

What is this presentation about?

- **How to best protect citizens, ensure fair markets, and enforce regulations, while allowing the emerging technologies and businesses to flourish?**
- Highlight regulatory challenges posed by digital-age technologies and business models.
- Describe 4 critical questions policymakers in LATAM must address when it comes to regulating the digital economy.
- Provide a set of 5 principles to guide the future of regulation:
 - Adaptive regulation
 - Regulatory sandboxes
 - Outcome-based regulation
 - Risk-weighted regulation
 - Collaborative regulation

Governance and emerging technologies in LATAM

- **Government AI Readiness in LATAM**

Despite not making the top 20, the governments of Mexico, Uruguay, Brazil, and Colombia ranked within the top 50 countries out of 194 globally. Mexico and Uruguay are the only two LATAM countries developing AI policies and strategies.

Mexico's strategy released in March 2018, "Towards an Artificial Intelligence (AI) Strategy in Mexico: Taking Advantage of the IA Revolution"

Uruguay opened a public consultation of Artificial Intelligence for the Digital Government on April 22nd, 2019 and has since updated its Digital 2020 Agenda.

- **Automation Readiness Index**

Government AI readiness in LATAM

Analysis of Government AI readiness led by Oxford Insights and the IDRC

Rank (of 194 globally; 33 regionally)	Country
32	Mexico
35	Uruguay
39	Chile
40	Brazil
44	Colombia
51	Argentina
66	Costa Rica
69	Panama
71	Peru
73	Trinidad and Tobago
77	Dominican Republic
82	Ecuador
85	El Salvador
87	Jamaica
89	Bolivia
96	Honduras
102	Paraguay
115	Guatemala
117	Nicaragua
133	Bahamas
134	Venezuela
135	Barbados
142	Saint Kitts and Nevis
143	Dominica
144	Antigua and Barbuda
145	Guyana
149	Saint Vincent and the Grenadines
150	Haiti
153	Saint Lucia
155	Suriname
164	Grenada
171	Belize
172	Cuba

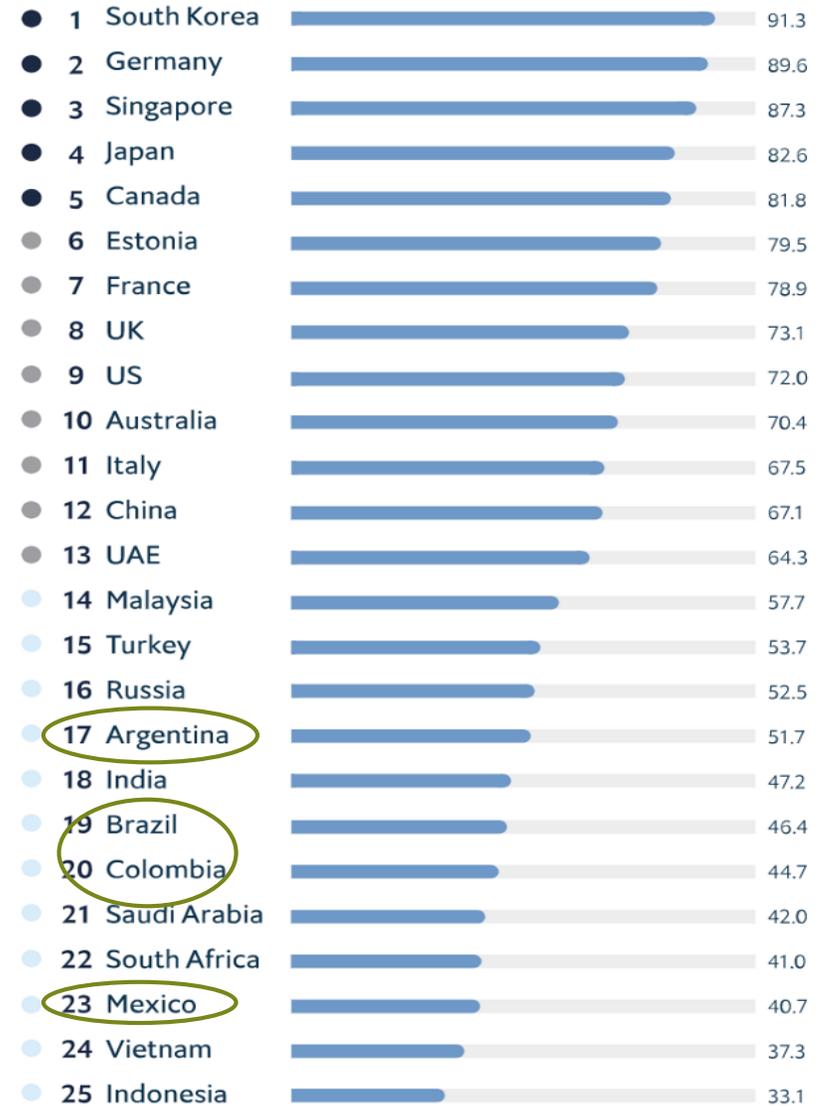


Automation Readiness Index

“Who is ready for the coming wave of automation” Economist Intelligence Unit

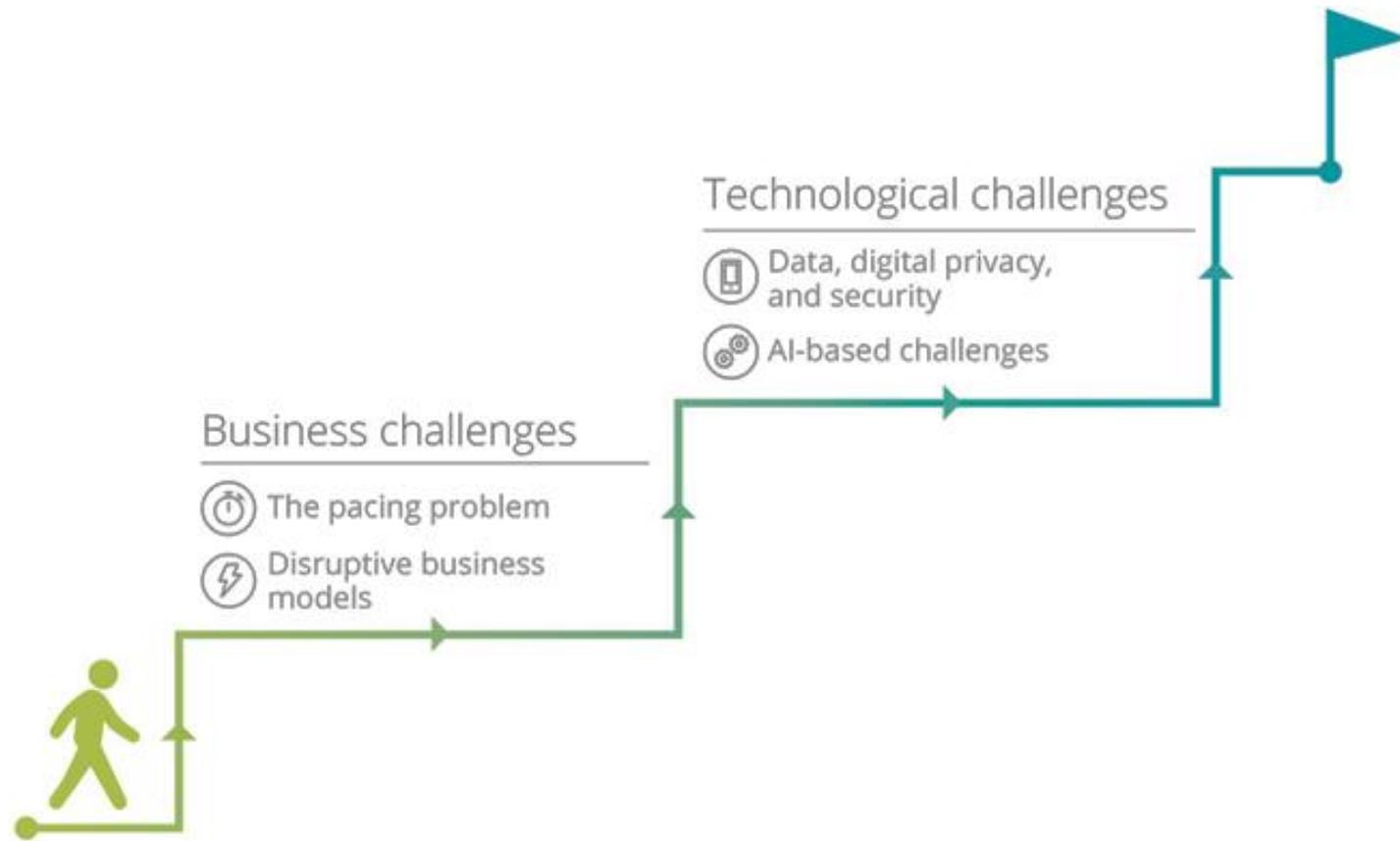
Overall Index:
ranks and scores

Average **62.1**



● Mature ● Developed ● Emerging

Challenges to traditional regulation



Business challenges

**The pacing problem & converging
disruptive innovation and business models**

The pacing problem

- Policy cycle takes anything 5-20 years whereas a unicorn startup can develop into a company with global reach in a matter of months
- Example: Airbnb went from 21,000 arrivals in 2009 to 80 million in 2016. Meanwhile, cities and countries are still trying to figure out how, and *if*, they can regulate short-term rental markets. Ride-hailing services have experienced similar hyper-growth as regulations in the space struggle to adapt (example Uber and Lyft)
- Patchwork of regulations
- Coordinating with regulators across borders is another challenge

Disruptive business models

- **Shifting regulation.** As products and services evolve, they can shift from one regulatory category to another
- **Consistency.** Maintaining consistency in rules and regulations is difficult in the sharing economy, which often blurs lines between vendors, facilitators, and customers
- **Liability:** The evolving, interconnected nature of disruptive business models also can make it difficult to assign liability for consumer harm
- Example: if a self-driving car crashes, who is liable—the software developer, automobile owner, or the occupant? Or who is liable if 3D-printed furniture fails? Is it the store that printed the part, the supplier of the design, or the printer manufacturer?
- In the case of virtual currencies, the anonymous, decentralized nature of transactions presents a particularly difficult challenge for regulators
- The properties that make emerging technologies appealing also can allow scam artists and hackers to take advantage of the industry's overall lack of maturity

Technological challenges

Data, digital privacy & information security

AI based challenges

Data, digital privacy and security

- One important question is **who owns all the data**—the user or the service provider who stores it?
- With **no single global agreement on data protection**, regulators around the world are taking different positions on these issues.
- **Nearly 30 % of nations have no data protection laws.** Those that do, often have conflicting laws. The EU's General Data Protection Regulation (GDPR), for instance, enshrines the principle of privacy. The US approach, by contrast, focuses on sector-specific rules (such as health care, financial, and retail) and state laws.

Data, digital privacy and security

- **The example of digital health regulation**
- Regulatory agencies generally have regulated Software as a Medical Device in much the same way as traditional medical devices such as heart stents.
- However, this approach isn't well-suited. A stent remains untouched by the device maker once it's released into the market. Software developers, though, can make continuous changes to their products remotely, after release

Data, digital privacy and information security

- **Cybersecurity**
- In the digital health field, SaMDs continually collect and analyze data on medical images, physiological status, lab results, and more, raising potentially serious concerns about the protection of patient data.
- Autonomous vehicles could be targets of cyberattacks as well. What precautions should developers of autonomous vehicles take to ensure malicious hackers won't force vehicles to crash or manipulate signals to cause traffic jams?

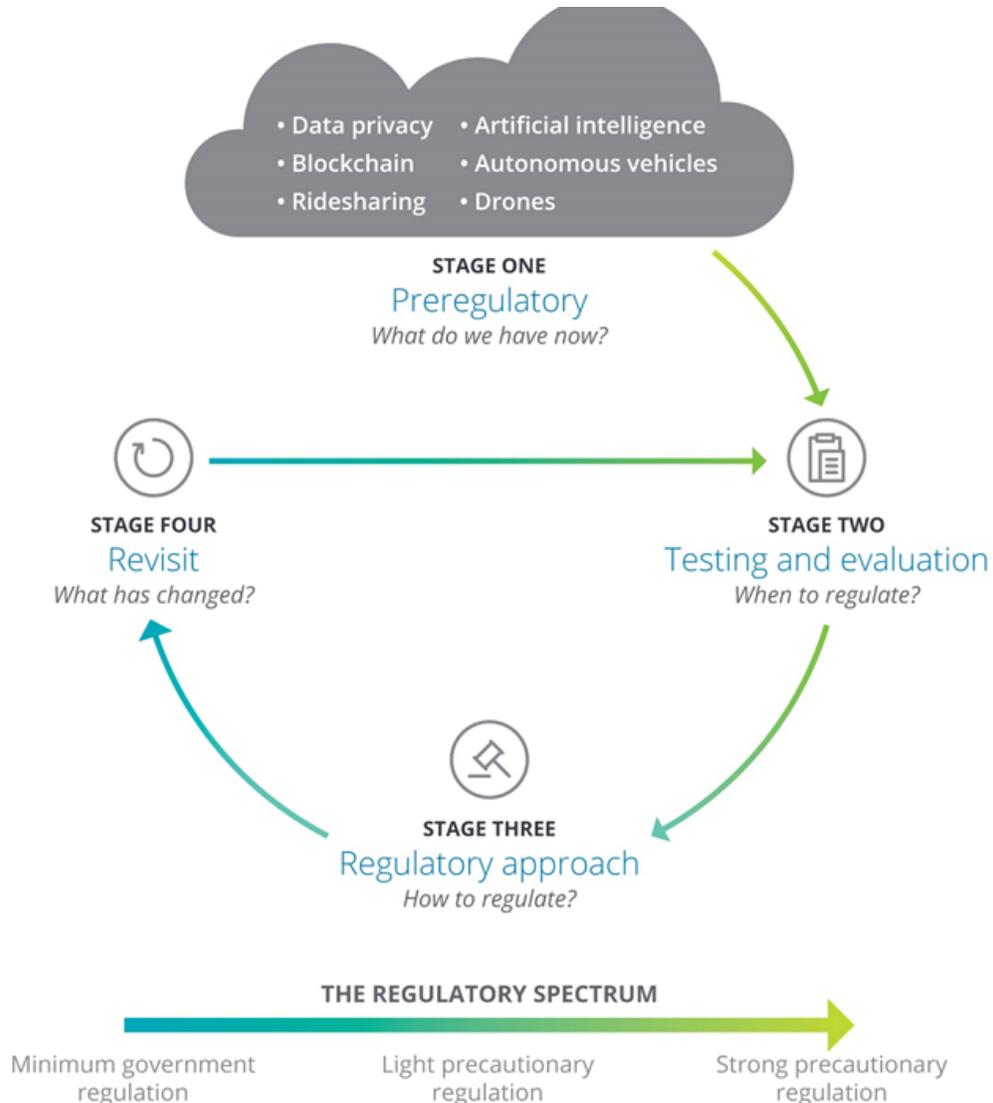
AI based challenges

- *The “black box” problem.*
- Algorithms today make scores of strategic decisions, from approving loans to determining heart-attack risk. Given the importance of algorithms for consumers and businesses, it is important to understand them and make sense of their decisions. But algorithms often are closely held by the organizations that created them, or are so complex that even their creators can't explain how they work. This is AI's “black box”—the inability to see what's inside an algorithm.

AI based challenges

- Algorithmic bias. In theory, using algorithms should lead to unbiased and fair decisions. But some algorithms have been found to have inherent biases. And while in some countries regulations explicitly prohibit discrimination in these and other areas, gray areas exist and often the underlying algorithms are opaque.
- The examples of algorithms helping judges in sentencing, Amazon biased hiring based on gender, facial recognition of gender and race, Facebook blocking a 1972 Pulitzer Prize winning photo of a Vietnamese girl over concerns about nudity.

The critical questions



Examples

- The Danish Ministry of Environment and Food has cut the number of regulations in its portfolio by one-third, slashing the number of laws it administers from 90 to 43.
- Drone regulation differences around the globe
- European Union's Regulatory Fitness and Performance (REFIT) program, which conducts retrospective evaluations to look for laws that are obsolete or in need of revision

Principles for regulating

-  **1** Adaptive regulation
Shift from “regulate and forget” to a responsive, iterative approach
-  **2** Regulatory sandboxes
Prototype and test new approaches by creating sandboxes and accelerators
-  **3** Outcome-based regulation
Focus on results and performance rather than form
-  **4** Risk-weighted regulation
Shift from one-size-fits-all regulation to a data-driven, segmented approach
-  **5** Collaborative regulation
Align regulation nationally and internationally by engaging a broader set of players across the ecosystem

Adaptive regulation

- **Shift from “regulate and forget” to a responsive, iterative approach**
- Adaptive approaches to regulation rely more on trial and error and co-design of regulation and standards; they also have faster feedback loops
- Setting up policy labs, creating regulatory sandboxes, crowdsourcing policymaking, and providing representation to industry in the governance process via self-regulatory and private standard-setting bodies
- Soft law: informal guidance, a push for industry self-regulation, best-practice guidance, codes of conduct, and third-party certification and accreditation
- The example of Finland’s transportation regulation: Mobility as a service – regulate all under one code

Regulatory sandboxes

The role of a regulator is no longer just a regulator; more of a partner in bringing safe and effective technologies to the table for people to have that high confidence in those technologies.

Examples: Canadian Securities Administrators regulatory sandbox (Impak Finance) and US Federal Aviation Administration drone sandbox

A Regulatory Sandbox Model

Innovators

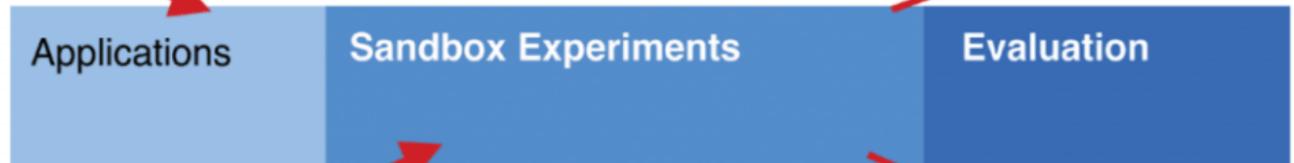
Identify innovative new offering, and submit 'experiment' along with which regulations should be relaxed & how they'll measure outcomes

If accepted, run the Experiment and gather data to evaluate

- consumer interest + outcomes
- technology's performance
- pricing and outreach models

Exit if there is no audience, or if risks outweigh benefits

Possibly continue with the Experiment as full offering if Authority extends Sandbox or permanently changes regulation



Regulatory Authority

Invites applications, and specify which regulations are open to relaxation and which are not

Gives steering guidance on possible experiments

Decides which Experiments can enter, & what the safeguard principles are

Gives 'no enforcement' guarantee to them

Audits quality and outcomes of the experiments, and removes experiments

Does final outcomes evaluation and report

Decides possible new regulatory strategies, or permanent regulation change

Possibly extends sandbox and experiments

Outcome-based regulation

- **Focus on results and performance rather than form**
- Consider 2 different ways of structuring drone regulations:
 - You must have a license to fly a drone with more than xx kilowatts of power (input—not very helpful).
 - You cannot fly a drone higher than 400 feet, or anywhere in a controlled airspace (output—better).
- **The example of Australia**

Risk-weighted regulation

- **Shift from one-size-fits-all regulation to a data-driven, segmented approach**
- Draw inspiration from precheck systems for airline travel used in many countries. These work by using data to certify low-risk flyers, who then receive a lower level of scrutiny and inspection.
- New Jersey allows commercial trucks enrolled in NJPass to bypass weigh stations. Qualification is based on their Federal Motor Carrier Safety Administration rating and data on history of roadside inspection
- Regulators also can use open data to complement their own data or for independent inspection.
- Once the data flows are integrated, this part of the regulatory process can be automated. Enforcement can become dynamic and reviewing and monitoring can be built into the system (the example of city of Boston, Yelp and Harvard Business School)
- **Cloud computing model of regulation**
- **Concept in practice: The FDA's Pre-Cert process**

Collaborative regulation

- **Align regulation nationally and internationally by engaging a broader set of players across the ecosystem**
- Ecosystem approach (multiple regulators, and private, standard-setting bodies and self-regulatory organizations)
- The fintech space has shown glimpses of regulatory convergence.

THANK YOU!

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