

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

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

Mandate and Summary Evaluation

Under the instructions of the 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. We did not explore Professor Edelman's contributions to the HBS community (the third criterion for promotion) and, 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. In 2011, he was promoted to Associate Professor. During his years at HBS, has taught the RC Negotiations course, two EC courses (Managing Networked Businesses and The Online Economy), and FIELD 3.

Scope of Our Review

We began our work by meeting with [REDACTED] NOM unit head, to obtain an overview of Ben Edelman's case and [REDACTED] assessment of Ben's strengths and weaknesses. We also asked [REDACTED] for a list of possible reviewers. Next, we interviewed (by telephone) Professor [REDACTED] [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 A007. Professor A007 also praised Ben's work and pointed us to reviewers in computer science.

From our discussions with Professors A006 and A007 and from our initial reading of Ben's work, we concluded that we would need to draw letters from three academic communities—economists, computer scientists, and legal scholars—as well as from practitioners. Accordingly, we sent materials with requests for evaluation to the following nine individuals:

Economics:

A008, A001, A002, A004

Computer Science:

A009, A044, A005

Law:

A011

Practitioner:

A003

Inside HBS, we received reviews from the following colleagues:

NOM

Other Units

The materials sent to these individuals are listed in the appendix to this report.

The response rate from the external reviewers was disappointing: we received letters from only A001 A002 A004 A005 and A003. The non-response of A008 A009 A044 and A011—despite follow-ups—was a concern for the subcommittee.

Unfortunately, by the time we became aware of the problem, it was too late to send new requests to additional outside scholars. However, the high degree of consistency among the five external reviewers, the two external experts we interviewed, and the sixteen internal reviewers gave us confidence in our conclusion regarding Ben's contribution to scholarship and teaching.

Selected Summary of Professor Edelman's Contribution

Ben's work is difficult to pigeonhole. A006 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 forthcoming paper (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 forthcoming 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 three additional papers that make original contributions (among the 30 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 *faceboik.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.

Finally, we note a paper that reports on 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.

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 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 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 behavior, or suing people who are engaging in bad behaviors.”

F072 after praising Ben’s paper on internet advertising and generalized second price auctions, which he calls a “home run,” states, “There are many, many other thought-provoking papers in his vita. The scope of his interests and his productivity are simply remarkable.”

F027 states,

“‘The Market for Internet Addresses’ provides a good illustration of Ben’s strength’s 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 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 Schwartz 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 stated,

"Let me say at the outset that if Ben Edelman's promotion were primarily based on his theoretical work, these three papers [internet advertising and second-price auctions; market for IP addresses; price effects of intermediation] could be the backbone of a very strong case. In the actual situation, however, they are only a small fraction of his output as a scholar, indicative of his quality of mind and the range of his scholarship, but only the tip of a very large iceberg."

F017 states, "Rarely does a researcher get it all lined up, as Professor Edelman and coauthors did in their work about search engine auction processes. The analysis is rigorous and durable ... The paper on racial discrimination and profiling on Airbnb looks like another home run."

F014 also called the second-price auction paper a "total home-run" and adds, "Many have suggested Ben understood the detail 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, F014 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) and I believe this paper has the potential to be another true home-run in Ben's research portfolio."

F008 calls Ben "among the most impressive blends of scholar/practitioner/educator that I have encountered, combining expertise in economics, computer science, business, law and policy." F008 adds,

His productivity is noteworthy: 17 peer-reviewed articles, 23 cases, 17 teaching notes, and a few dozen articles ... Moreover, it is not just the quantity, but the quality of his work that deserves mention. In the last year alone, he has articles in *Quarterly Journal of Economics*, *American Economic Journal: Micro*, *Journal of Economic Perspectives*, *Marketing Letters*, *HBR*, *Journal of Marketing Research*, and *Organization Science*."

F010 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. F010 adds, "This is exactly the type of scholar HBS, at its best, 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] also praises the knowledge of institutional detail that is evident in Ben's work. But F038 [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 that I applauded earlier."

F043 [REDACTED] states that "Ben's productivity in terms of journal articles, cases, and blog pieces that have led to changes in the real world is nothing short of dazzling." In referring to Ben's ability to influence economics scholars, F043 [REDACTED] notes Ben's technical skills in computer science and says, "Ben has thus influenced the theoretical literature by bringing it closer to the actual problems of the internet economy." However, F043 [REDACTED] does wonder, like F038 [REDACTED] about the generalizability of some of Ben's work. Referring to the IP address paper, F043 [REDACTED] states, "This is probably not a super deep insight, and I worry at times whether Ben is too interested in minutia of relatively short-lived relevance." But F043 [REDACTED] is impressed with the counter-intuitive finding of Ben's intermediaries paper, "This paper demonstrates something wholly unexpected ... giving value away for free (by an intermediary) makes people worse off !!!" However, after examining the unique conditions in which this result holds, F043 [REDACTED] voices the same concern about the generalizability of this result.

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, F003 [REDACTED] concludes, "Across these and other contributions, his research draws appropriately and rigorously on multiple, complimentary methodologies."

Like others, F060 [REDACTED] recognizes Ben's strengths and praises the intermediaries paper that F060 [REDACTED] says "is one of those rare papers that mixes theory and practice beautifully." F060 [REDACTED] 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. F060 [REDACTED] concludes that this paper is only "modestly successful." F060 [REDACTED] 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. F060 [REDACTED] 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.”

F075 [REDACTED] calls Ben a “superstar.” Citing 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), F075 [REDACTED] states,

“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, [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...”

Assessment of External Reviewers

A001 [REDACTED]

“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.”

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 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 behaviours 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 mould here.”

A002 [REDACTED] praises Ben’s work on modelling new forms of internet auctions and calls his result on the intermediaries paper “startling.” A002 [REDACTED] states that “the paper develops these 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 active in developing teaching materials 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

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 practice of sponsored search auctions, which generates over \$50B in annual revenue." Referring to Ben's paper on generalized second-price auctions, A003 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 adds,

"I think that it is fair to say 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 systems tweaks. ... Yahoo! used this analysis to adjust the reserve prices in its paid subscription 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 ... This paper is a must-read for anyone concerned about the future of the internet."

In summary,

A003

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

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 ... He should be promoted, and celebrated."

A004 letter is peppered with superlatives: path-breaking, well-cited, novel, out-of-the-park home-run, seminal, shines brightly, insightful. A004 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 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 ... at HBS.”

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

“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 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 strongly recommend him to the mentioned promotion with HBS.”

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 nine cases/case series, all with teaching notes, and three technical notes. This material is taught in Ben’s EC course, “Online Economy: Strategy and Entrepreneurship.”

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).

Ben's cases, like his academic papers, are rich in institutional detail and, importantly, they 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.

F027 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, F027 was less impressed by Ben's new LevelUp case—"it explores too many issues." F027 also reports that he has used two other of Ben's cases to good effect. F027 reports that Ben's course note was insightful but "would benefit from more work."

F018 pointed to the complexities of the airline networks and called Ben's American Airlines series "a great resource" and the teaching note "wonderful."

F014 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 assesses the course materials (especially the teaching notes) as rigorous, compelling, and strong in institutional detail.

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 compelling. 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 build on a foundation of good research."

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 "added 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 F014 [REDACTED] that Ben's teaching style is unusual. Instead of eye-to-eye interpersonal discussions with students, Ben often records student comments on a computer keyboard with results projected on central classroom screens ("a three screen symphony," said F015 [REDACTED]).

We reviewed teaching observation notes prepared by F007 (good, but room for improvement), F015 (pleased with what I saw) F018 (terrific) F082 (pioneering use of technology in the classroom, but questioned efficacy and student comprehension), F014 (highly effective), F008 (truly excellent teacher), F010 (great case discussion), and F047 (highly effective teacher).

In addition, several of the letter writers cited above referred to Ben's teaching abilities. F027 pointed to improvement and concluded that Ben had mastered case method instruction. F003 described a "solid performance with a clear teaching plan, command of the material, and the obvious respect of students."

F075 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." F025 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, F075 concluded that Ben was "over the bar on teaching, but 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 other possible audiences" of scholars, educators, and practitioners.

Ben's first audience is clearly scholars. The second audience for Ben's work is less clear (as F038 notes in his 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 A003 attests). We agree with F075 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, very few offered any direct peer comparisons.

A001 presented 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. While in some sense this made our deliberations on Ben's relative prominence more difficult, it appeared from the letters and our conversations

with the two outside experts that a lack of peer comparisons was due to Ben's strengths (there is no one quite like him).

Because of the paucity of comparisons, we quote F017 at length:

"The amount of output is astonishing. So too is the range. And, importantly, so too is the risk-taking. As benchmark, none of the other young stars in Web economics research have a profile with this much output, range, and risk-taking—not A023. A021 A024 A012 A016 A025 A025 Of A022 A021 has been engaged in the privacy debates, as has A012 and they come closest to straddling the same positive and normative fence that Professor Edelman has addressed. However, neither has engaged as extensively with normative policy. I would venture that A016 and A022 are the most productive on conventional grounds in doing positive research, and A022 the most technical skilled. All lack the range of Edelman, all have stayed within their respective comfort zones, and none has made any effort to shape public issues or teaching. Therefore, I have to say that Edelman's record is most comparable to A021 and much higher in profile. As for the range, when I look for somebody with a lot of writing across a wide range of topics, then I have to look at senior people, such as A008. It is hard to think of many others in this area who have the profile that speaks to researchers, managers, and educators."

Conclusion

Our committee was impressed with Ben's work and 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.

Appendix
Materials Sent to Reviewers

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

Papers:

- "Price Coherence and Excessive Intermediation," *Quarterly Journal of Economics* (forthcoming).
- "Pricing and Efficiency in the Market of IP Addresses," *American Economic Journal: Microeconomics* (forthcoming).
- "Risk, Information, and Incentives in Online Affiliate Marketing," *Journal of Marketing Research*, 2015.
- "Measuring the Perpetrators and Funders of Typosquatting," Proceedings of the International Conference on Financial Cryptography and Data Security, 2010.
- "Internet Advertising and the Generalized Second Price Auction," *American Economic Review*, 2007.

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] F047 to focus his comments on Ben's course materials and teaching and accordingly sent [REDACTED] only the cases and teaching notes.