DISRUPTIVE INNOVATIONS, COMPETITION, AND LEGACY INTERESTS

28 June 2015 | Speech delivered at Pembroke College

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INTRODUCTION

I'm very honoured to be here today to discuss what has become known as "disruptive" innovations or technologies. I personally prefer the term "transformative technologies", a term that captures at least some of the positive externalities of the phenomena we are discussing. Oxford University, through the research initiatives of its Oxford Martin School and other projects, is at the cutting-edge of exploring the impact of such technologies and – indeed – business models. I can think of no better place to have this timely discussion.

TONY WALKER AND HIS CAB

Technological developments shape and change our world; often in unexpected ways. The celebrated British science journalist James Burke has built his entire career on these unexpected pathways. Technological innovation has the potential to overturn lives, for better or worse, in the blink of an eye – even lives earned after a lifetime of hard work and ambition. We see that daily, even if we do not notice it all the time.

Earlier in the year, the Canadian film-maker Paul Almond passed away at the age of 83. He is not a household name, but he conceived the *Seven Up* documentary program, which ended up launching one of the most ambitious social documentary projects in the UK – and possibly in the world.

It's 1964. Almond selected 14 children from different social classes to interview about their lives and aspirations. The director Michael Apted picked up the project and followed up with the children every seven years. The last installment before Apted himself passed away was *56-Up* in 2012.

Now – what does any of this have to do with this conference, with innovation and disruption? In two words, Tony Walker.

He was one of the original fourteen; he appeared in each of the episodes that followed. Here's this impish, ambitious and focused working-class boy living in a council flat who confidently says, at 14, that he will be either a jockey or a cab driver. By age 21, he's failed as a jockey, so he starts studying for his London cab-license. At 56, in 2012, he and his wife drive a cab they own and have a comfortable middle-class life, including a Spanish holiday home. Incidentally, he is the only one of the children who kept in touch with Almond, the original director.

So here is this successful cab driver, the very personification of competitive drive and upward mobility. Now comes Uber, the very epitome of the smartphone economy: great for the consumer, possibly for the economy, certainly for competition. What about Tony and his life investment in his cab? *Let there be Uber*; but where will Tony be if *63-Up* were to be filmed? Would we rename his story "How Green Was My Valley", or should we try to write a different storyline than the standard one of demise and displacement of traditional industries in the face of technological progress?

CHALLENGES OF THE SHARING ECONOMY

My talk today will concentrate on three basic challenges of what has become known as the "sharing economy" and new business models such as Uber and Airbnb: to traditional service sectors; to regulators and their legitimate objectives; and to legacy interests that are principally the creatures of the regulatory state, but which nevertheless have expectations that cannot be ignored.

First, what is the nature of the challenge?

Imagine a service provision company that does not provide any services. Rather, relying on innovative software, the company allows individuals to sell services to one another, bypassing regulated entities.

Now, there is nothing innovative about individuals selling services to one another outside the regulatory framework; people have let rooms and apartments and offered ride-shares privately, no doubt since the first inns and coaches were established and long before anyone thought of regulating these services. A personal example: in 1989, just before the fall of the Berlin Wall, to encourage tourism, the Hungarian state-owned travel agency *Ibusz* used to arrange room rentals in private residences, in direct competition with state-owned hotels. Great way to provide additional income for pensioners, encourage private investment in renovations, and so on. The advent of the internet made this sort of private transaction easier, to be sure, but did not fundamentally shake existing sectors.

Fast forward to Uber, AirBnB and similar entities. These business models appear to be a form of **disruptive** or transformative innovation in the true sense of those words. Evidently, they offer important and exciting opportunities for consumers, including lower prices, greater convenience and a wider array of choices.

So if private transactions have always been with us and these companies offer services that consumers like, what's the big deal? There seems to be something qualitatively different about the new entrants and the new service models, and it is not just a question of new technologies. Is it possible that the platform makes transactions easier and more convenient because it actually reduces the risks of peer-to-peer transactions? I rented an apartment in Rome in 2006 and in Paris in 2014; the one involved a private transaction consisting of complicated money transfers and cash payments, and the other required a click of the mouse; I took the one on faith that the pictures and the location were not false, whereas the other had corporate guarantees and verified personal testimonials.

Similarly, ride sharing has made it easier than ever for us to find the transportation we need where and when we need it by allowing us to connect with a wide variety of drivers in a comparatively safe manner. Before services like Uber and Lyft took off, you could either wait for one of a limited number of taxis to become available, or take a risk requesting a ride from a stranger. Now, ride-sharing companies ensure that those strangers are trained, insured, and subject to regular peer reviews, enabling us to comfortably transact with strangers for transport services – and opening our options wider than ever before.

Are these technologies taking off because that most elusive of things, private-market regulation, appears to be working? Isn't that the essence of a successful competition model? What exactly are they disrupting then, other than the regulators and vested interests?

If the "market" were just about competition and consumer convenience, perhaps I could end my talk right now.

But there is more, and this brings me to the **second** challenge posed by these new entrants. And it is this: the new entrants appear to bypass not just traditional networks but regulations put in place for quite legitimate reasons – and in some instances, even tax rules.

In most modern democracies, indeed in most countries, regulations are in place for a good reason; no study of a regulated sector would be complete or credible without acknowledging a basic level of good faith on the part of regulators and the legitimacy of rules they put in place.

In this sense, a taxi regulator concerned about safety, or a hotel regulator concerned about health and privacy, is no different from a competition policy enforcer concerned about the integrity of the marketplace: for any market to function properly we need rules in place.

When Bauer's advertising gave the impression that its hockey helmets protected players against concussions, despite having no testing data to support this claim, Canada's Competition Bureau did not hesitate to take action and force Bauer to clarify this misinformation.

Regulations play an important role in protecting consumers, whether that`s ensuring that safety standards are followed, or making sure that they have enough accurate information to make a fully informed choice.

To be sure – and the Competition Bureau is on the record on this issue – regulations must make sense. What do I mean by this? In a nutshell, three things:

- the objective should be legitimate,
- the proposed regulation should achieve those objectives, and
- they should do so with minimal impact on competition and the functioning of the market.

But I think it would be uncontroversial to suggest that some of these disruptive technologies and models disrupt not just traditional businesses but the functioning of legitimate regulations as well.

And with those regulations, **the legacy interests** that are created by and bound up with them. This is the **third** challenge: the story of the London cabbie who could lose all his investment in training, experience and his very cab as a result of the disruptions caused by innovation.

Today, I would like to offer some of the Bureau's thoughts on these issues. Let me say that we are not experts in finding the appropriate balance between all the factors and considerations that should inform regulated industries. That is a job for policymakers and sector regulators. I offer these comments as an advocate for competition, and to promote understanding of the role disruptive innovations and regulation can play in fostering healthy, effective markets.

WHAT ARE DISRUPTIVE INNOVATIONS?

Disruptive innovations were first described through the work of Clayton Christensen and others in the 1990s and 2000s. A disruptive innovation is a new technology or business model that present customers with a service that is **remarkably** better than existing versions, thereby creating a new market or **drastically** changing an existing one.

They can be distinguished from sustaining innovations, which provide incremental improvements to existing services that are already valued by customers. Incumbents frequently invest in sustaining innovation to better suit the high-end, high-profit customers that are seen as the core of the market.

In contrast, disruptive innovations offer alternative packages that are frequently cheaper, simpler, or more convenient. While these packages often appeal to low-end customers who do not need the full performance offered by incumbents, they can also offer faster or more convenient services at a higher price. For example, Uber's controversial "surge" pricing model meant that customers that were willing to pay sufficiently high prices could quickly have a cab even in periods of peak demand.

In some cases, the disruptive innovation may be sufficiently appealing to attract entirely new customers, creating a new market segment. Services like Uber may be used by customers who want the great response times and conveniences offered by ride sharing, but also want to know that their driver has had a background check, is fully insured, and has been reviewed positively by other customers.

There has been a recent explosion of disruptive innovation in many sectors of the economy, powered by e-commerce models. From its modest start in 2009 as a luxury car service in San Francisco, Uber is now valued by investors at more than $40 billion and operates in more than 250 cities in 50 countries worldwide. In cities such as San Francisco and Dallas, Uber is estimated to provide between 50-70% of business travel rides. Its closest rival in the P2P ride-sharing business, Lyft, launched in 2012 and already operates in about 65 US cities, with plans to expand further domestically and internationally.

Meanwhile, Airbnb offered over one million rooms for guests in December 2014, beating out the largest hotel groups in the world – Hilton, Marriott, InterContinental – which each maintain just under 700,000 rooms. Airbnb is estimated to offer as much as 17.2% of hotel room supply in New York City, with this share expected to increase.

Even highly regulated industries, such as the financial sector, are feeling the impact of disruptive innovations powered by the Internet. Peer-to-peer mobile payment systems such as PayPal and Square, as well as disintermediated of capital through such crowdfunding models as Kickstarter and Indiegogo offer new ways of doing business, and new challenges for businesses and regulators alike.

Disruption is even being felt in services that were once thought to require a personal human touch, such as financial advisory services. So-called "robo-advisors" built customized portfolios for clients and use computerized algorithms to monitor and tweak them on an ongoing basis, offering a halfway point between bare-bones discount brokerages and traditional full-service financial advisors. Recent estimates have them managing more than $15 billion in assets in the US alone.

DISRUPTIVE INNOVATIONS MAY LEAD TO REGULATORY DISRUPTIONS

Some disruptive innovations shake up the market, but largely fit under existing regulatory regimes. For example, while robo-advisors may require some tweaks to consumer protection and privacy regulations, for the most part they comfortably fit under existing rules that govern the relationships between financial advisors and their clients.

In contrast, some disruptive innovations may prove challenging to policymakers by bypassing regulatory controls on an industry. Uber has faced-off against local regulators and municipalities on a number of occasions, and has been the subject of lawsuits and cease-and-desist orders.

For example, in December 2014, a court banned Uber from operating in Spain while it examined a case brought forward by the Madrid Taxi Association. Spanish phone companies have been ordered to block the Uber app.

In March 2015, a German court issued a nationwide ban on the firm's low cost service uberPOP, while France wrestles with whether to reverse or confirm a similar ban. Uber has filed complaints with the European Union against all three countries.

And recently, this past May 14, Uber's Montreal offices were searched by local tax authorities, on the allegation that tax law had been broken. Montreal had previously seized over 40 vehicles used by UberX drivers since the beginning of 2015.

Where a disruptive innovation challenges the effective operation of existing regulations designed to control an industry or market, there is regulatory disruption. For example, most municipalities have strict regulations concerning the provision of taxi services, requiring taxi drivers to own or rent one of a limited number of licenses, obtain adequate training and insurance coverage, and conform to specific rules concerning pricing, service quality, and accessibility. Ride-sharing applications such as Uber allow travellers to connect with non-taxi drivers, bypassing the regulatory requirements associated with taxicab drivers and impeding the effectiveness of the regulatory scheme. The face of the market may change significantly, as a much larger number of vehicles enter the market, some of which may not carry sufficient insurance, accessibility options, or other requirements normally imposed by regulations.

As another example, through its P2P accommodation system, Airbnb poses challenges to local hospitality regulations, condo board rules, and other limitations on who can charge what for short-term housing. Of course, some regulations may unnecessarily limit who can offer hospitality services as a form of guild or trade protectionism. At the same time, there may be real concerns where regulations essential to protecting health, safety and privacy are bypassed. Airbnb can also allow travellers and hosts to avoid taxes on hospitality services; these taxes form an important source of revenue for municipalities – including funds needed to pay for the municipal services used by visitors. Some disruptive innovations may even be designed to primarily cut costs, and thus offer attractive prices to customers, by doing an end-run around existing labour regulations.

CHALLENGES FOR REGULATORS

To the extent that they cause regulatory disruptions, disruptive innovations can create at least four kinds of headaches for regulators:

First, because disruptive innovations could bypass existing regulations, they may pose risks to health, safety, privacy, and other legitimate policy objectives.

For example, ride-sharing services are viewed with skepticism by a number of municipalities in part because the drivers are unlicensed, leading to health and safety concerns such as insurance coverage for passengers, vehicle maintenance, drivers' criminal records, and so on.

And, of course, these concerns are exacerbated where the innovation is new and untested. Let's take the example of nanotechnology or viral therapy for cancer; great potential, but do we know where they could lead? Let's not be too hard on regulators who sometimes desperately cling to the *status quo*; at least they know, or they think they know, it works and what the risks are.

Second, consumers may be unsure of how to adapt to new innovations; this in turn may necessitate educational campaigns or other efforts on the part of regulators. In the taxi world, customers may be under the mistaken impression that Uber drivers are fully licensed taxi drivers subject to regulated pricing. This may cause "sticker shock" if they use Uber during surge periods and end up with an unexpectedly high bill. I've been there; I know.

Third, some regulated industries are a source of significant revenues for governments. Fees and taxes may also be essential to governments to cover the costs of externalities generated by the industry. Disruptive innovations that avoid such fees and taxes can represent a significant revenue loss for governments.

Hotel and hospitality taxes are frequently used by municipalities to fund municipal infrastructure and other costs. Services such as Airbnb, which largely skirt such taxes, can thus pose a threat to a city's projects. Even sectors that do not play as much of a role in city revenue streams, such as taxi and limousine services nevertheless pay licensing and other fees that can help cover administrative costs.

Fourth, regulators will need to find a way to deal with legacy interests. These are people and businesses who are operating in the market using traditional business models – models created and supported by the regulatory state - but who nevertheless stand to lose from the spread of the disruptive innovation. Regulatory frameworks put in place by municipalities and other governments invite people to structure their livelihoods in accordance with these regulations. In turn, this creates an expectation that the regulatory framework will continue and that people will be able to earn a certain amount of revenue. When disruptive innovations pull the rug out from under traditional businesses, they will feel betrayed if regulators do nothing to help them.

Legacy interests can and do make their voices heard. In the urban transportation world, Uber and other ride-sharing applications have been widely denounced and resisted by taxi drivers and their associations. These sentiments were dramatically illustrated in June 2014, when an estimated 12,000 taxi drivers protesting over Uber brought London to a standstill.

CHARACTERISTICS OF DISRUPTIVE INNOVATIONS THAT CAN BE PARTICULARLY CHALLENGING FOR REGULATORS

Regulators, of course, have always had to adapt to changing business environments. But there at least three aspects of disruptive innovations that make them particular tricky subjects for regulation.

First, disruptive innovations often rapidly enter and expand into markets, and their impacts can be immediate and significant. Regulators may feel compelled to take action before they have had the opportunity to undertake research or stakeholder consultations that would normally inform their decisions. Such regulation risks being ineffective, inadequate, or poorly targeted. Google`s self-driving car, as well as other autonomous vehicles, have been banned entirely from California's roads while the state struggles with setting appropriate tests and standards.

Second, and in some cases relating to the first aspect, disruptive innovations may be highly technical in nature and often use new and complex technologies requiring specialized knowledge. Regulators may be forced to seek specialists to help them understand the innovation. For example, computerized medical devices, including the software used in the newest generation of radiation machines, can offer many benefits to consumers and health professionals. However, understanding them requires considerable technical and health knowledge, straining the knowledge resources of bodies like Health Canada and the Food and Drug Administration.

Third, disruptive innovations may cross national borders, requiring regulators to work with their counterparts in other jurisdictions to create an effective regime. Financial transactions across international borders that use disruptive P2P models, such as crowdsourcing and mobile payment applications, may require cooperation between financial regulators to ensure that funds are handled safely and securely, and to set up mechanisms for redress in the event of negligence or fraud.

SUGGESTIONS FOR REGULATIONS

Fortunately, regulators can make their jobs a little easier by keeping four general principles in mind when considering regulation for a disruptive innovation:

First, regulation should be as neutral as possible in how it applies to and impacts traditional business models and the new innovative model. Keeping regulations neutral ensures that policy goals are met, while providing a level playing field for competition. This improves the long term health of the regulated market.

For example, in urban transportation markets, there are legitimate policy reasons to require all drivers to carry sufficient insurance to cover passengers in the case of an accident. If traditional taxi drivers must offer proof of such insurance, then ride-share drivers should be required to do so as well. However, they should not be required to carry more or less insurance than taxi drivers.

Regulators should also take the opportunity to consider whether existing regulations are necessary for the industry. In the urban transportation example, if regulators determine there is no reason to limit the number of ride share drivers, then perhaps there is no reason to limit the number of available taxi licenses either.

Second, regulation should be limited to the minimum necessary to achieve specified policy objectives – this allows regulators to meet their goals without compromising the benefits of competition, including quality, choices, and prices.

Third, regulation should be subject to periodic review to ensure it is working effectively. If the regulator feels that rapid regulation is needed to prevent harm, they should consider the use of a sunset clause to ensure that the issue is revisited once the regulator has had the time to collect and consider evidence and proposals.

Fourth, care should be taken to ensure that regulation is impartial. Legacy interests, such as taxi license owners, may have made significant investments under the belief that the regulatory framework would continue, and may stand to lose a lot from the entry of disruptive business models. So they have strong incentives to persuade regulators to block such entry. This can create a high risk of regulatory capture, where legacy interests cajole or threaten regulators to protect their interests rather than those of the public. For example, they may persuade regulators to put in regulations that restrict the entry of cheaper competitors, or limit advertising so that consumers do not learn about new services on offer.

Regulators should consider steps to reduce the risk of regulatory capture, both by legacy interests and by disruptive innovators. As an example, including a variety of stakeholders in open and transparent consultations and standard setting discussions can be helpful. Regulators can also reduce their headaches by reaching out to legacy interests and others that may be negatively impacted by their decisions.

DEALING WITH LEGACY INTERESTS

Legacy interests operating in regulated markets stand to lose a lot from the sudden arrival of disruptive innovations – sometimes even their entire livelihoods. Complying with a government's regulatory framework often requires significant investment on the part of a market participant – for example, owners of taxi licenses in New York City may have paid up to $1 million for a taxi medallion. The owner may well have gone into significant debt to purchase this asset, with the expectation that regulations would persist and that she would be able to recuperate her investment. If a disruptive ride-sharing application then enters into the market, dodging the regulatory framework and steals customers away, the resulting value loss in her medallion will be devastating.

Regulators are faced with a difficult problem – how do you allow the benefits of disruptive innovation, while helping all the people who played by the rules and reasonably invested in licenses and equipment that no longer has any value?

Generally, policymakers faced with regulatory disruptions will have to choose whether to provide the disadvantaged parties with full or partial payment, or refuse to provide any payment for losses.

On the one hand, the payment story goes something like this: in certain regulated sectors, participants have made investments *contingent* upon the continuation of the regulatory framework. Original incumbents would have reaped significant rents over time from these regulatory structures; new entrants, however, were paying market prices based on implicit and explicit government assurances as to the existing structure. For taxi drivers, that generally means the cost of their taxi license and any additional training *required by the state*. As another example, when Australia dismantled its supply management systems for dairy producers in 2001, it paid out over $1.92 billion Australian dollars to buy out quotas and compensate farmers and affected communities for the loss of regulatory rent.

Now, these sorts of payments can be seen as a matter of fairness; from a public policy perspective, they might well also be viewed as a matter of economic efficiency. The argument goes like this: People rely on an implicit promise from regulators that the industry would function in a certain way, and made considerable investments on that premise. If regulations are suddenly changed or dismantled, and no payment is offered, this could have a chilling effect on future investment in both this sector and other regulated sectors.

Finally, from a public choice perspective, payments may also be a simple matter of expediency. Legacy interests often hold considerable market power that is protected by regulation, so they have strong incentives to have these regulations preserved and enforced. Offering payments may be the only realistic way to push through regulatory changes to allow disruptive innovations in a timely manner.

On the other hand, refusing to give any payment is also an option for regulators, especially where payment would unfairly reward incumbents who have already benefited from market power and rents for a number of years.

Regulators should consider whether incumbents had a reasonable expectation that regulations would not be changed when they made their investments. Regulatory risk is a factor that should be considered in business planning, especially for large sophisticated incumbents. In many ways, it is like playing the stock market – if you don't take measures to reduce your risk, you have little cause for complaint when things come crashing down around your ears.

Even if a regulator is inclined to offer payment, it may be prohibitively expensive to do so. If the gains from a disruptive innovation are widely distributed and not easily taxed or recaptured, then regulators may have to pay legacy interests out of general revenues, reducing funds available for other policy projects.

ROLE FOR COMPETITION AGENCIES

As disruptive innovations often have a profound impact on the markets in which they are introduced, they may attract the attention of competition agencies in a variety of ways – innovators may a competition agency to weigh in on their behalf, for example, or the local regulator may approach the agency for advice. A recent example of the Canadian Competition Bureau's work in this area include our 2014 submission to the City of

Toronto's review of the taxicab industry, including regulation of digital dispatch services. Our submission is available online on the Bureau's website.

The Competition Bureau typically offers its views as an advocate for competition, which is where our expertise lies. We recognize that it is up to policymakers to weigh all policy and social goals together to come up with optimal solutions.

Competition agencies may also be engaged as enforces rather than advocates, especially where traditional firms engage in anti-competitive conduct designed to keep innovators out of the market, or an innovator seeks to further undercut its rivals by anti-competitive means. Where agencies choose to take enforcement action, they should be neutral on business model, and rather focus on the anti-competitive nature of the alleged activities.

As an example in the urban transportation market, imagine if municipal regulations required all cars offering passenger services to use a particular type of tire for extra safety. Imagine further that only one firm sells such tires locally. If traditional taxi drivers got together and reached exclusive contracts with the seller, thus preventing ride-sharing drivers from purchasing the required tires, that would likely be considered anti-competitive conduct. If the reverse was to occur, such that ride-sharing drivers took action to prevent taxi drivers from obtaining the tires, that conduct would be equally likely to be anti-competitive, and should be treated the same way under competition laws.

CLOSING REMARKS

As disruptive innovations continue to spread throughout world markets, regulators will increasingly have to find the right balance between allowing great new choices while ensuring that hard working people – the Tony Walkers of this world – are not forgotten.

Disruptive innovations pose a number of particular challenges to regulators. They may come out of the blue and rapidly change the dynamics of several markets at once, both domestic and international. They may be technically complex and require expertise to fully understand, which can be difficult for regulators to commandeer on short notice. And finally, they can leave many vulnerable legacy interests in their wake, forcing governments to make sometimes difficult choices about whether or not to make payments to those interests, and what form those payments should take.

As we continue to see markets change and grow under the hand of innovation, competition agencies will play an important role in helping regulators understand market dynamics and challenges. Working together, we can ensure that consumers reap the benefits, while ensuring that important policy goals are still met.

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The author delivered this speech as Deputy Commission for Competition Promotion at the Competition Bureau of Canada. The author thanks the Bureau for permission to reproduce the speech.