



Quarterly InsurTech Briefing Q4 2017

January 2018

Q4 2017 Industry Theme

The Sobering of InsurTech: Adapting Business Models for Incumbents



Data & Analytics Example - Cytora

Data Liquidity in Commercial Insurance

Spun-out of Cambridge University in 2014, Cytora is building a new way to conceptualize, price and deliver insurance, underpinned by liquid access to data in a technology-enabled economy. Initially focused on extracting insights from a wide array of disparate data sources to quantify and manage economic, environmental and social risk, Cytora has adapted its technology to focus on addressing the “low-resolution” nature of commercial underwriting, which Cytora contends is currently characterized by weak differentiation between risks and increasing claims costs and underwriting expenses. Believing (re)insurer underwriting advantage will erode rapidly in areas where underwriter judgment is privileged but the underlying risk can be understood in an enhanced way using data and machine learning models, the company developed the The Cytora Risk Engine. This platform uses artificial intelligence and machine learning to transform billions of external data points into a risk targeting, selection and pricing advantage that drives both revenue and profitability for commercial lines insurers.

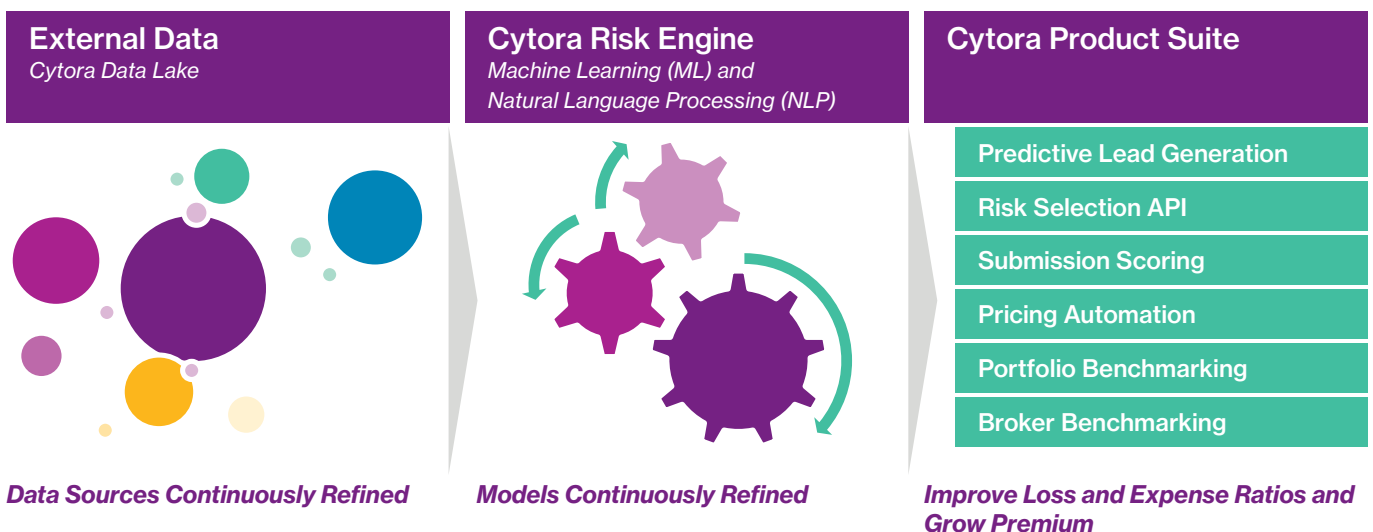
Cytora’s solution simultaneously improves the accuracy and sophistication of risk selection and removes friction associated with the insurance buying process by replacing questions with thousands of data inputs. This means risks can be selected and bound within seconds, making insurance companies an order of magnitude easier to trade with, benefiting both brokers and businesses buying insurance directly.

Validating Partnerships & Investments

Led by co-founders, Richard Hartley (CEO), Aeneas Wiener (CTO), Joshua Wallace (CRO) and Andrzej Czapiewski (CCO), Cytora has raised \$8.8 million to date, including a \$5.9 million December 2017 Series A financing round funded by Starr Companies and QBE Ventures, among other angel and venture capital investors. The investment followed an earlier Q4 announcement that XL Catlin intends to deploy the Cytora Risk Engine internationally across property and casualty business lines. QBE and Starr each announced similar strategic partnerships in conjunction with their investments. The company’s initial capital was provided by FinTech Innovation Lab, Cambridge Enterprise Seed Funds and Parkwalk Advisors in 2015, while Plug & Play Accelerator, iLexIR and several angel investors subsequently provided seed and Series A capital to the company.

The Cytora Risk Engine has produced attractive results for (re)insurer clients in Europe, North America and Australia. Two use cases are provided on the next page, followed by a brief Q&A with Cytora CEO Richard Hartley focused on Cytora’s progress to date, its recent financing and the company’s vision for the future of its platform.

Leveraging AI to Ingest, Structure & Transform External Data into Underwriting Advantage



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Cytora Value Proposition – Selected Use Cases

Client	UK Commercial Insurer	Global P&C Insurer
Challenge	<ul style="list-style-type: none"> ▪ Increase profitability by reducing underwriting and distribution costs in SME segments ▪ Design and implement direct distribution strategy coupled with an underwriting engine to reduce underwriting expenses and enable underwriters to re-focus time on complex referrals in profitable areas 	<ul style="list-style-type: none"> ▪ Following strong commercial property segment growth after a new product launch, insurer experienced attritional loss ratio erosion from 61.4% to 65.7% within 18 months, reflecting rising rate pressure and unchanged portfolio mix amidst fluctuating losses across core segments ▪ Validate whether loss experience resulted from short-term deviation or secular, more fundamental change and assess vulnerability of portfolio to adverse selection from more analytically sophisticated competitors
Solution	<ul style="list-style-type: none"> ▪ Augment internal pricing with technical risk price for every potential customer in market from Cytora Risk Engine ▪ Phased integration equipping insurer's systems to consume technical prices and adaptive rating questions from Cytora APIs to automate risk selection and pricing process across pipeline of live submissions from panels and aggregators ▪ Micro-segments ranked according to loss ratio, enabling the insurer to continuously assess the portfolio mix against the total population to ensure that they target the most profitable consumers ▪ Insight fed back into marketing and customer acquisition process to focus on bringing in profitable sub-segments of the total population 	<ul style="list-style-type: none"> ▪ Compare insurer's portfolio against peer frequency, severity and loss costs with Cytora Portfolio Benchmarking ▪ Recommended that insurer shrink or exit eight underperforming segments and grow in six outperforming segments ▪ Identified 20 attractive micro-segments (within six outperforming segments) to target based on desirable burn rate loss trends which had reduced 50% LTM; insurer had low volatility over last three years and less than 5% market share in each micro-segment ▪ Integrated Cytora Submission Scoring and Cytora Pricing Automation into existing underwriting workflow to enable underwriters to access information outside of question sets and base risk selection and pricing on market-wide experience instantly at the point of quote and renewal ▪ Monitor performance following integration of new strategy; focus on winning most attractive risks to enhance submission conversion in high priority segments
Results	<ul style="list-style-type: none"> ▪ Underwriting expenses reduced by 60% ▪ Insurer was able to shift to quarterly model validation approach ▪ Unprofitable sub-segments excluded and marketing campaigns refined to ensure client targeted the most profitable segments of the total population 	<ul style="list-style-type: none"> ▪ Commercial property loss ratio reduced by 18% from 65.7% to 47.7% over the following underwriting year ▪ Improved submission conversion in target segments by 8%

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Richard Hartley – Cytora Co-Founder & Chief Executive Officer



- 7+ years of experience in the insurance and technology industries
- Served as Product Manager at eBaoTech Corporation, a technology-enabled insurance solutions provider offering cloud and software based solutions for life, general and health (re)insurers
- Holds BA from University of Manchester and MSc from University College of London

Describe Cytora's insurance solution. How is it different from competing products in the market?

Cytora transforms the way insurers select, target and price risk by applying artificial intelligence to identify patterns of good and bad risks over time. The Cytora risk engine enables insurers to improve loss ratios and drive premium growth while delivering fairer prices to customers. By using hundreds of thousands of external data points, our technology simultaneously removes the friction of buying insurance and improves underwriting performance.

What are the biggest challenges associated with risk targeting, selection and pricing for commercial insurers?

Commercial pricing is low resolution – risks that have vastly different characteristics and loss probabilities appear equivalent and are priced identically at the point of underwriting. At the same time, the underwriting process is subjective and backwards-looking. Assumptions made 10-20 years ago define segment selection and underwriting choices today. Instead of observing the entire population and then choosing segments based on optimal loss ratios and profitability, insurers typically only see their own exposure (often 5% of total insurable risk) and are constrained to specific sectors where they have incrementally built claims experience. Both of these factors have a negative impact on underwriting profitability and premium growth.

Describe Cytora's current client base. Are clients concentrated in any specific geographies or commercial insurance sectors?

Cytora currently serves leading commercial insurers throughout Europe, North America and Australia. Cytora is a trusted partner to the commercial insurers including QBE, XL Catlin and Starr.

How does Cytora enable its clients to achieve premium growth and improve profitability?

Cytora uses machine learning to extract and fuse together billions of online data points relevant to commercial risk, enabling insurers to differentiate risks at a highest level of granularity and discover new segments in areas where they have zero underwriting experience and claims history. Cytora brings three specific innovations to the industry:

Population-scale: *Cytora operates at the scale of the total insurable population. This means the platform pre-computes a technical price for every insurable risk within the population outside of any data received from a broker or insured. In doing this, Cytora supports customers in moving towards questionless underwriting and provides a frictionless experience for the insured. This expands an insurer's view from one limited to their historical exposure to a view of the entire population.*

Continuous pricing: *Insurers typically see static data at the time of underwriting new business and renewals. Cytora dynamically prices risk through time, regardless of underwriting choices or whether they are part of an insurer's book. This allows continuous optimization of risk selection decisions at both new business stage and renewal based on predictive modelling of future claims.*

High resolution data: *Cytora brings high resolution data to a data poor area. The Cytora risk engine increases resolution by capturing and connecting massive volumes of data, much of which is unknown by the insured at the point of underwriting. It would take a human five years to read all the information that our algorithms process in a single day. This allows greater differentiation between risks that in current pricing practice may appear identical – enabling improved risk selection.*

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Are you focused on, or have you identified any opportunities for future expansion outside of the Cytora Risk Engine for commercial insurance?

Cytora powers frictionless and fair business insurance, providing the building blocks needed for the insurance companies of the future across risk targeting, selection and pricing. In the coming years, Cytora will build tools that help businesses to mitigate and reduce their risk, and enable insurers to create new, automated products in emerging and underserved areas of demand based on superior underlying data.

Describe Cytora's strategic partnerships with strategic (re)insurers (XL Catlin, QBE and Starr). Are you focused on any new opportunities for Cytora in partnership with either of its strategic (re)insurer investors following completion of Cytora's latest financing round?

XL Catlin and QBE are deploying the Cytora Risk Engine internationally across property and casualty lines. The Cytora Risk Engine will be used to generate risk scores and prices, providing enhanced insight into expected claims activity on the whole portfolio and also at an individual risk level.

****Willis Towers Watson Securities facilitated an introduction between Cytora and Starr Companies prior to completion of Cytora's most recent financing round, which included an investment from Starr Companies, among other investors.****

"Willis Towers Watson Securities developed a deep understanding of Cytora's technology, identifying synergies that lead to an introduction to Starr, one of the fastest growing commercial insurers. Starr is a company with huge global ambition who was ready to shift towards data-driven risk selection and pricing underpinned by machine intelligence. Starr's collaborative approach to innovation has created the perfect environment for us to embed our technology and achieve significant progress."

- Richard Hartley, Cytora Co-Founder & Chief Executive Officer

"Starr was first made aware of Cytora at a meeting with the Willis Towers Watson's Securities team. With ever-increasing levels of available data, Starr's interest in the benefits that artificial intelligence and other similar technological advances bring to the industry are aligned with the work that Cytora was focusing on. Following introductions, we better understood the capabilities of Cytora and how they could optimize Starr's underwriting approach. We are now excited to be partnering with Cytora as they continue to expand their work within the insurance industry."

- Steve Blakey, Starr Insurance Holdings President and Chief Executive Officer