Exploding oil wells, Swiss cheese, and the relevance of assurance mapping for Irish credit unions

By Brian Hayes

OIL WELLS AND SWISS CHEESE

At approximately 9:47 p.m. on the evening of 20 April 2010, an uncontrolled flow of water, oil mud, oil, gas, and other materials came out of the drilling riser on the drilling vessel Deepwater Horizon contracted by BP to drill the Mississippi Canyon Macondo well in approximately 5,000 feet of water in the northern Gulf of Mexico offshore the coast of Louisiana. A series of two or more explosions and a huge fire followed shortly after the uncontrolled flow commenced. The fire continued unabated for about two days. The Deepwater Horizon was abandoned shortly after the fire started, but 11 of 126 persons aboard perished. The vessel sank about 36 hours later. For the next 83 days, multiple attempts were made to catch, contain, disperse, and stop the reservoir fluids from reaching the Gulf of Mexico. Immense amounts of toxic reservoir fluids and gases from the Macondo well were able to escape into the open waters of the Gulf of Mexico. The result of this cascade of failures led to a disaster unprecedented in the history of the offshore oil and gas industry. The disaster led to significant level of reviews and studies (and a Hollywood Blockbuster movie starring Mark Wahlberg). As one would expect, many of the reviews and reports on the Deepwater Horizon disaster centred on risk management. After all, Deepwater Horizon appeared to be a spectacular failure in risk management.

One such report was completed by a USA body known as the Center for Catastrophic Risk Management (“CCRM”). In its report, the CCRM introduced a risk management theory of a UK professor, the rather aptly named Professor James Reason. Professor Reason’s “Managing the Risks of Organizational Accidents Theory” describes major system organisational accidents as the penetration of hazards through the system’s defences or barriers, using a term (with admirable style and grace) referred to as the “Swiss Cheese” Model. In Professor Reason’s Swiss Cheese Model, an accident develops when the major hazards confronting a system are able to successfully penetrate the barriers through aligned holes (defects/deficiencies) in the barriers formed by the risk management system. This is illustrated below:

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1. Information relating to the incident is extracted from the “Final Report on the Investigation of the Macondo Well Blowout”, Deepwater Horizon Study Group (2011)
Assuming effectiveness, each line of defence contributes to healthy organisational governance by ensuring objectives are achieved in the context of the legal, regulatory, and market environments. Both the second and third lines provide oversight and/or assurance over risk management activities.

Irish credit unions have witnessed wholesale reform of their governance frameworks since the Credit Union and Co-Operation With Overseas Regulators Act in 2012. Now credit unions have an army of assurance providers doing various assurance oriented tasks including risk, compliance and internal audit activities, in line with this Three Lines of Defence Model. This is being done in a variety of manners; insourced, outsourced or co-sourced. Added to this are external audits, Central Bank of Ireland PRISM inspections and other ad-hoc consultancy reviews. In contemporary Ireland’s highly regulated Irish credit union, one could surmise that vast stretches of the working year are spent managing audits/reviews/assessments of some shape or form. Many credit unions may feel themselves suffering from a chronic and severe case of “audit fatigue”. However, to re-introduce Professor Reason and his Swiss Cheese Model, while audit fatigue may be a common affliction in Irish credit unions, the more disturbing nightmare scenario would be for a failure in risk management to befall a credit union in spite of audit fatigue. The nightmare is that something slips through the Three Lines of Defence. Something slips through the holes in the credit union’s slices of cheese.

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2. Information relating to the Three Lines of Defence Model and Assurance Mapping, in their generality, is extracted from “Coordination and Reliance – Developing an Assurance Map, Institute of Internal Auditors (2018)."
Given that assurance activities (used in broad terms) are now shared among three lines of defence (insourced, outsourced or co-sourced) it is important for a credit union to document assurance activities in a credit union wide holistic and integrated manner. A clear understanding of risk coverage throughout the credit union can provide benefits, including reduced duplication of effort among assurance providers and avoidance of audit fatigue among credit unions. If assurance coverage is inadequate, significant risks may be overlooked, misjudged or mis-managed. By coordinating and aligning their risk coverage, assurance providers can build a robust assurance framework. How is this done? This is where the Internal Audit profession may help, with a process called “assurance mapping”.

THE CONCEPT OF ASSURANCE MAPPING

The Institute of Internal Auditors (“IIA”) is the internal audit profession’s most widely recognised advocate, educator, and provider of standards, guidance, and certifications. The IIA has developed a framework for what is termed “assurance mapping”. Assurance mapping is based on the fact that a Board relies on information from multiple providers of assurance services, including internal providers and external providers. An assurance map is a matrix comprising a visual representation of the credit union’s risks and all the internal and external providers of assurance services that cover those risks. This visual depiction exposes coverage gaps and duplications. Assurance providers may use the map to coordinate the timing and scope of their services, preventing audit fatigue within areas and processes under review. An assurance map could be used as follows:

- Internal audit may use an assurance map as a basis for discussion to determine whether reliance on the work of other assurance providers would be appropriate.
- Senior management may use the map to ensure that risk management and internal control functions are properly aligned and effectively monitored.

Therefore, an assurance map can enhance a comprehensive, credit union risk management process, advance the maturity of assurance functions, and strengthen the control environment.

WHAT DOES AN ASSURANCE MAP LOOK LIKE?

Like most solutions to complex problems, an assurance map is a thing of simplicity, and built on common sense. It simply lists off the key areas of risk on one axis, and then lists off the assurance activities on the other axis, and maps who does what. But the key thing about assurance mapping is that it makes you think. Who does what? Why? What is over-audited? What is under-audited? What is not audited at all? An assurance map for an Irish credit union would look something like this:

<table>
<thead>
<tr>
<th>Risk Categories</th>
<th>First Line of Defence</th>
<th>Second Line of Defence</th>
<th>Third Line of Defence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>CEO, Finance, Credit, Credit Control, HR, Operations, IT, Other...</td>
<td>Risk Management, Compliance, MLRO, DPO, Other...</td>
<td>Internal Audit, Other Consultants, Other Consultants, Other Consultants, Other...</td>
</tr>
<tr>
<td>Bank Reconciliations</td>
<td></td>
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<td></td>
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<tr>
<td>Share and Loan Reconciliations</td>
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<td></td>
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<tr>
<td>Accounts Payable</td>
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<td></td>
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</tr>
<tr>
<td>Provisioning</td>
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<tr>
<td>Management Reporting</td>
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<tr>
<td>Investments</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other Risk Area</td>
<td>List...</td>
<td>List...</td>
<td>List...</td>
</tr>
<tr>
<td>List...</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- No Risk Coverage
- Partial Risk Coverage
- Strong Risk Coverage
Assurance mapping, if done well, ought to be a beneficial process. A complete and updated assurance map would support:

- A shared understanding of the risks faced by a credit union aligned by risk categories.
- Identification of the credit union’s risk management and assurance roles/functions.
- Development of a holistic, comprehensive assurance framework, which can be useful during times of transition, such as mergers or transfers, ICT migrations, or assessing and changing business strategies.
- Collaboration among assurance providers to facilitate the efficient and effective use of resources.

Internal audit ought to be a "value added" function for a credit union. The global definition of internal audit (as defined by the IIA) is “…to enhance and protect organisational value by providing risk-based and objective assurance, advice and insight...”. Credit unions engaging with their internal audit service provider to complete assurance mapping should enhance governance frameworks by greater coordination and organisation amongst all reporting functions, thereby minimising audit fatigue and improving effectiveness. The internal audit profession should not be afraid to stray beyond providing assurance, and actually provide consulting activity. Particularly when the consulting activity relates to how best structure the assurance framework itself. Internal audit is intended to add value.

Assurance mapping, if done well, could be a significant value-add to a credit union. It may serve to reduce the risk of something truly bad, slipping through those holes in the Swiss cheese.