# OSC RegHackTO

Insights from Canada's first regulatory hackathon

March 6, 2017

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# Introduction

Over the weekend of November 25 to 27, 2016, the Ontario Securities Commission (OSC) hosted "RegHackTO" — the first hackathon by a Canadian securities regulator.

RegHackTO was part of our overall strategy to better engage with the fintech community through our OSC LaunchPad initiative. Established in October 2016, OSC LaunchPad is a pilot project that focuses on modernizing regulation to support fintech innovation, while ensuring investor protection. For more information, visit www.osclaunchpad.ca.

RegHackTO brought together more than 120 members of the fintech community who competed to find solutions to regulatory problems in four areas: RegTech, Know-Your-Client (KYC)/identity authentication, financial literacy, and transparency in the capital markets.

This paper provides an overview of RegHackTO and key themes identified by the OSC from the event.

## Why a hackathon?

Technological innovation is impacting the financial services industry every day and our approach to regulation must evolve accordingly.

Bringing together strategists, subject matter experts, developers and UX designers in an intense 40-hour competition gave us a window into the potential fintech can have in addressing complexity in the regulatory ecosystem. We wanted to hear firsthand from innovators working on unique solutions to real regulatory problems about their ideas on how technology can be used to solve those problems. We sought new perspectives on how fintech could shape the financial services sector and our work, and what we need to consider in regulation as markets change.

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# About RegHackTO

[Watch the video!](#)

## Why did we do this?

To engage with the fintech community and gain a better understanding of how technological innovations can help the OSC – and the financial services sector – modernize.

## When?

November 25-27, 2016.

## Where?

Toronto, Bitmaker offices.

## Who?

More than 120 individuals from the fintech community, including high school students, coders, employees of major financial services firms, entrepreneurs and lawyers.
See Appendix A for a list of the teams.

Special guests included The Honourable Charles Sousa, Ontario Minister of Finance, and Yvan Baker, Parliamentary Assistant to the Ontario Minister of Finance and Minister Responsible for Digital Government.

Over 40 OSC staff took part to facilitate the event and ensure participants had assistance where needed, including OSC Chair Maureen Jensen, Executive Director Leslie Byberg and members of the Executive Management Team.  Through this interaction, OSC staff learned about the code development process, which allowed us to better understand how solutions are created and how technology can help solve regulatory problems.

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# What?

Participants chose one of four problem statements dealing with regulation-related issues, such as RegTech, KYC/identity authentication, financial literacy, and transparency in the capital markets. See Appendix B for a list of the problem statements.

The weekend culminated in the teams pitching their solutions to a panel of judges including:

- OSC Chair Maureen Jensen
- Chris De Bruin, President, Digital Platform, Zafin Technology
- Adam Felesky, President and Managing Partner, Portag3 Ventures GP Inc.
- Doug Steiner, CEO, EVREE Corp.
- Ethan Wilding, Co-founder, Ledger Labs

Judging was based on how well each solution met three criteria:

- creativity of the idea
- how the app makes regulatory systems more user-friendly and approachable
- how well the app works

The solutions ranged from technologies that would standardize data in the capital markets to applications that allowed easier investment product comparability, to surveillance applications that conduct analytics and identify trends in the industry.

Participants did not receive any remuneration.  The first-place winner was awarded a seat on the OSC's inaugural Fintech Advisory Committee, established in January 2017.

# The winners

First place: Existence Labs, for "KeyStamp", which uses blockchain technology to verify compliance with securities requirements, including KYC and suitability, using cryptographic signatures and timestamps to show "proof of compliance". This solution would allow financial services firms and regulators to monitor the activities of advisers and verify compliance with legal, regulatory and firm requirements in real time.

Second place: RicLoo, for "TLSRegistry", a blockchain-based solution that verifies identities using existing secure websites and permits certain actions, such as granting

permissions and providing proof of employment. This would centralize proof-of-identity for clients, employees and advisers, and could be accessed by all financial services firms.

**Third place:** Extreme Securities 2k16, for "Rubix Solution", a portal that validates initial coin offerings (ICOs), which are similar to initial public offerings of traditional securities. This solution provides standardized data for comparing investment products in key areas such as returns and fees. It would also allow for real-time oversight by regulators, including early detection of products that are not approved or that raise investor protection concerns.

An honourable mention was given to a team of recent high school graduates, who built an algorithmic solution to verify the registration of investment advisers using data from LinkedIn profiles and the OSC's Check Registration database. Another team developed a web-based application that rates financial advisers, similar to Yelp for restaurants and TripAdvisor for travel.

# For more information

Visit the RegHackTO site at www.osc.gov.on.ca/en/reghackto.htm.

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# Themes

Several themes emerged from the event, which we believe are important for all regulators to consider.

## 1. Technology is rapidly changing how financial services are delivered

The majority of the solutions presented by participants, including the three winning ideas, featured the use of distributed ledger technology (DLT) in some form.

The hackathon made it clear that this technology is powerful – DLT has the potential to increase efficiencies and transparencies in our capital markets, within and beyond the securities sector. Teams used it in a variety of applications, such as smart contracts that protect investors from fraudulent activities, client identity authentication, ledgers that prove securities ownership, and increased regulatory monitoring through enhanced oversight capabilities.

Other technology solutions included standardized data models for investment reporting, allowing investors to have a consolidated view of their accounts at different investment firms.

These technologies could also assist regulators in their work, for instance by replacing manual processes currently used for collecting and analyzing data, and be able to monitor activities in our capital markets more effectively.

## 2. Open access to data is essential for advancing fintech solutions

Data that can be openly accessed, used and shared securely can benefit consumers and regulators. Open data has the potential to simplify a client's onboarding experience by making core information about the client available to various parties and eliminating duplicative forms and processes.

The potential for open data in streamlining manual processes was demonstrated by a number of solutions that eliminated duplication in KYC information collection and verification processes, and reflected the desire of investors to be in control of their own identities and data.

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Open data may also be helpful to regulators. Regulators could potentially access this data on a real-time basis, making verification procedures faster and easier and improving auditing and oversight capabilities.

When it comes to securities regulation, KYC and suitability are fundamental obligations. This was a key theme for many teams at RegHackTO. For example, "Taking Charge of your Financial Identity" by FinHackers is a blockchain-based mobile application that provides users with a unique universal financial identity for KYC information collected by financial institutions.

Team Schulich's "BlocKYC" writes KYC information onto the blockchain, eliminating the need for investors to fill out KYC forms every time they work with a new dealer. Firm ID's "SuitYourself" allows investors to store, maintain and own their own suitability profiles in the blockchain. This information can be accessed by multiple parties, including regulators and market participants.

## 3. Regulators must be open to new ways of doing business

RegHackTO reconfirmed that the OSC must continue to be a responsive regulator through active engagement with the fintech community. The creation of 22 thoughtful solutions to complex problems over the course of one weekend highlighted the vast potential of utilizing data and technology to solve regulatory problems.

Our capital markets must remain competitive, relevant and efficient for our country to thrive. As a securities regulator, we must be prepared to consider novel fintech ideas and business models in a nimble and flexible manner. While we must ensure essential investor protections are in place, we need to reconsider our rule framework in the light of rapid business change.

Many of the DLT and open data solutions presented by the teams are relevant not only to the securities sector, but also to the broader financial services industry, including banking, payments and insurance. Governments and regulators need to work together to respond appropriately to new business models that challenge traditional ways of delivering products and services, and cross jurisdictional lines.

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# Next steps

We are delighted with the results of RegHackTO and the challenges and solutions delivered by the participants, and look forward to working with some of the solutions presented at RegHackTO that can assist us in our work.  We continue to support emerging fintech businesses and digital innovation through our OSC LaunchPad initiative, which has already received 25 requests for support.

1. We recognize that DLT has the potential for a wide range of useful applications, within the securities sector and the broader financial services sector. Technologies using artificial intelligence (AI), including machine learning and data analytics, are also on our radar. We expect to continue to see businesses use AI in various processes, including client onboarding and investment decision-making.

2. We will consider ways to leverage these technologies in our regulatory work, for example, by replacing manual processes currently used for collecting and analyzing data and accessing real-time data in overseeing market activities. These technologies could also assist us in making evidence-based recommendations on whether certain regulatory actions, such as investigative or enforcement actions, are required.

3. We will support the facilitation of access to data where it fairly increases competition and provides tangible benefits to Ontario investors, such as streamlined access to a broader base of products or services. We will do so as long as privacy and security concerns are addressed.

4. A key theme that emerged over the weekend was the need for centralized KYC information collection and verification processes. We are highly interested in solutions that facilitiate the accurate collection of key information regarding investor's identities and financial circumstances. We encourage participants and the fintech community to build a test pilot and come talk to us about potential solutions to this problem.

5. We will continue to engage and collaborate with other domestic and international regulators to monitor and support fintech development. We are a member of the CSA regulatory sandbox initiative recently launched by the Canadian Securities

Administrators (CSA) to support businesses seeking to offer innovative products, services and applications. The OSC has also signed co-operation agreements with Australia and the U.K. that enable businesses licensed in Canada to have access to the innovation hub programs and seek regulatory approvals in Australia and the U.K.

Overall, we are open to taking a more innovative and flexible approach to regulation to support the evolution of the business while maintaining investor protection.

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# Acknowledgements

We would like to express our appreciation to Chami Akmeemana, the OSC's Fintech Advisor, and Bitmaker for hosting the event, as well as INFURA, Nuco and MLG Blockchain Consulting (Open Bank Project and Sia), which provided API resources to the participants throughout the weekend.

We would also like to thank our special guests: The Honourable Charles Sousa, Ontario Minister of Finance; Yvan Baker, Parliamentary Assistant to the Ontario Minister of Finance and Minister Responsible for Digital Government; Randy Cass, Founder and CEO, Nest Wealth; Alex Kurm, Head of Nimbus BPM and Advisor, Process Centre of Excellence, BMO Financial Group; Guy Pearce, Managing Partner, REData Performance Consulting; Cory Russell, Admissions Producer, Bitmaker; Veronica Scotti, President and CEO, Swiss Re Canada; Jin Tu, Co-founder and CEO, Nuco; Peggy Van De Plassche, Vice President (Innovation Engagement), CIBC; Russell Verbeeten, Decentralized Operations Specialist, ConsenSys; and Michael Wuehler, Blockchain Strategy and Business Development, ConsenSys.

Above all, we thank the participants who gave up their weekend and rose to the challenge of helping us focus on a more efficient securities regulatory ecosystem.

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# Appendix A – Teams

Amani

Amini

Blockfutures

BlockIPO

Canada Bitcoin Blockchain

Crowdvise

Existence Labs

Extreme Securities 2k16

Finhackers

Firm ID

KYC Form

Munich RE, ConsenSys

Next Gen

Pendio

RicLoo

Solomid

System Crashers

Team CIBC

Team Schulich

Warp

Zafin1

Zafin2

# Appendix B – Problem Statements

Participants chose one of four problem statements dealing with regulation-related issues, such as RegTech (use of technology in the regulation of the financial industry), KYC/identity authentication, financial literacy, and transparency in the capital markets.

## 1. RegTech

Automated reporting - Can we automate the method of recording and reporting information required by regulators?

Some examples include: Online methods of reporting distributions of prospectus-exempt securities that would allow the automatic filing of forms.
Digital solutions that allow insiders to file insider reports on the System for Electronic Disclosure by Insiders (SEDI) more easily and quickly.

Insider trading detection - Can we make the filing of trading information by insiders timelier, easier and more accurate?
How do we leverage technology to:

- Analyze the vast volume of data against other public information and regulatory filings (e.g. SEDI).

Identify patterns of behaviour that may suggest insider trading or misconduct.

## 2. KYC/identity authentication

Digital Identity - How can we implement Digital IDs for individual participants in the capital markets – officers, directors, insiders, accredited investors – to allow for:

- Use of biometrics for easier identification of individuals.
- Authentication of their investor status (e.g. accredited investor, eligible investor) for purposes of prospectus exemptions.
- Flagging inconsistencies in investors' KYC information (e.g. against publicly or otherwise available information).

Digital documents - How can we automate and reduce the replication of documents for investors and multiple firms in the financial services industry, in a way that:

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- Protects privacy of information.
- Requires consent to share information.

# 3. Financial Literacy

Adviser ratings – Propose a digital solution that would allow investors to rate their adviser in a way that is transparent and allows users to:
- Check their adviser's professional designations.
- Check whether they are registered and the types of securities they can sell.
- Rate their adviser, increasing transparency to other potential investors.

Investor education - Propose a user-friendly tool that could educate individuals in financial products and help people:
- Understand the fundamentals and benefits of sound financial management.
- Build investment savings.
- Understand the different types of accounts to help them save (e.g. TFSA, RSP, RESP, etc.).

# 4. Transparency

Distribution pricing and fees - What sort of technology solutions might improve fee transparency and comparability across the investment industry to better empower retail investors in their investment decisions?

Access to information - Can technology provide solutions that make it easier for investors to find relevant information, such as:
- Receive notifications through mobile apps regarding investments they are considering or own in their investment portfolio.

Provide a search engine for investors to access most recent prospectuses and filings.

**If you have questions or comments about this report, please contact:**

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