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Interview with Thibault Schrepel on Computational Antitrust

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Synopsis. We recently interviewed Dr Thibault Schrepel, Assistant Professor, Utrecht University, Netherlands & Faculty Affiliate at Stanford University's CodeX Center about his project entitled 'Computational Antitrust'. The interview proceeded with a Q&A mode.

The Interview

Abhivardhan: As of now because of the monopolistic behaviors of the big techs they can provide services either at free of cost or at negligible prices, so do you think that customers would want to give that when they have gotten more than just a taste of it?

Dr Schrepel: From my research the data that mainly comes from the work of Eric Barden Johnson from Stanford University, on the basis of which we now know that an average user will require over 17000 dollars a year to forgo search engine or an average user will require more than 3500 dollar to go without digital maps or another example they may actually require to pay over 1000 a year to not use video streaming services such as Netflix and YouTube; so that's something that's very valuable. It's not used by antitrust agencies, and to some degree I understand why it's not because its ok for companies to implement anti-competitive strategies and yet this is what we see in the big tech companies were saying basically look at the numbers I just gave you, which is very valuable and antitrust agencies were saying – yes this is true and yes, some antitrust computing practices should be punished. That I think must be the gap between the two which must be potentially covered up by a little more data. That's what worrying me much that some antitrust agencies seem to go in the direction of not business models neutral anymore and I think that's potentially the Amazon case in Europe; it's not very business model neutral and this is where the business models attack the core of the companies.

So, answering your question, consumers will be willing to let go of those services for the value that I gave you on the other end we must do something about what's anti-competitive.

Abhivardhan: As a follow, up to that question I would like to ask you this. What according to you is the relationship between the antitrust policies and the need to protect trade secrets? Do you think that the current big tech companies shouldn't have the rights to refuse or disclose secret interoperability information? For instance, like the EU did not think Microsoft had this right when its monopoly in 2012 was in question cause its refusal was an abuse of its dominant position and gave the company some unfair competitive advantage. so what do you think of it?

Dr Schrepel: For me there are two separate questions here, the first is the idea of making sure that companies will share some information with the agencies and for that I am actually in favor of giving more power to the competitive agencies. I think what's happening in the UK is actually quite great you may see the CMA requiring the companies and they actually done that not so long ago with google and Bing where they got access to all of their data for one week, and of course this is something where you will need some tools, they actually have to manage over 3 billion data in just a week. But that I think is something that is positive and as far as I know the European Commission may not do the same. So, I am all in favor of this type of disclosure. The other type of disclosure is where one company will have to disclose its data to one of its competitors and there, I understand the logic and I understand the Microsoft case at least in that regards, I can understand how this can potentially some bars years to enter the markets and therefore I see the reason why we may want to impose that a dominant company will actually provide its information to its competitors with some data. Unfortunately, if we do that, we tend sometimes to forget that it will actually favor the competition in the existing market and it will not create an incentive to actually create another market because of the barrier to enter the existing market and so that is referred to as the indirect entries between lots of indirect entries. [...] I think we should find a way to take that into consideration in antitrust policy. Potentially interoperability and the obligation to provide competitors with data, sure it could work but this is not actually the type of competition that you see within digital markets. So, I think this is not actually the holy grail when it comes to digital competition.

Abhivardhan: There has been lot of evidence that shows that how these tech monopolies have restrictive entry competition. So, what does it have with regards to the development of AI in these sectors? Do you feel it restricts innovation or does it help in ensuring everyone does not get their hands on this kind of technology? So, if that happens could that be a good thing? What's your opinion?

Dr Schrepel: My answer is that it's a feeling or it's what I think but it's really hard to get some hard data on that on that. We see is that the big tech companies they compete

heavily when it comes to AI. If you listen to the tech podcasts you will hear that everyday news story that Google, Amazon, Facebook or Apple are investing to develop in self-driving cars or home assistance or better search engines and so on. So, it seems that at least between those companies AI now is at the very center of the way they compete and we see that ever year they invest more and more money. Most of those company actually spend over 10 billion dollars a year in AI development.

I understand that for smaller companies you need to get access to some data because without the data if you are trying to train a machine learning system its near impossible. However, this is something which is dear to me. I think in the field of competition policy we should actually be looking into the technology and it seems to the best of my understanding that the more it goes the more you can develop a machine learning system without billions of data and we are getting better are actually training. The system with just a few of those of the data which was necessary just a few months or years ago, so if the trend is goes that way it means that start-ups will can compete with the tech giants if I may just give you an example you may know a website called depol.com which is a translation service online and it's a good example in my opinion because we were told a few years ago, that Google Translate will be there basically forever because the more people were using it the more the translation was becoming better and therefore it was impossible to compete and then comes another service which uses a totally different system based on deep learning and if you try it you will see that the results are much better than what Google Translate is providing us with so again the capacity to use fewer data to train system and eventually to compete in my view will be will be key when it comes to competition between big companies and smaller companies as for the competition between the big tech companies it is happening that's the least we can say.

Abhivardhan: [With regards to the] global and plural frameworks of international laws with regards to competition policy so what I would be interested to ask is [this:] Do you think there is a need for a solid framework of international anti-trust laws because what happens is that every country's approach to these monopolies is different should nations be left to their own opinions because like we can say there can be a comparative understanding between India and the US. The US's competition laws are of a completely different scenario while India's competition law earlier was inspired by Europe. Now it more mostly inspired by the US. So, I just gave an example. But what do you think what's your view?

Dr Schrepel: I think yes, we should have some sort of international framework and indeed I can see why this is good for companies to know that the same type of rules will apply all over the world and indeed most for instance in the digital market most of the companies operate all over the world and I think that without coordination between antitrust agencies, regulators and policy makers what you see (and that's very

interesting) is a winner takes all effect not regarding the tech but regarding the regulation (and there is a great book the title is the Brussels effect) and indeed GDPR is a great example we were the first in Europe to come up with some sort of big regulation regarding privacy and then in the us they have basically no choice but to implement similar regulations because otherwise it becomes a nightmare for companies and especially for small companies because of course the big tech – they can afford a bunch of lawyers but if you have a start-ups and you operate in different countries it becomes a nightmare to know which roles you should be applying. So, that's for the coordination. If we believe in competition, I also can understand why we may want competition between competition policies and competition regimes, so in that sense it might be great not to standardize everything but I guess where it will make sense. It's when it comes to using regulation to foster innovation rather than punishing anti-competitive behaviours and in the field of blockchain which is an example that comes to mind because I've been doing quite a few research in the field I think we may want to see different countries coming up with different type of safe harbours or regulatory sandboxes to try to attract companies and develop the ecosystem there and that will be positive but that's again only for granting rights to those companies rather than going after anti-competitive practices which I think should be eventually, you know, pretty much standardized all over the world. That's the dream. Of course, now we know it's not easy but luckily, we do have the OCED the ICN and a few other organizations trying to their best to coordinate between companies and I think they are doing a fantastic job so the more it goes the better.

Abhivardhan: You know – breaking of the big tech, considering the thing that already there are some cases where I would say other forms of disruptive tech companies (which we, you know, categorically in a loose fashion say, big tech) – they have already, you know, in some countries that already been trying to be banned in the case of ByteDance, we already saw in India; the US tried to do it but they failed and then I think in other countries also some incidents have happened. So, do you think it would help in reducing their monopoly and even if that were the case are they too big to break up what do you think?

Dr Schrepel: That's one effect. Another is that the economic effect will be hard to measure and we do have some empirical work. It reminds me of a great book that came out last year at the MIT press by Richard Gilbert and there is a table in the book where it shows that the relationship between the market structure and the level of innovation is very much unclear there are empirical studies going all over the place. So, we have no idea if it's best to have a monopoly, an oligopoly or a perfect competition. What we see is that if there is an oligopoly with a strong competition, it's actually good for innovation but it might be different for some for some of those markets, so we don't

know the social effects. I think we don't know. Potentially, you could argue that if you are to break up some of those companies, they will actually compete in a way which is even more aggressive and for that one good way to attract people's attention would be to publish more fake news and more of the type of content we are trying to eliminate. So, again it's a possibility I'm not saying it will happen but it's definitely a possibility what we know for sure and that is something which is a bit worrying in my opinion is that if you are to break up one of those companies, you will then have let's say five different entities, one with the service that the company can use to make lots of money but the other entities potentially will have only services or products which are being developed and those products or services potentially may be actually very costly and the company may need 10 or 15 years before making any sort of money. So, basically what you do if you impose the breakup and choose which services should go to which entity is that you will basically kill some of those services knowing that they are not tied together with all the services that the company can use to make money and that is worrying should we kill self-driving cars because now it's not ready or should we kill everything that is related to health potentially some people may want to but it seems to me that antitrust agencies are not the one to choose whether or not we should be doing that. So, overall, I'm a skeptic; although being a skeptic I think is very fashionable these days and I try to avoid the fashion. But when it comes to breaking up tech companies, I have no idea and therefore I think we should we doing it, you know, properly right and all that is something that matters. So, if you cannot prove to me how good this will be in my opinion, we should refrain from doing that.

Abhivardhan: People make arguments very interestingly that like for example when a government privatizes some aspects of something, for example, if railways is completely owned by the government, they can privatize some aspects of them, just you know for the sake of it. But the alternative argument for social media, for example, if they give or any other big tech if they wish to, they say that let's not nationalize everything or let's not just break it up - there are some segments or some aspects of some services that you're focusing on [so] let's nationalize them. So, this just came into my mind because I think I've been reading and hearing about it for a long time. So, what do you think of it?

Dr Schrepel: I mean that. But that's also that's the issue that comes after the one we've been discussing which is, okay, you broke up the company, you have five new entities or ten, and some of them will be nationalized. I but just for the sake of research would love to see that and to see government saying well that social media service is now nationalized and it becomes the one you know run by the government. Will people use it? I think to some degree some people would but by the end of the day it comes to which entities do you trust the most and my feeling is that we may tend to overestimate the trust people have in governments and that explain why blockchain is

booming right now because it is anti-system technology to some degree and it's still very much [in] presence there so I would love to see that will people go to Facebook. If Facebook was run by the US government, I will be very curious uh personally. I'm not sure if I trust a government more than one of those companies and so that is why I've been fascinating with blockchain because actually if you get rid of governments or at least governance in the sense that we know which is verticalized and centralized then potentially you recreate trust which is something which sounds very weird if you were looking at that from the 70s you will think well governance actually creates trust because you trust the person in charge of but potentially we have richer point in our society where the way to create trust is to get rid of governance as much as possible so it may explain why people are moving to the field of blockchain but at the same time we see that the adoption rate is very high for some industries such as fintech but not so much outside of financial services so overall very complex issues for the sake of research I would love to see that but I'm not sure if that's the good reason enough why we should actually break up the company so that I will be pleased and have a few papers to write on the subject.

Abhivardhan: That's really interesting point made about the issue of governance and how would you do because the issue of controlling things and how accountability is maintained many issues come up there and so, yes, it's really complex.

Dr Schrepel: If you discuss with some of the people in the blockchain environment, the first thing they will always tell me when I was discussing with them and some of the people, you know, running the behind the bitcoin core or some other blockchain - they were saying to me - yes - but if we do that, if we implement this type of change, we will get control and we do not want control, because control equals liability and we want to avoid that. So, I understand how a bit simplistic it might be but that's the spirit of those communities - no control - because they do not want liability; so, again it comes back to that issue of trust and the issue of who should be in charge if anyone which is not only a question of, you know, finding the right technology but also something more philosophical in a sense.

Abhivardhan: What's different here in the case of and new about Antitrust 3.0? Who are the important stakeholders what are some key new players and what is shaping the way 3.0 is developing what do you think?

Dr Schrepel: So, a bit of a background on that because some people may be asking what is Antitrust 3.0. So, it's in the research paper that I published for the project we've been launching at the Codex Centre at Stanford University entitled Computational Antitrust. I thought - well let me try to come up with a sort of a framework or just

introduction to the fields. And it seems to me (and I understand that this is very simplistic but overall) you could argue that Antitrust 1.0 is the one which was introduced with the Sherman Act so now quite a few years ago. Then we had Antitrust 2.0 which was the trend of making Antitrust more economical and always you've seen that on some; on one hand the Antitrust agencies were following that trend and also the companies where we're making sure that some of their practices will actually get to be to be explained in a way which was more economical. It seems to me that now we have reached a point where Antitrust 3.0 is not yet complete; we see companies using lots of digital services and implementing very complex and dynamic practices and yet some of the antitrust agencies are not fully ready for that because they are not yet fully transformed when it comes to being more digitalized. So, that's the rationale for the project that we've been launching. I'm very grateful for the Codex Centre for the support. We have now 50 agencies working with us, so that's the overall idea. Now to answer your question, I think the stakes are pretty much the same. I mean, at the end of the day, you do have companies: some of them are infringing anti-trust or competition law; and on the other end you do have the antitrust agencies. So, those are the same but it seems to me.

That the more it goes the more everything now is a question of politics and morale and you know putting your view to the field of Anti-trust and to some degree I understand that the way we apply the Sherman act as a political stance, I get that. But it seems to me that we could contribute to the debate by bringing some more data to the field so that we can make our moral choices in a way which is better informed because for now it is some time – two monologues of two companies and agencies or some think tank and others opposing one another without being able to prove anything except by saying that the other one is evil or bad or strawman and so on. So, that's the idea and for that it means that we need to of course have lawyers we need economists. But, that I think now is pretty much okay to work with economists in the field of anti-trust but we need also to bring someone else to the dance and that person is a data scientist or computer scientist and this will be complex because I think what we're going to see is the same thing that happens with economists coming to the field of antitrust and then some lawyers couldn't understand because they have never studied econometrics and, you know, the modelling of very complex economic systems and therefore we've seen some people rejecting the economics because they thought that they were actually providing with some argument which was not explainable for them to some degree. I think we're going to see the same when it comes to data scientists and computer scientists. They're going to bring some expertise to the field and some people probably will actually reject that and yet I think we have no choice but to actually work with data scientists and computer scientists to understand what the companies are doing better the more it goes the more you see that companies implement anti-competitive practices within the actual design and programming of their software's

and platforms and aggregators. So, we need to understand what's happening there; what's the dark pattern, what's an adversarial system and so on. So, that's the idea for the project so overall I would say the same stakeholders but informed by not only lawyers and economists but also data and computer scientists - that's the dream. It will take quite a few years but eventually we will get there.

Abhivardhan: So, there is something known as informational asymmetry which is usually more pronounced between consumers and corporations and can even be fuelled by agencies since it benefits internal bureaucracy and corrupt regular regulatory mechanisms how can basically try and solve that problem better? We can take the example of JP Morgan and the standard oil bribery case with regards to. What do you think?

Dr Schrepel: Again it seems that there are two sub questions: the one of the informational symmetry between consumers and companies can be solved technically but yet we have some empirical work showing that if you give consumers more data it's potentially not super useful since they will not actually take the time you know for reading and understanding the data so to some degree we could discuss it as great implication for what the European Commission is trying to achieve with the GSA the Digital Service Act. But, so that's one and I think overall, yes, more data is great but we have to think about the ways to by which we can actually display the data and change potentially the product and the services. The other type of informational symmetry is the one between the companies there and the agencies and this one I think can be actually solved not entirely of course but in a way which will be more rapid than the first one and there we have two symmetries – the first is the one which is raised by the fact that companies will actually send the information they want to antitrust agencies unless of course there is a down rate but I'm not discussing that here and so in a sense if you do emerge control for instance the companies will send the data they want and if you've been working in the law firm you know that it's not actually super scientific what's happening there. They have to estimate the market shares of their competitors and they have no idea. So, they will do in a way which, I guess, could be improved if we could actually automatize the way by which we transmit the data to agencies. So, that's one and the other one is the fact that once the data is sent to the agency, the agency will actually analyse the data and exploit the data, and, potentially will not actually send back the data to the companies, which means that the company then has no idea why some remedies should be taken or some commitments of course they discuss with the agency but it's hard sometimes to know what exactly is required from you is it better to just agree to let go of two businesses or a big chunk of your activity again talking in the context of merger control and there it seems to me that once again we could use some of the computational antitrust or computational tools to improve

that um and especially if we merge that with blockchain a blockchain is a database that is secured and that you could trust. So, if one company was to put some information on a blockchain and then try to get rid of some information before sending access to the agency that will be shown on the blockchain and the agency may then ask the question – why did you get rid of this type of information? I'm sure this would be valuable so that's one. We could also think that we could use smart contracts to implement remedies and commitments. So, overall, I think the tools may help to create a trusted environment and to automatize some of the information going back and forth from the company to the agency again. I'm not saying this will be perfect but especially in the field of merger control, I think it's a great example because some of the tools are ready for agencies and companies to use and potentially to improve the way antitrust agency function and we know that they complain they all pretty much all the agencies all over the world today. Merger control is taking a big chunk of their activities and they don't have the resources to go after anti-competitive practices the OECD actually came up with some numbers: 90% of all the cases come from reactive methods namely one company applying for leniency and only 10% comes from proactive methods which could be market screening and so on. So, if merger control was representing a bit less of the activities of those agencies potentially, they could actually redirect some of the resources to anti-competitive practices and that I think this will be for the better of the common good. So, that's the long answer to your great question.

Abhivardhan: So, let's get on transparency and the issue of privacy. How do you balance the privacy of data with transparency? So, we can say that of course not all the data used and generated by computational tools should be publicly available but perhaps processes and mechanisms should be. So, please shed some light on the kind of data which needs to be protected and what should be what should be available publicly and for discovery phases of cases. What do you think?

Dr Schrepel: So, let me take an example. Let us say that an entire agency will use machine learning to screen the market and to detect anti-competitive patterns and to potentially come up with a much better understanding of what is a company's strategy and therefore what might be the strategy in the coming days or weeks or months. This will be very valuable data for the agency and yet if the agency was to publish that data, this could be information about future behaviour's which is the foundation on top of which all the companies create cartels or potentially could use that information to try to disrupt the company being investigated. So, it seems to me that this type of data we do not want to be on the market available to anyone on the other end I think it is important that the company understands what are the tools being used by the competition agencies and what are the results and it's important for the company to understand the process of using the tools and reaching a certain result if that is not the case.

We could argue that due process will not be fully enforced and this will be a shame because the company must be able to explain why the antitrust agency analysis is incomplete or is factually wrong and so on. That's why I explained in that in that paper that you are referring to that the methods and the process should be explained and especially when it comes to anti-competitive investigations. However, we do not necessarily want all the information to be put out there for the sake of transparency because transparency may mean cartel in some examples, for instance. Of course, that brings us back to the issue of black boxes – can we understand the way an algorithm or a machine learning and deep learning algorithm function and I know this is a complex issue. My guess is that we'll be discussing that issue for a long time but there is one thing that I want to say is that a human brain is very much a black box, which is for now, very much difficult to enter even though we are making some progress in the field of neuropsychology and yet it's hard to understand why people make decisions when it comes to algorithm. I'm not saying this will be easy but we should remember that we oversee designing algorithm and even though they may be using unsupervised learning techniques and improve and learn from their mistake. If they do that it is because we gave them the right to do that; so, potentially we could retroactively try to go back and understand what has been the reasoning of the algorithm and provide the companies with the resonance so they could actually provide a fair defence to what is being argued by the agency.

Abhivardhan: With regards to the idea of East Coast Code and the West Coast Code Cooperation brought up in the conclusion of your article on CA, there's also deliberation as to how decentralization produces efficiency within blockchain systems which is what you argued when discussing blockchain as antitrust. Can you please discuss this further in the context of CA and how computation can facilitate efficiency in these interactions?

Dr Schrepel: So again, I'm going to try to tie everything in a way that is understandable here. First, what is the West Coast Code and the East Coast Code? So, I took that from the great and fascinating work of Lawrence Lessig from Harvard University. So he's basically explaining in his book Code 2.0 that the one from the East Coast is the one that is coming from US Congress and the one from the West Coast is the one of the Silicon Valley (the code inside our are computers and devices) and so, what you see is that the two has been opposing one another for quite some time and in fact law and technology, generally speaking, have been opposing one another. I've done some research and you can go back several thousand years ago, and see that already the law was trying to go after the technology whatever it was at the time. So, this is nothing new but to some degree I think you could argue that the confrontation between the two is becoming stronger and stronger and to understand why if one wants to escape

the other. I understand why we do need some sort of confrontation to make sure that the rule of law applies or that innovation can actually thrive. That being said I think we've probably reached the end when it comes to certain type of law and certain technology and so, in our paper we argue that when it comes to antitrust and to blockchain since they have the same objective which is to decentralize economic opportunities, they should find a way to cooperate and the reason is that they can complement one another in a way, which is nice. You could argue that antitrust agencies unfortunately maybe but may not be able to apply antitrust to all the practices. [...] We have some empirical work estimating that we detect between 10 and 30 percent of all the anti-competitive practices all over the world which means that potentially up to 90 percent of illegal behaviours are not being punished. If you can use technology in a way to shape transaction and to get rid of most of those anti-competitive behaviours, that's great. And in the case of blockchain, since, you have no middleman or at least you could design it in a certain way to eliminate some of the intermediaries, potentially, you can also eliminate all the practices that goes with intermediaries. So, in that sense blockchain complements antitrust and when it comes to antitrust, it could also very much complement blockchain. We have a few cases now going on in the US and all over the world in which you see that a blockchain ecosystem sometime may see some anticompetitive behaviours which are not solvable just by tweaking the code of blockchain a little bit. So, there you need the rule of law and that's why we argued in that paper that the two should collaborate and updated the very final version of the paper this morning on SSRN, so, you may then access the final version. Overall, this is how we see a cooperation between technology and the law and this is also pretty much the philosophy for the computational antitrust project which is trying to bring the law and technology together. We've been discussing a lot in the field of antitrust how big tech companies especially use technology to infringe antitrust which is true, but the other part of the story is that antitrust agencies could use some pretty much of the same technologies to improve the way they process and therefore can fight fire with fire and in that sense, it's a collaboration between tech and the law and that's what we are trying to activate in a very active way.

Abhivardhan: Considering the antitrust hearings and the attitudes adopted by big tech companies like Amazon in 2020, how do you think CA could have benefited a policy makers and regulators during the COVID19 pandemic? What's your view?

Dr Schrepel: I think indeed Computational Antitrust would have been helpful to agencies and to some degree to companies. Of course, we do have now a few investigations and the more data you have, the more you can understand the practices and the better it is where it's especially relevant. Again, in the field of merger control, we've seen that some agencies have been saying at the very beginning of the pandemic: “forget merger

control, forget getting an approval; we're going to postpone everything". Recently, the FTC in the US said well the fast track procedures are we going to get rid of those because we need more time and to some degree you understand why right and especially in the field of merger control agencies have only a certain time a certain period by which they can study all the data and they have no choice but to come up with the decision which is a bit different in the context of anti-competitive practices since they can decide to delete go with the case and they can take a few years if they if they need to which also raises some issue but in the field of merger control this is not the case they have 90 days' work days and they have to take a decision and their computational antitrust could have helped the antitrust agencies by speeding up the process a little bit. We now know that some agencies have to actually study and analyse over two billion data to actually come up with the decision to allow a merger or not and here. I'm confident that using some computational tools, it could be blockchain, it could be machine learning, it could be natural language understanding and processing, to try to understand what's the rationality behind the merger. The agencies could actually get to take a decision in a way which is more informed and also faster. That's why I'm absolutely delighted that we have more than 50 agencies now part of the project and agreeing to discuss those issues and potentially uh to implement some of those tools a few of those agencies and on top of my mind I can think of the US, the Netherlands, France and a few others are actually implementing and of course the UK. I think we will have no choice but to implement the tools. That being said I'm not arguing that we should [implement] all. [What] we should do is to develop the tools even in a cooperation between competition lawyers and computer scientists and then this will be the end of the story. I understand it will have some heavy institutional implications for the agencies and we should also discuss how to implement the tools within the agencies. What do you need as an agency is to actually be able to function and to operate those tools, which means getting the information, getting the expertise to use the tools but also making sure that computer and data scientists are part of the entire investigation process. So, all of those institutional questions eventually should be dealt with but of course this will be when some of those tools will be implemented in a way which is even more active than it is today. So, overall the answer is yes those tools can help they cannot solve all the antitrust issues far from that but they can actually inform the field in a way which will be nice if we want and try and this is a bit of a call right now to try not to eliminate but to mitigate a little bit our opposition between fractions of the antitrust communities because this is not working and we can actually reach some consensus in some places at least when it comes to the facts and so that's the idea behind the project and you could actually access all of our work if you go to computationalantitrust.com, we will be publishing papers every month.