The Digital Legal Systems Lab
Vision and design considerations

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What's the opportunity?

Law and computer code increasingly interact. In particular, people use digital systems to perform tasks that the law requires them to do. In some cases, digital systems act with the force of law, or replace human reference to the law entirely. The design of some digital systems is attracting the attention of nation states, judicial bodies, the world's largest companies, and human rights advocates.

Law has always been a base level infrastructure that shapes human society, but this base level infrastructure is frequently being augmented or replaced by digital systems. Some people believe this is a bad thing, but there is opportunity if the risk can be carefully mitigated. Some of New Zealand's biggest most successful companies use "code" as "law", and implement law through code.

- TradeMe structures user interactions through digital systems which have legally binding effects.

- Xero helps users to deploy digital systems to comply with legal taxation and accounting requirements.

- Vend uses digital systems to manage core legal and accounting requirements of small businesses: when people use it well, they can be confident they are acting legally.

- Sharesies is a digital system that facilitates real world trading in shares, an activity which must comply with legal requirements.

Beyond the private sector, Government uses software extensively to perform legal tasks:

- Inland Revenue is a pioneer in coding its legislation into digital rules that can be re-used and updated in digital systems. It deploys these for automated tax assessments.

- DIA is leading work on a digital identity legal framework that would make digital identity systems standardised and reliable for a range of sectors.

- Land Information New Zealand and local authorities are exploring the way that planning instruments can be coded into re-usable rule sets that can be displayed in visual interfaces like maps, and accessed as data.

What's the solution?

Both the public and private sectors are increasingly embedding the law in digital systems which help users to manage everyday life. This creates massive opportunity for New Zealand and its people. At the same time, there are valid concerns about the use of algorithmic decision-making systems. These risks must be mitigated.

What we need is a space for collaborative testing and development of digital legal systems. Ideally, this space has physical, digital, and legal dimensions: a place that developers can interact and collaborate; an online infrastructure to support their work; and institutional stability in terms of funding and legal identity. This space will be a melting pot for different people to experiment with building systems that solve real problems. The Digital Legal Systems Lab would learn by doing. It would be an applied research lab that produces digital systems with a view to implementing them in the real world.

In summary, the Lab will be:

- **A place to build and test useful tools and infrastructure.**

- **A place to train people and develop skills.**

- **A place to contribute to a wider body of knowledge.**

- **A place to facilitate community initiatives.**

- **A place for multidisciplinary people to work together.**

- **A place to lobby for uptake and appropriate use of tools and infrastructure.**

In the process, it will identify better ways for mitigating risk, for increasing public trust and confidence, and generating skills and experience among key people for more efficient and reliable systems. The lab will achieve critical mass by hosting many different projects simultaneously, with a range of practitioners from key sectors.

Key sector participants

Projects will be identified and guided by the private sector, government, and the incubator's own research priorities. The outputs will be digital tools that can perform legal tasks.

The mission of the Digital Legal Systems Lab is to be a place where people can bring a problem and find a solution. What we learn in the process will be shared as insights beneficial to the entire field, and will give it something that it sorely needs - grounded case studies.

1

Government

Gets	Brings	Prevents
• Highly skilled workforce • Opportunities for digital and science diplomacy • "Digital ready legislation" • Increased trust and confidence in the use of digital systems to perform legal tasks • A structured environment to draw on a body of expertise to guide operational and policy initiatives	• Use cases and opportunities to implement • Institutional expertise and experience in implementing digital and legal systems at scale	• Undue emphasis on commercial private benefit, co-opting of infrastructure, or short term interests by other participants

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Non-Government organisations and civil society

Gets	Brings	Prevents
• A forum for ongoing engagement and participation in creation, implementation and auditing of digital systems performing legal tasks • An empirical and theoretical basis for raising legitimate concerns about digital/legal systems	• Concern for the public interest, human rights, and the interests of minority groups	• Undue emphasis on commercial private benefit, co-opting of infrastructure, or short term interests by other participants

Key sector participants

3 Research and academia

Gets
- Applied material for research and research outputs
- Research projects for students and undergraduates
- Teaching opportunities and visiting lecturers
- Opportunities for international collaboration
- Opportunities for clinical legal studies programmes
- Highly skilled graduates for dealing with intersecting issues of law, policy and digital technologies

Brings
- Theoretical understanding of law and computer science
- Capability to deal with broader socio-political implications of the lab's work

Prevents
- Undue emphasis on commercial private benefit, co-opting of infrastructure, or short term interests by other participants

4 Private sector

Gets
- Increased legal certainty from government regulation
- Better quality regulation and policy suitable for digital operations
- More legally reliable digital systems
- Access to better pools of talent which are multidisciplinary
- A foundation and support for regtech industries

Brings
- Skin in the game and real use cases
- Ability to innovate rapidly and implement and test
- Experience in building systems and organisational approaches

Prevents
- Concentration of power in government
- Esoteric investigations or investigations becoming too abstract
- A focus on value generation

What do we need?

Why a "laboratory" model?

There is no shortage of theoretical work in this field. Law and code have been examined in academia since the 1980s. While this work is valuable, it desperately needs grounded experimentation and case studies. We encountered this first hand in our research for the New Zealand Law Foundation.

The Lab will provide this. It will follow a process of scientific experimentation that combines observation, hypothesis, testing, and analysis. It will experiment building digital outputs with real end users in mind. The lab can also act as an advocate and expert to support the uptake of the tools it produces, and will work with business and government to assist with implementation.

A laboratory model fosters an experimental approach where participants learn by doing. Here are some examples of potential projects we already have in mind:

- Better Rules workshop tooling, conceptual modelling tools for improving drafting instructions and law conceptual clarity

- Coded test suites for law, scenario modelling, policy intent capture and other uses.

- Legal interpretation as code, approaches to public repositories that allow for versioning, issue raising and discussion.

- Legal interpretation as code explorers, how can we make interpretations easily understandable and easily explorable.

- Portable interpretations, how can government achieve standardisation of agreed interpretations across multiple jurisdictions.

Why a hub?

Localising different researchers and projects in one place will accelerate the lab to become a centre of excellence with world class outputs. The lab will produce people with valuable skill sets who can work between policy, private sector, law, technology and ethics. Having a central home where different researchers and practitioners can regularly interact will make a huge difference. By all working within the same network,those involved can constantly test and refine ideas, bring outside perspectives to each other's projects, and push the field much further than can be achieved in isolation. This convergence of different skillsets and mindsets is essential to developing effective digital tools.

The lab will seek out - and is already attracting both researchers and practitioners who can benefit from institutional support, while providing value to the lab's community and core interests.

Outcomes

Governance/Legal

- Improving access to justice
- Improving access to government services
- Lowering the cost of delivering government services
- Cost of creating digital systems from legislation
- Insight into automated decision making systems
- Upskilled legal and policy professions, as well as computer science professions
- Foundation for litigation and challenge in the Courts as appropriate
- Establishing best practice for reliable interpretations
- It will upskill the public service

Economic

- Skilled workforce
- Opportunities for digital exports
- New industries
- Ease of compliance
- Better regulation
- Increasing the supply of people with highly valuable skill sets
- Laying a foundation for a thriving regtech industry
- This will create companies and spin offs
- Getting better at processing stuff through the "knowledge bottleneck" and increasing the number of people to usher things through the "knowledge bottleneck"

Research and development

- Opportunities for digital exports
- Opportunities for international collaboration
- Attracting overseas expertise and talent
- Educating lawyers, policy people and developers how to work together

Social

- Access to government services
- Public education and public trust and confidence in digital/legal systems
- Better regulation, less time
- Upskilling New Zealand's population
- Benefits of transitioning toward digital exports and away from primary industries exports
- Improving Policy and making policy possible in digital systems

Why now is the time

Digital systems are increasingly pervasive and have wide-reaching implications for our lives. They perform tasks with significant consequences in complex legal environments. There have been a succession of government and private sector reports calling for a centre of excellence in New Zealand focused on the transparent development and use of algorithmic systems. This coincides with global attention to the need for developing ethical and responsible AI systems.

A range of public commentators are calling for a transition for New Zealand away from primary industries exports, and toward digital weightless exports. There has been a growing demand to use automated systems along with a parallel increase in suspicion of them. The topic of "law and code" has a long history, but it is finding fertile new ground in a changed society. New Zealand is going to be left behind unless it moves now.

Why are we pursuing this proposal?

We have completed a year-long research project shaping up the idea of "legislation as code" within a wider law as code movement. We have built a reputation and key networks with interested parties in each of the four stakeholder groups we identify. We have the knowledge base to speak with authority on this topic beyond perhaps anyone in New Zealand. We also bring practical experience in performing these kinds of exercises within Central and Local Government.

What next

We are approaching you because you fall into one of the sectors above. We want to make this idea a reality, we think you should too, and we think you can help.

What we need is written expressions of interest in providing the below:

- Advice and expertise
- Formal structure
- Funding
- Key personnel

We welcome expressions of interest from you or referral to other people or institutions who may have an interest.

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