

# Nonmarket Strategy and Innovation: Regulatory Entrepreneurship and Global Arbitrage

非市場戦略とイノベーション：規制起業家精神とグローバル裁定

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## **Abstract**

Innovation could be considered a fruitful arena for CPA (Corporate Political Activity) because there are more demand and leeway for shaping regulations and standards due to the non-existence of rules, as well as less entrenched interests. This article reviews the often overlooked relationship between regulation, innovation, disruption, and how firms can take advantage of this dynamic through appropriate CPA at a global level. Regulation per se is not only exogenous but also the fruit of collaborative interplay.

It is argued that, besides the traditional law/regulation-lagging model, a co-creative model could exist and that regulatory entrepreneurship with CPA would be core strategic competences. Global arbitrage between jurisdictions in a fragmenting but connected world would complete opportunities for agility.

## **Keywords**

CPA (Corporate Political Activity), innovation, nonmarket strategy, regulatory entrepreneurship, regulatory arbitrage, international business

Recent works (Romann, 2020) investigated CPA strategies in an international business context under a framework consisting of an array of influence modes, ranging from persuasion to pressure and reflecting the manner influence is wielded through political resources. Emphasis was put on the efficiency of the persuasive approach, especially well-suited for international business when firms may face the liability of foreignness.

In this context, innovation in the form of new products or processes could be considered a fruitful arena for CPA because there are more demand and leeway for shaping regulations and standards due to the non-existence of rules, as well as less entrenched interests. As Spar (2001) says: “the overlap (between business and politics) ... is particularly strong along the edge of the technological frontier.” According to this author, there seems to be a cycle between individualism when a new technology emerges and a return to the state when rules are needed for its commercial development. This translates into disruption, including a political challenge with strong CPA capabilities requirements for firms.

However, in many cases, the constructive/proactive stance often takes the lead strategically when the market expands. This effect is particularly reinforced by increased connectivity that easily offers alternative arenas.

This article will, therefore, attempt to review the relationships between regulation, innovation, disruption,

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and, above all, how firms can take advantage of this dynamic through appropriate CPA at a global level. The central hypothesis posits that there could be interactions close to the co-creation of regulation between regulators and regulatees in the context of new and innovative fields. Regulation per se is not only exogenous but also the fruit of collaborative interplay for regulatory entrepreneurs arbitrating between jurisdictions.

In the first part, a prospective reflection related to possible future issues, states of the world and governments, will be followed by a review of relationships between innovation, disruption, and regulation as well as a discussion of existing literature. In the second part, after an overview of theories considering regulatory competition and arbitrage, existing schemes in selected parts of the world and possible tools are examined, thus providing the basis and example of firms' cherry-picking of jurisdictions. The idea being to assess real-world solutions, interviews with regulators and a short case study have also been conducted.

Altogether, this essay is rather exploratory and speculative than merely analytic, due to the newness of some topics and the difficulties to access to some confidential CPA information for innovative firms in highly competitive environments. Methodologically, it encompasses theoretical review and cases in a multidisciplinary approach mixing strategic management, political science, and law/regulation.

## **What global issues and future regulatory systems?**

### *A world fragmenting or unifying?*

The world is sending seemingly contradictory signals. On the one hand, the globalization at work since the Cold War's end and the digital revolution lowered borders, spurred flows in trade, finance, data, people, spreading out supply chains all over the world, thus creating a strong economic interdependence reinforced by colossal infrastructure investments such as the Chinese Belt and Road Initiative. On the other hand, growth in trade of goods and financial flows seems to have reached a plateau since the 2008/2009 financial crisis, whereas the quantity of data exchange is continuing to mushroom (45 times between 2004 and 2014)<sup>1</sup>. On the political side, fragmentation in the form of populism and nationalism is ramping up chiefly in the western world with the side effects of trade wars, protectionism, and restrictions on migrations. It is too early to announce how it will turn out. Still, it could be said that the world is heading toward a mix of inward-looking entities orbiting around a handful of regional powers in a multipolar configuration.

At the same time, numerous non-state actors see themselves empowered by globalization, technology, and the changing role of the protecting/centralized nation-states. That globalization itself was and still is spearheaded by firms, should not be forgotten. As Khanna (2016) highlights, actors at a sub-central level, such as cities, are becoming increasingly active on the diplomatic and economic scene as humans tend to urbanize with development. More generally, he advocates to "let the tribes win," that is, to devolve as much as possible of political autonomy to people and ethnic groups while connecting them by powerful supply chains to ensure

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<sup>1</sup> McKinsey Global Institute, Digital Globalization: the new era of global flows, March 2016

political stability and economic development simultaneously. Looking at the case of the EU with its numerous separatist movements, it might be wise to consider a more appropriate level of political division replacing the current 27 states (after the Brexit) by autonomous nations/entities rebecoming members of a new EU upon a new social contract.

***Highly agile, globalized and not necessarily very big firms will lead***

Nonetheless, whatever direction will take history, the most immediate and foreseeable reality is that highly agile and globalized firms, not necessarily very big, will evolve on an international scene fragmented by political and societal rules that are in a solidifying process for new technologies.

Indeed, regarding for example AI and the surrounding ethic rules in each great bloc, one can observe that, whereas the western world has prioritized privacy and human rights, Chinese public shows a higher degree of tolerance toward government initiatives such as a monitoring system using an algorithm to assign social scores. Similarly, they do not present the same resistance as in the West for the use of their personal information by private tech giants such as Alibaba or Tencent. At the opposite stands the EU and its recently adopted General Data Protection Regulation which aims at a high degree of individual rights protection with extra-territorial implications for entities dealing with Europeans' data. The US is in-between, with some states beginning to pass legislation similar to the EU. The problem with this divergence is not limited to ethical and cultural choices: there are profound consequences in geopolitical and economic terms. Since data are the raw material necessary to build AI capabilities, the more, the better. Chinese firms or state entities will not only benefit from their considerable human material, but they also will not be limited in the use and combination of these data, which will undoubtedly give them a very substantial advantage compared to their western counterparts. Furthermore, as AI is by nature combinational with the possibility of exponential growth, once a threshold is passed, it could lead to an over-dominant position leaving limited room for other actors to catch up. This might be something like the birth of the nuclear era with a clear before and after, actors with and without the power.

Biotechnology and gene-editing techniques tell the same story. Even before gene-editing techniques such as CRISPR<sup>2</sup>, the agricultural community was divided regarding the use of genetic modifications. The EU strictly limits the cultivation and import of genetically modified crops and organisms, unlike the US. Recently (July 2018), the EU Court of Justice ruled that genetically edited plants and animals should be subject to the same regulation as GMOs. In the US, a distinction is made between the two techniques, but announces have been made that genetically edited crops would not be regulated. The other great agricultural countries such as Canada, Australia, Brazil, Argentina seem to be following the US path on non- or light regulation. This evolution could put the European farming sector at a disadvantage. Going further in this direction and looking

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<sup>2</sup>CRISPR: The major difference between the two techniques is that in GMOs, new genes are inserted whereas in editing, a DNA strand is cut and repaired.

at the application to the human body, differences among blocs stand out in a different manner. In parts of the EU, the use of CRISPR has been approved on human embryos. However, in this area, China is taking the lead with successful use on viable human embryos. On the contrary, in the US, where the sensitivity to abortion issues is high, embryonic research using CRISPR is restricted and will probably face significant regulatory hurdles in the foreseeable future. As a result, China has again an advantage based on societal and cultural grounds.

Thus, for many emerging technologies, a new global order is materializing with its different standards across the world. Whether or not this is an entirely new situation cannot be fully asserted because, after all, regulation has always been different across countries. Nevertheless, there are reasons to think that this unfolding new international scene presents some originality because of a combination of unprecedented firms' mobility, a fourth industrial revolution with medium- and long-term structuring dimensions, and a multipolar world. This configuration brings diversity and strategic openness for innovative firms that can cherry-pick their place of development. It also provides room for small to medium dynamic countries to explore and offer options differing from the big blocs. And, generally speaking, it compels governments worldwide to rethink their approach to regulation if they do not want to be left on the sides of history during this critical juncture.

### ***The regulators of the future***

As Adam Thierer (and many others) states in his book, *Permissionless innovation* (2016), "just as capital now fluidly moves around the globe seeking out more hospitable regulatory treatment, the same is increasingly true for innovations." Indeed, the world is now offering the possibility of global innovation/regulatory arbitrage in a scope never seen even though precedents exist in the financial field, for example. This idea is the backbone of this article's discussion. Governments are also beginning to realize the extent of the problem and the possible opportunities, albeit the major initiatives still emanate from the business and startups community. A consensus is growing about the idea that the relationship between governments/regulators and firms/regulated must change in the future.

For example, Klaus Schwab, in *The Fourth Industrial Revolution* (2016), stresses that governments must adapt to the fact that power is shifting from state to non-state actors, from established institutions to loose networks. The digital age has undermined many of the barriers protecting public authority, whereas the public became increasingly better informed and demanding. Governments will more and more be "seen as public-service centers that are evaluated on their abilities to deliver the expanded service in the most efficient and individualized ways." A top-down approach is no longer an option. Their ability to adapt will ultimately determine their survival in a world of disruptive change in order not to be overtaken by the speed of technology. The question is: how policymakers will be able to support innovation while preserving the interests of the consumers and the public. Schwab speaks of "agile governance," which implies a close collaboration between governments/regulatory agencies and business/civil society. New rules, checks and balances are to be forged to maintain fairness, competitiveness, intellectual property, safety, etc. To this end, "innovation-enabling regulation" is a crucial concept for countries and regions that will establish the

international norms of tomorrow.

In addressing innovation strategy, the OECD (2015) equally highlights the prominence of governance. While the focus is more on structural reforms, the report reviews the mix of framework conditions necessary to support innovation in areas such as knowledge-based capital, financing, global value chains, entrepreneurship/experimentation, and investment. At the same time, in a context of fiscally strained public funding and firm's growing arbitrage power, a strong emphasis is put on "the growing importance of governance also reflects a new approach to policies for innovation in many countries, where governments increasingly act as a facilitator in the face of complexity and uncertainty, enabling closer co-ordination between individual economic agents as well as fostering greater experimentation in the economy. This includes a greater emphasis on building networks, improving coordination and regulation, as well as promoting awareness and less reliance on government funding". This governance issue stretches to a wide range of stakeholders (business, academia, social partners), to central as well as regional/local authorities, and finally to cross-border actors.

*The regulator of 2030*, published by the Chartered Accountants Australia and New Zealand (2017), presents an interesting foresight of the future regulator's possible figure. Its essential characteristics would be: to embrace innovation, operate in a flexible and adaptive culture, share data between regulators, use behavioral insights to create better policies, digitally transform, connect and be proactive, recruit creatively, and across a wider skill set. In embracing innovation, regulators should act more like entrepreneurs than bureaucrats, open to learning from others, including those they oversee while taking care to maintain their independence. Rather than imposing laws on regulated entities irrespective of their fit, the focus would increasingly be on developing regulatory solutions via partnerships, work together with industry and consumers to develop additional guidelines and mutually agreed standards of best practice (Connect and be proactive). They would also deepen their talent base by recruiting specialists, skilled analysts, and technologists who speak the same language as those they oversee (Recruit creatively). Altogether, the traditional regulator vs. the regulator of 2030 could be summarized in Table 1.

**Table 1 The regulator of 2030 seen by the Chartered Accountants Australia and New Zealand**

The traditional regulator	<b>The regulator of 2030</b>
Retrospective review	<b>Real-time regulation</b>
Process based	<b>Digital</b>
Solitary	<b>Collaborative</b>
Corporate cop	<b>Facilitator</b>
Job for life	<b>Seeking diverse talent</b>
Slow to react	<b>Agile</b>
Risk averse	<b>Innovative</b>
Outreach: formal submission	<b>Nimble, flexible outreach</b>
Waits to be approached	<b>Engage early</b>
Regulations	<b>Standards and guidelines</b>
Standalone	<b>Cross- agency and jurisdiction</b>
Reactive	<b>Horizon scanning</b>

The last item, Horizon scanning, will be addressed later, as it appears as a powerful though underutilized tool of proactively and collaboratively regulating the future. As the foreword of the report *Technology and Innovations Futures 2017* (The UK Government Office for Science) states, “we can never be certain...about which technologies will eventually have the greatest impact on growth, on our society...Part of the value of horizon scanning lies in anticipating a range of possible outcomes, as well as identifying potential risks.”

Finally, the remark of a roundtable<sup>3</sup> about the need for regulators to adopt a pro-innovation culture could be quoted interestingly: “Regulators need to adopt a pro-innovation culture. Rather than a pernicious dynamic of ‘box-ticking,’ regulators should design regulatory processes which mirror the growth phases of start-ups as far as possible, aligning regulatory requirements with the different stages in a start-up’s life-span as it seeks to raise capital. Regulators need to be hyper-alert to vested interests and the potential for rent-seeking incumbents trying to block disruptors and innovators.”

## **Innovation, regulation, disruption: review and reflections**

### *The impact of regulation on innovation, a short review*

Regulation is not the sole factor behind innovation, far from it, but certainly plays a significant role, particularly regarding the disparity between countries. The central questions could, therefore, be: to what extent, will this importance grow, and how firms could take advantage of it?

Concerning the first question, a vast literature exists, but it might be interesting to have a look first on an OECD assessment and its methodology. In 1997, the OECD presented an overview of the relationship between regulatory reform and innovation, with the main finding that regulations can have both positive and negative effects. The regulation/innovation interface being mutual and dynamic, an understanding of this interface is crucial. As a conceptual framework, a distinction is made between:

**Economic regulation** – Economic regulation is generally intended to improve the efficiency of markets in delivering goods and services. It can include government-imposed restrictions on firm decisions over price, quantity, service, and entry/exit.

**Social regulation** – Social regulation is intended to protect the well-being and rights of society at large. It can include protection of the environment, health and safety in the workplace, protection of the rights of workers, and protection of buyers from fraudulent or incompetent behavior by sellers.

**Administrative regulation** – Administrative regulation relates to general government management of the operation of the public and private sectors. It can include regulations relating to taxes, business operations,

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<sup>3</sup>How can Government and regulators keep up with disruptive innovation? Policy Exchange, Jul 12, 2017. Retrieved from <https://policyexchange.org.uk/how-can-government-and-regulators-keep-up-with-disruptive-innovation/> (accessed 14 September 2018).

distribution systems, health care administration, and intellectual property rights.

***Regulation is not per se exogenous***

In recent research, Blind (2012) reviews the impact of regulation on innovation based on this distinction and numerous empirical studies to find that, in summary, the picture is heterogeneous regarding the types of regulation, the sectors, the companies, and the time horizon. According to this synthesis, there is a clear divide between the effects of economic and social regulations. The net impact of economic regulations such as competition, antitrust, price regulation, regulation of natural monopolies, etc., can be understood as the net balance between compliance costs on the one hand and incentives on the other. The result emerging from this review of various studies is that economic regulations have an ambivalent impact on innovation. Stringent regulation could be heavily detrimental to innovation and, therefore, should be implemented in a flexible way to minimize the compliance burden.

By contrast, Blind finds that social regulations tend to stimulate innovation because they can lead to radical and disruptive solutions when facing a societal or environmental challenge, thus creating new markets and standards.

Finally, this meta-study identifies many gaps and under-researched areas such as the lack of relevant indicators of the third field, the administrative regulation, where research chiefly focuses on the links between innovation and intellectual property but leave barely touched many other themes.

However, the essential point for the purpose of this article is the acknowledgment that the specific relations between companies' internal side and regulation are mainly treated as a black box process whereas "regulations per se are not only exogenous to companies" with "close interactions in the development of regulations between the regulators and the regulated companies."

*Innovation, disruption and regulatory entrepreneurship*

Continuing the investigation, the issue of disruption, which frequently appears linked to many discourses related to innovation, will now be discussed.

Not all innovations are disruptive and have an impact on regulation. In a seminal paper, Bower and Christensen (1995) made a substantial distinction between sustaining and disruptive technologies and their effect on business models. The former, proceeding through small incremental steps, would give customers something more or better in the attributes they already value, whereas the latter introduces a very different package of attributes from the ones mainstream customers historically value, often through a technological breakthrough. This distinction is now widely accepted despite criticisms of vagueness about how to define disruption, and with regards to its predicting power.

Going further with business disruptions, two broad categories could be considered: first, a business can exploit a new technology to produce a good/service or deliver it to customers; second, a firm can organize itself

in a new way to produce/deliver a good/service. To summarize, there would be innovation in technology, in the organization/business model, or a combination of both. The disruption would result from this mix of factors and the shift in the value proposition.

### ***The relationship between disruption and regulation***

The critical question here is not the technological or disruptive aspects per se, but the relationship and the challenge to regulation. In a recent paper, Biber et al. (2017) analyze this issue of business innovation and policy disruption with an emphasis on the latter term, which is at the heart of this article's problematic. They give the example of Netflix and Uber. Netflix initially used only traditional technology such as the US mail to deliver DVDs to customers. Gradually, they took advantage of the diffusion of the broadband internet to reach more clients worldwide but never had the level of regulatory issues shown by Uber or Airbnb<sup>4</sup>. By contrast, Uber and Airbnb can be seen as firms whose business model consists of challenging or breaking the law with the associated regulatory and legal response worldwide by the concerned authorities.

### ***Can there be an alternative to the traditional innovation-regulation consecutive model?***

As a matter of fact, the clash between innovation and law is not new. The issue is often referred to as the "pacing" problem because regulation is usually reactive, lagging, or considered so, behind technological and business innovations. Typically, a two phases model seems to be the natural and implicit reference with a first period where a private actor would create new technology and a second one where governments and regulators would step in, write the rules and enforce them. In this configuration, the private and public actors act independently and consecutively.

Spar (2001) offers an instructive historical perspective on the relationship between business and politics along the technological frontier. Building on the history of navigation, telegraph, radio, satellite television, and the internet, which have all been disruptive in their time, she distinguishes four phases: innovation, commercialization, creative anarchy, and rules. In the innovation phase, no rules are needed, neither wanted, because the development has not been brought to the point where property rights, competition conditions, or societal impact are critical. In phase two, the commercial benefits of innovation become clear, attracting rogues and pirates borrowing the technology, and opening a period of wild expansion where the government cannot catch up legally due to the speed of evolution. Here, speed is more important than ownership, but in the next phase, as the technology matures, demand for property rights rises to keep interlopers at bay. Then comes a problem of coordination as several technological solutions coexist, leading to efforts of standardization by the new industry. Additionally, once a standard has imposed itself, a dominant firm might emerge, causing competition issues. Finally, in the last stage, rules are demanded by the market actors themselves to protect them from the cost of chaos and preserve their rent. This is where the state steps in to enforce them.

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<sup>4</sup> At least until recently where Netflix is beginning to bypass restrictive national broadcasting regulation in some countries.



This analysis is strongly related to Douglas North's views about the crucial role of the state and institutions in the development and prosperity of markets. Spar argues that, despite the buzz about venture capital and permissionless innovation, the cyberspace is nothing but another arc along technology's frontier, not an unprecedented event.

This observation seems certainly true regarding the information revolution the world is experiencing: after a pioneering period, standards are emerging, giant firms are forming, and states are stepping in for numerous reasons. There are also reasons to think that sets of rules enforced by a state are a precondition for economic development and prosperity as the condition of many countries in the world, and many studies show<sup>5</sup>.

But the question here would be: will the law lag in the same manner as it used to do with previous innovation and disruption waves? Without doubting that rules enforced by states will be put in place at the end of the sequence, isn't there something different and more complicated this time when the observation is done at a more granular level than great phases? This article intends to emphasize the new role of governments and regulators as service providers in a technologically and geopolitically changing world, fragmented but connected. Firms now have a leveraged possibility for global regulatory arbitrage; on the other hand, the strongest attribute of the state that will not change with the current world evolution consists of its ability to enforce rules and its monopoly of violence. It does not mean that the state and its specialized regulatory agencies master all the knowledge and experience to understand revolutionary technologies and write adequate top-down regulation. Therefore, the state and its entities need to be informed and convinced by future regulatees. There is room for dialogue and collaboration during the process. Reversing the model and saying that the law could lead innovation instead of lagging behind might be exaggerated, but that some jurisdictions in the world will offer more attractive and friendly systems than others, is, and increasingly will be, a fact. In this sense, these jurisdictions will take the lead in providing a place for the co-creation of regulation.

### ***Permissionless innovation as a new exigency?***

At the firms' level, there is already a strong culture of anarchy, permissionless innovation, and business/regulatory disruption with a prevalence of startups since the beginning of the last technological wave. According to Adam Thierer, permissionless innovation is about the creativity of the human mind to run wild in its inherent curiosity and inventiveness. It refers to the general freedom to experiment and learn through ongoing trial-and-error experimentation and, above all, is not limited to the virtual/information economy but should also extend to the physical/industrial sector. Having come into existence in the information sector, the proponents of this Weltanschauung are entrepreneurs, innovators showing a clear culture of hacking, including for the regulatory aspects. They tend to heavily criticize the hyper-cautious approach of agencies such as the FAA with drones<sup>6</sup>, for example, arguing that this policy is stifling the US drone market and drive

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<sup>5</sup> See for example Why nations fail: the origins of power, prosperity and poverty, Acemoglu and Robinson (2012).

<sup>6</sup> Regulation clips wings of US drone makers. Jack Nicas, Wall Street Journal, Oct. 5, 2014. <https://www.wsj.com/articles/regulation-clips-wings-of-u-s-drone-makers-1412546849> (accessed 9 September 2018).

operators underground.

The same kind of charge is directed against the “precautionary principle” on which the EU would over-rely, and that would play a huge role in Europe falling behind in terms of innovation, as point out think-tanks such as the European Risk Forum or Policy Exchange in the UK. The denunciation can go further than the heavy-handed overregulation in the US or EU behemoths. Marc Andreessen, the founder of the pioneering web browser Netscape (at 23 years old), shares<sup>7</sup> his view about how to build innovation clusters beyond California. He explains that efforts made by governments to create the next Silicon Valley often include policies such as building technology parks, mixing with R&D labs and universities, providing incentives to scientists and firms, interconnecting the industry, protecting intellectual property, establishing a favorable business environment. He adds that these kinds of attempts fail for one big reason: too much top-down and simply not drawing people. He suggests that policymakers should not try to copy Silicon Valley and create fifty clones of it, but rather fifty variations, each focusing on different domains. Thus, there could be Bitcoin Valley, Driverless Car Valley, Stem Cell Valley, and so on. To do this, Andreessen proposes that the government relax the laws and regulations associated with each theme so that innovators could legally test ideas and schemes forbidden in the rest of the country. This solution would also offer the advantage of having multiple categories to advance in parallel.

This solution is naturally not without new issues and risks but, altogether, the major barriers to disruptive innovations could be summarized as: a disproportionate regulatory burden for startups, backward and not forward-looking regulation, and an asymmetric approach to risk and opportunities. Nevertheless, what can be observed is that the model is already expanding on the global stage across countries. Genetic testing startup 23andMe, which moved to the UK because of the FDA barriers in the US, is a famous example. Amazon testing drone delivery in the same country is another. And Kitty Hawk flying taxis getting approval in New Zealand because the US FAA did not allow it is an example studied in support of this article.

### ***Regulatory disruption in innovation: collaborative strategies associated with flexible jurisdictions***

It is time now to refocus on the issue of policy/regulatory disruption in innovation from a more strategic management perspective. To this end, Biber et al. (2017)'s contribution will be called upon to take the measure of the variety of policy disruptions and their possible policy responses, even though their article is rather oriented in a regulator and not a firm's perspective. In their framework, they distinguish the four following categories:

End-run: as the name indicates, a circumvention strategy consisting of arguing that the features of the newcomer's technology or business model is sufficiently distinct to that of incumbents, despite similarities, so

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<sup>7</sup>Turn Detroit into Drone Valley. Politico Magazine, June 15, 2014. <https://www.politico.com/magazine/story/2014/06/turn-detroit-into-drone-valley-107853#ixzz3LQf5XliD> (accessed 9 September 2018).

as not to be subject to the same costly regulation. The typical examples would be Uber and Airbnb, which could be said to add limited new technology or business model innovation but keep claiming that they are not a taxi company or a travel agency and, therefore, not subject to the corresponding regulation.

**Exemption:** refers to legal loopholes when the business innovation fits an explicit exception to the existing policy regime, hence not subject to regulation, but at the same time exacerbating a condition the policy regime was intended to control. The example given is Airbnb and its discriminatory guest selection practices, which are illegal under federal housing laws but are admitting exceptions for occasional rentals by homeowners. The problem appears when the phenomenon extends to the industrial scale allowed by Airbnb.

**Gap:** this situation occurs when the business innovation threatens incumbent businesses and create a new policy problem for which no policy regime exists. The example is the disruption of the advertising industry by the rise of Google and Amazon's algorithms. They are not evading any regime, but new issues such as privacy and data security still rise, which could request a new regulatory system.

**Solution:** contrary to the first three cases for which there was a regulatory differential to be fixed between the innovation, subject to less restrictive regulation, and the incumbent industry, this fourth category describes the situation where the innovation is clearly covered by the existing regulation while presenting a superior public welfare outcome compared to the incumbents. In this case, there is a risk of overregulation that could weigh on the penetration into the industry.

This framework is interesting in that it brings a conceptual clarity regarding what issues innovative firms and regulators must face and the strategies that could ensue. However, as the authors themselves recognize, the reality is far more complicated. All those qualifications are not mutually exclusive, can overlap, and are dependent on the interpretation and framing made by firms and regulators. For example, Airbnb can be related to the Exemption category for hosts discrimination and End-run for zoning, hotel taxes, etc. Uber will portray itself as a Solution while taxi companies portray it as End-run. The authors then offer a regulatory toolkit consisting of Block (new form of business not allowed), Free Pass (innovation allowed without changing the regulatory structure), Old Reg (new firm authorized within the existing rules), and New Reg (new legal category created). Here again, one could consider that reality is made of a mix of all these components. Furthermore, the possibility of regulatory arbitrage, whether in the same country or globally, is not taken into account despite its reality, thus adding another layer of complexity with the possible co-existence of multiple regulatory responses and firm political strategies.

Ultimately, it seems that for an innovative firm in a policy disruption situation, a range of strategies is available but that the outcome will depend greatly on the interpretation and the goodwill of the regulators and the firm's skill in regulatory affairs. They could say that they are not covered by the law because different, or that they offer new solutions to induce a change in regulation vital for their business model. They could do this using pressure or collaborative strategies and combine with a global adaptation across various jurisdictions. As it is argued in this article, pressure strategies are more frequent and efficient domestically due to the greater

weight of constituents and for societal/legal/cultural reasons, but not absent on the international stage if for, for example, state power intervenes. However, it is contended that collaborative strategies associated with flexible jurisdictions are a highly effective combination globally.

***Regulatory entrepreneurship: a core competence for innovative firms***

A key element here is what Pollman and Barry (2017) call “regulatory entrepreneurship.” In their paper, the authors define the term as firms, often disruptive startups, for which changing the law is at the heart of the business model. Regulatory entrepreneurship is not new but is becoming increasingly salient recently for reasons already cited such as startups moving from the virtual to the physical world, a culture of permissionless innovation and regulatory hacking, but also because of increased political engagement from the technology community (ex: immigration issues and opposition to Donald Trump), changing market trends in startup valuations and life cycles (startups staying private longer with more government scrutiny). Consequently, regulatory affairs are increasingly becoming a core competence for innovative firms, and this is where this article’s views converge with Pollman and Barry (2017).

A last point of confluence with Pollman and Barry (2017) brings back to the key question of the lagging of law vs. innovation and the possible emergence or strengthening of a co-adaptation/co-creation model. The emphasis is put on the complexity of the process, of the interactions between regulators and innovators rather than a straightforward business-against-government stance. This complexity begins with the great variety of actors implied, even domestically, with different levels such as local, state, federal (US) who may have different interests. Contrary to a general impression that may owe much to Uber’s worldwide legal activism and pressure strategy abundantly relayed by the media, collaborative strategies may well be an important component of actual regulatory entrepreneurship.

Altogether, there seems to be a sort of consensus about the need for startups to have a regulatory strategy to succeed, but on the ground, there may be very different ones. The contrast could be illustrated with the two opposing perspectives of Bradley Tusk, who directed the regulatory battle for Uber and others, and Evan Burfield, an entrepreneur, as expressed in their respective recent books, *The Fixer* (2018) and *Regulatory Hacking* (2018). Whereas Tusk speaks of disrupting traditional industries terrified of competition and the necessary combats, Burfield leans to solving problems for citizens and collaborating with the government far more often than openly conflicting. He even describes Uber’s victory in New York as the exception that proves the rule.

The debate stays open, but in the next pages, the focus will be on the possible collaboration between business and regulators in the global arena.

## **What is being done, what can be done: toward global innovative regulatory arbitrage**

In this section, the reality of what is being done worldwide in this collaborative perspective will be examined through a selected number of examples.

### *A short review of theoretical frameworks*

This article was built on the hypothesis that the world and, consequently, the global regulatory landscape is fragmenting and will continue to be increasingly uneven. The keys to creating innovation hubs such as Silicon Valley will, therefore, be the triad of talent, funding, and regulation. Competing and having more liberal regulation than other jurisdictions will provide obvious advantages for the relevant countries: attracting firms, enhancing their overall competitiveness, creating standards and maybe global giants such as the American tech companies, strengthening their industrial fabrics, etc., in a word, a virtuous circle.

### ***Regulatory competition and arbitrage***

Therefore, regulatory competition and arbitrages are likely to intensify in the future. The question that could then arise is: what is the impact on a country's regulatory system and its sustainability in terms of functional efficiency and legitimacy? The following issue is: what could be the possible configurations and actual forms of collaborative schemes between regulators and regulatees on a competitive scene.

A classical contribution to the debate regarding international regulatory competition is offered by Tiebout (1956). He suggests that, in the context of a small municipal government, consumers-voters would favor jurisdictions that best reflect their preferences, some being low taxes/low public services, other proposing affordable education, health system, or whatever services. Consumers-voters could vote with their feet and exit, that is, move to jurisdiction better suited to them. The model has been extended to international competition by succeeding scholars with the conclusion that it could provide an efficient equilibrium. Thanks to the decentralized decision-making system, regulators could be able to attract the optimal number of regulatees and will be responsive to their demands because they fear exit. Responsiveness would imply a necessity to ensure a balance of interests between various consumers and regulatees, with the advantages of reducing the weight and complexity of regulation. It would also contribute to reducing capture due to the fear of exit by other actors. Furthermore, regarding innovation, this kind of decentralized system favors market-driven processes.

Therefore, the Tiebout-based view assumes a globally positive effect of regulatory competition. However, a number of conditions and concerns limit its realizability: full factor mobility, adequate and symmetrical knowledge of different jurisdictions, possible inequality of mobility among actors leading to preferential treatment to some of them, incessant mimicry from other systems and instability, externalities, transaction costs, etc.

The notion of “race to the bottom” is another idea widely associated with regulatory competition and

arbitrage but, in contrast with Tiebout's model, implies negative consequences that would need to be corrected through coordination. In this configuration, jurisdictions are competing in a prisoner's dilemma type of cycle where, at every move, they are compelled to lower the standards to attract the mobile factors of production, such as capital and highly skilled labor. This criticism has been particularly observed in the financial field with the last decade's global crisis. However, the opposite concept, "race to the top" also exists, considering the case where firms find more efficient in terms of production costs to organize themselves according to the most stringent standard among different jurisdictions. The process has been named "California effect" by Vogel (1997) by contrast to the Delaware effect (attractive chartering requirements for corporates), after the observation that California's adoption of tight environmental standards for cars was followed by other US states and led to harmonization at a higher level. The dynamic behind is that, for domestic producers, a stricter regulation could represent a source of competitive advantage forcing importers to adjust to enter the market (at least in high-end, developed countries). Therefore, in this case, there is a convergence of interest between the industry and environmentalist groups, called the "Baptist-bootlegger coalition."<sup>8</sup>

When comparing these different models, the first conclusion is that things in the real world are hardly as straightforward. According to Radaelli (2004) or Baldwin et al.(2012), the notions of "top" and "bottom" are controversial because normatively loaded and varying across societies as well as the so-called optimal level of regulation. Rather than the direction of the race, attention should be paid to the actors and the process, since, as often in this kind of model, a black-box phenomenon is at work, preventing an in-depth understanding of who does what and how. Furthermore, the decision for a firm to pick-up a jurisdiction can rarely be determined only by a change in standards. Countries compete with their whole institutional-legal system as shows the school of Varieties of capitalism.

Altogether, one answer to the question regarding the impact of regulatory competition could be that regulators have to weigh competing interests at a micro-level. Indeed, for the purpose of this article, the stake for a regulator in a collaborative configuration is to foster innovation while avoiding capture.

Capture is a significant risk highlighted by the Private interest theory and greatly relevant in this pattern. Again, the best solutions to this issue consist of increasing checks and balances, diversity of thought, diffusion of decision-making power, public transparency, in a word, contestability.

#### ***Rule-Based and Goals-Based regulatory approaches (RBR and GBR)***

Regarding the promotion of innovation, there is, since the early 1990s, a school of thought that introduced an alternative to the proponents of "deterrence" and "compliance models," known as "responsive regulation"<sup>9</sup> and that considers a government open to collaboration with the private sector in the regulatory process. Other

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<sup>8</sup>The term emerged in the context of demand for prohibition on alcohol sales on Sundays. Baptists wanted it on moral grounds whereas bootleggers wished sales restrictions to maintain their business. Politicians could then pride themselves of moral arguments while pocketing contributions from bootleggers.

names exist around the same idea, such as “new governance,” “collaborative governance,” etc. Correlated to this conception, the two broad threads for the achievement of regulatory objectives known as the Rule-Based and Goals-Based regulatory approaches (RBR and GBR) are increasingly becoming prominent in discussion and actual policies.

The RBR approach involves precisely drafted and highly particularistic rules with advance notice to the regulatee about how to comply, what actions they can and cannot engage. By contrast, the GBR sets general goals, outcomes, principles, or standards without prescribing details about how the regulatee will achieve these requirements. The regulatees have to judge and predict what and how their actions will achieve the regulatory objectives. The terms performance-based-regulation or outcomes-based regulation are also used interchangeably.

Concerning advantages and disadvantages, the GBR is seen as flexible, encouraging experimentation, favoring the regulatees to take more responsibilities, being adaptive to changes, and allow the regulator to tailor its approach to enforcement. On the other hand, the RBR is more precise and more certain for regulatees and better at ensuring that the regulator is ultimately accountable. In practice, pure versions rarely exist. Regarding innovation and fastmoving sectors, the GBR is considered particularly suited because not prescriptive and allowing rapid adaption without the need to promulgate new rules. A close parent of this approach is the Risk-based Regulation found largely in the UK, where a report in 2005<sup>10</sup> recommended that the UK regulators should adopt this program. Its essence lies in the identification, evaluation, and control of relevant risks rather than compliance with sets of rules, with a great amount of leeway for regulatees to propose an assessment model and a strategy to mitigate the risks.

Both approaches have shortcomings: over-abundance of rules for the RBR and lax enforcement for the GBR, but the fact is that the GBR approach is being actually adopted in some jurisdictions such as the UK, Australia, New Zealand, etc., offer these nations a competitive edge and a framework for innovative globally active firms.

### *Foresight*

#### ***Regulatory foresight***

After this review of available frameworks and further considering the possible configuration and practices favorable to collaborative approaches between firms and regulators, foresight also appears as a promising and underexploited lead.

Foresight is used to strategically explore, anticipate, and shape the future in science and technology by

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<sup>9</sup> See Ayres I. and Braithwaite J., *Responsive Regulation* (1992).

<sup>10</sup> P. Hampton (2005). *Reduction in Administrative Burdens: Effective Inspection and Enforcement*. [http://news.bbc.co.uk/1/hi/shared/bsp/hi/pdfs/bud05hampton\\_150305\\_640.pdf](http://news.bbc.co.uk/1/hi/shared/bsp/hi/pdfs/bud05hampton_150305_640.pdf) (accessed 15 November 2018).

governments, research agencies, companies, etc. It is generally understood as a collective, collaborative, and consultative process aiming at gathering future intelligence in a systematic manner and build medium to long-term visions. The process itself is seen as important as the outcomes since a key purpose consists of informing opinions and taking an active part in shaping the future. In this sense, it differs from prediction. The exercise mobilizes various technics and tools such as expert panels, Delphi, scenarios, brain-storming, horizon scanning, etc., and involves a variety of participants and stakeholders.

Despite a widely spread use among developed countries in the last decades in the attempt to identify and drive the future and promising scientific/technological trends as well as, sometimes, the collateral stake for innovation policies, the idea of foresight focused on regulatory aspects is still underdeveloped.

It is contended here that, for the purpose of this article, it may be interesting that innovative firms and regulators, as well as other experts, organize regulatory foresight for a better understanding of emerging issues, the implication for existing regulations, and the requirement for new regulations. Instead of being mostly reactive, governments could anticipate the future regulatory challenges proactively, reshape them or develop new frameworks, reduce the frequency of crisis-mode reactions, set priorities earlier with a more effective use of resources, prepare for change and reduce resistance, reduce regulatory failures by adjusting regulations more quickly. For industry and other stakeholders, the benefits would be of increased transparency, a cooperative regulatory environment with earlier notice of initiatives on the horizon, allowing them to prepare better or participate. This anticipation facet is even more essential as the temporality is different between fast-moving innovative sectors and the long-lasting administrative and political time.

Blind (2008) defines regulatory foresight as follows: “strategic activity undertaken by governments and policymakers...to identify future requirements for regulations or re-regulations, including formal standards released by standards development organizations not only in existing but also in emerging technologies, sectors or markets in order to shape pro-actively innovation-promoting regulatory framework conditions, which are crucial for the competitiveness of national or regional innovation systems.” In his paper, he reviews the available methodologies and compares three of them, the indicator-based approach, survey, and Delphi, as an attempt to redirect general foresight tools toward a more specific regulatory utilization. For the indicator-based tool, he notes that it allows a systematic approach but that a quantitative approach is insufficient. With the survey method, insights of specific needs for future regulation can be detected, but the reliability and validity of the results depend crucially on the identification of the adequate sample of stakeholders. Besides, it is a high cost, time, and human resources-consuming activity. Regarding Delphi studies, they are effective for consensus building and reducing uncertainty about regulatory priorities and impact. However, they are complex to conduct as they have to involve not only experts in science and technology but also possible users, consumers, members of public organizations, regulatory bodies, etc. The conclusion is that methodological improvements are needed: a simple transfer from the existing foresight methodologies would be insufficient because regulatory bodies have, in general, no experience with this kind of activities. It is also a long-lasting process to convince stakeholders about the need and effectiveness of such approaches.



As a matter of fact, very few researches exist on the subject. Similarly, evidence of regulatory foresight conducted by a central agency or a government to apply across departments is limited. This might be due to the challenge of determining broad trends while ensuring sufficient accuracy to prepare specific regulatory adjustments. Finally, for this article's purpose, the interaction of individual firms with regulators might be limited if the firm does not stand out, for the newness of its technology, among other stakeholders.

### *The UK example: catalyzing collaboration*

In spite of the difficulties pointed out above, the UK is a good example of country actively using foresight to scan the technological horizon with a strong concern in creating/maintaining a pro-innovation regulatory environment and experiment at scale in collaboration with business. The UK foresight cycles date back to the 1990s, with a progression from the first one aiming at setting priorities to the current third one, which brought a new emphasis on engaging stakeholders on policy issues and embedding a foresight culture. Today, the unit responsible for foresight is hosted by the Government Office for Science and actively publishing a number of essential reports related to future issues and stakes. In one of them named Technology and Innovation Futures (TIF) 2017, instructive indications can be found about how the UK sees the question summarized in two words: catalyzing collaboration.

After having identified eight great technological areas<sup>11</sup>, the report describes the government's views about its role. It states that identifying and supporting the killer app cannot be the government's responsibility, it should be left to the private sector, but creating the appropriate environment and helping business where it can, should be at the center of government's attention. Furthermore, the report highlights the need to anticipate and debate the long-term ramifications of emerging technologies, and more specifically, recommends that the government ensure greater coordination among departments to help bring technologies to market, that is, a more proactive approach for a concerted response for issues cutting across policy areas.

The most interesting contribution may be the formulation of a framework regarding the levers the government can activate.

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<sup>11</sup> Advanced materials, satellites, energy storage, robotics and autonomous systems, agri-science, regenerative medicine, big data, synthetic biology.

**Table 2 The role of government. Adapted from Technology and Innovation Futures (TIF) (The UK, Government Office for Science, 2017)**

Early intervention	Market framing	Adoption & integration
<p><b>Catalyzer</b> Analyze value chains to identify which technologies present opportunities and long-term value to the UK</p>	<p><b>Regulator</b> Ensure regulation is sufficiently agile and permissive to enable technology interactions and innovative applications</p>	<p><b>Intelligent customer</b> Develop a procurement environment that encourages big businesses to engage with SMEs in public contracts – allowing them to demonstrate capability and build commercial links</p>
<p><b>Innovation facilitator</b> Create test beds for developers to try out applications in real-world settings, assess scalability and engage with the public</p>	<p><b>Standard setter</b> Use insights from “living labs” to develop UK standards – setting the global agenda by “showing, not telling”</p>	<p><b>Platform provider</b> Scale up deployment of proven technologies in national infrastructure, the NHS and other public services</p>
<p><b>Skills planner</b> Prepare for growing demand for workers with multi-disciplinary technical skills, and mitigate the impact of robots and machine learning replacing unskilled and graduate level roles</p>	<p><b>Fiscal incentivizer</b> Deploy financial and other mechanisms to stimulate innovation and market growth</p>	

In this framework, the government supports technologies, addresses market failures, and tackles roadblocks to innovation by maintaining a pro-innovation regulatory environment, addressing high-level skills needs, and stimulates demand through public environment. Specifically, the function of “Innovation facilitator,” that is, translating in the real world testbeds as will be seen below, can be considered a real progress and a strength going hand in hand with the purposes of “Regulator” and “Standard setter,” thus ensuring that the full chain of global soft power is complete. Indeed, the report stresses examples of the UK’s comparative advantages and successes: implementing judicious regulation of stem cell research, enabling a future for autonomous vehicles, etc.

*Regulatory sandboxes*

As a new tool designed to support the rapid adaptation of regulators to the speed of technology, the regulatory sandboxes recently appeared in a number of leading countries can be seen as a new space for dialogue between firms and regulators. They provide a safe space where firms can test innovative products, services, business models, and delivery mechanisms without immediately incurring the normal regulatory consequences of such activities. If the business model does not comply with existing regulations, rules can be temporarily relaxed for testing during a limited period of time, provided that alternative safeguards for consumers and risk-mitigating measures are put in place. The approach is case-by-case for each firm rather than one-size-fits-all.

Thus, regulatory sandboxes encourage innovation, minimize legal uncertainty, allow entrepreneurs to experiment and fine-tune their business model while providing regulators with up-to-date information related to

markets and technologies, allowing them to work collaboratively with industry players and develop appropriate rules and regulation for emerging technologies and business models.

The first and most advanced scheme is being found at the UK Financial Conduct Authority, where it was launched in 2016. Other countries and other industries followed in Singapore, Australia, etc. The concept being very recent, hindsight is not sufficient for an in-depth assessment. The most advanced projects in the UK and Singapore will be examined here briefly.

### *United Kingdom*

After one year of functioning, the FCA published a report in October 2017 about the lessons learned for this first experiment. The stated objective was to promote effective competition in the interests of consumers with four potential benefits: reducing the time/cost of getting innovative ideas to the market, enabling greater access to finance for innovators, enabling more products to be tested and allowing the FCA to work with innovators to ensure that appropriate consumer protection safeguards are built.

The general conclusion is that the first year has been successful with regard to the overall objective. Considering the time/cost reduction, the sandbox program helped firms to understand how the regulatory framework applies to them with the result that the majority of firms who started with restricted authorization secured a full authorization after completion of their tests. Access to finance was also facilitated because participation in the program provided a degree of reassurance to investors through the oversight the FCA had. Regarding the testing of products before their introduction to the market, the sandbox allowed an assessment of the commercial viability and iteration of the business models based on the received feedback. Finally, close work with the FCA has given firms the opportunity to develop their business models with consumers in mind and mitigate risks by implementing appropriate safeguards. A set of standard safeguards was put in place for all sandbox tests, and additional bespoke safeguards were developed in a collaborative pattern.

### *Singapore*

Singapore is the second country to have introduced sandboxes following a long tradition of openness and business-friendliness. Though the term foresight is not employed, the government repeatedly mobilized strategic thinking and action to lead the country toward what it has become now. The most recent illustration can be seen in the Committee on the Future Economy who produced a report in 2017 aiming at restructuring the economy to shape the future. Among a number of strategic leads, the recommendation 7.2 set forth the need to create a regulatory environment to support innovation and risk-taking. The regulation should be forward-looking with the necessity for regulatory agencies to balance risk concerns and industry development needs. The focus is put on areas with high potential for technological and industry innovation and for which clear and updated regulations will be particularly important such as MedTech, FinTech, food, and nutrition. In addition, the development of greater capacity in public services to encourage innovation is also underscored,

in the line of what some government agencies are already doing, such as the Monetary Authority of Singapore (MAS) for FinTech and Land Transport Authority (LTA) for autonomous vehicles.

As a result, Singapore now offers a wide range of tools to test innovations and adapt regulations to enhance the ease of doing business. Besides the sectors mentioned above, the Energy Market Authority (EMA) also launched its sandbox in 2017 after a public consultation. As the sandbox's evaluation criteria are representative and instructive, they can be cited extensively:

- Uses technologies/products in an innovative way
- Addresses a problem or brings benefits to consumers and/or the power sector
- Requires some changes to existing rules
- Has clearly defined test scenarios and outcomes
- Has defined boundary conditions
- Has defined monitoring and evaluation procedure
- Foreseeable risks have been assessed and mitigated
- Has a defined exit and/or transition strategy

In the Final Determination Paper taking into account the results of the public consultation, a section is dedicated to Regulatory changes stating that the EMA can allow proposals for new products and services to be tested with relaxed regulations. After a mention of the targeted laws and regulations, it declares that “following a successful sandbox, EMA may deem that certain regulations, can be permanently amended or relaxed. EMA will consult the industry accordingly for such regulatory change.”

Nonetheless, it must be noticed that not all sandboxes and regulators share the same objectives. The MAS introduced it with a clear purpose of encouraging innovation and Fintechs, as it is the case with the EMA in the energy sector. For autonomous vehicles, it was rather a recognition that the tech is coming and that something must be set up to allow a safe growth of this emerging sector without being left behind. Every industry has its specific motivations.

Examples and details are provided in the appendix; it can be said from these cases that the sandboxes are designed to have regulation relaxed during a limited period of time and can lead to permanent modifications suited to firms' needs. However, as the sandbox is limited in time, the modification procedure cannot intervene within this framework. Furthermore, the regulator's role being to encourage innovation, protect consumers and maintain a level playing field, it must statutorily consult at least the industry and maybe other stakeholders before modification, it may even need a vote at the parliament. As the system is new and lacks hindsight, it is difficult to assess the leeway individual firms may have to manage their CPA agenda within this new scheme. Nevertheless, it seems that it gives many opportunities for a bespoke treatment leading to a better mutual understanding between the regulator and the firm with informed rational data, risk assessment, and mitigation strategy, the key basis for a constructive CPA approach. This certainly increases the chances

of success and reduce the average time needed for a CPA action, which is always the Achilles heel of these operations compared to the temporality of other money-earning functions such as sales or marketing.

## **Lessons and conclusions**

This article stands at the confluence of firms' strategy/political activity, innovation, and regulation to explore their interactions that often lead to disruption. Rather than strict analysis, a reflection, speculation of how things could evolve in the future is offered here.

### ***Governments as public-service centers***

It is observed that the world is fragmenting and reorganizing itself into areas diverse but connected. The consequence is that highly agile and globalized firms, not necessarily very big, can evolve in this scene where rules are in a solidifying process for new technologies. This configuration provides firms with the possibility of global innovation/regulatory arbitrage in a scope never seen.

It also provides room for small to medium dynamic countries to explore and offer options differing from the big blocs. And, it compels governments worldwide to rethink their approach to regulation if they do not want to be left on the sides of history during this critical juncture. Governments will more and more be "seen as public-service centers" that are evaluated on their abilities to deliver the expanded services in the most efficient and individualized ways.

### ***Regulation as close interaction between regulators and regulatees***

A brief review of the relationships between regulation, innovation, and disruption suggests that many studies still consider innovative firms' internal side as a black box, whereas regulations are often the results of close interactions between the regulators and the regulatees. Regarding disruption, not all innovations are disruptive and have an impact on regulation. When this is the case, the law is usually seen as lagging behind technological disruption, leading to aggressive lobbying, judicial battles, or simple prohibition.

### ***Revising the law-lagging model: toward consubstantiality of regulatory practices***

However, in this article, attempts were made to cast a new light on this approach. Reversing the model and saying that the law could lead innovation instead of lagging behind might be exaggerated, but that some jurisdictions in the world will offer more attractive and friendly systems than others is, and increasingly will be, a fact. In this sense, these jurisdictions will take the lead in providing a place for the co-creation of regulation. If not regulation-driven innovation, there would be a kind of consubstantiality of regulatory practices based on dialogue that would redraw the map of global innovation. Ultimately, it seems that for an innovative firm in a policy disruption situation, a range of strategies is available but that the outcome will depend significantly on the interpretation and the goodwill of the regulators, and the firm's skill in regulatory affairs.

***CPA as a core competence: regulatory entrepreneur/arbitrageur***

Therefore, it is contended that collaborative strategies associated with flexible jurisdictions are a highly effective combination globally. The concept of regulatory entrepreneur defined as firms, often disruptive startups, for which changing the law is at the heart of the business model, is not new but is becoming increasingly salient with regulatory affairs and CPA becoming a core competence. This idea could be completed by the notion of regulatory entrepreneur/arbitrageur that could be a combination of exit and voice<sup>12</sup>. Voice could be exerted in a critical and pressuring manner toward the law needed a change in the home country but also in a constructive and collaborative manner in the new host country. Exit would be a tactical or a strategic move, depending on the evolution of the home and host countries in regulatory and market terms.

***Available framework: Goal-Based Rules, foresight, regulatory sandboxes***

With the view of investigating the possible collaboration between business and regulators in the global arena, theories related to arbitrage and the available regulatory frameworks, such as the Goal-Based Rules, are reviewed. An intensification of foresight practices as an underexploited tool favorable to a participative approach is also proposed.

Then, is explored the question of how the concept of regulatory sandbox, recently appeared in a handful of countries, can support the dialogue between firms and regulators with a focus on the UK and Singapore. It seems that it gives many opportunities for a bespoke treatment leading to a better mutual understanding between the regulator and the firm with informed rational data, risk assessment, and mitigation strategy, the key basis for a constructive CPA approach. This certainly increases the chances of success and reduces the average time needed for a CPA action, which is always the Achilles heel of these operations.

***Two examples: global regulatory arbitrage and indirect interaction***

To finish, two cases illustrating the above discussion about interactions between CPA/firms' individual strategy and global regulatory arbitrage for innovation are examined in the appendix. In the first, the flying taxi Cora which chose New Zealand because of friendlier regulation than in the US, a real dialogue seems to be at play with an assessment in common of the risks and the corresponding mitigating strategy followed by the selection of the rules to be applied in a bespoke treatment. The important feature here is the newness, the absence of path-dependency, of a long history of efficiency that could lead to attachment to its own model and norms. This leaves room for flexibility, openness, and creativity on both sides and gives an interesting example of how a fast-moving startup with a disruptive technology can navigate the world regulatory landscape, which is here strikingly essential compared to other traditional business criteria such as market potential, taxes, etc.

The second example is Domino's Pizza, which offers a sort of indirect model, evolving in a constellation of

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<sup>12</sup> See Hirschman, Exit, Voice and loyalty (1970)

partnerships domestically and globally, and scrutinizing interactively the technological opportunities that could enhance the consumer experience. The firm, in general, does not by itself interact directly with governments but collaborates with its partners to take advantage of a favorable regulation. This may allow Domino's to innovate on a wide scale with limited CPA resources.

Altogether, these aspects of knowledge building, technocratic rationality based on trust and mutual understanding to advance a firm agenda are something emphasized all along this article. Playing pressure strategies in the power and influence game will certainly still be required, but in innovation, the benefit of newness, the changing role of governments, and the increasing qualitative diversification of jurisdictions are factors supporting collaborative strategies for a reduced time to market. This implies enhanced capabilities for CPA, in influence, in technology, and global comparative knowledge.

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## Appendix: cases

### *Sandbox cases*

When looking at the example of the Ministry of Health (MOH) in Singapore, a circular<sup>13</sup> is explaining the idea behind the sandbox in the following terms: “encouraging selected telemedicine providers to enter into a regulatory sandbox with the MOH. The sandbox will enable telemedicine providers to develop innovative models but within well-defined patient safety and welfare parameters. Depending on the model, MOH will also ask these providers to share key data on their service. This approach will allow MOH to understand the evolution of the sector better and provide a platform for the co-creation of telemedicine regulations under HCSA<sup>14</sup>. The sandbox will exist up till the point of HCSA licensing after which all telemedicine providers will have to comply with the prevailing legal and regulatory requirements.” One crucial keyword here is “co-creation.”

According to an MOH representative interviewed, competitiveness (of Singapore) was not the key objective, but they wanted to focus on ensuring patient welfare and safety. Telemedicine has been identified as a growing area of interest in healthcare (and subject to licensing) in the more general context of the preparation of the Healthcare Service Act that will come to effect in 2020. There have been public consultations, but, more specifically, the newness lies in that the service providers were invited to sit and dialogue with the regulator to discuss how the regulation should be. The regulation would then be formalized and submitted to the parliament. The focus was on understanding, identifying the new risks of the new models, questioning the regulator capabilities and resources to put in play the regulation to be sure that the new services will be safe and accessible. In this sense, the sandbox is not solely intended for innovation but as a tool for risk diagnosing and establishment of mitigation strategies. Constant communication and trust-building are, therefore, key in this process. Here also, it was difficult to assess the system in-depth due to its newness and the confidentiality of information. New technologies such as 3D organ printing are likewise in the pipeline with further developments to be followed.

Altogether, sandboxes are work-in-progress, very new schemes relatively spread worldwide. They generally share a case by case approach rather than a one-size-fits-all, but the details, the scope, and the objectives may differ across countries and sectors.

Refocusing on the purpose of the article, the EMA statement can be compared (that it “may deem that

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<sup>13</sup> *Telemedicine and issuance of online medical certificates*, Joint SMC and MOH Circular no 2/2018, retrieved from <https://www.moh.gov.sg/docs/librariesprovider5/default-document-library/joint-smc-and-moh-circular-on-teleconsultation-and-mcs.pdf>, July 14, 2018.

<sup>14</sup> Healthcare Service Act

certain regulations, can be permanently amended or relaxed. EMA will consult the industry accordingly for such regulatory change”) to its UK counterpart, an open letter addressed to the innovators interested to enter the regulatory sandbox set by the UK regulator, the Office of Gas and Electricity Markets (Ofgem). This letter declares that “There were a small number of unsuitable expressions of interest, primarily because they were not asking for a trial of a new product or service but a permanent change in regulation, which is not appropriate for the short-term nature of the sandbox. We also received expressions of interest in trialing new regulation and policies in existing projects; these related to trialing new network charging arrangements. We welcome the offers to support policy development and have recommended that the companies engage with the relevant policy team.”

### *Firms Cases*

#### ***Kitty Hawks/Cora project in New Zealand***

Although flying vehicle projects are numerous, their degree of progress may be very different across companies and countries in terms of technology, testing, and certification. The Cora flying taxi project is one of the most advanced. It is developed by California-based Kitty Hawk Corporation funded by Google co-founder Larry Page. Kitty Hawk operates under its subsidiary Zephyr Airworks in New Zealand. The aircraft belongs to the category of eVTOL (Electric Vertical Take-Off and Landing) and stands between a car, an airplane, a helicopter and a drone (as it is autonomous). It can take two passengers, flies up to 180 km/h, and has an autonomy of 100 km.

In 2017, “after a global search for a partner, Cora has landed in New Zealand to start a new phase of evolution. With its commitment to innovation and forward-thinking regulatory ecosystem, New Zealand is the perfect collaborator,” as explains its website<sup>15</sup>. Fred Reid, CEO of Zephyr Airworks, discloses the key criteria for the choice of New Zealand as follows<sup>16</sup>: 1) the ability to gain native certification which is only available in a handful of countries, 2) good intellectual property protection laws, 3) a place open to new ideas. The official announcement was made in March 2018. Cora is for now allowed to pursue testing with the view of getting a certification for commercial flights. Technically speaking, Cora has an experimental airworthiness certificate from both the New Zealand Civil Aviation Authority (CAA) and the United States Federal Aviation Administration (FAA), which means that testing can be done in both countries, but the complexity and prospects of the American regulatory landscape drove Cora to search certification and concretize its market entry only in New Zealand, for now.

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<sup>15</sup> <https://cora.aero/>. Accessed December 12, 2018.

<sup>16</sup> *Air taxi trials possible in six years as tech company trials flying vehicle in Canterbury*, March 13 2018, [www.stuu.co.nz](http://www.stuu.co.nz), retrieved from <https://www.stuff.co.nz/technology/102203642/air-taxi-trials-possible-in-six-years-as-tech-company-trials-flying-vehicle-in-canterbury>, May 31 2018.

In terms of market, NASA recently released two consultant studies related to Urban Air Mobility (UAM) in the US. In the first one<sup>17</sup>, the air metro market is estimated to be profitable by 2030, assuming that regulations are in place, but the air taxi market is not seen as widespread due to high investment costs and risk of concentration in wealthy areas only. The second report<sup>18</sup> by Booz, Allen, Hamilton, offers a range of scenarios for the US air taxi market in which the best (unconstrained) one would yield an annual value of 500 Bn\$, whereas the most constrained in terms of regulation, certification, public perception, infrastructure, and weather would only bring in 2.5 Bn\$.

The competitive landscape is highly crowded with more than a hundred projects recorded worldwide, more than seventy manufacturers, including Boeing, Airbus, and Bell Helicopters. However, not all of them are at the same stage. According to Fred Reid<sup>19</sup>, up to thirty competitors are working on similar projects, within which a half-dozen seriously. The best known are Ehang, A3 Vahana/Airbus, Volocopter, and Lilium Jet. Uber is also actively participating in the development of air mobility through its program Elevate and cooperation with a handful of manufacturers such as Bell, Aurora/Boeing.

As noticed by the reports evaluating the feasibility and commercial viability of autonomous aircraft, a multitude of barriers still stands in the way of this technological and societal breakthrough. In a seminal white paper<sup>20</sup>, Uber Elevate lists up the numerous hurdles to be overcome for market feasibility: certification process, battery technology, vehicle efficiency, vehicle performance and reliability, air traffic control, cost and affordability, safety, aircraft noise, emissions, vertiport/vertistop infrastructure in cities, etc. Regarding certification, Uber Elevate suggests a timeline ranging between 2017 for the first prototypes and 2025 for urban public flight operations (in the US). This schedule is judged “not unreasonable” by a representative of the CAA interviewed. Legal and regulatory barriers are naturally key elements concerning the potential success of autonomous VTOLs. The Booz, Allen, Hamilton report specifies some examples of the US context but that are likely to be a problem in a form or another in other parts of the world: regulations for beyond visual line of sight, for operations over people/streets, for when a passenger is being transported, for flight in instrument conditions, for training and knowledge requirements for pilots and operators, etc. In addition, beyond these obstacles, societal barriers such as public perception, cost consideration, personal security, privacy concerns, etc. are far from negligible.

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<sup>17</sup> *NASA Urban Air Mobility, Market Study Executive Summary*, November 5, 2018. Crown Consulting, Ascension Global, Georgia Tech Aerospace Systems Design Lab, Mc Kinsey Company. Retrieved from <https://www.nasa.gov/sites/default/files/atoms/files/uam-market-study-executive-summary-pr.pdf>, March 19, 2019.

<sup>18</sup> *Urban Air Mobility (UAM) Market Study, Executive Briefing*, October 5, 2018. Booz, Allen, Hamilton. Retrieved from [https://www.nasa.gov/sites/default/files/atoms/files/bah\\_uam\\_executive\\_briefing\\_181005\\_tagged.pdf](https://www.nasa.gov/sites/default/files/atoms/files/bah_uam_executive_briefing_181005_tagged.pdf), November 22, 2018.

<sup>19</sup> See 16

<sup>20</sup> *Fast-Forwarding to a Future of On-Demand Urban Air Transportation*, Uber Elevate October 27, 2016. Retrieved from <https://www.uber.com/elevate.pdf>, June 20, 2018.

Therefore, it seems to be a long way, generally speaking, before air taxis become a widely shared reality. Meanwhile, in the specific case of New Zealand, the Ministry of Innovation, Business, and Employment, recently set up the Innovative Partnerships Programme, whose role is to enable international companies to connect, collaborate and invest in R&D in the country through the creation of world-leading and enabling environments. The Programme has identified a number of areas in which New Zealand either has or can create clear competitive advantages, such as Space, Advanced Aviation, Agritech and Future Food, and Sustainable Energy.

For the time being, no sandboxes as in the UK or Singapore have been introduced in these related areas, but the Innovative Partnerships has developed as a tool the concept of “Platform play” which is intended as an eco-system level scheme to build and capture competitive advantage and capability in New Zealand so that new opportunities of interest to domestic and international companies are catalyzed and grown. As a representative of the Innovative Partnerships explains, the idea behind is to scrutinize all the components of an ecosystem in a particular area such as regulation, taxes, government science investments, R&D skills and capabilities at the universities, startups, sophisticated investors, domestic leading-edge businesses and available infrastructure to come up with a plan to organize the aspects that will lead to the development of a world-leading ecosystem. The final goal is to grow environments that are well-suited for fast-moving companies to try and develop disruptive technologies and that are uniquely suited to the New Zealand context so that they are more difficult for other countries to replicate. New Zealand having a small and highly interconnected public service, it allows them to take easily a cross-government approach resulting in proactive and agile interaction.

Concerning the unmanned aircraft area, New Zealand developed in recent years a strong industry and community for unmanned aerial vehicles (UAV), and the government intends to support further growth. To this end, new aviation rules came into force in 2015 to regulate the use of UAVs for recreational and commercial purposes. The approach is risk and principle-based, which is enabling without compromising safety. It provides a pragmatic and bespoke method for operators who have the flexibility to assess and establish strategies and procedures to mitigate risks.

In the Cora case, the company credited the Innovative Partnerships program as part of the reason it is testing its air taxi in New Zealand. The same representative explains that they tried to build an excellent relationship, to understand the issues Cora was really facing, to facilitate things and help. Due to confidentiality reasons, it was not possible to enter into details, but it seems that a very close relationship made of follow-up and interactions is accompanying the Cora project.

Regarding the CAA, in charge of the certification process, an interview with representatives illustrates how the firm and the authority interact. A first element is that the new law mentioned above allows encompassing in

one rule all the aspects from certification to maintenance to operations of manned and unmanned aircraft. This seems to be rather unique in aviation. Furthermore, instead of having all rules written in advance in black and white, a dialogue is established, a two-way conversation where a recap is done of what rules should be selected and applied, what agreement can be reached about the risks of operations. In Cora's case, an interesting factor is that they are new to aviation and do not come with a long history of being effective, they are not restricted by what they have done in the past but are future-oriented. Hence, the CAA needs first to understand what they are trying to achieve, and then start to think what are the effective requirements that would be appropriate to establish with an acceptable level of risk associated.

A concrete example of interactivity, bespoke approach and risk assessment/mitigation given by the CAA concerns the fuel reserves needing to be carried by an electric VTOL aircraft: "NZ Civil Aviation Regulation 91.305 is explicit about what fuel reserves must be carried by aeroplanes and helicopters conducting Visual Flight Rules (VFR) operations. Discussions with an applicant regarding their specific aircraft and the nature of their operation enabled them to convince CAA that it would be adequately safe for their aircraft to carry less energy reserves than those mandated by CAR 91.305. Had they not been able to present a convincing argument for such an approach, there would have been a significant time and cost penalty due to them needing to redesign their energy storage system."

Thus, even though limited in detail related to the firm, individual CPA activity due to confidentiality reasons during interviews, this example can be seen as giving an interesting image of how a fast-moving startup with a disruptive technology can navigate the world regulatory landscape, which is here strikingly essential compared to other traditional business criteria such as market potential, taxes, etc. Correspondingly, it can be observed how a country organizes itself at the different legislative and regulatory level to answer this demand and proactively work together to create a bespoke framework.

It is too soon to evaluate how the future will be for Cora, the New Zealand UAV landscape, and the impact on transport worldwide. As the CAA points out, despite the existence of mutual recognition agreements across countries and regulators, the technology is far too new for any nation to recognize another nation's activities. Therefore, before certification in New Zealand opens the door automatically to another country's acceptance, a long time would be necessary. In this sense, even if Cora and New Zealand's authorities manage to create a regulatorily and commercially viable market for air taxis before other countries, an individual approach would still be necessary for each new country entered, but there is little doubt that the power of the model will significantly advance the agenda as it is often the case in international business.

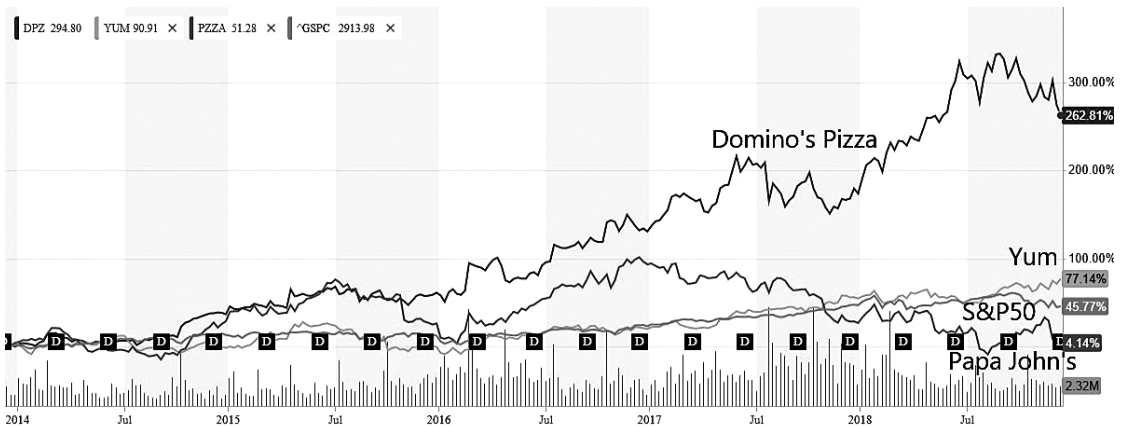
### ***Domino's Pizza***

Domino's Pizza may not be the first company that comes to mind when considering fast-moving global

disruptive innovation, but the fact is that the company might be an interesting example of regulatory arbitrage, albeit in an indirect manner.

The company touched the bottom in 2008-2009 in terms of earning and shareholder return, which led to a self-questioning campaign about the quality of its products and a reshuffling of the strategy named the “pizza turnaround” in 2010. Thanks to a combination of savvy marketing, innovative technology, and creative ordering method, Domino’s Pizza recovered to the point that in recent years its growth and valuation compare, if not beat, many technology firms.

Figure 1 Domino’s Pizza share vs competitors and the S&P500. Source: Yahoo Finance, accessed December 14, 2018



On a five years basis, Domino’s Pizza share price increased by nearly 300%, thus largely overperforming its competitors such as Yum/Pizza Hut, Papa John’s, or even the S&P500. According to many analysts, the share is valued more like a tech than a food company with earnings constantly beating the consensus EPS forecasts over the recent quarters leading to a consistent hold-buy recommendation despite a risk of overvaluation.

Considering the strengths, besides a powerful brand, the business model is a combination of revenues, cost-efficiency, and economies of scale. For the revenues side, domestic and international franchise royalties account for 20%, company-owned retail sales 17.6%, and supply chain, that is, providing goods to the network, 62.4% (as of December 2017). On the cost side, the model is characterized by delivery and carryout-oriented store design with moderate capital requirements. Production/delivery processes are streamlined, and economies of scale are maximized on the purchase of food.

However, technological innovation can be considered a major differentiative element. Domino's Pizza prides itself on having always been a disruptor and a technological leader. Its strategy includes building digital platforms and in-house data analytics to control better data that drives everything from knowing the customers, what they eat, which device they prefer, where they receive their messages, and what changes their purchase behavior. This emphasis on technology helped Domino's Pizza to generate more than 50% of its US sales from its digital channels. It is cited in a BCG<sup>21</sup> study about restaurants, together with other distinctive firms, for its advance in competing in the new digital game where partnerships and fine segmentation of the value chain are essential. Hence, the BCG analysis distinguishes the great categories of Demand generation, Order, Food preparation, Food delivery, and Engagement across the purchasing journey. These categories are further segmented into subgroups corresponding to existing digital services/applications. For example, in Demand Generation, the subgroup Promotion includes Groupon and LivingSocial, the subgroup Reservation Nowait and Open Table, etc. Order is subdivided in Online menus, E-commerce, POS systems, Payment, the latter including Apple Pay, TabbedOut, or Ziosk. The key messages here consist of understanding the consumer needs and the digital value chain, investing in technology to differentiate digitally, but above all, pursuing partnerships as no one vendor offers a full solution.

And this is precisely what Domino's is doing, domestically obviously, but also abroad, because the room for the franchise expansion is there, but also, and this is where this story converges with the purpose of this article, because of friendlier regulations.

For example, Domino's announced in 2017 a robot delivery system for its pizzas in the German town of Hamburg in partnership with Starship Technologies, a European startup. In New Zealand, Domino's partnered with Flirtey, a US startup, to deliver pizzas by drones. In the US, autonomous vehicle tests are conducted with Ford in Ann Arbor (Michigan) and Miami because those communities were open to having the company.

When interviewed about this strategy, a firm's representative explains that, first of all, Domino's is a highly-franchised (97%), highly-decentralized structure. Owned stores are only in the US, whereas, in the rest of the world, they are owned by independent franchisees and/or independent publicly-traded entities. Regarding innovation, the headquarter and franchise companies openly share information. The choice of the country depends on the local ideas and initiatives, but also on local regulations that help or do not get in the way. This is the reason why drone delivery has been tested in New Zealand rather than in the US because of stricter FAA regulations. Partners are chosen because of their technological strengths. However, rather than the technology per se, the essential point for Domino's is the customer reaction and interaction. For example, with the autonomous delivery cars in the US, they want to see if customers, who are accustomed to a driver coming

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<sup>21</sup> *The new digital reality for restaurants*, November 2017

to their doors, are willing to walk outside and get their orders themselves.

Asked whether they are lobbying in parallel in the US for future regulatory/legal modifications based on the experience gained in other countries, the representative indicates that they are not actively lobbying, but are working jointly with the automobile company as they navigate the future of self-driving vehicles. In general, inside and outside the US, he declares that when they see a meaningful opportunity, they begin working with their partners to encourage governments to write or rewrite regulations that would allow them to use the new technology.

Thus, it could be said that Domino's offers a sort of indirect model, evolving in a constellation of partnerships domestically and globally, and scrutinizing interactively the technological opportunities that could enhance the consumer experience. The firm, in general, does not by itself interact directly with governments but collaborates with its partners to take advantage of a favorable regulation. This may allow Domino's to innovate on a wide scale with limited CPA resources.