



H A R V A R D | B U S I N E S S | S C H O O L

F017

Letter Concerning Professor Benjamin Edelman

August 14, 2017

I was asked to assess the case for tenure for Professor Benjamin Edelman. The academic work supports a very strong case for tenure. This is a unique situation, and this will take some length to explain.

Professor Edelman's research broadly falls into four broad areas. First, he examines mainstream economic questions in the Internet economy. Second, he examines questions from law-and-economics and policy, again, focused on issues found in the Internet. Third, he has a large number of speeches, un-refereed articles, and other types of managerial writing, all oriented towards various popular topics, typically about the Internet. Fourth, he has a number of cases and other material oriented towards teaching. In this letter I will focus on the first two categories, where I have read many of the papers, and not the latter two, where I have not read most of the writing. That reflects my own expertise, and the fact that I did not have time to read all of Professor Edelman prodigious output. It does not reflect on the quality of the uncovered topics.

**Business economics of the Internet**

Like many researchers in the area of business economics of the Internet, Professor Edelman spreads his writing across a wide range of journals. Among those commonly regarded as leading journals are *AEJ: Applied Economics*, *AEJ: Microeconomics*, *Quarterly Journal of Economics*, *Organization Science*, *Journal of Marketing Research*, and *American Economic Review*.

I would also include some of his writing in *Journal of Economic Perspectives* (4), and *Harvard Business Review* (3). These essays are accessible, but these are more than merely translations of existing (and otherwise obtuse) work. Rather, they address novel topics – such as research resources on the Internet, the role of zero price, or the characteristics of adult entertainment online (which has tended to be a taboo topic). These are designed to explain the plain economics of an issue, principally helping a policy audiences, managerial audiences, undergraduate audiences, and general readers. This is an unusual number for any economist, and it exceeds HBS norms.

A few research lines have had exceptional impact. One of these is the research devoted to the keyword auction. This research examines the quality-weighted second-price position auction, which allocates all the ads on Google's search engine page. The auction's design was invented by a few employees at Google, who were trying to improve on an auction that imitated competitors. Those employees had educated guesses for why the design worked so well, but no deep understanding about whether it would work at large scale. 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 this paper on which Professor Edelman participated.

F017



## HARVARD | BUSINESS | SCHOOL

F017

The backstory for this paper is well known. The initial paper was not alone. There was a competing paper by Hal Varian, who was hired by Eric Schmidt to examine the auction (This occurred while Professor Varian was dean at the information school at Berkeley. Today he is chief economist at Google.). Professor Varian was given insider access, wrote a paper stressing similar themes, and at roughly the same time. Yet, the paper by Edelman et al has been more influential among academics, and I believe one can see why in the later work. Their framework is rigorous and durable, and more flexible, and it resonates with others in the auction literature. The coauthoring team also has continued to pursue this line of work, examining open questions about bidder strategies and related topics. The totality of the work has generated an enormous number of citations, and had high impact by any definition.

The paper on racial discrimination and profiling on Airbnb looks like another home run, albeit, we are witnessing this paper at an early moment in a literature. This research documents a provocative phenomenon. While the explanation is straightforward, the work has profound implications. My understanding is that US regulatory agencies (i.e., the FTC) have become aware of the pattern and have undertaken their own investigations. So too has Airbnb, who has partially altered its practices. (Talk about impact!) The literature on “algorithmic bias” and other unintended effects of the design of online markets has a long way to go in front of it. I expect this paper to inspire a whole host of follow-on research.

I also respect the work on markets for IP addresses, though it is more of an extra base hit than a home run. This is a young market, but it is beginning to involve large amounts of money. (For example, last spring MIT just sold a large block of IP v4 addresses for over \$50 million.) The research considers different options for structuring the market, and identifies the principle challenges (i.e., breaking up IP blocks will increase costs in the routing tables.). I was not familiar with any of the issues before reading this paper, and liked its explanations. The authors also make a forecast – that after the market opens up prices will rise and then fall – which appears very testable in later events. There are probably more angles here that require exploration. I will be very curious to see the follow-on work.

Let me pause here and benchmark the research so far. A typical researcher in Internet economics at a top ten research-oriented business school will have one major paper a year, and maybe something else to go along with the agenda. Typically such a researcher will come up for tenure with two or three homeruns. Against this benchmark, Professor Edelman does very well with just his work in business economics. He has many papers and two homeruns. It forms a coherent agenda around new economic problems arising from the diffusion of low cost data networks. Professor Edelman also displays breadth to go with the depth. Finally, it is rare for any scholar to have this much impact.

### Law and economics

I am familiar with some of Professor Edelman’s research in policy and economics, and I will draw attention to a few topics where I recognize his contribution. Unlike the other work, I am unable to assess the quality of the journals.

Professor Edelman has pursued an agenda on regulatory issues in online advertising. He has had impact on regulatory practices in online advertising markets, and these issues are raised in *Journal of Law, Proceedings of Financial Cryptography and Data Security, Business Standard*. In this setting, he is regarded as an irritant by Google. Professor Edelman’s work, as well as that of others, has led Google to make a number of changes to its advertising practices – including things such as changing the color, sharpness, and distinctness of ads. For many activist scholars that would be quite an accomplishment. For Edelman it is merely one of many policy issues on which he has had impact.

F017



## HARVARD | BUSINESS | SCHOOL

F017

Professor Edelman also has had a significant impact on contracting practices in the mobile smart phone market, and some of those issues are raised in *CPI Antitrust Chronicle*, *European Competition Journal*, *Journal of Competition Law and Economics*. Professor Edelman deserves credit for this topic. He uncovered the bundling practices at Android, and drew regulatory attention to it. While the regulatory issues are still ongoing (outside the US), it is already apparent that he has had large impact on the market. By the norms of law and economics this also is a big impact on policy.

Professor Edelman also has done considerable research about advertising fraud and other advertising misrepresentation. The work appears oriented towards an audience interested in consumer protection. By the typical norms this activist agenda has also achieved an impact, garnering attention from the public at large and from relevant regulatory bodies from around the world, leading to the initiation of policy investigations.

Finally, a related line of research looks at typo-squatting –renting a domain name to take advantage of misspellings of surfers. The research focuses on a real phenomenon, and a major problem for the Domain-Name-System of the Internet. It raises thorny issues (which, to my knowledge, have not been “resolved” satisfactorily). These coauthors document that there are close to a million domain names reserved that take advantage of user misspelling. As with the work on IP sales, I give Edelman credit for identifying an issue, framing the analysis, and moving the discussion forward. Again, it is still early, and, now that Edelman has introduced me to the topic, I will be curious to read follow-on research.

Note the subtle differences between Professor Edelman’s writing in business economics, and his writing in law and economics. They both are analytical, but differ in the propensity to proffer a solution. His writing in law and economics offers normative policy prescriptions, while most economic research provides analysis and stops short of specific solutions. These differences reflect the norms of those respective literatures.

I believe the research in law and economics, and in Internet policy, has earned Professor Edelman critics and enemies. Most of the research points out where business practices skirts legal norms, or raises questions about whether business practice meets the standard of the latest court cases. By its nature, the studies put Professor Edelman in the role of tattletale on the powerful, and/or gadfly about lucrative practices at the edge of ethics. It also makes him a bit of an ally or troublemaker for a regulatory agency, who either finds itself on one side or another of these policy positions. No firm enjoys being identified in such research. It has cost many firms at least tens of millions of dollars in legal fees and regulatory lobbying, and untold costs in redesign efforts.

I also see from Professor Edelman’s CV that he has offered Congressional testimony, and offered testimony to regulatory authorities around the world. Further evidence of his impact comes in news coverage, editorials, policy discussion, and policy action in multiple jurisdictions. It is rare to see this in junior colleagues, and rarer still to see multiple such events among any faculty. By any definition I can imagine, I interpret it as a symptom of his engagement with the issues of the day.

For purposes of tenure, which is the question before me today, my conclusion has to stress the intellectual risk-taking and intellectual leadership. I can respectfully disagree with aspects of the policy, and still draw a firm conclusion that Professor Edelman has had a high impact in a range of Internet practices – including search, search advertising, IP address markets, smart phone contracting, and more.

F017



## HARVARD | BUSINESS | SCHOOL

F017

Summarizing, the work in law and economics also would be more than sufficient to merit tenure at most business schools. It forms a coherent agenda around new policy problems and solutions. Again, Professor Edelman displays impressive breadth to go with the depth, developing insights relevant to advertising, search, typo-squatting, and contracting for smart phones. Finally, it is rare for any scholar to have this much impact on such a wide set of topics.

### Comparisons

It is normal to compare a candidate with contemporaries. I will compare Professor Edelman with other young stars in business economics of the Internet – in particular, A023 A021 A024 A024 A012 A016 A025 A025 and A022. These are considered among the best young scholars in the world in Internet business economics. I will add two additional legal scholars who works in business schools, A026 A026 and A027 who are older.

Let's start with A021 and A012 who have been engaged in the privacy policy debates, using economic analysis to guide observations. Of these two I would say A021 comes closest to Professor Edelman, closer than A012. Both come close to straddling the same positive and normative fence that Professor Edelman has addressed. However, A012 has not engaged as extensively with normative policy, while A021 has. In another overlap with Edelman, she has moved into the debates about algorithmic bias – in her case, about inadvertent gender biases in online advertising.

There is also a useful contrast with A023 A016 A025 and A022. By the norms of research in Information Systems, A016 and A016 are the most productive in doing positive and technical research. A016 has focused on developing causal models in social networking analysis, while A016 has moved advanced econometric techniques and big data into just about any area he can apply it. Both are regarded as highly successful in pursuing their agendas at great depth. A025 and A022 (with whom Professor Edelman has coauthored work) are the most technical skilled by the norms of academic economics, and they would be regarded as the deepest by the norms of mainstream economists. None of the four has the breadth of Edelman. None of these four – A016 A025 or A022 – has any policy or normative writing, and, thus, none displays none of the similar impact in policy.

Aspects of A024 portfolio remind me of Edelman. In one-on-one conversation both share some of the same passions – for gadgets, for new apps from Internet firms, and for analyzing the businesses that provide them. That said, I would guess that A024 has a high profile among management scholars, partly due to his focus on strategic questions, and partly due to his abundance of charm and his presentation skills (e.g., he does A024 facilitates). In contrast, Edelman's profile among business economists must be higher, in part due to the focus of his work on economic issues and the publication of that work in economic outlets, and in part due to the use of economic modeling. A024 has a breadth similar to Edelman in positive work, and, unlike Edelman, does not venture into public policy. Hence, Edelman's impact on policy is higher.

A026 and A026 represent another model of a legal scholar in a business school. Both publish almost entirely in law reviews, and maintains a very high profile in policy debates. Like Edelman, both teach a variety of legal/regulatory courses (with A026 doing comparatively more teaching at A026 and A026 doing comparatively more teaching in A027 and both do considerable executive education). Both are more politically savvy than Edelman, as

F017



## HARVARD | BUSINESS | SCHOOL

F017

evidenced by their time on the transition teams for the [REDACTED] at different administrations and different political parties). They also show more willingness to convene occasional conferences at the intersection of technology and policy.

A026 [REDACTED] is most affiliated with two topics, early work on the law and economics of gamification, and early research on the need for regulatory law to catch up with Internet advances. [REDACTED] is more affiliated with skepticism about net neutrality (and for being the primary rhetorical opponent to A057 [REDACTED] and with books that call for tailoring Internet law to adopt to innovative engineering practices. Neither of them has the portfolio of publications in business or economics journals like Edelman, and, quite frankly, from multiple conversations with all of them, I would say that Edelman is a much better economic analyst. While all maintain a high profile, neither of them owns several high profile policy topics in the way that Edelman owns issues in Internet search advertising and smart phone bundling.

In conclusion, Professor Edelman has a unique place among his vintage, as well as among legal scholars in business schools. The researcher who comes closest in the combination of breadth, depth, and policy relevance is A021 [REDACTED] — who, I might add, recently received tenure in the marketing department at A021 [REDACTED]. Among the other comparable scholars, there are others with more depth along one research agenda, or with great displays of technical gymnastics, but none with a similar policy impact. I conclude that Professor Edelman compares very favorably with his cohort, and has provided unique leadership on a range of topics.

That said, it is also interesting that neither A026 [REDACTED] nor A026 [REDACTED] have quite the same extend of policy writing. I have a hard time coming up with a comparable academic who has taken on a similar role in Internet policy other than A021 [REDACTED]. More senior legal scholars come to mind. A057 [REDACTED] the original champion for Net Neutrality, comes to mind. So too does A058 [REDACTED] who is also somewhat comparable in his work to reform IP law. In case that is not obvious, these are all flattering comparisons. [REDACTED] and A058 [REDACTED] have ruffled a few feathers along the way. Again, this is a symptom of high impact.

### Collegiality

Lord knows that manners do not usually play a role in tenure cases. Yet, it must be acknowledged 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. Hence, I feel obligated to comment on his collegiality. I have positive things to say.

Professor Edelman has been a contributing member of the Digital Initiative, attending some seminars and meeting with visitors and occasionally hosting a small dinner at his home. He has also hosted DI lunches during the summer. And I turn to him (and others) every year to ask for suggestions for new speakers. He also has hosted lunches with executives, such as the former CEO for American Airlines (which I attended).

I also recently asked Professor Edelman to comment on a paper at NBER Summer Institute, where [REDACTED] the two-day meeting. His commentary about Lambrecht and Tucker's paper on algorithmic bias was quite good. He engaged the audience and helped move the conversation forward. Many participants later told me they considered it the highlight of the day.

F017



H A R V A R D | B U S I N E S S | S C H O O L

F017

Let me comment on his behavior in seminar and elsewhere. The directness does not bother me, but I do understand that it takes some getting used to. I have found him to be a good listener, and to engage in topics in deep ways, displaying astonishing recall of facts and arguments in spontaneous conversation. I have seen aggressive questions from Professor Edelman in seminar, but I never seen inappropriate seminar behavior from him. Though he has the capacity to make seminar speakers defensive, he is direct and polite. When he disagrees he acknowledges the differences and let's go at the appropriate moment. In sum, I am always pleased when we share a seminar. His participation improves the experience.

### Summary

To summarize, Professor Edelman has not played it safe. He has impactful work in both positive and normative areas. Professor Edelman engaged in conversations in a wide array of topics, and put out an astonishing amount of work. The extent of risk-taking – in terms of work in new research areas and in terms of confronting public issues – is unique, and shows intellectual leadership.

To reiterate, there is a very strong case for tenure based on the research and its impact, and I would be delighted to have Professor Edelman as a colleague.

F017