



## Reducing business risk by capturing and sharing knowledge and expertise across the organisation

**The well publicised wave of senior engineers expected to retire in the next 5 years, along with increased outside scrutiny following recent major incidents are driving a new approach to knowledge management and decision support in Oil & Gas.**

### Dispersed Knowledge

Over the last decades the widespread use of spreadsheets for decision support, as well as an array of in-house developed software models, has led to a proliferation of sometimes 1000s of discrete, complex and poorly documented tools in use by engineers and scientist across most “upstream” and “downstream” processes - from subsurface analysis, to drilling and completion, to operations, production, research and HSE.

This poses both a risk to the business, and an opportunity to operate in new ways.

Having expert knowledge bound up in individual tools, often on a single laptop, becomes an obvious risk as engineers leave or retire. This can impact key operational processes as well as lead to the loss of valuable information, competitive advantage, knowledge and experience.

In addition, higher levels of outside scrutiny and compliance mean that the lack of inherent robustness, transparency and auditability of engineer developed tools put the organisation at increased risk. The good news is that against this backdrop many forward thinking Energy organisations have identified an opportunity to

capture, leverage and share this valuable knowledge and expertise in new ways that also benefit the business as a whole.

### Modernising Decision Support

Tessella has a 30 year track record of providing innovative consultancy and technology solutions to the world’s largest energy and petrochemical companies covering a wide range of “upstream” and “downstream” activities.

Drawing on this unique blend of domain experience and scientific software expertise, Tessella can help Oil & Gas organisations re-engineer and re-architect the 1000s of individual modelling and decision support tools in use across their businesses, including:

- ▮ An audit to identify the most valuable, critical, duplicated or at risk tools
- ▮ Close collaboration with the original engineer or scientist to draw up requirements and translate their complex decision support and modelling spreadsheets and programs into well-documented, professionally developed algorithms and software modules



- | The addition of easy-to-use graphical interfaces

- | Use of the latest “Cloud” based technologies

This modernisation of decision support reduces business risk, captures vital knowledge and experience while at the same time enables the organisation to spread best practices and work in more effective and efficient ways:

- | **Increased Knowledge Sharing**

World-class knowledge and expertise is globally accessible - from offshore rigs to remote production facilities - allowing engineers to collaborate on models and projects globally, as well as making the tools available to the next generation of engineers.

- | **More Holistic, Real Time Decision Making**

Data can be gathered and fed into models in real time – speeding up decision making

The modular design allows a library of specific models and tools to be created - preserving knowledge and best practice, but more importantly enabling them to be combined to provide more holistic decision making, for example, inserting a real time corrosion monitoring model into an overall predictive analysis process

- | **Greater Collaboration**

A centrally accessible library of high-integrity data can also be built which speeds up decision by making it easier for engineers to collaborate and share data e.g. during well planning and design

- | **Streamlined Support**

Decision support tools that are integral to the operation of the business become part of the organisation’s software inventory and are no longer supported on an ad hoc basis by the engineers that created them. Undertaking an audit allows tools that are duplicates or no

longer required to be retired. The number of supported systems can be reduced further by combining previously unrelated tools and models into a single application release

- | **Reduced Business Risk**

The re-engineered models and tools stand up better to outside scrutiny, compliance requirements and safety critical application. They are inherently more robust, transparent and auditable, operate off a single high integrity instance of data, and give engineers and scientists control over all variables and algorithms, enabling them to be confident that the results fit their specific circumstances, especially compared to “black box” solutions

## Summary

The modernisation of decision support is allowing Oil & Gas organisations to reduce business risk, preserve and leverage valuable IP, share knowledge and expertise, and operate in a more efficient and effective way.

Tessella can help accelerate this transformation by providing a unique blend of domain experience, professional scientific software expertise and advanced algorithm and model development. We can also provide business and strategy analysis, technical and quality audits, team augmentation and full project management.

In short, we will partner with you in the way that best fits your needs.

Our aim is to help ensure our Oil & Gas clients have the right technology and solutions to meet today’s unique challenges.

For more information visit [www.tessella.com/oil-gas/](http://www.tessella.com/oil-gas/).

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