

DICE.

Meeting your capital modelling needs



Insurers need more flexibility and control of their risk and capital modelling. DICE is next generation risk and capital modelling software which meets that need.

Changing demands on capital models

Insurers increasingly need more responsive and sophisticated risk and capital models. This has led to the use of proxy models of the business and to more complex capital calculation techniques.

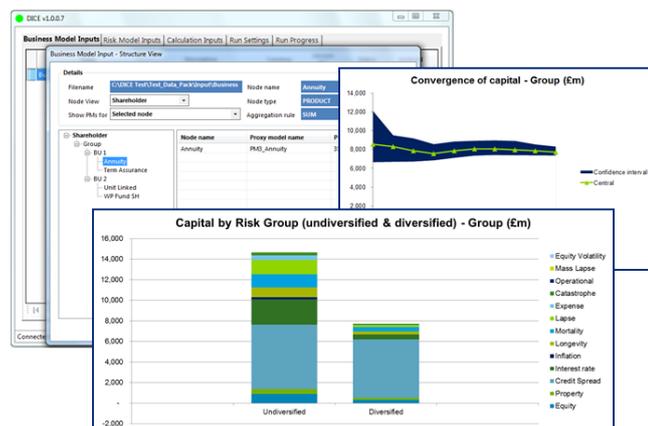
However, the regulatory landscape is uncertain and modelling approaches continue to evolve. Insurers will need flexible models to respond to this. Deloitte has developed DICE to meet that need.

What is DICE?

DICE is the Deloitte Internal Capital Engine. It is an easy to use, flexible and accessible software system which allows insurers to:

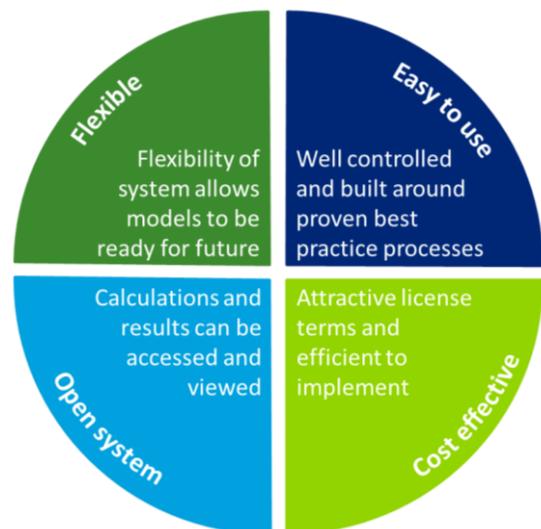
- **Calculate, analyse** and **attribute** economic capital; and
- **Monitor economic balance sheets** on a day-to-day basis.

DICE is quick to set up and populate, with initial draft capital results produced early in an implementation.



What makes DICE different?

DICE is a distinctive offering in the market:

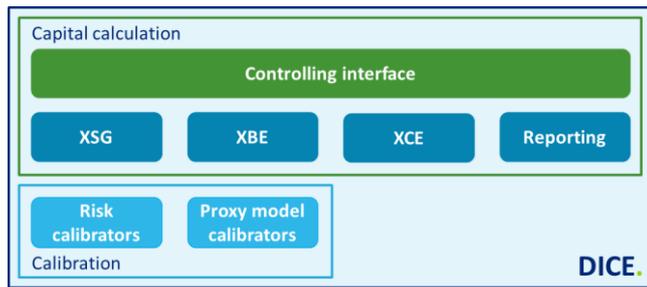


In particular, **DICE is built with flexibility at its core** therefore addressing many of the limitations of existing capital models.

- ✓ Users can **design** and **build** their own proxy models into the system, enabling **better modelling of their business** than with simple formula approaches.
- ✓ DICE contains a **variety of capital calculation methodologies** and analysis as standard, allowing users to **better understand and validate** the results produced.
- ✓ DICE is an **open component-based system** which provides easy access to individual elements of the calculations.

DICE components

The DICE components consist of capital calculation engines and calibration tools used for model inputs.



DICE capital calculation components

- **Controlling interface** – controls the setup, production, and sign off of all the calculations.
- **XSG** – our scenario generator software generates the risk scenarios used.
- **XBE** – the business engine models how the business is affected by the risk scenarios.
- **XCE** – the capital engine calculates economic capital requirements using the results generated by the XSG & XBE.
- **Reporting** – contains templates to report and analyse the results of the model.

Depth and breadth of expertise

Deloitte has large and mature actuarial and technology practices with a track record of joint delivery and a history of innovation. We have been at the heart of capital model development and implementation for some of the biggest insurers in the UK.

Contacts

To find out more, please get in touch with one of the team:



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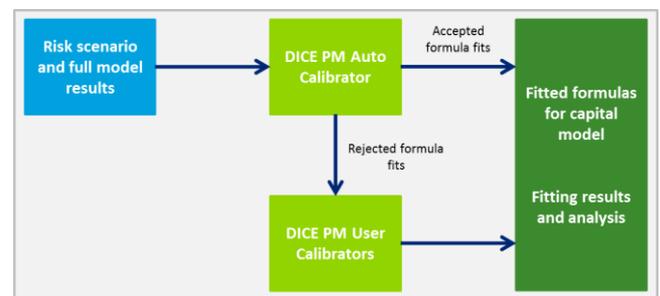
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DICE calibration tools

The **risk calibrators** provide inputs for the XSG. They fit risk distributions to historic data, and include an array of summary statistics and graphs.

The **proxy model calibrators** provide inputs for the XBE. An automated process for fitting proxy models to assets and liabilities is complemented by a manual process for investigating and improving fits:

- ✓ Polynomial formulas can be fitted to both **values** and **cashflows**.
- ✓ **Least Squares Monte Carlo** is allowed for.
- ✓ An **optimisation algorithm** for selecting terms is included as part of the automated process.



Both sets of calibration tools can be used as part of the DICE suite or on a standalone basis.