

## Background to Cantab Risk

Cantab Risk (Cantab) is a spin out from the Centre for Risk Studies, University of Cambridge Judge Business School, the leading international research centre into systemic shocks to business and the economy, with 10 years of deep engagement with leading global businesses.

The world of corporate risk management is changing rapidly – becoming more pro-active, quantitative, and transparent. Corporates face a risk modelling gap, lacking a consistent and comprehensive approach across the enterprise that considers external threats and emerging risk geography. They are being increasingly required to focus on risk modelling for stress testing and reporting.

Cantab has a unique offering to help international corporations quantify the likelihood and severity of their balance sheet risks. A wide range of risks are covered within a unified framework, including not only the risks that companies face in their day to day operations such as increasing costs, competition, changes in taxation and interest rates, devaluation of financial assets and damage to brand value, but also external risks such as geopolitical, market, trade, cyber, technological, natural catastrophe, social, environmental and health shocks.

The product we plan to develop empowers risk management processes enabling corporations to measure, diagnose, and reduce risks to their business, potentially reducing their 1-in-100 probability loss by billions of dollars, and their annual expected loss by millions.

We want to put information into the corporate management process that will make companies more resilient. We want to help them move from being reactive to shocks towards planning for the future, thereby making themselves more responsible to shareholders, customers, employees and society in general.

## Management Team

Cantab is led by an experienced management team:

Simon Ruffle, Chief Executive

- Simon has founded and run several technology start-ups. Background in risk modelling and related data. Experienced manager of software and database product R&D teams.

Dr Michelle Tuveson, Chief Operating Officer

- Michelle brings 25+ years of corporate experience within the technology and consulting sectors to further the development of better risk models for the future.

Dr Andrew Coburn, Chief Scientist

- Andrew is one of the leading contributors to the creation of the class of catastrophe risk models that over the past 30 years has come to be an accepted part of business management in financial services. Author of *Solving Cyber Risk: Protecting Your Company & Society* (Wiley, 2019).

Professor Daniel Ralph, Chairman

- Daniel is a Founder and Academic Director of the Centre for Risk Studies, Professor of Operations Research at Cambridge Judge Business School, and a Fellow of Churchill College Cambridge

### **What will the Product Do?**

We propose to develop a scientifically based toolkit to assess the risk of a specified company suffering future financial impairment from the occurrence of various stress scenarios. This will help companies understand the risk to the whole organisation and ensure they meet their strategic goals.

The kinds of question that the product will answer include:

- What risks does my company face as a whole?
- What risks do my counterparties (e.g. supply chain, distributors, contractors) introduce into my company?
- How does my business plan (strategy) hold up under the stresses my business faces over the next five years?
- What scenarios would place my company into distress? For example - Stock price devaluation (sell off by investors); Credit agency downgrades the company's credit rating; Trade credit terms worsen for company as purchaser (reduced credit time).
- What mitigation options do I have at my disposal and how cost-effective are they? For example – risk transfer (insurance, capital markets); cyber security measures; anti-terrorism measures
- What emerging crises going on right now around the world might impact me in the future?

The functional components of the product are planned as follows:

- For the CEO/CFO perspective:
  - 5 Year Outlook Projector with
    - Sales projections and breakdown, with optional baselining against trend scenarios such as climate change and emergence of disruptive technologies (e.g. 4<sup>th</sup> Industrial Revolution).
    - Ability to test business 5-year cash flow outlook against all, or a selection of, shock scenarios. Business can be tested, as a whole; by business unit; by geography; by product line or any combination of these.
- For the Chief Risk Officer/Enterprise Risk Management/Audit perspective:
  - Company Profiler: Counterparties View
  - Balance Sheet Stress Tester (scenario suite)
    - Cyber
    - Mitigation
  - Key Facilities Risk Profiler
  - Insurance Purchasing Framework
  - Real time business intelligence

### **Timeframe**

We plan to develop the product over a two-year period, with interim deliverables of a demo version and a minimum viable product (MVP). During this time Cantab plan to sign up six clients to steer development, and these will become the first licensees of the product. To achieve this goal Cantab plans to have eight staff in place at the end of the two year development period.

- 2019      **Product Dev MVP:** Formalize product design and analytics spec for highest priority application; Software development; Acquire data, update, and enhance models; Develop demo toolkit and Minimum Viable Product; Soft marketing campaign. Sign up six clients.
- 2020      **Product Dev Enhancement:** Complete application suite; Add functionality; Start building GTM team; Expand to 16 clients and convert one client into 'major' user; Identify partners and distributors.
- 2021      **Go-to-Market:** Marketing, sales and client service operation, US and Europe. Double client base to 36; Convert 5 clients to 'major' and one to 'Platinum'. Enhance and update product; Complete partnership deals.
- 2022      **US GTM:** Expand US sales and service operations; Double client base to 72 clients, with 3 Platinum clients; Update and enhance product.
- 2023      **International GTM:** Deepen client relationships; dedicated account teams; Extend as appropriate with e.g. SE Asia offerings; Develop product suite for medium sizes of international, regional and national-only companies; Develop partnerships with regulators.
- 2024      **Exploitation of market position:** Having established position as the market standard, structure the company to achieve year-on-year double-digit growth for the next several years.

## Product Development Activities

Our intention is to create a product consisting of software and data that companies will license annually to perform these analyses for themselves, and to monitor their risks as they change over time.

Our initial exercises with our development clients will create bespoke analyses as reports and presentations to the development client, with the results being delivered via a dashboard. We will endeavour to create an application of value, credibility, and on-going usefulness. The dashboard and the API will be the delivery mechanism to the client for the analytics and data that Cantab will create.

The product will need the following development activities.

- Corporate Risk Taxonomy
  - Development of a Data Schema
- Scenario Suite
  - As set of Catastrophe Stress Scenarios in all categories of risks both internal and external that companies face, drawing upon extensive past research by Centre for Risk Studies.
- Impact Modelling, consisting initially of
  - Business Consequence Model (BCM)
  - Company-Specific Cyber Risk Model
  - Key Facilities Risk Model (KFRM)
- Business Intelligence Feeds
  - Monitoring of the changes in the threat landscape so that the scenarios of most concern and greatest potential impact to a specific company are given the highest weighting for that company.
- Data Repository

- A data resource to provide a large inventory of underlying data to inform the models and to provide background and contextual information.
  - A historical catalogue information on past catastrophic events and illustrative scenarios of how these progressed and the impacts they had, as precedents for the modelling work.
- Dashboard and API Development
  - We will develop a client/server technology that employs an API as back end and dashboard at the front end. All client data will be stored, optionally encrypted, in the dashboard, and the API only used as a read-only source of Cantab's data sets and modelling results. The dashboard can be hosted in a variety of industry-standard cloud deployment scenarios but, in particular, there is the option for it to be installed entirely within an organisation meaning that no proprietary sensitive data is stored outside of a company's firewalls.