Search Service introduced "Interest in My College," a modest enhancement that utilizes data from the "BigFuture" college search website owned by College Board. BigFuture encourages prospective students to create a list of universities they are interested in. "Interest in My College" enables universities to filter prospects who expressed interest in your university when purchasing student lists.

Segment Analysis Service. College Board created Segment Analysis Service (herein Segment) in 2XXX, which is built directly on top of the Student Search Service. Essentially, Segment enables universities to additionally filter prospects based on the college-going characteristics of the high schools prospects attend and on the neighborhoods prospects live in. We believe Segment is a particularly problematic product from an equality of opportunity perspective because prospects are filtered based on aggregate characteristics of neighborhoods/schools that are highly correlated with race/ethnicity, income, and geography.

Board (2011) published a surprisingly transparent explanation of the conceptual and technical underpinnings of Segment. Conceptually, Segment Analysis Service is based on "geodemography," which is a branch of market research – now often referred to as "spatial big data" – that estimates the behavior of consumers based on where they live. Board (2011) p. 1 states,

> The basic tenet of geodemography is that people with similar cultural backgrounds, means, and perspectives naturally gravitate toward one another or form relatively homogeneous communities; in other words, birds of a feather flock together. When they are living in a community, people emulate their neighbors, adopt similar social values, tastes, and expectations, and -— most importantly for consumer marketers —- share similar patterns of consumer behavior toward products, services, media, and promotions. The primary appeal of geodemography from the marketer's perspective is that, with just an address, s/he can begin to craft an image about a particular set of individuals based on the values, tastes, expectations, and behaviors associated with their geographic community.

From a conceptual perspective, application of geodemography to a college access product is problematic in that geodemography assumes that "people with similar cultural backgrounds. . . naturally gravitate toward one another" (Board, 2011, p. 1) In reality, American communities are racially segregated because of centuries of systematic, discriminatory policies enacted by federal, state, and local governments and the private interests these governments enable (Harris, 1993; Rothstein, 2017).

Building Segment Analysis Service. The technical underpinnings of Segment are based on applications of geodemography to traditional consumer industries, which proceed by (Board, 2011, p. 1):

> mapping small bounded geographical regions, typically at a nine- digit zip-code level, against data from credit card agencies, U.S. Census data, and other consumer databases that track consumer characteristics, attitudes, and behaviors. The result is a series of geodemographic "clusters" that represent types of individuals based on a unique set of characteristics, attitudes, and behaviors.

In contrast to "standard consumer-focused neighborhoods that are thinly populated with college-bound students" (Board, 2011, p. 2) Segment Analysis Service incorporates publicly available data and proprietary College Board data to create "educational neighborhoods," which are "a new set of geodemographic communities composed entirely of college-bound students.

The data used to build the Segment product "begins with the most detailed pieces of information available to the College Board about college-bound students: their actual responses to a series of detailed, academically relevant questions that are asked when they register for various assessments (PSAT/NMSQT, SAT, SAT II, AP)" (Board, 2011, p. 3). These data are additionally layered with "other relevant data elements, such as individual student test-performance results and individual student test-score sending patterns, [that] are attached to each record" (Board, 2011, p. 3). This prospect-level dataset is grouped two ways: at high school level (over 33,000 high schools); and at the neighborhood level, with neighborhoods defined by Census tracts (about 44,000 neighborhoods). Cluster analysis is used "to group the 33,000+ high schools and 44,000 neighborhoods into 29 unique high-school types and 33 unique neighborhood types referred to as clusters" (Board, 2011, p. 4).

Thus, each neighborhood is assigned to one of 33 educational neighborhood (EN) clusters, which are numbered EN:51-EN:83. Each high school is assigned to one of 29 high school (HS) clusters, numbered HS:51-HS:79. As a hypothetical example, a Census tract in the Boston suburb Wellesley might belong to the same Segment Analysis Service neighborhood cluster as a Census tract in the Chicago suburb Barrington. Weston High School, a public high school in Weston, MA might belong to the same Segment Analysis Service high school cluster as Barrington High School in Barrington, IL.

Using Segment Analysis Service. Customers of Segment Analysis service could purchase a list that contains prospects who scored within a particular range on the SAT, who live in a particular set of metropolitan areas, and who are associated with particular combinations of neighborhood and high school cluster (e.g., live in neighborhood cluster "EN:61" and attend any high school OR live in neighborhood cluster "EN:73" and high school categories "HS:65" or "HS:70").

The problem is that Segment neighborhood and high school clusters are highly correlated with both racial and income demographics. For example, in the Board (2011) table of "Neighborhood cluster sample characteristics" (p. 4), neighborhood cluster "EN:61" is 30% nonwhite and has median income of $123,858 while neighborhood cluster "EN71" is 97% nonwhite and has median income of $42,661. In the Board (2011) table of "High school cluster sample characteristics" (p. 5), high school cluster "HS:70" is 33% nonwhite and has median income of $105,721 while cluster "HS:71" is 98% nonwhite and has median income of $43,391.

Racial redlining in the US occurs at fine-grained geographic levels [CITE]. Segment's fine-grained geographic targeting capabilities can – intentionally and unintentionally -– lead to racial redlining in recruiting because Segment enables customers to purchase prospects from a metropolitan area who live a particular "kind" of census tract, without explicitly naming the census tract. Furthermore, within a purchased neighborhood cluster, Segment allows customers to filter prospects based on the "kind" of high school they attend. Thus, a Segment purchase that includes a particular student might exclude a similarly achievement student who attends a different high school in the same neighborhood. An equality of opportunity concern is that Segment encourages universities to include/exclude prospects based the aggregate behavior of those around them, rather than their individual achievement.

[INSERT PARAGRAPH SUMMARIZING AN ANALYSIS OF A PROBLEMATIC SEGMENT STUDENT LIST PURCHASE]

Universities can utilize Segment to identify prospects from historically under-served populations. Student Search Service enables universities to filter based on ethnicity/race, and first-generation status and Segment additionally enables universities to filter based on kind of neighborhood/school. The "student search modeling" offered by the consultancy Fire Engine Red leverages "Segment Analysis Service and our own data warehouse of proprietary geodemographic, behavioral, academic, and enrollment data" CITE. A table on the Fire Engine Red website indicates that compared to "our client's own inquiries," "the prospects we generated for our clients" had higher average income, GPA, and SAT scores and a higher share of "underrepresented students." When universities target particular under-served populations, the equality of opportunity question is whether these efforts systematically exclude some members of the population. Universities that filter on race/ethnicity can use Segment to target prospects from schools/neighborhods that are underrepresented in higher education. Our concern is that universities can also use Segment to efficiently target prospects from high-resource schools/neighborhoods.

In Fall 2021, the College Board Student Search Service product added the "Environmental Attributes" feature, three "new filters that will help you refine your Search selections based on historical characteristics of students' high schools and neighborhoods." Previously, only Segment Analysis Service customers could filter prospects based on geodemographic characteristics of schools and neighborhoods. The three Environmental Attributes filters are Travel Rates (out-of-state), Travel Rates (Distance from home), and AP engagement rates. For example, each high school is categorized as "low," "medium," or "high" in terms of the percentage college students who attend an out-of-state university. In turn, a Student Search Service customer could purchase prospects who live in a particular metro area, with PSAT scores within some interval, and attend a high school with a "high" out-of-state travel rate. , the Environmental Attributes filters may increase the "efficiency" of student list purchases, but like Segment Analysis Service, we are concerned that this product feature enables universities to ignore meritorious students who don't belong to the "right" kind of neighborhood or school.

Enrollment Planning Service. Enrollment Planning Service, the third product within the Search suite, leverages proprietary College Board data to provide enrollment management consulting services and software-as-service data analysis tools.

The data universities receive when they purchase student lists from Student Search Service or Segment Analysis Service contains a subset of the academic achievement and college preferences data that College Board knows about each prospect. Access to the full set of data would enable universities – and the enrollment management consulting firms they hire – to make more efficient and effective decisions about recruiting interventions. Universities that pay for Enrollment Planning Service receive enrollment management consulting services and also obtain data about prospects that is not included in purchased lists. [ONE SENTENCE EXAMPLE OF RICHER DATA AVAILABLE FROM EPS] The value proposition Enrollment Planning Service makes is this: Rather than buying lists from College Board and hiring a seperate a separate enrollment management consultancy, purchase names and consulting from College Board and get access to prospect data that cannot be obtained from student lists.

Enrollment Planning Service and EAB exemplify the blurring of lines between student list vendors and enrollment management consultants. On one hand, EAB is enrollment management consultancy that has become a vendor of proprietary student list data they make available only to EAB clients. On the other hand, the student list vendor College Board – and also ACT – developed enrollment management consulting capabilities, including customer-facing software-as-service predictive analytics products.

4.3.2 ACT

University of Iowa professor Everett Lindquist developed the American College Test (ACT) in 1959 as a competitor to the Scholastic Aptitude Test (SAT). Lindquist was critical of the SAT's orientation towards measuring "aptitude" and developed the ACT as an assessment of academic preparation on subjects that college-going students were expected to learn in high school CITE. Whereas the SAT was primarily used by selective universities in the Northeast, the ACT quickly became popular in the Midwest CITE. The ACT focus on achievement bore fruit in the 2000s when states began adopting the ACT as a statewide high school exit exam. The ACT student list product, which was named "Educational Opportunity Service" until recently, was based on data generated by the ACT and PreACT assessments.

From 2015 to 2020, ACT CEO Marten Roorda attempted to attempted to transform ACT from a "testing organization" to a provider of "learning, measurement, and navigation" [CITE] services in the broader EdTech space. Acquisitions were core to Roorda's transformation strategy and the majority of acquisitions occurred in the "learning" and "measurement" spaces (e.g., 2018 $7.5 million investment in adaptive learning company Smart Sparrow, 2020 acquired K-8 adaptive learning platform ScootPad) [CITE]. In 2018, ACT acquired the National Research Center for College and University Admissions (NRCCUA) – a major player in the student list business – and its subsidiary Eduventures, a consulting firm focused on innovations in higher education. As of 2021, the ACT's student list/enrollment management product suite consist of the Encoura Data Lab (student lists and data analytics), Eduventures (market research and consulting), and Omnichannel Enrollment Services (digital advertising). While the acquisitive approach of ACT contrasts with the internal development approach of College Board, both organizations adopted many of the same innovations.

The National Research Center for College and University Admissions (NRCCUA), founded in 1972, generated student list data by partnering with high schools to collect survey data from high school students. The survey, which students completed during school hours, asked students about academic achievement, extracurricular pursuits, and college and career preferences. In return, students received recommendations about best-match colleges and occupations. Compared to College Board and ACT, NCRCCUA was more liberal in the sale of student list data [CITE NYT ARTICLE]. In 2003, The FTC issued a complaint to NRCCUA and American Student List (ASL) LLC [CITE FTc COMPLAINT]. . According to the complaint, NRCCUA claims that student data "is shared only with colleges, universities, and other entities providing education-related services," but that "in truth and in fact. . . is shared. . . also with commercial entities for marketing purposes." Additionally, the NRCCUA survey "receives substantial funding from ASL" which uses NRCCUA survey data to "create lists of college-bound students that it sells to"consumer products manufacturers, credit card companies, direct marketers, list brokers, database marketing companies,and advertising agencies" [CITE FTc COMPLAINT].

In 2018, ACT acquired NRCCUA from the private equity firm Sterling Partners. Sterling Partners had acquired NRCCUA in 2016. Under Sterling, the NRCCUA student surveys completed by students during school were re-launched as an online college search engine named myOptions, self-described as "the nation's largest free college and career planning program." For ACT, the NRCCUA acquisition can be viewed as a horizontal integration in that the second-largest vendor of student list data gained market share by acquiring what had been the third-largest vendor. Additionally, the acquisition diversified the sources of ACT student list data, from a sole reliance on standardized tests towards the inclusion of a player in the college search market. However, the value of this acquisition is unclear because the college search market is competitive, with many players, suggesting that the market position of NRCCUA has eroded over time [CITE?].

In 20XX ACT developed the Encoura Data Lab, which integrates the ACT and NRCCUA student list businesses gives users data analysis functionality to inform decisions about student list purchases and broader enrollment strategy. The Encoura website, tagline "Enroll smarter with Encoura," states, "we've combined the myCollegeOptions program, Education Opportunity Service (EOS), and ACT College Score Reporting service inside Encoura Data Lab – higher ed's app-based platform for using data science, analytics, and research to enroll the best-fit students" CITE.

Accompanying the Encoura rollout, Eduventures and Omnichannel Enrollment Services provide consulting services that compete with enrollment management consulting firms. Eduventures, acquired by NRCCUA in 2016, was a market research and consulting firm focused "focused on innovations in higher education" [CITE BLOOMBERG PRESS RELEASE]. Under ACT, Eduventures offers "primary research, analysis, and advisory services to support decision-making throughout the student life cycle" – from recruitment to student success. Eduventures also advises universities in areas such as curriculum, gifts, and investments in technology. Omnichannel Enrollment Services, tagline "send the right message at the right time via the right channel," provides consulting around recruiting campaigns, including the delivery of digital marketing interventions on behalf of universities.

While broader organizational transformation initiated by CEO Marten Roorda was viewed skeptically – contributing to his resignation in 2020 – acquisitions and new products in the enrollment management space complement one another, at least in theory. ACT gained a new source of student list data while leveraging its student list business to generate demand for new enrollment management consulting services.

4.4 Failed Market Entry by Chegg

In preparation for a discussion of policy alternatives, it is instructive to analyze the case study of Chegg and Zinch, which is illustrative of a larger number of EdTech firms that tried and failed to enter the student list business.

Zinch, created by Princeton University students in 2006, was a company that matched students to colleges and to scholarships. Zinch users created a profile "similar to a college application, which could be browsed by colleges in which they were interested, providing a forum for a connection between college and Zinch user" [CITE WIKIPEDIA].

Chegg, a company known for online textbook rentals, purchased Zinch in 2011 for $27.2 million [CITE IPO]. The press release headline reads, "Chegg plans to expand into $7 Billion college recruiting market and increase student base by over 3.5 Million" [CITE CHEGG BUYS ZINCH]. Following the acquisition of Zinch, Chegg began offering College Admissions and Scholarship Services to students, which generated names for enrollment marketing services to universities. In 2013, Chegg became a publicly traded company (raising $187 million and valuation of $1.1 billion) [CITE TECHCRUNCH CHEGG IPO STORY]. The IPO prospectus, which claimed that in Chegg enrollment marketing services delivered "approximately 2.6 million paid leads for interested students" to 750 colleges in 2012 [CITE IPO], provides insight about Chegg's strategy to enter the student list business [CITE IPO]:

> Using the information from the more than one million college-bound high school students who fill out a profile using our College Admissions and Scholarship Services, we provide colleges with qualified leads to potential candidates... The leads can be based either on students' expressed preference for a particular college or matching students' general preferences with college profiles... Colleges pay for these services on a per-lead basis or on a subscription fee basis... Rather than spending hundreds or thousands of dollars per enrollment, colleges that use our enrollment marketing services can realize recruiting costs of generally less than $100 per student enrolled through our enrollment marketing services, and we believe they are better able to shape their incoming class, reducing transfers and drop-outs by using our services.

The IPO reported that one cost of the enrollment marketing services was "leads purchased from third-party suppliers to fulfill leads that we are unable to fulfill through our internal database" [CITE IPO] Chegg's long-term stratety was to increase the number of users by creating the Chegg Student Hub. In turn, more users would enable Chegg to "increase monetization of marketing services":

> We intend to leverage our enrollment marketing platform to increase monetization of potential leads by demonstrating our value proposition to more colleges, which will increase the number of paying colleges as the number of students and leads per student increases [CITE IPO]

However, by 2014, Chegg began promoting the "Chegg Cloud" as a broker/reseller which claimed to reach "8 out of 10 students actively researching schools online" by partnering with 18 of the top college search websites and mobile apps to aggregate student data and requests for information" [CITE CHEGG-2015-SOCIAL-ADMISSIONS-REPORT]. In 2017, Chegg entered a partnership whereby "NRCCUA will assume responsibility for managing, renewing, and maintaining our existing university contracts and become the exclusive reseller of our digital Enrollment Marketing services for colleges and universities" [CITE 2017 ANNUAL REPORT], effectively shuttling Chegg's enrollment marketing service.

To this day, Chegg remains a successful company – recording revenue of $644 million in 2020 [2020 ANNUAL REPORT] compared to $255 million in 2013 [2013 annual report], raising the question, why did Chegg's foray into the student list business fail?

In the absence of a published autopsy, we relied on background conversations with enrollment management consultants who purchased names on behalf of universities. The consultants we spoke with had little respect names provided by Chegg and similar providers. A principal concern was coverage; universitis are often trying to target particular subsets of prospective students but the names contained by these lists were a sparse, scattered subset of all prospects. Second, consultants criticized the low quality of these data (e.g., many missing fields), a function of names being generated from voluntary online survey responses. Another concern was timeliness. College Board and ACT generate student list data early in the college search process (e.g., PSAT, PreACT). By contrast, names cannot be derived from college search websites until students start searching for college. Finally, we reason that it is difficult to create a foothold in the student list business based on user data from a competitive market – college search enignes – that has no barriers to entry.

5 Student List Policy

5.1 Policy Concerns

Policymakers should care about student lists because research suggests that participating in the Student Search Service has large, positive effects on the access and degree completion outcomes of millions of students each year [CITE]. Furthermore, these effects appear to be stronger for low-income students, first-generation students, and students from racial and ethnic groups that have been historically under-served by higher education [CITE]. However, our empirical analysis of student list purchases [CITE] and conceptual analysis of student list products suggests these underrepresented groups are more likely to be excluded from underlying student list databases and more likely to be excluded from student list purchases by universities.

What should the student list business look like, from an equality of opportunity perspective? All talented, hard-working students should have the opportunity to attend a high-quality college or university, regardless of where they live and which school they attend. Student lists should provide eligible Title IV institutions with free access to the contact information of prospective students who consent to being contacted. Student list product filters should enable universities to target prospects with a reasonable chance of admission, but should avoid achievement criteria that systematically exclude students because of the curricular offerings of their school (e.g., AP exams). Student list filters should not allow geographic micro-targeting (e.g., at the zip-code level) and should not allow universities to target prospects based on the aggregate characteristics of their school or neighborhood.

Why does the actual student list business stray so far from this equality of opportunity ideal? Several important reasons are a function of student list vendors and the products they create.

First, underlying databases owned by College Board and ACT exclude many prospective students. Students who do not take College Board or ACT assessments are largely excluded from the lists these organizations sell. As more universities adopt test optional admissions policies, the number of test takers may decline in ways that are correlated with race/ethnicity, income, and geography. Considering the large relationship between inclusion in student list databases and college access outcomes [CITE], declines in the number of test-takers could negatively affect college access because universities cannot easily recruit prospects without knowing their contact information.

Second, the filters on student list products facilitate the exclusion of prospective students. For example, geographic micro-targeting filters and geodemographic filters conflict with the equality of opportunity ideal that universities should find high-achieving students wherever they are. College Board and ACT student list filters have become more elaborate over time. The rationale for new filters is to help universities can make "efficient" name buys that target "right-fit" prospects. Many talented prospects are excluded in the name of efficiency, but the only reason universities care about efficient name buys is because the price of names is so high. Third, the proprietary ownership of names and the oligopoly of name vendors undermine equality of opportunity. The price of names is so high only because College Board and ACT effectively operate a cartel. The test-optional movement threatens this cartel. Unfortunately, the organizations poised to fill this void are corporations and private equity firms that view names as a source of profit. Over X.X million high school students use Naviance to plan for college. Intersect enables universities to connect with high school students and guidance counselors who use Naviance. The PowerSchool-EAB partnership makes EAB the exclusive provider of Intersect. The arrangement raises concerns about whether Naviance users are being funneled towards universities that pay EAB for enrollment management consulting and funneled away from opportunities at universities that are not EAB clients.

Fourth, in addition to concerns about student list products and vendors, the enrollment priorities of universities may undermine equality of opportunity. Consider a public university that receives little state funding and views tuition revenue as the top enrollment priority. The name buys of this university likely focus on wealthy households. However, even if names were free, the university would likely focus recruiting expenditure on wealthy households.

5.2 Regulating the Student List Business

Having laid out the problems, how should policymakers think about regulating the student list business? To what extent should regulations focus on student list products and the vendors that create these products, or on the customers (universities) that buy student list? Focusing regulations on products and vendors rather than customers is conceptually attractive because lists purchased by universities are limited by what the product features allow. However, the Higher Education Act gives the US Department of Education regulatory authority over Title IV institutions, not over "third party servicers" with the exception of student loan services. The Federal Trade Comission (FTC) has authority over commercial products. The FTC and the Department of Justice Antitrust Division has authority of antitrust issues. An alternative approach is to regulate universities. At present, neither federal nor state policy regulate student list purchases by universities. However, there may be scope for requiring universities to disclose information about student list purchases.

5.2.1 Regulating Student List Products

Based on equality of opportunity concerns described above, student list products should be regulated to prohibit filters that allow geographic micro-targeting and to prohibit geodemographic filters, which target prospects based on the historical behavior of nearby peers. We believe that these filters increase the risk of intentional and unintentional racial redlining, particularly when they are employed alongside other filters (e.g., AP test scores). The viability of actually implementing these regulations depends on which statutes and agencies have regulatory authority over student list products, whether the filters on student list products run afoul current regulations, and whether regulations can be changed to prohibit these filters.

5.2.1.1 FTC Regulations and Guidelines The Federal Trade Commission has become increasingly concerned about products that utilize "big data," "artificial intelligence,"algorithms, and "predictive analytics," citing reearch findings that "apparently 'neutral' technology can produce troubling outcomes — including discrimination by race or other legally protected classes" (Jillson, 2021). Consumer protection laws enforced by the FTC that are salient to these technologies include the Fair Credit Reporting Act and the Federal Trade Commission Act.

The Fair Credit Reporting Act (FCRA), enacted in 1970, regulates "consumer reporting agencies," which "compile consumers' information and provide it to companies making credit, employment, insurance, housing, and similar decisions" (Commission, 2014, p. 4). However, FCRA generally does not cover consumer data sold for marketing purposes (Commission, 2014).

Section 5 of The Federal Trade Comission Act (FTC Act) prohibits "unfair" or "deceptive" practices. In contrast to the FCRA, "Section 5 is not confined to particular market sectors but is generally applicable to most companies acting in commerce" (Commission, 2016, p. 21). A practice is considered unfair if it satisfies all three of the following criteria CITE: (1)

"practice must cause or be likely to cause substantial injury to consumers"; (2) "Consumers must not be reasonably able to avoid the injury"; and (3) "the injury must not be outweight by countervailing benefits to consumers or to competition." Importantly, the FTC Act definition of unfair practices is concerned with outcomes rather than intentions.

FTC concerns and guidelines about big data, algorithms, and analytics emerged over the past decade following several reports and hearings (Commission, 2012, 2014, 2016; Jillson, 2021; A. N. Smith, 2020) ADD CITE [ADD CITE]). The life cycle of big data is divided into the four phases of collection, compilation and consolidation, data maning ana analytics, and use. The Commission (2014) report *Data Brokers: A Call for Transparency and Accountability* focused on the first three phases and the Commission (2016) report *Big Data: A Tool for Inclusion or Exclusion?* focused on how these products were used in ways that negatively affected low-income and legally protected populations.

Commission (2014) defines "data brokers" as "companies that collect consumers' personal information and resell or share that information with others" (Commission, 2014, p. i). Drawing from Commission (2012), Commission (2014) distinguished three categories of data brokers: (1) those covered by FCRA; (2) entities that sell consumer data for marketing purposes (which would include student list vendors); and (3) entities not covered by FCRA that use consumer data for non-marketing purposes, such as fraud detection. With respect to marketing, data brokers sell consumer data to businesses looking for customers. A common practice amongst data brokers is categorizing customers into different segments. For example, "Married Sophisticates" includes "upper-middle class . . . with no children" and "Rural Everlasting" includes includes single men and women over the age of 66 with "low educational attainment and low net worth" (Commission, 2014). Another common practice is to assign customers scores based on their likelihood of responding of making a purchase or responding to a marketing intervention (Commission, 2014). The FTC and other federal policymakers raise concerns

Commission (2016) described policy concerns about the usage of marketing products sold by data brokers. Broadly, policymakers are concerned that these technologies may be used to "categorize consumers in ways that can result in exclusion of certain populations" (Commission, 2016, p. 9). For example, "if big data analytics incorrectly predicts that particular consumers are not likely to respond. . . [or] are not good candidates for prime credit offers, educational opportunities, or certain lucrative jobs, such educational opportunities, employment, and credit may never be offered to these consumers" (Commission, 2016, p. 2). Additionally, Commission (2016) raised concerns that these products cause individuals to be denied opportunities based on the actions of others and that these products create new justifications for exclusion (e.g., excluding customers based on data gleaned from social media accounts), and excluding customers that are not included in the datasets developed by data brokers.

FTC has developed guidelines to businesses about the use of big data, algorithms, and analytics (Commission, 2016; Jillson, 2021; A. N. Smith, 2020). First, companies should consider how representative their data are. "If a data set is missing information from particular populations, using that data to build an AI model may yield results that are unfair or inequitable to legally protected groups" (Jillson, 2021). Second, companies should consider

whether the algorithm is biased against protected classes. For example, Obermeyer, Powers, Vogeli, & Mullainathan (2019) found that the algoritm used by a hospital system to predict health care needs was biased against Black patients because the algorithm was based on health care costs rather than illness.

Third, FTC recommends that companies focus on both inputs and outcomes that discriminate against protected classes. When investigating a particular product, FTC examines whether whether the algorithm explicitly considers a protected class – e.g., race, gender, religion. Additiononally, FTC investigates whether the algorithm considers inputs that are highly correlated with a protected class. For example, if "a company made credit decisions based on consumers' Zip Codes, resulting in a "disparate impact" on particular ethnic groups, the FTC could challenge that practice" (A. N. Smith, 2020). Regardless of the inputs utilized by an algorithm, FTC evaluations investigate whether the product has an "illegal disparate impact on protected classes" (A. N. Smith, 2020).

5.2.1.2 FTC Jurisdiction over Student List Products Are FTC regulations and guidelines salient for student list vendors and student list products? Commission (2014) defines data brokers as companies that collect and sell consumers' personal information. This definition clearly includes student list vendors, including College Board, ACT, Scholarships.com, PowerSchool in kts acquisition of the Naviance and Intersect products, and EAB in its acquisition of Cappex. The Fair Credit Reporting Act (FCRA) regulates "consumer reporting agencies," which sell consumer data for the purpose of "making credit, employment, insurance, housing, and similar decisions" (Commission, 2014, p. 4). Student list vendors do not clearly fall within the definition of consumer reporting agencies. Therefore, FTC likely categorizes student list vendors as data brokers that "maintain data for marketing purposes" (Commission, 2014, p. 1), which are not subject to the FCRA.

The majority of student list products seem to fall within the FTC interest in big data, algorithims, artificial intelligence, and predictive analytics. Student list products are increasingly marketed as applications of data science methodologies. For example, ACT states that the Encoura Platform – which includes student lists – "is an enrollment management technology platform that combines student intelligence data, advanced analytics" CITE. More specifically, consider the growing use of geodemographic filters by College Board and ACT against the four phases of the big data life cycle – collection, consolidation, analytics, and use – as defined by Commission (2016). Student list data are collected via College Board assessments. Second, in the consolidation phase, student-level data about academic performance and college preferences are merged with school-level and neighborhood-level data sources. Third, Commission (2016) distinguishes *descriptive analytics*, which seek to "uncover and summarize patterns or features that exist in data sets" (p. 4), from "predictive data analytics," which "refers to the use of statistical models to generate new data" (pp. 4-5). The geodemographic filters in the College Board Segment Analysis Service product are based on predictive data analytics in that cluster analysis is used to assign neighborhoods and schools to types (Board, 2011).

Section 5 of the FTC Act applies to companies engaging in commerce and prohibits "unfair" and "deceptive" practices. Although the FTC regulates deceptive lead generators that push

consumers to low-quality products CITE – including lead generators for for-profit schools – deceptive practices are not a substantial concern for the student list products discussed in this report. However, particular attributes of student list products may meet all three criteria of unfair practices and simultaenously have a disparate impact on protected classes, particularly race.

Consider the Segment Analysis Service geodemographic high school "type" filters, which are highly correlated with race (see Board (2011), p. 6). These filters are likely to cause substantial harm to consumers (criterion #1) because students attending high school types not selected by a university are excluded from outreach. Consumers cannot reasonably avoid the injury (criterion #2) because they cannot easily change schools. The injury is not reasonably outweighed by benefits to consumers or competition (criterion #3). The beneficiaries of high school type filters are universities, who are able to target customers more efficiently, and students who attend high school types that universities tend to select. High school type filters do not realistically benefit competition in terms of the price and quality of higher education purchased by students.

Applying this, other attributes of student list products may be considered unfair practices by the FTC Act. For example, most student list products all universities to filter by zip code, which is highly correlated with race. Filtering prospects based on zip code causes harm to students from excluded zip codes (criterion #1) that cannot reasonably avoided by students (criterion #2) and is not outweighed by benefits to consumers or competition (criterion #3). Similarly, the ability to filter prospects by AP exam score may be an unfair practice because students who attend high schools that do not offer substantial AP curricula are excluded. More broadly, College Board and ACT student list products exclude students who do not take one of their assessments. In turn, these products likely exhibit systemic racial bias in which students are excluded from the underlying database, which may cause substantial harm to consumers (criterion #1). However, consumers can reasonably avoid the injury (criterion #2) by taking a College Board/ACT assessment. Furthermore, this injury is reasonably outweighed by benefits to consumers and competition (criterion #3). The rationale is that College Board and ACT are the largest student list brokers and prior research finds that participation in the College Board Student Search Service is associated with substantially higher levels of college access and degree completion (Howell, Hurwitz, Mabel, & Smith, 2021).

5.2.2 Regulating Anti-competitive Behavior

The mission of the FTC Bureau of Competition is to prevent anti-competitive business practices by enforcing antitrust law, a role it shares with the Antitrust Division of the Department of Justice. Anti-competitive business practices are practices that restrain competition in a market, often resulting in higher prices, fewer choices for consumers, and lower product quality. Antitrust law is concerned with two types of inter-firm agreements CITE PODCAST. Horizontal agreements (e.g., price collusion) refer to agreements between competitors in the same market and horizontal agreements that restrain competition are call *horizontal restraints*. Vertical agreements refer to agreements between firms that operate

at complementary points in the supply chain (e.g., input supplier and manufacturer) and vertical agreements that restrain competition are called *vertical restraints*.

The student list business raises two potential antitrust issues. First, College Board and ACT are an oligopoly, raising concerns about horizontal restraints to competition. Second, PowerSchool-EAB partnership, which makes EAB the exclusive provider of the "Intersect" recruitment platform raises concerns about vertical restraints to competition.

Oligopoly and horizontal restraints. Robinson & Koley (2019) describes antitrust enforcement of oligopolies. An oligopoly is "a market form with limited competition in which a few products control the majority of the market and typically . . . provide similar . . . products" (Robinson & Koley, 2019, p. 1). Many product markets can be characterized as oligopolies. Oligopolies can be be "competitively benign" (Robinson & Koley, 2019, p. 1). However, "oligopolies can be unhealthy for the economy when they fundamentally impede the competition that is crucial for a properly operating economy" (Robinson & Koley, 2019, p. 1). Examples of anti-competitive behaviors oligopolies may engage in include raising prices relative to prices in a competitive market and setting "favorable terms of sale that would not otherwise be achieved in a fully competitive market" (Robinson & Koley, 2019, p. 1).

In the student list business, College Board and ACT satisfy the definition of oligopoly. As such, College Board and ACT may charge higher prices for student lists than would be charged in a competitive market. An potential example of "favorable terms of sale" is encouraging universities to purchase College Board/ACT enrollment management consulting services in order to gain access to data not included in student lists.

The Sherman Act defines and prohibits horizontal agreements that restrain competition (Robinson & Koley, 2019). Importantly, oligopolies are legal unless it is proven that the firms engaged in an express or implied agreement (Robinson & Koley, 2019). In practice, collusion (e.g., price fixing) is the primary reason oligopolies are held in violation of antitrust law. Collusion violates the Sherman Act because it "stands in contrast with substantial market positions achieved because of superior products" (Robinson & Koley, 2019), p. 2]. Case law generally holds that any horizontal agreement between members of an oligopoly is unlawful CITE PODCAST. However, proving that firms engaged in an agreement requires strong evidence. For example, Parallel conduct (e.g., simultaneously raising prices) is "necessary but not sufficient to establish a Section 1 violation" (p. 5) because parallel conduct can result from firms reacting to one another.

In 2021, both College Board and ACT charged $0.50 per name, an example of parallel conduct in the student list business. However, it is unlikely that this price is a result of an agreement between College Board and ACT. Even if collusion occurred, proving it would be difficult. In conclusion, the market position of College Board and ACT do not raise antitrust concerns because Sherman Act prohibits horizontal agreements between oligopolists rather than prohibiting oligopoly per se.

PowerSchool-EAB partnership and vertical restraints. Vertical agreements are agreements between firms operating "at different levels of production, distribution, or supply" CITE PODCAST. For example, a clothing retailer agrees to promote the products of a clothing manufacturer in exchange for a price discount. Vertical restraints defined as ver-

tical agreements that affect competition. Vertical restraints can increase competition or they can restrain competition. Antitrust law is concerned with vertical restraints that are anti-competitive in that "they hurt competition more than they help competition" [CITE PODCAST] including vertical agreements that "raise prices, limit output, restrain or exclude competitors, or decrease the available variety of products or services" CITE PODCAST

In 2021 PowerSchool entered into an agreement "with EAB Global, Inc. ("EAB")... for them to serve as ...the exclusive reseller of the Intersect student recruitment platform in the United States and Canada" CITE IPO. Intersect connects universities with the XXXX high school students who use Naviance for college planning. EAB pays PowerSchool upwards of $30 million annually to be the exclusive reseller of Intersect. In effect, the partnership grants EAB exclusive control over Naviance user data for the purpose of college recruiting, enabling EAB to connect Naviance users to university clients looking for students. Is the PowerSchool-EAB partnership a vertical restraint on competition?

Antitrust case law identifies different kinds of vertical restraints. Most broadly, vertical restraints are categorized as price-based or non-price based. A common price-based vertical restraint, known as "resale price maintenance" occurs when a manufacturer and a distributor agree on the price a product will be sold for. Non-price vertical restraints include "exclusive dealing" agreements between a manufacturer and a distributor, in which the distributor agrees to not sell products made by other manufacturers. In "exclusive distribution" agreements – often called "exclusive reseller" agreements – only one distributor is authorized to sell the the product of a manufacturer. The PowerSchool-EAB agreement makes EAB the exclusive reseller of the Intersect recruiting platform owned by PowerSchool.

CITE PODCAST describes recent changes how antitrust law evaluates vertical restraints. A consistent position of the Supreme Court is that "that Section 1 of the Sherman Act prohibits only unreasonable restraints on competition, not all restraints on competition." Following the 2007 Supreme Court case *Leegin Creative Leather Products v. PSKS*, antitrust law evaluates vertical restraints against the "rule of reason" analysis, which seeks to determine whether the agreement "has a substantial anti-competitive effect that harms consumers." Following 2018 Supreme Court case *Ohio v. American Express*, plaintiffs alleging vertical restraint must first establish that the entity imposing the vertical restraint has market power in a "relevant market" because the Supreme Court "recognized that vertical restraints often pose no risk to competition unless the entity imposing them has market power" [CITE PODCAST].

The "relevant market" concept is fundamentally important to vertical restraint cases because it determines where we look for harm. CITE PODCAST states that

> The relevant market in an antitrust case consists of a product market and a geographic market. Generally speaking, the relevant product market includes all the firms selling a product or service and any close substitutes for that product or service that would be reasonably interchangeable in the eyes of the consumers. The relevant geographic market is generally the geographic area in which the firm in question and its competitor firms compete for customers of the particular product that is the focus of the case.

Applying this definition to the PowerSchool-EAB exclusive reseller agreement, we conceive of EAB is an enrollment management consulting firm that helps universities recruit students. The product market consists of enrollment management consulting firms and the products/services these firms offer and the consumers in this market are universities seeking to enroll students. EAB satisfies the market power criterion because EAB and Ruffalo Noel Levitz are the two largest firms in this market. Although the agreement to be the exclusive reseller of Intersect can be thought of as a student list product, we exclude student list vendors from the product market because EAB does not formally sell student list products. The relevant geographic market is the United States because EAB and competitor enrollment management consulting firms compete for customers (universities) across the US.

Having defined the relevant market and established market power, we analyze whether the vertical agreement making EAB the exclusive reseller of Intersect has anti-competitive effects that harm competitors and consumers. Naviance is used by XXXX high school students, representing a substantial share of the college-going high school population. The exclusive reseller agreement may harm enrollment managment consulting firms (competitors) because Naviance users will be funnelled to EAB clients. In turn, competitor EM consultancies will be less able to find prospects for their own clients, making them less valuable to universities. Second, the agreeement may harm universities that are not customers of EAB. These universities may be unable to recruit high school students that use Naviance because EAB funnels Naviance users to EAB client universities.

Although not formally part of the relevant market, the agreement may also harm high school students who use Naviance in that these students will be funneled to EAB client universities. EAB charges higher prices than other EM consultancies, a cost that universities finance by charging higher tuition price. Therefore, Naviance users who are funnelled to EAB clients may experience higher prices than they would in the absence of the exclusive reseller agreement.

5.2.3 Higher Education Act: Regulating Title IV Institutions and Third-Party Servicers.

- Introduce relevant regulations/rules from HEA
- apply them to student list business

5.3 Replacing the Student List Business

Is this the best we can do???? an oligopoly dominated by racially problematic tests/ap curriculum and looming takeover by a private equity firm

6 Recommendations for Universities and Admissions Professionals

PUBLIC UNIVERSITIES HAVE A RESPONSIBILITY TO EQUALITY OF OPPORTUNITY; THAT ISN'T THE SAME THING AS MEETING ENROLLMENT GOALS AND IT SHOULDN'T BE APPROACHED WITH THE SAME MINDSET OF "EFFICIENCY"

UNIVERSITIES

- LONG-TERM INVESTMENT IN THE IN-HOUSE CAPACITY OF YOUR ENROLLMENT OFFICE AND ADMISSIONS PROFESSIONALS

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