



**Cass Business School**  
CITY UNIVERSITY LONDON

# Cass Consulting

Research for business

[www.cassknowledge.com/cass-consulting](http://www.cassknowledge.com/cass-consulting)

*Our approach is entirely collaborative. Cass consultants work with clients to define the brief, scope the project and implement it.*

## Give your business an academic edge

Cass Consulting is a research-led consultancy service provided by Cass Business School, a world-leading business school situated in the heart of the City of London, that takes academic research and skills and applies them to deliver great results for your business.

More and more professional organisations recognise the benefits of working with an academic partner to help them validate thinking or solve business problems to inspire business excellence. Cass's academic research is rigorous, outward-facing and impartial. While grounded in theory it is always relevant to practice.

However, academic research has its own language and conventions that do not always make it easy for practitioners to see how they might actually use it. Cass Consulting bridges that gap. Our consultants work with clients to interpret and apply the outcomes of research in a tailored way to improve business performance.

We work with each individual client to discover and define their specific requirements, and then draw on the collective knowledge of our faculty to develop the right approach to answering this need.

Our areas of expertise include financial and professional services, actuarial science and insurance, business management and the third sector.

Previous and existing clients include: American Express, Bank of England, BNY Mellon, Barclays Wealth, BP, Ernst & Young, Microsoft, Prince's Trust, Procter & Gamble, UBS and UK Treasury.

For detailed online case studies go to  
[www.cassknowledge.com/cass-consulting](http://www.cassknowledge.com/cass-consulting)



## Work with us

**Clients can come to us with business problems and issues at any stage. Some of them know exactly what they need us to do; others are less able to articulate the problem they are facing; some clients have already tried another approach and it hasn't worked. Whatever the background and context, we will help.**

In every case, we will start with an in-depth meeting that aims to develop a detailed diagnosis of the client's needs. This meeting is usually between the client and Cass Consulting's Client Director and assigned faculty experts. We will then advise on what we think is the best way to proceed.

We will assemble a research team to work on a client project. This approach is highly effective when finding a solution to a specific challenge: mixing people at different levels and with different experiences can generate new ways of looking at previously intractable problems.

The research team works to a detailed plan with defined outputs and an agreed reporting structure so that at every stage the client knows what is happening.

*As a leading business school, Cass has more to offer than simply a range of services. Clients are aligning themselves with a prestigious intellectual brand.*

## Employ fresh thinking and objective analysis

Work with Cass Consulting on:

### Analysis of industry trends

We can develop white papers that provide comprehensive summaries and analyses of industry trends. While referring to existing research, the papers themselves will be entirely original and written to your brief. They can be jointly branded or published under your brand, providing the author(s) and their affiliation with Cass Business School are acknowledged.

A white paper is a straightforward introduction to working with Cass Consulting. Many clients who have commissioned white papers go on to develop longer-term relationships with us.

### Sponsored research

Collaborate with us to conduct specialised, high-quality research that sets you apart in your industry. This is the essence of thought leadership in that it supports the creation of new knowledge, which has an intrinsic value and can also pave the way for major innovations. This sort of activity has the potential to position your business as one that looks beyond short-term commercial goals and takes a leadership role within your sector.

### Bespoke proprietary research

Commission us to undertake more detailed research that we would not expect to publish or otherwise make available outside your organisation, such as systematic and formal analysis of competitors and the overall market in which you operate, or which you are considering entering. This can support new products or new product utilisation, strategic development or other planned organisational change.

## Draw on Cass's reputation and network

Key additional benefits of working with Cass Consulting are:

### High profile and influence

Through working with Cass Consulting, clients become part of Cass's international network of academics, writers, and reflective practitioners, including over 30,000 *alumni*. Typically, these are people who are interested in the interplay between research and practice, eager to discuss new ideas, and who can play an important role in raising the profile of Cass's clients worldwide.

As Cass is situated in the heart of the City of London it is an ideal venue to launch research projects and to hold linked discussion events and debates.

Journalists in all the leading international publications come to us for comment because they trust the expertise and impartiality of our academics. By linking your thought leadership programme or R&D objectives with Cass you not only have the potential to boost your coverage in these key media, but you will be aligning your brand with a world-leader in business thinking.

### Innovative approach to business challenges

Cass consultants, who have often worked at a senior level in business before entering academia, work with leadership teams and project teams to facilitate finding their own solutions to a variety of business problems, from testing models and systems, to articulating a new vision.

Their academic training means you will benefit from objective and rational analysis of business strategies or products. Our consultants will approach the problem from a different angle, working collaboratively with you to get to the heart of the issue and develop a practical and sustainable solution.

### Long-term relationships that change your business

Sometimes a client's contact with Cass Consulting may be the first step in a long process of fundamental change for the business. We have many long-term relationships with clients whom we have supported through major and continuing change, and who have participated in research that has generated new knowledge and insights.

*Our faculty comprises over 100 research-active experts with impressive academic credentials and, in the majority of cases, formidable business and professional CVs. We also recruit the most promising young researchers.*

## Use the talents of our academic community

As well as working with a wide range of businesses and professional firms we have excellent relationships with industry bodies and practitioner and policy institutions such as the Financial Conduct Authority (FCA), Bank of England and the International Monetary Fund (IMF).

Cass Consulting has a core team of academics who are actively interested in working with clients on a research and consultancy basis. Where appropriate they will call upon colleagues with expertise in specific disciplines or direct teams of researchers to deliver results.

### Building on our world class research

The latest UK research evaluation ranked Cass among the top ten business schools in the UK for Business and Management research. The majority of our research output was ranked as 'world-leading' or 'internationally excellent'.

You can find out more about our research on **Cass Knowledge**, a free web resource containing a comprehensive range of research tools. These include research papers with specially written executive summaries, as well as a magazine and compelling broadcasts. Academics give up-to-the-minute views on current business and finance news in the weekly Cass Talks video podcast.

[www.cassknowledge.com](http://www.cassknowledge.com)

**CassExec** is our executive education business. They work in partnership with clients to create bespoke programmes for a range of participants from a variety of functional and managerial backgrounds, always with the objective of achieving tangible change and growth.

[www.cass.city.ac.uk/execed](http://www.cass.city.ac.uk/execed)

## Cass Consulting case studies

*Find out how Cass Consulting has made a difference to industry-leading clients.*

To find out how we can help you, contact:  
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[www.cassknowledge.com/cass-consulting](http://www.cassknowledge.com/cass-consulting)**Cass Business School**

In 2002, City University's Business School was renamed Sir John Cass Business School following a generous donation towards the development of its new building in Bunhill Row. The School's name is usually abbreviated to Cass Business School.

**Sir John Cass's Foundation**

Sir John Cass's Foundation has supported education in London since the 18th century and takes its name from its founder, Sir John Cass, who established a school in Aldgate in 1710. Born in the City of London in 1661, Sir John served as an MP for the City and was knighted in 1713.

*Cass Consulting undertook research to test a new portfolio construction methodology developed by FE.*

Cass Consulting case study



## Asset management



### Using research to validate an innovative portfolio construction methodology for the financial services industry

#### Synopsis

Cass Consulting undertook research to test a new portfolio construction methodology developed by Financial Express (FE). Using a review of the literature to confirm that the methodology was theoretically sound, the team then provided a simulation, which confirmed that it could lead to improved investment performance.

#### Background

FE provides investment data, software tools and performance analysis to the financial services industry. They had developed an innovative portfolio construction technique, which they believed overcame some of the severe shortcomings of methods that were currently being used in the industry.

They approached Cass to undertake research that was aimed at answering two key questions:

1. Was their proposed approach theoretically sound?
2. Would their approach have led to an improvement in performance over more traditional methods?



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## Consultancy

The project was led by Dr Nicholas Motson who worked together with Professor Andrew Clare.

FE was proposing a portfolio construction methodology that was substantially different from mean-variance optimisation in that instead of using expected returns it used the asset variance. Under their framework the optimal portfolio was the one with the greatest “diversification ratio”, which was defined as the ratio of the weighted average of the volatilities of assets to the volatility of the portfolio of the same assets.

A comprehensive review of the academic literature was presented to FE, which showed that the issues they had identified with mean variance analysis were valid and that others had proposed an approach that was similar but not identical to theirs. The team was also able to identify the assumptions that were inherent in using the diversification ratio and hence ascertain where its use was valid.

Empirically, the Cass consultants provided a simulation using 600 years of randomly generated data, which illustrated both the limitations of the traditional approach and how the new approach would be an improvement. They went on to test the performance of various optimisation techniques using long run data on equities as well as other asset classes. The results showed that the methodology proposed by FE could indeed lead to substantial improvements in performance with lower portfolio turnover in many cases.

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## Cass consultants



### Dr Nicholas Motson

Lecturer in Finance, Cass Business School

Awarded the Foundation for Management Education Fellowship at Cass Business School in 2008, Dr Nicholas Motson specialises in asset management, particularly hedge funds, alternative assets and structured products. Before returning to Cass as a PhD student in 2005 he spent 13 years working as a proprietary trader of interest rate derivatives in the City of London for various banks including First National Bank of Chicago, Industrial Bank of Japan and Wachovia Bank. In 2009 he was awarded the Sciens Capital Award for Best Academic Article, in conjunction with *The Journal for Alternative Investments*, for his paper ‘Locking in the Profits or Putting It All on Black? An Empirical Investigation into the Risk-Taking Behavior of Hedge Fund Managers’. Dr Motson has provided research and training for numerous banks and hedge funds including Barclays Wealth, Societe Generale, BNP Paribas, ABN Amro, NewEdge, Rosbank and FM Capital Partners.



### Andrew Clare

Professor of Asset Management, Cass Business School

Professor Andrew Clare was a Senior Research Manager in the Monetary Analysis wing of the Bank of England, which supported the work of the Monetary Policy Committee. While at the Bank he was responsible for equity market and derivatives research. Professor Clare also spent three years working as the Financial Economist for Legal and General Investment Management (LGIM), where he was responsible for the group’s investment process and where he began the development of LGIM’s initial Liability Driven Investment offering. He has published extensively in both academic and practitioner journals on a wide range of economic and financial market issues. Professor Clare serves on the investment committee of the GEC Marconi pension plan, which oversees the investments and investment strategy of this £3.2 billion scheme and has recently been appointed as a trustee to the Magnox Electric Group Pension scheme.

To find out how Cass Consulting can help your business, contact Dr Christina Makris, Cass Consulting Client Director.

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*“Professor Haberman conducted a valuable review on an initial proposal of a mortality trend model for Swiss Re in 2009. The review led to several modifications and improvements of the model. The revised model is now part of Swiss Re’s internal model.”*

Peter Antal, Head Risk Modelling, Swiss Re

Cass Consulting case study

Swiss Re



## Longevity



### Testing new mathematical model helps Swiss Re better predict longevity and manage reinsurance risks

#### Synopsis

In 2011 Cass Consulting conducted a review of a new mathematical model developed by leading global reinsurer Swiss Re. The model looked at historical mortality data, in particular geographical regions, and used them to predict future mortality. Swiss Re asked Cass to test this model and compare it with other, similar models before recommending which one would be best suited for Swiss Re’s purposes.

#### Background

The Swiss Re Group is a leading wholesale provider of insurance, reinsurance, and other insurance-based forms of risk transfer to Property & Casualty and Life & Health clients around the world. Necessarily it has a comprehensive range of risk management processes to identify, assess and control the Group’s risk exposures. Most of Swiss Re’s Life & Health business is driven by mortality, morbidity and longevity risks.

Underlying mortality trends are uncertain and longevity is systematically underestimated. As pension plans guarantee retirement income for however long people live, this uncertainty affects the investment choices made by pension schemes and, potentially, annuity providers. Mortality is a stochastic process and therefore cannot be predicted exactly, but can be amenable to statistical and probability techniques.



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## Consultancy

A Cass alumnus introduced Swiss Re to Steven Haberman, Professor of Actuarial Science. Swiss Re had developed a mathematical model attempting to achieve a robust predictive model of the future level of population mortality for each of a certain number of geographical regions.

### Swiss Re were looking at:

- The age-shape of mortality, that is the level of mortality at each age in relation to other ages
- The trend in mortality over time (including the pace of change and change in the age-specific patterns)
- The effect of birth year on mortality over age and time (i.e. the events at specific times being experienced at particular ages and their effects on mortality at higher ages in later years).

### Swiss Re asked Cass to:

- Review this mortality trend model
- Test it against three other stochastic mortality models
- Recommend ways in which it might be improved
- Propose which of the models analysed would best be suited for Swiss Re's purposes
- Produce a report summarising the findings.

Professor Haberman and his team conducted a mathematical analysis of the model and tested it against a leading set of models. They also fit each model against historical mortality statistics and used the models to predict mortality in later years. The models were compared according to fit and to the predictions of key indices for various groups of people. The team was able to draw conclusions on what made a 'good' model, and made recommendations for changing and improving the Swiss Re model.

Although most of this consulting project was specific to Swiss Re and confidential in nature, Professor Haberman's comparison of the different models was published in a paper that is now being widely cited. 'A comparative study of parametric mortality projection models', *Insurance: Mathematics and Economics*, 48 (1), p.35-55.

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## Cass consultant



### Steven Haberman

Professor of Actuarial Science, Director and Deputy Dean, Cass Business School

Professor Steven Haberman joined City University London in 1974 as the first Lecturer in Actuarial Science and was promoted to a professorship in 1985. He was appointed Deputy Dean of Cass Business School in 2002. He also worked on a part-time basis for 20 years at the Government Actuary's Department in London. Recent consultancies have included: Lucida, Swiss Reinsurance, Financial Services Authority and Deutsche Bank. He is a Fellow of the Institute of Actuaries, Royal Statistical Society and Institute of Mathematics and its Applications. Professor Haberman has published over 160 academic papers and five co-authored books: *Pensions: The Problems of Today and Tomorrow*, *History of Actuarial Science*, *Modern Actuarial Theory and Practice* (2nd edition in 2005), *Actuarial Models for Disability Insurance*, and *Modelling Longevity Dynamics for Pensions and Annuity Business*. He is an Editor of the *Journal of Pension Economics and Finance* and *Pensions* and a member of the Editorial Boards of *Lifetime Data Analysis* and *Decisions in Economics and Finance*. He has been a member of the Council of the Institute of Actuaries for 11 years. He is a member the UK Financial Reporting Council's Board for Actuarial Standards, the Association of British Insurers' Research Advisory Board and Legal & General's Longevity Science Advisory Panel.

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*A framework and technical tools were developed to aid staff of the FSA in their reviews of the diversification element in general insurers' capital models.*

Cass Consulting case study

## Insurance



### Developing a framework for reviewing dependence and diversification in general insurers' capital models

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#### Synopsis

A framework and technical tools were developed to aid staff of the Financial Services Authority (FSA) in their reviews of the diversification element in general insurers' capital models.

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#### Background

The FSA is tasked with reviewing insurers' risk management standards and capital adequacy as part of the current ICAS (Individual Capital Adequacy Standards) regime, as well as the impending EU-wide Solvency II framework. A part of this review addresses the quantitative modelling of risks. One of the most technical areas of such modelling relates to the way in which risks depend on and diversify against each other. In addition to technical complexity, dependence assumptions have substantial impact on portfolio risk, while often being derived by necessity from limited empirical evidence.



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## Consultancy

Dr Andreas Tsanakas, a Senior Lecturer in Actuarial Science at Cass with prior industry experience in the subject area, spent 16 days working on the project over a period of two months. It entailed working closely with internal FSA experts in order to produce an overall framework for reviewing dependence models in general insurance, linking the objects being reviewed and the areas over which assurance is sought. To aid reviewers, elements of the framework were then developed into short papers, supplemented by a number of technical tools.

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## Outcomes

This project achieved its planned objective, which was the development of a framework for assessing the aggregation techniques and assumptions used by general insurers in their internal models. A variety of aggregation approaches are used, some of which are complex. The framework will promote consistency in the supervisory approach and can be applied to internal models of various complexity giving due consideration to the principle of proportionality.

In addition, Dr Tsanakas documented recommendations for low-level technical approaches, which support components of the overarching framework. Practical application of these techniques was demonstrated through providing input to the routine work on aggregations conducted by FSA.

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## Cass consultant



### Dr Andreas Tsanakas

Senior Lecturer in Actuarial Science, Cass Business School

Dr Andreas Tsanakas joined Cass in October 2006. He studied Electrical and Computer Engineering at the University of Patras, Greece. He has an MSc in Control Systems from Imperial College London and an MA in Modern German Studies from Birkbeck College. He carried out his doctoral research on 'Risk Sharing in Financial and Insurance Markets' at Imperial College London, with the sponsorship of Lloyd's. For his PhD he received the Tanaka Business School Principal's Award for the Most Outstanding Doctoral Thesis. From 2003 to 2006 Dr Tsanakas worked full-time at Lloyd's, his last role there being Manager of Research and Modelling. He has published widely in international journals on actuarial science and risk management and presented his research at academic and practitioner conferences.

*NTL Institute remains at the forefront of innovation in organisational development and change with the help of Cass Consulting.*

Cass Consulting case study

## Organisational change



### Introducing an innovative approach to organisational development in practice

#### Synopsis

National Training Laboratories Institute (NTL Institute) remains at the forefront of innovation in organisational development and change with the help of Cass Consulting. Through their work with Cass's organisational development expert Professor Cliff Oswick, NTL consultants have moved away from a traditional 'diagnostic' approach towards a more discursive and dialogue-based approach to change.

#### Background

NTL Institute is a leading US-based learning solutions provider that delivers a range of training and learning programmes for organisations, leaders and practitioners who want to enhance individual, team and organisational effectiveness.

65 years old, NTL is a membership organisation with a faculty of just over 300 individuals. All programmes are designed and delivered by these members who must meet rigid NTL standards. These cover, among other things, academic rigour and consultative experience.

The approach adopted by NTL has been based upon a traditional organisation development model, which is problem-centred and applies a structured, diagnostic approach to organisational improvement and change.



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## Consultancy

Based upon his expertise in new forms of organisational development, Professor Cliff Oswick was invited to undertake a large-scale group intervention with 110 NTL consultants.

This involved challenging them to move from their traditional, diagnostic approaches to organisational change – which tended to focus on what the problem is here and now, and what happened in the past to get to this point – in order to develop a clear solution. He encouraged them to experiment with new approaches that were more discursive, that focused on the future, and that encompassed multiple possible solutions.

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## Outcomes

In NTL there has now been a shift of emphasis from scientifically-inspired forms of organisational development towards more discursively-oriented interventions, which have now started to gain momentum and traction.

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## Cass consultant



### Cliff Oswick

Professor in Organisation Theory, Head of the Faculty of Management and Deputy Dean, Undergraduate Programmes, Cass Business School

Before coming to Cass, Professor Cliff Oswick spent four years at Queen Mary, University of London as a Professor of Organisation Theory in the School of Business and Management. He has also previously held posts at University of Leicester (2002-2007), King's College, University of London (1990-2002), and Westminster University (1988-1990). Before becoming a full-time academic in 1988, Professor Oswick worked as a HR manager in local government. His research interests focus on the application of aspects of discourse, dramaturgy, tropes, narrative and rhetoric to the study of management, organisations, organising processes, and organisational change. He has published over 120 academic articles and contributions to edited volumes. He is the European Editor for *Journal of Organizational Change Management*, Associate Editor for *Journal of Change Management*, and Co-director of ICRODSC (International Centre for Research on Organizational Discourse, Strategy and Change), which links a network of researchers in several renowned institutions located in the UK, Canada, USA, Sweden and Australia.