Meng Wong's Legalese Pitch

As you may know, JFDI.Asia has invested in nearly 70 startups since 2012. The good news: we're expecting a 3x return on our portfolios. The bad news: it's a lot of work. Over time, I found myself spending more and more time supporting our portfolio through their fundraising rounds, working on ESOPs, cap table structuring, splits, vesting, and other legal paperwork.

In 2015 Hugh and I went for a beer and reconceived that work as a market in its own right. Every day 137,000 new businesses are started globally.* Every year about 50,000 angel deals are struck in the US alone.(*, *, *) Those numbers are rising, thanks to factors like the arrival of equity crowdfunding and the millennial preference for entrepreneurship over employment.

Experienced investors know that every startup raising an angel/seed round faces a pain point: they can't afford to spend money (and time) on a lawyer, but they need legal paperwork to get the deal done. Without the right paperwork in place, the deal doesn't happen, or could be found invalid by a later investor's due diligence! Working with lawyers can be slow. Sometimes deals fall apart simply because too much time passes. Because lawyers generate contracts by hand, mistakes arise easily. Even after the deal is done, it needs to be interpreted when subsequent deals arise.

I've been thinking about this for years. Back in 2012 I worked with BANSEA to produce standard legals for the Singapore community. At JFDI, after searching for third-party solutions but not finding any, I wrote software to support our startups through their fundraising, both at JFDI and for their next round. We've pushed over 24 deals through the system. The last deal was for $500,000, and involved thirty-four documents requiring over a hundred signatures in total. Our software supported the negotiation, produced the paperwork, and managed the execution process. Now, even non-JFDI startups are coming to me for help.

What's the innovation? Legal solutions are traditionally delivered on a service model: time for money, like a dentist or hairstylist. It seems obvious, but why not deliver legal as a product? A scalable, high-tech product. The accounting world has TurboTax and Quickbooks. What does the legal world have? Nothing!

Marc Andreessen says, "*software is eating the world*". Let's unpack that industry by industry:

- **Blueprints** used to be done on paper. Software eats engineering. Who is the category leader in computational 3D design? Autodesk, market cap $13B.
- **Accounting** used to be done on paper with ledgers. Software eats accounting. Who is the category leader in computational accounting? Intuit, market cap $27B.
- **Graphic design, photography, and illustration** used to be done on paper, in the darkroom, with pencil and ink. Software eats the creative department. Who is the category leader in computational creative? Adobe, market cap $50B.

Now, *software is eating law*. But who is the category leader in computational legal?

That's a billion-dollar question. We plan to be the answer.

Insight: Contracts Want To Be Code

Recent advances in machine learning have enabled a crop of LegalTech startups that productize **computational linguistics** and **natural language processing** (NLP): examples include Lex Machina and Ross Intelligence.

In May, at FutureLaw 2016, hosted by Stanford's Center for Legal Informatics, a panel session pointed out that NLP was only one approach: the other is contract formalization and computation. This confirmed our intuition and our approach. Rather than trying to extract semantics from English contracts (at FutureLaw we counted five players in that space), we go the other way: we consider contracts to be programs. First we express their semantics in a formal language, then we compile into English.

Now it's a problem in software engineering! There are a lot of people who know how to solve problems in software engineering. We programmers have arsenals of tools and techniques that lawyers can't even begin to comprehend!

Getting technical for a moment: Legalese's tech stack rests on a domain-specific language optimized for expressing obligations, permissions, and prohibitions. We call it L4. We write a compiler for L4. The compiler is able to compile statements written in L4 into English-language contracts. The compiler's static analyzer can automatically detect conflicts within and between contracts. We write "reference libraries" of "programs" in L4, which turn into investment agreements, shareholders agreements, directors' resolutions, members' resolutions, ESOP contracts, and so on. We augment the compiler to output to Ethereum, thus providing the world's first formally verified programs to run on the blockchain – a feature valuable in the financial world. We extend the compiler to output other natural languages, to provide multi-lingual contracts – a feature valuable for cross-border transactions. We write a scenario visualizer so you can see what a contract means and does, not just what it says. We write a runtime monitor that evaluates contract traces and business events for conformance and, in the case of breach, blame assignment.

That's a lot of IP. This is a deep tech startup productizing computer science, not a consumer tech startup hacking out a music-sharing app for teenagers. It'll take time and a lot of thinking. We're working to develop a partnership with NUS, NTU, and I2R to deliver some of the above components, with funding from NRF.

Note that the intended customer is an end-user. Not a lawyer. Not a law firm. Our "full stack" vision is so compelling that already we have one lawyer (quit her day job) and several law students (learning to program) on our team.

Our First App: Investment Agreements

We named Adobe as one of our inspirations. Do you know what their first product was? Not Photoshop. Not Dreamweaver. Adobe's first product was PostScript. If you want to

own a category, it helps to start at the bottom of the stack. Defensible IP lives at the bottom of the stack, but revenue lives at the top.Today Adobe makes money selling apps that ultimately use the same core technology, but interact with end-users instead of, well, printers.

What applications will we sell?

Our first app is a SaaS web app that helps entrepreneurs configure and engross all the paperwork required for an angel or seed round – not just term sheets but shareholders agreements, corporate resolutions and amendments, rights notices, and other prerequisites like ESOPs and vesting. All these documents are compiled automatically from high-level, structured expressions.

As the category leader we aim to support at least 50% of startup investments happening south of Series A. How many are there? 30,000 to 100,000 each year, globally, depending how you count. Let's assume those numbers remain high, as more and more startups are founded.

If 25,000 investments per year run through our system, and we are able to charge $100 per deal, we make $2.5M per year – enough to break-even a small company of about 20 full-time employees. That's not counting the opensource contributors who will do the bulk of the work of internationalization and localization: we envision a generation of legal developers who will do with legal contracts what web developers have done for web sites. Many of these legal developers may be trained lawyers opting out of the law-firm partner track, who have picked up programming and learned L4.

That gives us the breathing room to explore new application areas.

Future Markets

Investment agreements are just one app. In the future, we could handle employment agreements, conveyancing, insurance, construction, maritime agreements. After that, legislation and regulation: the Companies Act and the Securities & Futures Act also read like programs, so why not encode them into L4?

Our approach promises to transform the world of work. Consider: every mission-critical business process is described in a contract – or should be. Presently, almost every such contract is pseudocode: it specifies (in English) what should happen. Every company of significant size employs a contracts manager, whose job is to monitor the fulfilment of that pseudocode and interpret it for other people. *If a contract expires in 12 months, then set a calendar event for 9 months, to start negotiating a renewal. When we run an event, how are we allowed to use the logos of our partners? How often are we supposed to report to our funders?* If enterprises could describe their business processes in L4 – in actual code, instead of pseudocode – they could remove the human bottleneck from contract compliance and execution. Indeed, projecting from specification to implementation becomes possible, and opens the door to further automation of actual fulfilment of business processes. That is the future of work: what the assembly line did for blue-collar work, Legalese will do for white-collar legal.

Without getting too technical (*, *, *, *), the takeaway is this: we are at just that time in history where academic research is ready to be productized and commercialized, by the right team, with the right beachhead, into a massive category-leading business. When we pitched Legalese to Floodgate in May 2016, their first suggestion was a book recommendation: Play Bigger.

How do we make money? Business-model details are shown on our lean canvas, and in our 3-year roadmap. There are still a lot of unknowns, and we need to run experiments. Angel/seed funding will be used to run those experiments. But, big picture: we're going to eat the legal industry – an industry valued at $400B. Commercial practice is about $160B. Contracts and finance are about half of commercial – $80B. One way or another, we'll make money in the sea change from high-margin, low-volume, manual labour (law firms) to low-margin, high-volume, automation (us).

Team

We have about a dozen contributors to the project, including full-stack developers working on the product, law students working on the unglamorous bits of converting legals to code, and computer scientists working on core IP. The leadership team includes lawyers, hackers, and investors.

LinkedIn: https://www.linkedin.com/company/10860801
Crunchbase: https://www.crunchbase.com/organization/legalese