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A report by the Economist Intelligence Unit

Finding a level playing field:

Models and frameworks
for policymaking in an
innovation-driven economy

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How do you define a level playing field?

The Economist Intelligence Unit convened an advisory board to discuss the impact of innovation on market fairness.



James Gattuso: *Most people look at the term [level playing field] as referring to the competitors in the market. And that concept of equality is not what we want. It's consumers that we want to really have the benefits, and we want the focus of policy to be on them, not on the competitors.*

Minerva Tantoco: *When I think about a level playing field, I think more about the concept of fairness, that everyone's playing by the same rules, [which are] there to protect the consumer, to collect taxes, to make sure that the workers are protected.*



Rory McDonald: *You [don't] want to have any market participants that had privileged access or undue influence on any sort of regulatory process. You want to make sure that all companies have the ability and motivation to pursue innovation.*

Jessika Trancik: *A level playing field in markets is one that supports economic growth and also technology innovation but at the same time protects certain basic human rights associated with the environment, safety and health.*



James Gattuso, senior research fellow in regulatory policy, Thomas A. Roe, Institute for Economic Policy Studies, The Heritage Foundation

Minerva Tantoco, chief technology officer, New York City

Rory McDonald, assistant professor of business administration, Harvard Business School

Jessika Trancik, assistant professor of engineering systems, Massachusetts Institute of Technology

Rachel Haot, chief digital officer, state of New York



Rachel Haot: *I would define a level playing field in the market as a scenario in which no participant has a particular advantage over the others, that everyone is working with the same resources and materials, and of course one that's protecting and supporting consumers with choice and safety.*



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Executive summary

Technological innovation is reshaping markets and creating new opportunities for businesses at a faster rate than at any other time in living memory. But to realise the promise of greater economic growth, incumbent businesses, challengers and the policymakers who regulate them need to find a balance that encourages fairness without either stifling entrepreneurialism or compromising the public interest.

Finding this balance has proven difficult for businesses and industry regulators alike. For businesses, the massive shift toward producing digital rather than physical goods and services has muddied the meaning of market fairness. As they confront traditional incumbents, nimbler, digital-first upstarts often walk a fine line between pressing their competitive advantages and over-stepping regulatory—and sometimes even societal—norms. Policymakers, hindered by bureaucratic processes built for an earlier time, struggle to respond in a timely and effective way to fast-evolving markets and continuous technological disruption.

In order to build greater understanding of the trade-offs at play in ensuring a level playing field, this report explores the specific challenges that regulators face when it comes to disruptors, and explores workable models for increased collaboration between the public and private sectors.

Building a policy environment that ensures fair competition, promotes innovation and safeguards

the public interest is no small task. But sparking a dialogue can help. To capture a broad range of perspectives, The Economist Intelligence Unit (EIU) convened an advisory board composed of subject-matter experts across industries, leading academics and public officials to discuss the impact of innovation on market fairness. The EIU also conducted in-depth interviews with additional experts.

We would like to take this opportunity to thank the following advisory board members (marked with an asterisk) and interviewees for their time and valuable contribution to our research:

Peter Bryant, partner at Clareo Partners and senior fellow, the Kellogg Innovation Network

Gregory Daniel, fellow in economic studies and managing director for evidence development and innovation, Center for Health Policy, Brookings Institution

Brian Hearing, co-founder, Drone Shield

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Tom Goodwin, senior vice-president of strategy and innovation, Havas Media

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Minerva Tantoco, chief technology officer, New York City*

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Jessika Trancik, assistant professor of engineering systems, Massachusetts Institute of Technology (MIT)*

The advisory board's panel discussions and numerous other interviews with business leaders and policymakers led us to the following key findings on the nature of business today and what constitutes a fair marketplace:

- **Regulators cannot keep up with the speed and effects of technological change.** Companies continue to innovate at a torrid pace, but regulatory frameworks evolve slowly and incrementally. Sometimes they're even backwards-looking, solving yesterday's problems rather than tomorrow's.

- **Many of today's fastest-growing companies are born out of regulatory inefficiencies.** Using technology to disrupt their industries with more efficient solutions, they sometimes manoeuvre in areas that regulations—often conceived many decades ago—don't clearly address. Unless governments are staffed with tech-savvy professionals, they will struggle to keep up with the disruptors.

- **A level playing field must balance the interests of business with those of consumers.** While disruptive innovators can deliver welcome new products and services, without appropriate regulatory oversight, these products and services may not serve the public interest.

- **Technology is making it easier for businesses to self-regulate, but doing this effectively requires integrity.** Through data gathering and thoughtful user agreements, some digital disruptors demonstrate an ability to assume responsibilities previously handled exclusively by government. However, abusive practices could make regulators and the public more sceptical of delegated solutions.

- **Broad and principles-based, rather than prescriptive, regulation is the way forward.** Given how fast technology can evolve, policymakers should strive to implement forward-looking, broad regulations with clear intent. Doing so requires open channels of communication between industry and government. ■

1

Introduction

It took Hilton Hotels 93 years to build an inventory of 600,000 rooms. Airbnb reached this figure in less than four.

On September 21st 2011, Google's executive chairman, Eric Schmidt (a member of the board of The EIU's parent company) sat in front of a US Senate antitrust panel tasked with determining whether Google favoured its own online commercial offerings in its widely dominant search engine. In response to the claims of anticompetitive behaviour, he proclaimed: "The internet is the ultimate level playing field."

On the face of it, that is true. In the hyper-competitive online space, users are just one click away from a competitor's offering. Seen through a different lens, the advent of an age where innovation and growth are largely driven by information technology, has in some ways made it easier for companies to achieve monopolistic market positions (or nearly so). Paradoxically, however, the information age enables upstarts to achieve dominant market positions at what were once unimaginable speeds, even as it has delivered increased consumer choice and price competition. Traditionally, market concentration caused exactly the opposite effects.

Of course, innovation cuts both ways. Although it's easier than ever for an innovative company to overtake a legacy competitor, defending that position has never been harder. In 1960, the average lifespan of companies in the S&P 500 was 60 years. Innosight, an innovation consulting firm, expects this to decrease to less than 20 years by 2020. And according to Constellation Research, a Silicon Valley research firm, it took Hilton Hotels

93 years to build an inventory of 600,000 rooms. But Airbnb, a short-term apartment and room-rental service, reached this figure in less than four, simply by building an app that connects would-be guests with available, unoccupied homes. The seven-year-old company now has an "inventory" of close to a million rooms around the globe—without having built or purchased a single one of them.

Such companies excel at exploiting market inefficiencies to bring greater access to more people. But growth like this does not come without scrutiny. As Airbnb has grown to provide accommodation to over 25m people to date, the company has met regulatory challenges in nearly every new city it enters. Likewise, Google, whose stated mission is "to organise the world's information and make it universally accessible and useful", has been investigated or formally charged by the Federal Trade Commission (FTC) for anticompetitive behaviour eight times since 2007.

Innovative companies like these would argue that they're serving the public interest and levelling the competitive playing field in their respective industries. But others—especially the objects of their disruption—are more likely to cry foul, not least because the upstarts in many cases seem to have done an end-run around existing regulatory frameworks. Why, they ask, shouldn't an upstart like Airbnb have to follow the same rules as traditional hotels? Part of the answer, or lack thereof, is that regulations never anticipated the existence of such business models.

Regulators are under pressure to resolve a core dilemma of the information age—how to promote fair competition, encourage innovation and protect consumers given how fast the business environment is changing. To address this and related questions, our paper will do the following:

- Explore how the technology landscape both enables new forms of competition and challenges conventional ideas of what makes a market fair;
- Highlight the specific difficulties regulators face in their approach to digital disruptors; and
- Share successful models that will help policymakers and those they regulate to move beyond rhetoric towards constructive solutions. ■

2

Recasting the level playing field

“The capitalist economy is built on innovation leading to advantage. It’s a question of, at what scale does that suppress future innovation?”

Arun Sundararajan,
professor and NEC faculty
fellow, New York University,
Stern School of Business

Technology is the main source of competitive advantage across many industries today. The purely digital nature of many innovators means they face relatively few barriers to entry, which could include difficult access to key natural resources, or the need to build large, costly physical manufacturing centres and distribution networks. Moreover, once a digital good or service is developed, the marginal cost of producing and distributing another—an additional “copy” of an e-book or another user page on a social networking platform—is often virtually zero.

As a result, these digital innovators can scale up much faster, far more cheaply, and with far fewer workers than ever before. But the ramifications for market fairness are still unclear. “The capitalist economy is built on innovation leading to advantage,” notes Arun Sundararajan, a professor at New York University’s Stern School of Business. “It’s a question of, at what scale does that suppress future innovation?”

The basic tenets of the level playing field—that the same rules apply to everyone, that no competitor should benefit from unfair advantages, and that corporate interests should be carefully balanced with those of the public—have not changed significantly, even as technology has transformed the competitive landscape. Interpreting and applying these tenets, however, is no longer as straightforward as it once was.

Businesses’ level playing field

Almost every instance of industry disruption elicits at least a few howls of protest—sincere or otherwise—from incumbents. By their reckoning, if the success of a competitor’s innovation appears to hinge even partially on taking advantage of out-of-date regulations, then the incumbents must be at a structural disadvantage; the playing field must be tilted. But, seen from the perspective of the innovators, as long as their game-changing activity isn’t actually proscribed by extant rules—and particularly if consumers prefer their offering to incumbents’ version—then there’s no harm, no foul. Regulators, caught in the middle, struggle to muster a consistent response. Their challenge is either to apply existing statutes to today’s technologies or to come up with seminal new statutes—both of which are extremely difficult tasks.

“If you work at or on behalf of a major US technology company, there is a good chance that you’ve come in contact with an Antitrust Division investigation,” said Renata Hesse, deputy assistant attorney-general in the antitrust division at the US Department of Justice, to high-tech leaders in January 2014. With so much upheaval in the industry, this isn’t surprising. As Airbnb, to revisit our earlier example, doubles in valuation year after year, the hotel industry’s revenues are dropping. According to a Credit Suisse report, Airbnb is rapidly driving down hotel costs in New York City—revenue from the city’s hotels fell 18.6% per

available room in 2014, thanks in large part to apartment-sharing services.

Similarly, mobile-messaging services like WhatsApp, which added 500m monthly users in just five years since its founding, “are absolutely cannibalizing the telecommunications market,” says Tom Goodwin, senior vice-president of strategy and innovation at Havas Media. So-called over-the-top technologies like WhatsApp and Skype essentially use existing carrier networks to provide their own alternative instant messaging services. “Cellular networks are potentially losing billions of dollars in what could be revenue from SMS,” adds Mr Goodwin. According to London-based research firm Ovum, the global telecommunications industry will lose \$386bn between 2012 and 2018 due to these internet voice and messaging applications.

Consumers’ level playing field, and rise of the sharing economy

The effects of disruptive innovation raise questions of fairness for consumers, too. “Most people look at the term [level playing field] as referring to the competitors in the market. And that concept of equality is not what we want,” says James Gattuso, senior research fellow in regulatory policy at the Washington, DC-based Heritage Foundation. “It’s consumers that we want to really have the benefits, and we want the focus of policy to be on them, not on the competitors.”

In some ways, the increasing speed of

innovation makes it more challenging to ensure that consumers’ interests are being served. It took 36 years for 25% of the US population to use the telephone since its invention in 1876. In that era, regulators had ample time to observe and react to the effects its adoption had on consumers. They no longer have that luxury. By the same measure, it took only 13 years for the mobile phone to catch on and just three years for the tablet. Today, half of the adult population worldwide owns a smartphone. By 2020, 80% will.

Is increasing connectivity and the concomitant shift from traditional commercial exchanges to digital and oftentimes, peer-to-peer, ones working in consumers’ favour? Given the speed at which it’s happening and the borderless nature of tech adoption, the answer isn’t clear.

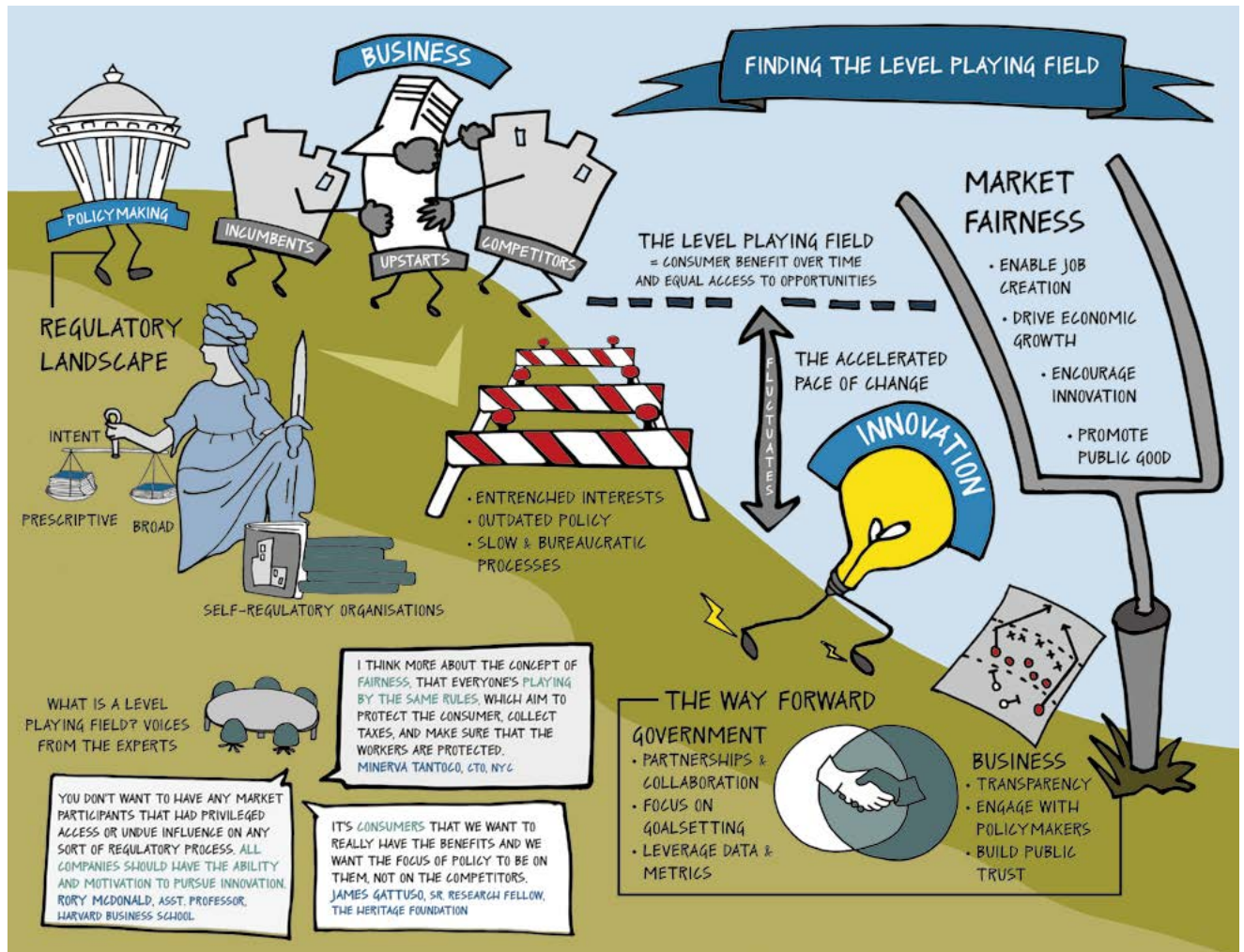
Consider the advent of the “sharing” or “collaborative” economy, which allows individuals to leverage the power of technology to share goods and services seamlessly. Rather than a traditional business providing a product or service to a customer, this democratisation of the marketplace blurs the lines between personal and professional, service provider and buyer, investor and customer, just to name a few. Not only are middlemen at risk of being disintermediated, regulators could be, too.

Such concerns continue to mount as the sharing economy expands. Uber, perhaps the poster-child of the sharing economy, has become infamous for setting up shop in new cities and challenging

Amazon and how to own an e-book

Amazon, which started with the ambition to be the world’s biggest book store, was not the first e-book retailer, but it was the first sizeable one. Existing copyright laws that define what owners can or can’t do with a product had been written with physical objects in mind—therefore governing how and when customers could resell the product. Once a customer sells a book, he or she no longer owns it. But is this the same case for e-books? The answer is: not quite.

As a consequence, Amazon came up with a solution borrowed from the software industry. Facing a similar dilemma of selling digital products to a market that was accustomed to the exchange of physical goods, software companies in the 1980s used a licensing contract to govern the selling and reselling of shrink-wrapped software. Today, the “ownership” of an e-book is basically a licensing agreement. ■



existing regulatory frameworks while fending off challenges from the taxi industry. Many would argue that the playing field is often tilted in favour of the taxi lobbies to the detriment of passengers, and that upstarts' presence helps correct the situation. Yet, while Uber itself "employs" over 160,000 drivers (or "driver-partners" as the company carefully calls them in a white paper by the company's policy research team in January 2015), it does not provide health insurance or similar benefits, even though nearly 40% of these drivers have no other jobs. And while the company's success is a clear indication of the high demand of these "personal drivers," recent newspaper headlines also point out instances of rogue Uber drivers misbehaving around the world. "Uber has the best of both worlds today," Mr Goodwin says. "They're an employer and can say that they create

jobs. At the same time, they're a traditional business that creates a lot of revenue. In retrospect, there should be more rules around employment."

The regulator's quandary

Regulators are poorly positioned to anticipate disruptive innovations, and reacting effectively to such rapid changes has proven almost as great a challenge. Amid competing mandates from upstarts, incumbent businesses and consumers, regulators must adapt, or they'll find it increasingly difficult to ensure a level playing field for each of these constituents. Adapting, of course, is easier said than done—especially when entire industries can change in what seems like the blink of an eye. Fortunately, some of the very forces that have confounded regulators offer the promise of a workable solution. ■

3

Chasing a moving target: Challenges for regulators today

As we've seen, rules to help ensure fair competition and protect the public interest are caught between the old and the new. As the pace of innovation gathers speed, it's in many ways becoming more difficult for regulators to do their job. At the heart of the challenge lies the explosion of data, and its increasing centrality in commercial and consumer interactions. "As innovators come up with more creative approaches to new technologies," Astro Teller, head of Google X, the company's home for experimental projects, says to The EIU, "this drives up both the rate of change and the overall demand for things to be regulated, creating challenging conditions for policymakers."

Finding an edge in the zettabyte era

The benefits of ubiquitous digitisation to both business and society are clear. The free flow of information boosts economic growth and improves products and services for consumers. In 2012, IDC, a technology research firm, estimated that there were 2.7 zettabytes (2.7×10^{21} bytes) of data generated, which is *double* the amount generated in 2011. This figure is expected to reach 44 zettabytes in 2020. The volume and velocity of data are increasing exponentially—and with it, its uses.

Amazon, for example, has built up its dominant market position by analysing huge amounts of user data to sell products more effectively—a benefit less data-savvy competitors, or those with fewer resources, could not reasonably replicate. Competitive advantages like these can be controversial, not only for reasons of consumer

privacy, but because access to such information is often unevenly distributed. Any attempts to curb these proprietary information advantages in the name of preserving competition will, however, require careful deliberation.

"If we want people to have incentives to gather data and create new products with that data, we have to assume that people are going to have unequal access to that information," explains Professor McDonald. "When we can try to get an information edge, it allows us to develop our business or release our products in a way that's better than competitors."

For Mr Gattuso, "it goes back to the issue of fairness. Is it more important that everyone has access to the same information or has less information out there in the marketplace?" he asks. "The number one rule is that information is good, and you want it to be circulating."

Regulatory inefficiencies and being late to the game

Innovators aren't waiting for regulators to set new rules. In fact, many digital disruptors were born out of regulatory inefficiencies, experimenting with ideas that the regulators of yesteryear could not have foreseen. And once their idea takes hold in the marketplace, regulators must cope and react.

Perhaps no industry demonstrates this dynamic as well as peer-to-peer or peer-to-business lending platforms such as Lending Club, Prosper and Funding Circle, which match investors with small-loan borrowers, typically at better interest rates (for both buyers and sellers) than traditional bank

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”
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lending provides. Following the 2008 financial crisis and the tightening of borrowing regulations that followed, the peer-to-peer lending model grew quickly as a cost-effective and easy alternative. By 2014, US consumer-lending platforms facilitated more than \$8.8bn in loans (projected to rise to \$20bn by end-2015). 100 platforms now vie for slivers of the trillion-dollar consumer-credit market that have, until recently, been the reserve of traditional banks.

Similarly, “Uber came out of loopholes in the taxi industry and Airbnb with the hotel industry,” says Mr Goodwin. Uber has found a way to allow virtually anyone with a driver’s licence and a car to operate what’s essentially a taxi, and Airbnb looked beyond expensive hotel properties to a wide-open market of ordinary people’s not-always-occupied homes. “These companies are ruthlessly exploring loopholes. They are built by very smart people who understand technology, and unless government is equally equipped with smart, tech-savvy people, markets are already hacking themselves.”

Our panellists agree that for policymakers, this means playing catch up: “In part, the government wants to get ahead of [regulatory challenges] and we know the sector is important,” says Rachel Haot, chief digital officer of New York state. “The market is so powerful—especially with all these technologies, we hear it [in] the public sector—that it becomes unavoidable. The power dynamics are shifting in general and we’re seeing that everywhere.”

Fleeting internet monopolies and “thin” companies

With the competitive landscape skewing towards a “winner take all” approach, successful digital companies are naturally prone to dominant market positions, as we’ve seen. Yet in the last decade, this new crop of quasi-monopolies has proven to be different from traditional monopolies in several ways.

First, they can easily operate two-sided markets, where companies have two distinct user groups that provide each other with benefits—leaving regulators with a complicated task of constantly overseeing more than one market. For example, Facebook operates a business for two groups. For

the online public, the company has been the most dominant social networking site worldwide since 2010. Meanwhile, as an advertising platform, the company occupies only 5% of the global digital advertising market, by revenue.

In addition, despite innovative value propositions, digital, online companies like Uber, Lyft and Airbnb “are very ‘thin’—they don’t have unique assets, or unique software. They’re an app, an API, a brand name and distribution,” says Mr Goodwin. “They own so little and therefore remove themselves from regulatory oversight easily.” According to Rory McDonald, assistant professor of business administration at Harvard Business School, upstarts, more agile than larger companies, “can also change their businesses in real time to move away from regulations that may be overly onerous for them.”

Lastly, with typically low barriers to entry, the competitive landscape can turn overnight. Finding itself challenged to keep ahead of changing user behaviour, Facebook, the world’s most popular social networking platform, made its biggest acquisition at the time, acquiring the two-year-old, steadily growing photo-sharing application Instagram for \$1bn. Luckily for Facebook, 26% of Americans on the internet use Instagram today, and “hockey-stick” growth came in April 2012, when the number of users doubled in just four short months after its acquisition.

In a post-event analysis of FTC’s antitrust case against Google, in which the agency dropped its charges after the company agreed to voluntary changes in its practices, Geoffrey Manne and William Rinehart researchers from the International Centre for Law & Economics, a think-tank, warned against treating digital monopolies the same as traditional monopolies. Referring to the Department of Justice’s landmark antitrust case against Microsoft’s dominance on operating systems, they wrote in a law review journal: “We’ve been here before in the relatively short history of high-tech antitrust. Microsoft’s market position was unassailable...until it wasn’t. Even at the time, many could have told you that its perceived dominance was fleeting, as many did.” ■

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Tom Goodwin,
senior vice-president of
strategy and innovation,
Havas Media

4

Learning along the way: Models for balancing innovation and regulation

As long as innovation continues to transform business at breakneck speed, regulators need to rethink their strategies to ensure a level playing field and protect public interest. Our research and discussion with the advisory board members suggest that regulators achieve the best results when they show the same nimbleness as innovators and embrace digital solutions themselves.

Broader policies and open channels

It's impossible—and undesirable for all concerned—for regulators to update or create new laws around every new technology or upstart. In this environment, policies need to be broad enough to accommodate future innovation, but have clear enough intent to adequately guide expectations and enforcement.

For instance, governments around the world are rushing to clarify existing policies to address the advent of 3D-printed guns. Part of regulators' challenge is to issue rules that won't inadvertently create loopholes for a subsequent generation of innovators. In the US, regulators recently found themselves wrestling with the emergence of organisations like Defense Distributed, which planned to make 3D-printed gun schematics available to anyone on the internet. In response, lawmakers extended the duration the Undetectable Firearms Act, which prohibits weapons that can evade metal detectors, for 10 years as well as updating some of its details around how to define such weapons.

Often, instead of constantly reacting with

“micro-regulations,” finding a balance comes down to creating flexible policies that promote fair play and the public interest, regardless of how industries transform. “Even in the new context where new business models are created, or it's a new way to deliver a service in an existing industry, the intentions of the regulation still hold,” argues Minerva Tantoco, chief technology officer of New York City. “We've seen how technology makes markets more efficient, competitive, and allows new entrants into the field, but do not lose track of what the laws are meant to enforce.”

Learning the same language

Hiring additional technical subject-matter experts can help government agencies keep abreast of change in industry. “Where I've seen success is where there's a two-way dialogue between the businesses trying to set up and the regulator that's in charge of that,” Ms Tantoco adds.

According to CQ Roll Call, a US politics publication (and sister company of The EIU), only 10% of members in the 113th Congress (serving in 2013 and 2014), had a science or technology background. There is a general lack of expertise when it comes to building policies that address newer technologies, such as those around genetic sequencing diagnostics and modern systems for data collection, explains Gregory Daniel, managing director for evidence development and innovation at the Brookings Institution, a think-tank based in Washington, DC. Government is beginning to catch up, though. The Food and Drug Administration

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What are self-regulatory organisations?

Self-regulatory organisations (SROs) exercise authority over a specialised group or industry. Their roots date back to the communal farming-and-grazing byelaws that protected land in 13th-century Europe, but they are just as prevalent in today's world. Contemporary examples of SROs include the Chartered Financial Analyst Institute, which sets high ethical and professional responsibilities in finance, or the American Bar Association, which does so in law. Some government agencies heavily rely on

SROs to oversee complex markets, such as the Financial Industry Regulatory Authority (FINRA), which is charged by the Securities and Exchange Commission to set and enforce regulations that protect investors and promote fair markets.

Depending on context and varying widely in stakeholders' involvement, SROs are typically privately held and serve the purpose of policing an industry (rather than a trade organisation that serves to promote the well-being of an industry). ■

(FDA), for example, is asking Congress to expand the agency's budget in order to hire people with greater technical expertise.

And by drawing on the expertise of the more tech-literate, regulators can also "track how technologies are performing right now in terms of benefit to society," says Jessika Trancik, assistant professor of engineering systems at MIT.

To do this, some government departments, including the Department of Energy, Department of Homeland Security and Department of Defence, are leveraging the Advanced Research Projects Agency (ARPA) model, composed of engineers, developers, and tech futurists to work hand-in-hand with policymakers to add technical proficiency to the regulatory process. Many agencies are also participating in the Intergovernmental Personnel Act, a federal mobility programme that encourages agencies to loan out skilled personnel to other agencies. And most recently, the US Digital Service, formed in 2014 after the disappointing launch of healthcare.gov, is rapidly hiring top tech talent to bring government services into the digital era.

"Technology is changing so fast. Adoption is growing exponentially, and we are all connected by networks. So many more exponential changes are coming," says Mr Goodwin. "Government agencies must be properly staffed to deal with this."

Business as a trusted partner

Many regulatory issues in the digital space beg for delegated solutions, where large stakeholders other than government (ie, consumers and businesses) participate actively in rulemaking and enforcement.

Digital businesses frequently serve as quasi-regulatory intermediaries or ensure fairness in their own marketplaces through incentive structures and user agreements. Such businesses are often in a better position than the government to act as referees, given their strict control of user channels and data. This practice is especially prevalent in the sharing economy, where on-demand car services Lyft and Uber, for example, collect feedback directly from users to incentivise drivers to offer good service. And Airbnb has been able to assuage some regulatory concerns by collecting occupancy tax on behalf of its users in a handful of US cities. The fact that it captures accurate occupancy data through its app is, in fact, what allows it to make the case for a greater degree of self-regulation.

As the relationships among businesses, consumers and regulators evolve, it is becoming clear that the technology and data underlying so much friction can actually help each party find solutions. The commercial drone industry is a case in point. Following a near-ban on all commercial

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Arun Sundararajan, professor and NEC faculty fellow, New York University, Stern School of Business

drones, the Federal Aviation Agency issued an interim policy in March 2015 governing the use of small commercial drones for approved companies as long as the drones fly under 200 feet. Critically, these companies were able to show that technology such as GPS-based flight path software could help address the safety concerns of regulators, airlines and the general public. As of the end of April 2015, more than 150 companies had been granted permission to field commercial drones, with hundreds more waiting to test drone applications in agriculture, data collection,

construction and other fields.

Regulatory oversight for the sake of public safety, especially in industries like air travel, food and drugs, is critical. But as businesses increasingly control marketplaces through digital means, regulators and businesses themselves can benefit from shared interests, leading to more partnerships and greater collaboration: "To me, [companies] should be a part of the regulatory solution," says Professor Sundararajan. "They should be involved as actors in the provision of making the markets work better." ■

5

Conclusion

Even the most aggressive disruptors would agree that some form of regulation will always be necessary in order to ensure fair competition and safeguard the public interest. And though policymakers continue to struggle to accommodate the effects of disruptive innovation, a workable path forward is becoming clear.

Just as innovators are disrupting industries, regulators, working in close partnership with businesses and consumers, need to refresh their approach to rulemaking. Crafting future-proofed regulations may seem more difficult than simply continuing to react with prescriptive regulation, but the results are likely to be more effective for all concerned.

Representing many different points of view, our panel participants observe trade-offs at play as regulators aim to ensure fair and open markets for both innovators and incumbents while protecting

public interest. They universally acknowledge that no single set of rules can address or anticipate the fast-changing needs for oversight. Instead, they advocate broad, principles-based and forward-looking policymaking, which they believe will hold relevance even as further innovations inevitably arrive. Of course, such an approach will only be possible through collaboration with a cooperative private sector and an increased capacity on policymakers' part to embrace new technology.

To Rachel Haot, chief digital officer of the state of New York, the possibility of greater collaboration is not far off: "What we find is that at the beginning government and [innovators] may feel like they're speaking different languages. But they do have common aims. They do have a desire to impact the public, very often to improve the world in some way, and by working together we can achieve a lot more." ■

Whilst every effort has been taken to verify the accuracy of this information, neither The Economist Intelligence Unit Ltd. nor the sponsor of this report can accept any responsibility or liability for reliance by any person on this white paper or any of the information, opinions or conclusions set out in the white paper.

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