

Limited Review of Associate Professor Ben Edelman  
For Promotion to Full Professor with Tenure

Committee: F073 [REDACTED] F058 [REDACTED] F034 [REDACTED] (chair); Paul Healy (ex officio)

Mandate and Summary Evaluation

Under the instructions of Senior Associate Dean Paul Healy, our committee was given a limited mandate: to evaluate whether Associate Professor Ben Edelman meets our academic standards (intellectual and teaching contributions) for promotion to full professor with tenure. Because a separate Faculty Review Board is preparing an independent report on Ben's behaviors inside and outside the school, we did not attempt to analyze or come to a conclusion regarding Professor Edelman's contributions to the HBS community (the third criterion for promotion). As a result, we do not offer any overall recommendation regarding promotion.

Based on our review, we concluded—by unanimous vote—that Professor Edelman passes our standards for scholarly impact and contribution. Letters from outside experts and from internal colleagues were consistent in their praise of Professor Edelman's research. Moreover, it was clear to us that Professor Edelman's work has been influential with both scholars and practitioners and meets the second audience test.

Professor Edelman's Background

Ben Edelman has a long history at Harvard. He received his A.B. in economics (summa cum laude) in 2002 and, in the same year, was awarded an A.M. degree in statistics. He then attended Harvard Law School, receiving his J.D. in 2005. Two years later, he received his Ph.D. from the Harvard economics department with a thesis on internet advertising (Ariel Pakes, chair, David Parkes, Al Roth).

In 2007, Edelman joined HBS as an Assistant Professor and was promoted to Associate Professor effective 1 July 2012. During his years at HBS, has taught the RC Negotiations course, two EC courses (Managing Networked Businesses and The Online Economy), Field Studies, FIELD 3, and LCA.

Scope of Our Review

The evidentiary letters in this report span two time periods. In the fall of 2015, a sub-committee was formed [REDACTED] F073 F079 [REDACTED] F034 [REDACTED] to evaluate Ben for tenure. At that time, the subcommittee interviewed [REDACTED] F014 [REDACTED] and outside experts [REDACTED] A006 [REDACTED] Professor [REDACTED] A006 [REDACTED]

who praised Ben's work—helped us understand the positioning of Ben's work in the “market design” community and suggested experts from whom we could request evaluations of Ben's work. We next interviewed Professor [REDACTED]<sup>A007</sup>

Professor [REDACTED]<sup>A007</sup> also praised Ben's work and pointed us to reviewers in computer science.

In 2015, we were disappointed by the outside-letter response rate. We received letters from the following individuals (their letters are included in this current report):

A001

A002

A004

A005

A003

Despite repeated requests and follow-ups, the following individuals did not respond to our requests:

A008, A044, A009, A011

Inside HBS, we received reviews from the following colleagues:

NOM

\* [REDACTED]

Other Units

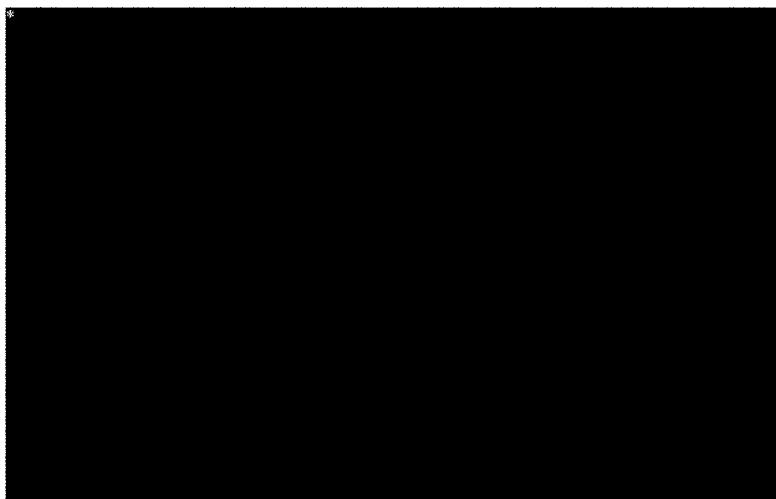
[REDACTED]

A subcommittee report was written in November 2015, but the Dean decided to postpone bringing the case to the appointments committee for two years.

In the summer of 2017, a new subcommittee [REDACTED]<sup>F073</sup> [REDACTED]<sup>F058</sup> [REDACTED]<sup>F034</sup> was formed to revisit the case and prepare this report. Again, the subcommittee met with [REDACTED]<sup>F014</sup> to obtain an overview of Ben Edelman's case and [REDACTED]<sup>F014</sup>

assessment of Ben's strengths and weaknesses. We also asked [REDACTED]<sup>F014</sup> to update our list of possible reviewers.

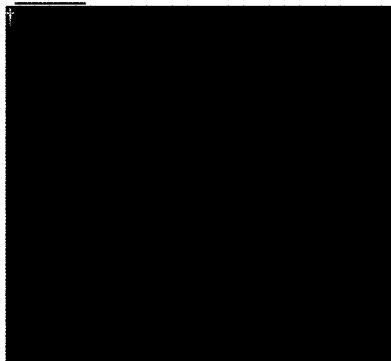
In the second round (summer 2017), we sent letters to:



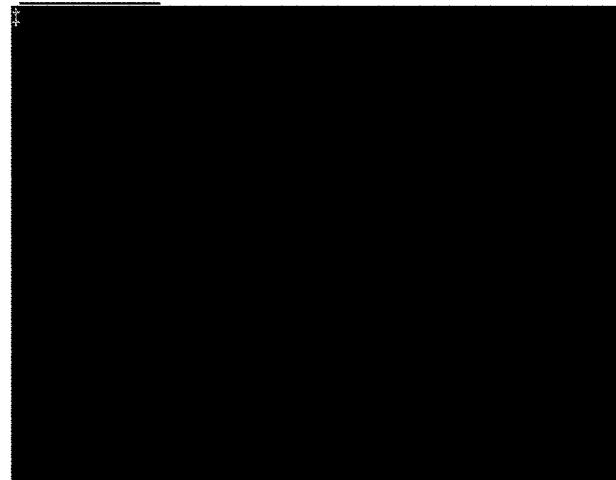
We received letters from all except [REDACTED]<sup>A008</sup>, [REDACTED]<sup>A016</sup>, [REDACTED]<sup>A017</sup>, [REDACTED]<sup>A018</sup> and [REDACTED]<sup>A020</sup>.

In the summer of 2017, the subcommittee also requested and received letters from the following colleagues in NOM and other units.

NOM



Other Units



Most internal reviewers responded with new letters: in this instance, we have included only the most recent letter in this report. Other internal reviewers told us that we should use their original letter for this review: in this case, the original (2015) letter is included and referenced in this report.

All reviewers (external and internal) received Ben's curriculum vitae and personal statement, along with five journal articles, two cases with teaching notes, and one technical note to help in their evaluations. A detailed list of the materials included in the review packet is included in an appendix to this report.

### Selected Summary of Professor Edelman's Contribution

Ben's work is difficult to pigeonhole (A006 [REDACTED] called it "an incredibly non-standard case"). He works at the intersection of economics, computer science, and law, all with a strong focus on the impact of the digital economy on practitioners, users, and society at large. His work examines the workings of the infrastructure underlying the internet, the theory and practices of online advertising, and emerging opportunities for fraud and abuse.

Ben's most influential paper, coauthored with Michael Ostrovsky and Michael Schwarz, focuses on internet advertising and second price auctions (*American Economic Review*, 2007). This (new at the time) auction method is the primary revenue driver for Google and Yahoo. Ben's paper was the first to mathematically model the game-theoretic properties of so-called second-price auctions (successful bidders for an advertising position on a search webpage—ranked from most to least desirable position—pay the amount bid by the next lowest bidder) and to show the properties of equilibrium outcomes relative to other auction alternatives.

This paper set the stage for Ben's position as a leader in the field of market design: platform economics and auction design. (The Edelman, Ostrovsky, and Schwarz article was an important part of the deliberations to promote Ben to Associate Professor.)

This interest continues in a paper (2015, co-authored with Julian Wright) that sheds new light on the role of intermediaries (payment card systems, travel reservation systems, rebate services) in internet markets (*Quarterly Journal of Economics*). The results of his mathematical modeling are both counterintuitive and important. Ben examines the impact on consumers when such intermediaries (in so-called two-sided markets) are able to require sellers to commit to charging customers the same price for their products and services as that charged through the intermediary. The effect of this constraint, Ben shows, is higher retail prices across the board and overinvestment in intermediary services, all with a possible welfare loss to consumers.

In another paper (coauthored with Michael Schwarz), Ben looks at the market for IP addresses (*American Economic Journal: Microeconomics*). This paper addresses an important problem: the world's supply of Internet Protocol addresses is running out and decisions must be made about allocating the limited number of addresses to the highest-valuation networks. Again using a mathematical model, Ben proposes market rules to achieve social efficiency while limiting the oversight of central authorities.

To illustrate Ben's eclectic reach, we can point to four additional papers that make original contributions (among the 40-plus papers and articles on the list of materials he presented

to us). First is an empirical paper in the *Journal of Marketing Research* (2015, coauthored with Wesley Brandi) that examines affiliate marketing programs. Specifically, Ben studies the use by product sellers, such as Nordstrom, of intermediate “affiliate” websites (such as FatWallet and Amazon) to market and sell their products. Under such a system, the affiliate earns a commission each time a user clicks through to the merchant’s product site and consummates a sale. Such arrangements are notoriously susceptible to fraud (e.g., “cookie-stuffing” that generates commissions for a buyer who would have gone to the merchant’s site without the intervention of the affiliate, and payment of commissions for orders that are subsequently cancelled). The paper documents the prevalence of different types of affiliate fraud as a function of the management structures used by merchants to control their affiliate programs (management structures include managed by merchant, managed by independent specialist, and managed by network) and offers recommendations regarding the best incentive and monitoring arrangements for each management structure to maximize benefits to sellers.

A second paper, presented at the International Conference on Financial Cryptography and Data Security (2010), looks at typosquatting (the intentional registration of misspellings of popular websites). An example would be registering the domain name *facebook.com* to snare users who incorrectly type in their desired search word. Upon arriving at the (incorrect) site, users are presented with pay-per-click ads (often legitimate) that generate revenue for the typosquatter. Ben (and his coauthor Tyler Moore) “crawled” some 285,000 of these sites to document typosquatting practices. They found, for example, that websites with higher price-per-click websites were more susceptible to typosquatting and, as a result, posit that platforms such as Google AdWords (that maximize price-per-click) may worsen the problem. Solutions are suggested.

In a third paper, Ben reports who subscribes to pornography websites (*Journal of Economic Perspectives*, 2009). In this sole-authored (invited) paper, Ben gathers zip code data (with embedded information on average resident income, education, etc.) for subscribers to the top-10 porn sites over a two-year period. He analyzes this data by state (Utah has the most users per capita; West Virginia the least), income level (correlates positively with usage), urban density (more users in urban areas), religious observance (not significant), and other variables such as social capital (people who donate blood, engage in volunteer activities, and participate in community projects) and age.

Finally, Ben is making a splash with a new paper that documents racial discrimination on Airbnb (*American Economic Journal: Applied Economics*, forthcoming). In work that is typical of Ben’s creative approach, he devises a field-experiment where property owners (hosts) are presented with resumes of potential renters (guests) that are identical with one difference: half of the resumes list a name that many people would associate with an African American (e.g., Tyrone Robinson) and half list a white-sounding name (e.g., Brent Baker). Ben and his co-authors (Michael Luca and Daniel Svirsky) send 6,400 booking requests and document a sixteen percent difference in acceptance rates that is persistent across gender, race (white and African

American hosts are equally likely to discriminate), property price, and homogeneity of neighborhoods. Publication of this paper caused Airbnb to change its policies to reduce discrimination.

As this brief tour illustrates, Ben's work covers an enormous amount ground relating to online advertising, properties of internet platforms, and fraud and deception on the internet. All of Ben's work focuses on technology-related issues—both potential and actual problems—that did not exist before the internet. In our eyes, the best of Ben's work has the potential to achieve significant influence among scholars by building lasting theories to describe and understand new (yet likely durable) internet practices. Other parts of his work, however, document transient trends that are unlikely to be of lasting interest.

#### Standards for Promotion: Intellectual Contributions

The “green book” asks us to evaluate whether the candidate’s contributions are recognized as outstanding in an area of inquiry with broad and enduring significance for business practice. To be successful, a candidate must be “judged to be a leading scholar or educator.”

Ben’s first audience is scholars. To meet our promotion standards, Ben’s work “must meet the highest standards of conceptual or empirical rigor appropriate to the nature of the intellectual inquiry, while demonstrating appropriate linkages to related research and engagement with alternative views.” (para. 9)

#### Assessment of Internal Reviewers

F029

[REDACTED] summarizes the views of many,

“Ben is a new breed of internet social scientist, who organizes data in ways that could not have been conceived of a decade ago to answer fundamental questions facing the new economy. He uses his knowledge of the law, basic economics, and his massive knowledge of institutional details. His approaches are novel, logical, and compelling. But, perhaps what I value most is that Ben is motivated to make the world a better place through his work. He wants to use his unusual combination of talents to improve the welfare of society—whether through teaching, research, outing bad corporate behavior, or suing people who are engaging in bad behaviors.”

F024

[REDACTED] stated that it was “rare to find scholars [like Ben] strong in both theory and empirics.” [REDACTED] F024 reported that Ben’s price coherence paper was beautifully written, well-grounded, and highly original. [REDACTED] F024 also thought that the affiliate marketing paper demonstrated Ben’s “ability to cater to a number of audiences (which include scholars in the field of economics, computer science, marketing and law). Like others, [REDACTED] F024 thought that the generalized second price auction paper was a “complete home run.” [REDACTED] F024 was less

enthusiastic, however, about the typosquatting paper noting that it “does not strike me as a subject where a large, important literature of interest to business schools will emerge.”

F026 [REDACTED] calls the quality and volume of Ben’s work “truly exceptional” pointing to two characteristics that distinguish his work: “First, he makes outstanding theoretical *and* empirical contributions. ...Second, Ben’s conviction vis a vis consumer rights.” F026 [REDACTED] discusses in detail Ben’s racial discrimination paper as an example of Ben’s commitment to “using research to promote fair and nondiscriminatory market environments for individual consumers.”

F072 [REDACTED] after praising Ben’s paper on internet advertising and generalized second price auctions, which he also calls a “home run,” states, “There are many, many other thought-provoking papers in his vita.” F072 [REDACTED] writes approvingly of Ben’s price coherence paper, but adds; “even if Edelman can write some really exciting papers, I did find some of them less compelling (his paper on racial bias seems less impressive, in part, because the results are more predictable and the approach more derivative).”

F027 [REDACTED] states,

“‘The Market for Internet Addresses’ provides a good illustration of Ben’s strengths as a scholar. He often focuses on a specific problem, like the impending shortage of IP addresses, rather than a more general problem of the type preferred by many theoreticians, like the optimal allocation of fees for a two-sided platform. Ben gains very deep knowledge of institutional factors relevant to the problem at hand and uses that knowledge to identify key properties that must be reflected in his theoretical models.”

F015 [REDACTED] describes how Ben affected her decision to join HBS as an assistant professor, “When I prepared for my job interview in NOM years ago, I talked to one of my friends and colleagues at another school ... he asked me to read [Ben’s] ... AER paper with Ostrovsky and Schwarz and make up my own mind. ... In reading it, it became clear to me that Ben understands the workings of the internet ad market better than anybody else I know—something I had the pleasure to confirm when I met him in a one-on-one meeting during my job interview in NOM.”

In praising Ben’s work, F018 [REDACTED] states,

“...Ben is an unusual individual in many respects. One can only marvel at his unbounded energy, the depth of his mind, and his creativity in the way that he frames economic problems. These are not the sort of skills one learns in a classroom or seminars. They are borne of an intense, innate curiosity about every facet of economic activity and a drive to make the world a better place.”

F018 [REDACTED] then discusses in detail many of Ben’s papers including the internet advertising paper (“justifiably famous”), pricing and efficiency paper (“brilliant”), and price coherence paper (“the most creative of all [his] papers ...represents economic theory at its best”).

F017

[REDACTED] states, “A few [of Ben’s] research lines have had exceptional impact. One of these is the research devoted to the keyword auction ... Since this paper was written, there has been an enormous literature debating the properties of the design, and all of it traces its lineage to the paper. ... The paper on racial discrimination and profiling on Airbnb looks like another home run. ... Professor Edelman displays impressive breadth to go with the depth, developing insights relevant to advertising, search, typo-squatting, and contracting for smart phones ... it is rare for any scholar to have this much impact on such a wide range of topics.”

F014

[REDACTED] also called the second-price auction paper a “total home-run” and adds, “Many have suggested that Ben understood the details of the working of the internet ad market as well as anyone in the world (perhaps including the Google and Yahoo scientists who created these markets) ...” In pointing to Ben’s intermediaries paper, [REDACTED] calls it “another paper with home run potential” and states, “This paper is already receiving a lot of attention (it was being taught by Nobel Prize winners Jean Tirole and Al Roth even before it was accepted for publication). ... This paper brings insightful new theory to bear on a question that has both theoretical and practical importance.”

F013

[REDACTED] says that Ben’s work is “important, novel and original.” He continues, “his focus on the ‘foibles and follies’ of online platforms and the associated powerful intermediaries provides an important and much needed antidote to the (sometimes) over enthusiastic celebration of the online digital economy.” [REDACTED] points to the foundational importance of the auction paper and the intermediaries paper. [REDACTED] also notes that Ben is “not afraid to confront topics that may be commercially sensitive to large and important companies ... the ‘dark underbelly’ of successful online marketplaces,” noting the typosquatting paper and the Airbnb discrimination paper.

F008

[REDACTED] calls Ben “among the most impressive blends of scholar/practitioner/educator I have encountered, combining expertise in economics, computer science, business, law and policy.” [REDACTED] adds,

“His productivity is very impressive (and shows no sign of slowing down): 21 peer-reviewed articles, 25 cases, 19 teaching notes, and a few dozen other articles ... Moreover, it is not just the quantity, but the quality of his work that deserves mention: he publishes not only in top academic journals, but also in top outlets for impacting practitioners.

F010

[REDACTED] describes how Ben typically starts his projects by writing about an issue for a computer science audience. Then, he formally models the issue and publishes his results in an economics or management journal. Finally, he presents the knowledge he has gained to practitioner audiences. [REDACTED] adds, “This is the type of scholar HBS attempts to fosters—rigorously trained in a discipline (three in Edelman’s case) and publishing in top tier disciplinary journals, while deeply involved in practice and publishing prescriptive translations of the research in practitioner-oriented outlets.”

F038 [REDACTED] offered praise for Ben's new Airbnb racial discrimination paper noting, "The paper highlights an admirable pattern I noted in 2015: Ben's work often causes managers, regulators, or investors to take action." In his first letter, however, [REDACTED] raises two concerns,

"First, Ben's papers are so rooted in the details of specific markets that it is not always clear what generalizes from his papers. I'm not sure, for example, what I learned from his paper on the market for IP addresses that will apply to other markets with different details. Ben's paper [on affiliate marketing] ... boils down to differences across just four classes of fraud that differ in how clear-cut they are—not especially compelling. My second concern—a question really—is whether Ben has spread himself across so many audiences that he has not had a major impact on any. This is the potential downside of the diversity I applauded earlier."

F003 [REDACTED] states that "Ben works on contemporary problems of immense managerial, intellectual, legal, and public policy importance. ... It is vital that business schools have some of their best talent, like Ben, working on this complex [set] of issues that is both cutting edge and fundamental." Addressing Ben's different approaches—from theories based on abstract principles to specific, market-based phenomena, [REDACTED] concludes, "Across these and other contributions, his research draws appropriately and rigorously on multiple, complementary methodologies."

Like others, [REDACTED] F060 recognizes Ben's strengths and praises the intermediaries paper that [REDACTED] F060 says "is one of those rare papers that mixes theory and practice beautifully." [REDACTED] F060 questions, however, the causal story presented in Ben's paper (with Ian Larkin) that looks at the deceptive self-download practices used by authors to improve their SSRN ranking. [REDACTED] F060 concludes that this paper is only "modestly successful." [REDACTED] F060 is most bothered, however, by Ben's failure to influence legal scholars, pointing to the racial discrimination (Airbnb) and price maintenance practices (intermediary paper) that could have important legal implications. [REDACTED] F060 concludes,

"Overall, I find that Professor Edelman has excellent instincts regarding topic selection; he executes his papers with care; and he moves virtually effortlessly—certainly as well as anybody on the HBS faculty—between pure theory and very applied practice. There can be no doubt that the work has had an impact on the practice of management, though not in the traditional way. My only complaint is that he could have used the full repertoire of his training and talents to explore the legal implications that his econometric findings and theoretical models would suggest."

F061 [REDACTED] notes that most of Ben's work is co-authored but "these papers are among the very best work that these co-authors have produced, suggesting a significant (conceptual) Edelman effect." Pointing to the price coherence paper, [REDACTED] states, "What is most attractive about the paper is that its core results are very intuitive, almost ex-post obvious, yet hadn't (to my knowledge) been identified. Moreover, the results have considerable relevance." [REDACTED] states two "gripes" about Ben's work: the amount of co-authorship and the fact that Ben has spread his work over so many issues that there is not a signature "Ben" issue or approach.

F075 [REDACTED] calls Ben a “star” and states, “His training in economics, law, and computer science give him a unique ability to understand important phenomena in the digital economy, provide new, rigorous and creative insights, and then promote the ideas in a variety of forums, which get broad coverage in the press and in the halls of leading companies.” In his 2015 letter, F075 [REDACTED] cites Ben’s work that revealed that Google’s Android system was not as open as commonly believed (instead, handset manufacturers are locked into legal agreements to preload all Google applications to allow them access to Google Play),

“One of the things I like most about Ben’s work is his ability to uncover information that is not widely known or understood, and then expose the economic, legal, and policy implications. ... For both managers and many academics, this [Google’s contract requirement] was eye opening. Ben has also been able to translate his economic research into highly managerial articles, which can help managers address the evolving challenges in the online world. Ben’s April 2015 *HBR* article on ‘How to Launch Your Digital Platform’ is a good example...”

#### 2015 Assessment of External Reviewers

A001 [REDACTED] states,

“Over the years I have written letters ... for tenure on numerous occasions and this is one of the most substantive portfolios I have had to evaluate in that time. Having reviewed the materials I can say that I believe that **Professor Edelman is one of the best scholars in the intersection of economics, computers science, law and the digital economy at a comparable career stage and one of the most influential scholars on the digital economy in terms of wider impact today.**” (bold in original)

Referring to the IP addresses and the price effects of intermediaries papers, A001 [REDACTED] continues, “Taking a digital phenomenon and working out how to properly model it and analyze it is a theme in Professor Edelman’s work. ... I should emphasize that it is very rare for applied theory to be published in top tier economics journals these days.” He summarizes,

“The sheer volume of [his work uncovering poor behavior by firms] is staggering and unprecedented in a non-tenured faculty member. What is more, this impact is not simply based on opinions but in a forensic investigation of the claims and behaviors of companies concerned. This is something that academics are often capable of but rarely spend the time to carry out. Professor Edelman breaks the ivory tower mold here.”

A002 [REDACTED] praises Ben’s work on modeling new forms of internet auctions as well as the intermediaries paper. In describing the latter paper, A002 [REDACTED] states that it develops “ideas in a clear, understandable model, and draws out the implications for credit cards, airlines and other industries.” A002 [REDACTED] concludes,

"Ben has established himself as one of the leading authorities on the economics of the internet. He has made several influential research contributions, especially in the area of internet search advertising. He has been very active in developing teaching material and has written a number of excellent case studies. Finally, he is playing an influential public role in identifying and calling out misbehavior by internet companies. Overall, I see a strong case for promotion."

A003

A003 [REDACTED] states that "Edelman is a leading scholar in internet-related issues, and his work is exceedingly important and influential. He has made many original contributions to important business topics, and has substantially influenced the practice of sponsored search auctions, which generates over \$50B in annual revenue." Referring to Ben's paper on generalized second-price auctions A003 [REDACTED] states, "This paper has become *the* model of the generalized second price auction, used by Google, Yahoo! and Microsoft to operate their paid search auctions. It is extensively discussed in both the economics and computer science literatures. It is substantially more general than the simultaneous and competing paper by Hal Varian, rendering the latter little more than an example." After describing the mechanisms that Ben's paper identifies A003 [REDACTED] adds,

"I think it is fair to say that this paper is the most important contribution to the analysis of keyword auctions in the voluminous literature to date. ... The analysis contained in this paper is in standard use at Google and Microsoft primarily to predict the outcome of changes to system tweaks. ... Yahoo! used this analysis to adjust the reserve prices in its paid search auctions, with great and continuing success."

Referring to the paper on IP addresses, "Edelman's paper on IP addresses is the best source for understanding the problem. It is deep and insightful. It correctly characterizes the many subtle technological issues, a fact I have verified by working with engineers on this topic. I have used this paper extensively at [REDACTED] ... This paper is a must-read for anyone concerned about the future of the internet."

In summary, A003 [REDACTED] concludes,

"Ben Edelman writes deeply, authoritatively and insightfully about at least a dozen quite different topics. Anyone interested in the internet—and who isn't?—knows and appreciates his work. ... I strongly recommend Edelman for promotion to Professor. He is deep, important, insightful, and entertaining."

A004

[REDACTED] calls Ben an "exceptional scholar" and "one of the true pioneers in studying online businesses ... I think that in many ways his case for promotion at HBS is the strongest I've seen since [REDACTED] He should be promoted, and celebrated."

A004 [REDACTED] letter is peppered with superlatives: path-breaking, well-cited, novel, out-of-the-park home-run, seminal, shines brightly, insightful. [REDACTED] concludes,

“Ben is the very model of a modern internet scientist. He brings to bear a wide scholarship with a finely focused attention to relevant details that, in his hands, leads to important, generalizable theory, and deep lessons about online (and other) business. He is an enormous asset to HBS, and his promotion will be an occasion for celebrating HBS at its best.”

A005 [REDACTED] is a computer scientist who tells us that he has never met Ben and is only familiar with a subset of his work. “Nevertheless, he has made significant contributions to the area of economics and computation, and has quite [a] unique profile [as a] researcher, which makes me strongly believe he deserves being granted a tenured professorship ... with HBS.”

A005 [REDACTED] refers to Ben’s generalized second-price paper which, he claims,

“[It is] one of the two papers (the other is the paper by Hal Varian on position auctions) that basically initiated academic research on sponsored search, which is potentially the most important advertising market created in the last 20 years. The paper is not only a pioneering paper but it is also technically elegant, and has been the point of departure for much follow-up work.”

A005 [REDACTED] concludes,

“[Ben] is a major asset to scholars and students who may be exposed to the subject through HBS. Hence, I believe that in a business school context he is exactly the kind of researcher and educator one may desire. ... I therefore strongly recommend him to the mentioned promotion with HBS.”

#### 2017 Assessment of External Reviewers

A012 [REDACTED] writes,

“I consider Dr. Edelman one of the best scholars working at the overlaps of online markets, policy, and fraud. ... [his] research path and publication strategy are anything but ordinary. I write ‘anything but ordinary’ in the best possible sense: Dr. Edelman has been able to uniquely blend economics, computer science, and law expertise into a singular body of work that is rigorous as much as it has been impactful. There are very few scholars who are able to do that, and at that level.”

In his letter, A012 [REDACTED] refers to Ben’s second price auction paper (seminal, highly cited and influential), the paper on trust seals and website quality (clever, I have often used it myself in classes on privacy). A012 [REDACTED] also shares his impressions of Ben from academic conferences, “as a speaker and communicator, he is razor sharp, clear, extremely knowledgeable and confident.”

A006

[REDACTED] opens her letter by stating,

“Ben is a force of nature, one-of-a-kind, with the sort of creativity and passion that serves an amazing role model for young researchers and students. … he has repeatedly delivered what is considered to be the ‘holy grail’ of applied theory—theory that is non-obvious a priori, hits first-order issues, and that after the fact has a huge impact on business and policy.”

She describes the auction paper as a “true home run” and says that she teaches his price coherence paper to every MBA and executive class on platform markets. “This paper is a home run as well and role model for applied theory. … There are many papers on the economics of credit cards, including papers written by Nobel Prize winner … Jean Tirole—but none of the others cut to the core of what is important for strategy the way that Ben does.”<sup>A006</sup> [REDACTED] continues, “Ben’s paper on racial discrimination in the sharing economy is also a first-rate piece of research, this time empirical, that has a direct impact on policy.”

A013

[REDACTED] limits his review to Ben’s economics papers and concludes “that the best work is truly outstanding and could easily form the basis for a promotion to tenure at Harvard Business School.”<sup>A013</sup> [REDACTED] rates the 2007 auction paper as “truly outstanding” and tells us that the Ben’s racial discrimination paper is his favorite recent paper. He also states that the price coherent paper “is a nice contribution to the IO literature.”

A014

[REDACTED] sets the stage for his letter by telling us that Ben’s discussion of another paper (Lambrecht and Tucker) at a recent NBER conference “was the best discussion I have ever seen of any paper in any context. He explained the paper to the audience, described why it mattered, provided a critique, and did so with a perspective that no other economist (or lawyer) could provide. … everyone in the room learned something.” Like other reviewers, A014 [REDACTED] praised the second price auction paper and describes how he has built his own work on it. A014 [REDACTED] also liked the racial discrimination paper and the price coherence paper.

A014

[REDACTED] is also impressed by how Ben’s general interest articles “add to his already excellent research portfolio by increasing the potential impact of this ideas.”

A015

[REDACTED] referred to Ben’s most popular papers: the auction pricing paper (“clearly a home run”) and price coherence paper (“once again, he is at the front of a very important business and policy issue”). He states further, “I think his affiliate marketing paper adds more value than most of the academic search advertising engineering papers combined.” [REDACTED] also mentions that “some of his work that is published in unusual venues or on his web site may prove to be quite important.”

A007

[REDACTED] writes that “Dr. Edelman is a phenomenon. [He] is, in my opinion, the leading scholar in the world on online markets and networked businesses as these designs relate to issues of competition, policy and fraud.”<sup>A007</sup> [REDACTED] refers to Ben’s impact on policy (e.g. investigations by State Attorney General, IPv4 to IPv6 market-based transformation, new regulatory oversight, DOJ investigations, Congressional testimonies) as well his “ease with … multiple modes of inquiry (theoretical, empirical and experimental.) Above all, his papers

always reveal a great deal of creativity.”<sup>A007</sup> [REDACTED] is also impressed with how the price coherence paper “emerged as the result of discussions with American Airlines case protagonists.”

#### Standards for Promotion: Teaching Contributions

The green book tells us that “candidates for tenure must be deemed effective teachers.” To be deemed effective, the standards require that candidates have developed course materials, engaged students in discussion-based learning, and shared insights with colleagues through teaching notes.

Ben has written 22 cases with corresponding teaching notes, two technical notes, and two module notes. This material is taught in Ben’s EC course, “Online Economy: Strategy and Entrepreneurship.” Is this course still being offered? How should I reference it?

The cases and teaching notes focus on such topics as how two-sided markets work and mechanisms for distributing the costs of intermediaries throughout a network (American Airlines); compensation structures and rules for affiliates (eBay); different internet marketing technologies (Big Skinny); and platform design (LevelUp).

Importantly, the American Airlines case series provided the impetus for Ben’s paper on intermediaries, indicating a synergy between his course development and research.

Ben’s cases, like his academic papers, are rich in institutional detail and provide an effective platform for students to explore the implication of Ben’s research. Students learn not only how internet markets work, but they also confront the choices and tradeoffs that managers must make to operate effectively in this new and changing environment.

The American Airline series (A, B, C, D), for example, shows the progression of fee arrangement that American employed over time to reimburse travel agents and network distributors; the final instalment concludes by describing an antitrust trial between American and Sabre. The teaching note explains how instructors can put students in the shoes of the different actors as they attempt to gain advantage as circumstances change.

Ben’s eBay case focuses on the young (MBA graduate) director of on-site advertising at eBay who must come up with recommendations that would improve the ability of the company’s affiliate program to generate revenue. This case is taught in a four-part series (A, B, C, D) with the teaching note laying out the principles to be considered when exploring different options and the changes in organizational capabilities that each option would require.

The Big Skinny case describes a start-up that sells ultrathin wallets on the internet. The founder is surprised when a glitch in the company’s online promotion program allows 4,000 customers to order the wallets for free. The teaching note describes how the instructor can use this dilemma to discuss the pluses and minuses of different online marketing approaches (display ads, interactive content, sponsored search, social media, online distributors, algorithmic search, affiliate marketing, email marketing, group buying voucher sites).

The fourth case we mention is “Pivots and Incentives at LevelUp,” a payments platform that began by providing gaming-type rewards for people to interact with each other and targeted businesses. The case demonstrates how, over time, the company adapts to shifting opportunities and forces students to consider the growth implications of focusing on merchants, branded apps, and consumers.

Generally, Ben’s cases and teaching notes were positively reviewed.

F030 [REDACTED] reported that the LCA case “Three Problems in Protecting Competition” (with Lena Goldberg) was “an excellent case supported by an excellent teaching plan and teaching note.”

F024 [REDACTED] liked the LevelUp case but found the American Airlines case “much less appealing” because the teaching note was “uneven and patchy.” [REDACTED] did note, however, that he was pleased to see that Ben had figured out (since his promotion to associate professor) how to successfully integrate his research and course development.

F026 [REDACTED] found the American Airlines teaching note “particularly valuable” and reported that the LevelUp teaching note “provides an excellent game plan for discussion complete with instructor jokes and a brief discussion of how intermediaries provide incentives for price coherence and excessive intermediation.”

F027 [REDACTED] thought that the American Airlines case did “an excellent job of illustrating the market power of dominant platforms and the impact of price coherence.” However, [REDACTED] was less impressed by Ben’s new LevelUp case—“it explores too many issues.” [REDACTED] also reports that he has used two other of Ben’s cases to good effect. [REDACTED] reports that Ben’s course note was insightful but “would benefit from more work.”

F018 [REDACTED] pointed to the complexities of the airline networks and called Ben’s American Airlines series “a great resource” and the teaching note “wonderful.”

F014 [REDACTED] observed how well Ben’s course dovetails with his research agenda, and noted that virtually all cases in the course were authored by Ben. F014 [REDACTED] assesses the course materials (especially the teaching notes) as rigorous, compelling, and strong in institutional detail.

F013 [REDACTED] spoke very positively about both the American Airlines and the LevelUp cases (salient, vivid example, clear, rich set of decisions) and of the teaching notes that accompanied them.

F010 [REDACTED] called Ben’s Google case (coauthored with Tom Eisenmann) and Big Skinny case (coauthored with Scott Kominers) “world class” by pointing to external prizes these cases have won.

F038 [REDACTED] reviewed Ben’s course overview note and concluded that it “did a nice job of conveying the overarching flow of the course.” [REDACTED] also liked how Ben’s teaching notes for LevelUp and American Airlines were linked to his research and how they provided clever questions to guide instructors.

F047 [REDACTED] reviewed the Airbnb and LevelUp cases and teaching notes. [REDACTED] found the cases well-crafted and interesting. [REDACTED] concluded from the teaching notes that Ben had a “remarkable grasp of the underlying economic, strategic and legal issues. ... In sum I believe Ben Edelman is a gifted course developer and teacher, whose materials cause students, teachers, scholars and practitioners to think more productively than they otherwise would.”

F003 [REDACTED] found Ben’s American Airlines cases intriguing and insightful. He also praised Ben’s technical note on platform-mediated networks and his teaching notes.

F060 [REDACTED] called the American Airlines and LevelUp cases “terrific: rich context, tightly-connected to research, and clean managerial decision-points.”

F075 [REDACTED] described Ben’s technical notes as “sophisticated, relatively comprehensive, and built on the foundation of good research.”

A006 [REDACTED] states “I have used many of Ben’s cases in my teaching on platform marketplaces, and financial technology, for MBAs as well as executives. I’m always very pleased that he is one step ahead of the game in creating teaching material on relevant issues.”

A013 [REDACTED] —in a (somewhat pointed) retort to our request to review teaching materials says: “Several cases were included in the package you sent. I do not, however, teach in a business school and given HBS’s pricing practices would not use any of them in my classes and do not feel that I should volunteer time to review them.”

A001 [REDACTED] said that he used Ben’s Google, eBay, RightMedia, and Airbnb cases as well as several of Ben’s articles. He reported, “The only person whose writing is used more for my students is my own! Suffice it to say, that is suggestive of an important impact ...”

A002 [REDACTED] noted that Ben’s cases like Google and eBay “are some of the best teaching material available on internet businesses.”

A003 [REDACTED] told us that Ben’s cases and notes were important and salient and “add an important component to the wide and diverse population of Harvard cases ... Were I still teaching at [REDACTED] where I used Harvard and other cases, I would likely be using several of Ben’s.”

Based on our review, we concluded that Ben meets our promotion standards for developing course materials and sharing insights with other educators through teaching notes.

### In-Class Teaching

We learned early in our discussion with [REDACTED] F014 that Ben’s teaching style is unusual: instead of the usual chalkboard, Ben often records student comments on a computer keyboard with results projected on central classroom screens (“a three screen symphony,” said F015 [REDACTED] in a teaching observation letter).

In our 2015 report, we reviewed teaching observation notes prepared by [REDACTED] (good, but room for improvement). [REDACTED] (pleased with what I saw), [REDACTED] (terrific), [REDACTED] (pioneering use of technology in the classroom, but questioned efficacy and student comprehension), [REDACTED] (highly effective), [REDACTED] (truly excellent teacher) [REDACTED] (great case discussion), and [REDACTED] (highly effective teacher). [REDACTED]

In addition, several of the letter writers cited above referred to Ben's teaching abilities. [REDACTED]

[REDACTED] pointed to improvement and concluded that Ben had mastered case method instruction. [REDACTED] shared a note that she wrote to Ben after observing him teach in which she congratulates him for a "great" class: "you orchestrated it wonderfully." [REDACTED] believes that "Ben has become a truly excellent teacher." [REDACTED] tells us that the last time he saw Ben teach, the class gave his a standing ovation. [REDACTED] described his teaching performance as "solid with a clear teaching plan, command of the material, and the obvious respect of the students."

In a detailed letter reporting on his observation of an LCA class, [REDACTED] reported that Ben "did quite a solid job of teaching the class and ... cleared our bar for teaching performance." However, [REDACTED] was not convinced that a regular chalkboard would not allow better summarization of key points and flow of a discussion. [REDACTED] also was concerned that the class did not flow well, instead being broken into a series of "10-minute chunks."

[REDACTED] was similarly unimpressed by Ben's computer-based classroom management, describing that "There was seldom more than one hand in the air, and little reflection in the discussion. ... Because Ben does not use a chalkboard his pedagogy is excessively linear. The technology impedes spontaneity and flexibility."

[REDACTED] reported that he had seen Ben teach a couple of times in executive education and thought that teaching was "the weakest part of Ben's package." [REDACTED] acknowledged that Ben is a competent teacher, but that his style was not exciting: monotone, can get into minutia and lose the interest of students. Nevertheless, [REDACTED] concluded that Ben was "over the bar on teaching, but he is unlikely to become one of the star teachers at the School."

While recognizing the variability in the impressions of those who have observed Ben in the classroom, we concluded that, overall, Ben meets our standards for teaching effectiveness.

### Second Audience Test

The green book requires not only that a candidate make an outstanding contribution to a primary audience; in addition, the candidate is required to demonstrate "the potential to make a significant contribution to one of the others (the secondary audience)" of scholars, educators, and practitioners.

Ben's first audience is clearly scholars. The second audience for Ben's work is less clear (as [REDACTED] notes in his 2015 letter). However, in the view of the committee, Ben's work is of sufficient scope and impact that he could successfully pass the second audience test with either

educators or practitioners (as the very positive letter from [REDACTED] <sup>A003</sup> attests). We agree with [REDACTED] <sup>F075</sup> assessment: "Ben is clearly over the bar in terms of first audience (the academy), and what's most unusual, he is also over the bar on both managerial and educator audiences."

### Peer Comparisons

Many, if not most, of the letter writers described Ben as unique in the true sense of the word. As a result, relatively few offered any direct peer comparisons.

[REDACTED] <sup>F026</sup> relayed a recurrent theme, "While letter-writers are prone to stating that it is difficult to identify an appropriate peer group for the scholar in question, I believe this is uniquely true for Ben Edelman." [REDACTED] <sup>F026</sup> mentions "theoretical star" [REDACTED] <sup>A022</sup> and [REDACTED] <sup>A021</sup> as possible comparisons. [REDACTED] <sup>F026</sup> tells us that Ben has a somewhat different profile than these two but shines on different dimensions. "In sum, Ben lacks many peers for comparison purposes not only because he is unique but also because he is truly outstanding."

[REDACTED] <sup>F017</sup> [REDACTED] <sup>A023</sup> offered a detailed, one-and-a-half page peer analysis in his letter. He mentions [REDACTED] <sup>A021</sup> [REDACTED] <sup>A024</sup> [REDACTED] <sup>A012</sup> [REDACTED] <sup>A025</sup> [REDACTED] <sup>F024</sup> [REDACTED] <sup>F017</sup> [REDACTED] analysis explores different dimensions of comparison (that cannot be easily summarized in a paragraph). He concludes that "Professor Edelman compares very favorably with his cohort, and has provided unique leadership on a range of topics."

[REDACTED] <sup>F013</sup> said that Ben "is unique in his breadth and depth of work." He mentions two comparisons (both tenured): [REDACTED] <sup>A016</sup> and [REDACTED] <sup>A023</sup> [REDACTED] <sup>F013</sup> concludes, "Professor Edelman compares quite favorably to these benchmarks and his polymath capabilities and writing in a variety of fields probably cause him to have an edge over them."

[REDACTED] <sup>A001</sup> [REDACTED] presented (in his 2015 letter) a table of citation counts for eight scholars including Ben and noted that anyone who topped Ben on this metric was tenured and had received their PhDs between two and seven years earlier than Ben.

[REDACTED] <sup>A012</sup> [REDACTED] <sup>A028</sup> [REDACTED] <sup>A029</sup> [REDACTED] compared Ben to [REDACTED] or [REDACTED] [REDACTED] <sup>A029</sup> and reported that Ben's work is more impressive and accomplished. He states, "For a closer comparison, I would have to look at scholars who are not in the same cohort as Dr. Edelman, but are in fact his seniors by a few years: scholars like [REDACTED] <sup>A021</sup> [REDACTED] or [REDACTED] <sup>A016</sup> [REDACTED] who have been exceedingly successful in related fields. Dr. Edelman compares very favorably to them, even though he is younger."

[REDACTED] <sup>A013</sup> [REDACTED] <sup>A001</sup> [REDACTED] stated that comparisons were difficult due to Ben's unique career path. He mentioned [REDACTED] <sup>A021</sup> [REDACTED] <sup>A014</sup> [REDACTED] [REDACTED] <sup>A021</sup> [REDACTED] For untenured comparisons, he named

A030

A031

and A032

He concludes, "Relative to this group Edelman stands out on several dimensions: his strongest paper is more important than those of any of the others; he is more active outside academia; and he has as strong a combination of economics and computer skills as any. His relative weakness is that he does not have nearly the depth of academic publications that several others possess, but one could easily weigh the pros and cons and put him at the top."

A014 [REDACTED] writes, "There is no one like him. He has a unique and powerful perspective. I have written promotion letters in the last three years for scholars at Chicago, Stanford, London Business School, Cornell, Kellogg, and a large number of other places. Professor Edelman's record dominates all of them in several dimensions: Quality of the top papers, quantity of papers in top journals, diversity of outlets, influence in the academy, and, perhaps most important, influence beyond the academy."

A015 [REDACTED] states that Ben "meets the usual bar for top tier institutions but does not vastly exceed it in terms of top tier journal publications in traditional outlets." In terms of comparisons, he also remarks, "Ben is somewhat in a category by himself." He names faculty recently promoted to tenure: A016 [REDACTED] A032 [REDACTED] and A024 [REDACTED] A024 [REDACTED] and concludes that Ben's "overall impact is substantially greater, but his overall research output in the usual outlets we consider for tenure is about comparable (perhaps less than some) and a bit more diversified, although this is counterbalanced by a few high profile publications like AER or QJE which is more unusual in the area and probably worthy of much greater weight and significance."

A007 [REDACTED] also states that comparisons are "difficult given that Dr. Edelman is quite unique in his research focus. He mentions A012 [REDACTED] A021 [REDACTED] A016 [REDACTED] and [REDACTED] and concludes "I think that Dr. Edelman's scholarship has had more impact than all except for Dr. A012 [REDACTED] and it is hard to draw a comparison between these two. Dr. A012 [REDACTED] research focus is on privacy, information systems and behavioral economics, and less about digital markets, broadly."

#### Letters Referencing Colleagueship

The final criterion for tenure demands that we seek candidates who display honesty, integrity, and respect for others; accept a fair share of administrative and mentoring activity; and contribute to the teaching and research environment of the School.

As mentioned at the beginning of this report, a separate Faculty Review Board subcommittee has been formed to investigate concerns regarding Ben's behavior both inside and outside the school. As a result, our subcommittee did not undertake a thorough analysis of Ben's colleagueship. Nevertheless, several letter writers referred to this issue and we wanted to be sure that their voices were heard. Not unexpectedly, opinions on the nature and impact of Ben's behavior varied.

F030 [REDACTED] told us that Ben was an outstanding citizen in LCA and a positive contributor to the LCA teaching group.

F029 [REDACTED] recounted how Ben has aided various of our colleagues: in one case, helping to implement new technology to overcome a peripheral vision problem; in other cases, helping to resolve disputes involving Amex, a neighbor's property line, and "a standard stream of landlord disputes, parking ticket disputes, etc." F029 [REDACTED] also tells us the Ben is acting as his attorney in a class action suit against American Airlines over bag fees.

F072 [REDACTED] reported having "lingering doubts" on Ben's "spectacular lack of judgement."

F062 [REDACTED] lists the reputational risks of promoting someone with Ben's penchant for the public spotlight but concludes that "his 'Sheriff of the Internet' persona is durably built around a strong commitment to finding the truth."

F015 [REDACTED] also was impressed by Ben's effort to develop new software to help our colleague with vision problems.

F017 [REDACTED] states that "Professor Edelman possesses an unusually direct conversational style, and it shows up in hallway conversations and seminar discussions, and it has shaped his broader reputation." F017 [REDACTED] goes on to say the Ben's "directness ... takes some getting used to," but concludes that, on balance, Ben's contribution is positive.

F014 [REDACTED] makes an impassioned argument for the good that Ben does in the school pointing, as examples, to his development of a participation tracker and technology to help our colleague with vision problems. F014 [REDACTED] notes Ben's passion, but recognizes that he can be "clumsy" in his behavior and in "sending and receiving social cues."

F013 [REDACTED] reported a "negative visceral reaction to the restaurant incident" and faulted Ben for his involvement in the Digital Initiative. "On various occasions, I would get multiple page emails about various areas that needed improvement. While I appreciated the feedback, lacking in this criticism was any willingness to offer solutions or prepare to take on any roles within the initiative to fix our shortcomings. I also found that he excessively pressured staff to 'fix things' ... that were beyond their span of control or influence. This I found off putting."

F008 [REDACTED] is a fan of the way Ben devotes his time to helping others in the school, again referencing the participation tracker and Ben's effort to help colleagues resolve legal disputes that are proving troublesome.

F010 [REDACTED] comments on the number of times that Ben has helped her and others with technology and unit activities. She elaborates, however, that Ben's attention to detail "can be wonderfully helpful and it can be irritating" and provides examples of both outcomes.

F038 [REDACTED] remains concerned. He states, "The questions raised by the Sichuan Garden episode remain pertinent and unresolved. Ben's 2017 personal statement is eerily silent on the episode, unlike his 2015 personal statement. Perhaps the silence reflects the fact that the Faculty Review Board (FRB) will weigh in on Ben's promotion case, including the Sichuan Garden episode. ...

Until then, I remain where I was in 2015: I would like to support Ben's promotion, but I cannot yet."

Referring to the Chines restaurant incident, <sup>F003</sup> [REDACTED] states that Ben "can have a tin ear for process and appearance. ... he was deaf to what publicly came across as an HBS-based Goliath bullying a local and small-time David. When broadly exposed in the media, this episode put him and, by association, the School in a bad light." <sup>\*</sup> [REDACTED] concludes that Ben has learned from this experience and is unlikely to repeat it.

<sup>F060</sup> [REDACTED] tells us that he [REDACTED] Ben and has "never witnessed anything other than appropriate behavior toward [REDACTED] or others in the unit." <sup>F060</sup> [REDACTED] also recounts how Ben helped [REDACTED] get a plane ticket home by pooling frequent flyer point.

<sup>F061</sup> [REDACTED] likewise believes that Ben is someone "who is very willing to help others" and describes how Ben arranged access for a new case for [REDACTED] and assisted with in class technology issues.

### Conclusion

Because a separate FRB report focuses on the issue of collegiality, our mandate was limited to an assessment of Ben's intellectual and teaching contributions; we do not offer an overall recommendation regarding promotion.

Our committee was impressed with the unanimity of reviewers regarding Ben's scholarly strengths. We conclude that he is an unusual, highly-skilled, and motivated individual who, already in his young career, has made influential contributions to scholarship, teaching, and the practices of internet companies.

Accordingly, in our opinion, Ben meets our academic standards for promotion to full professor with tenure.

### Materials Sent to Reviewers

The following papers and cases were sent, together with Ben's personal statement and curriculum vitae, to all internal and external reviewers:

#### Papers:

“Price Coherence and Excessive Intermediation.” *Quarterly Journal of Economics*. With Julian Wright. Full Cite

“Risk, Information, and Incentives in Online Affiliate Marketing.” *Journal of Marketing Research* 52, no. 1 (February 2015): 1–12 (lead article). With Wesley Brandi.

“Measuring the Perpetrators and Funders of Typosquatting.” Proceedings of the Fourteenth International Conference on Financial Cryptography and Data Security 6052 (2010). (Springer-Verlag Lecture Notes in Computer Science.). With Tyler Moore.

“Internet Advertising and the Generalized Second Price Auction: Selling Billions of Dollars Worth of Keywords.” *American Economic Review* 97, no. 1 (March 2007): 242-259. With Michael Ostrovsky and Michael Schwarz.

“Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment.” *American Economic Journal: Applied Economics* (Full reference). With Michael Luca and Daniel Svirsky.

F027 F017 F038 F075 F007 F072  
Additional journal article sent to all NOM reviewers as well as [REDACTED]  
[REDACTED] and [REDACTED]

“Pricing and Efficiency in the Market for IP Addresses.” *American Economic Journal: Microeconomics* (forthcoming). With Michael Schwarz.

#### Cases and Teaching Notes:\*

“Distribution at American Airlines” (A, B, C & D with TN)

“The Market Power of Platform-Mediated Networks” (Note)

“Pivots and Incentives at LevelUp” (with TN)

\*We asked [REDACTED] to focus his comments on Ben's course materials and teaching and accordingly sent [REDACTED] only the cases and teaching notes.