

# Position paper on the promotion of actuaries in risk management

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Version	Date	Author	Reviewer	Comment
<b>C0.1</b>	16 August 2017	Kartina Thomson		Initial draft for comment
<b>C0.2</b>	21 August 2017	Daphné de Leval		Incl. preliminary pension topics and link with the AAE position paper on required skills to be a good risk manager
<b>C0.3</b> <b>C0.4</b>	4 September 2017	Loes de Boer	Kartina, Daphné, Frank	Merger of SWOT analysis and stakeholder's needs
<b>C0.5</b>	8 September 2017	Daphné de Leval	Kartina, Loes, Frank	Adapt the skills section, implement some corrections
<b>C0.6</b>	11 September 2017	Frank Schiller	Daphné, Kartina, Loes	Several changes as discussed in our call 8 <sup>th</sup> September 2017
<b>C0.7</b>	15 September 2017	Loes de Boer	Daphné, Kartina, Frank	Minor final changes
<b>C0.8</b>	3 March 2018	Loes de Boer	Frank, Daphné	Refresh and update
<b><u>C0.9</u></b>	<u>14 March 2018</u>	<u>Daphné de Leval</u>	<u>Loes, Frank</u>	<u>Minor suggested changes</u>

## Introduction

This position paper intends to provide input for the European actuarial associations to further strengthen the role of the actuary as risk manager. Parts of it could for example be incorporated in strategic plans.

In the last meeting of the AAE Risk Management Task Force (RMTF) we decided to focus the work for promoting actuaries in risk management on the insurance industry as a starting point and (if seen important) later extend the work on other industries. Hence, where already feasible now we started with a broader approach (e.g. in the self-assessment) but limited ourselves to insurance and pensions for the stakeholders' assessment.

The structure of this document is as follows:

- Self-assessment: what are our main strengths, weaknesses, opportunities and threats?
- Stakeholders' assessment: what are the needs and expectations of our stakeholders?
- Evaluation of results: how do our main strengths, weaknesses, opportunities and threats relate to the needs and expectations of our stakeholders?
- Proposed strategy: how can we best move forward, e.g. how can we further align our strengths, weaknesses, opportunities and threats with the needs and expectations of our stakeholders?

This paper is a general blueprint to open discussions with the RMC in order to test our 'proposed strategy' on key situations and define next steps to support the promotion and development of actuaries in risk management. Some of the statements made could be perceived as provocative. They are left in intentionally to provoke and add fuel to the discussions.

## Self-assessment

### SWOT analysis

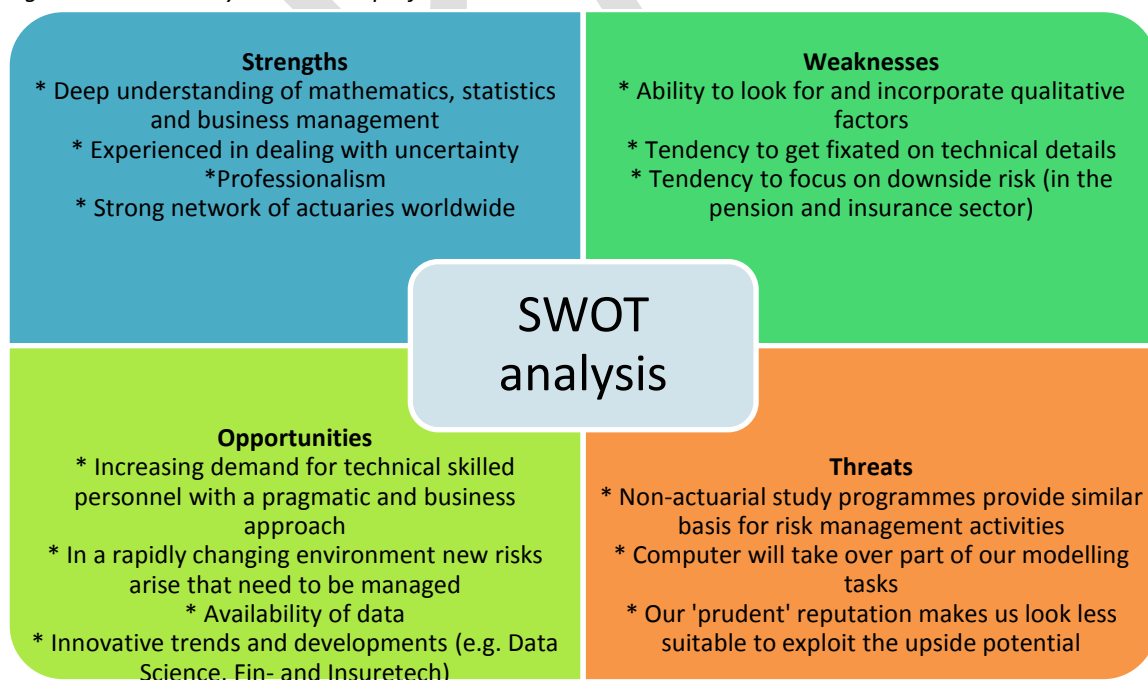
Actuaries deal with risk. It is what we do best. Our goal is to be and stay the natural candidate for all kinds of roles in [assessing](#), measuring and managing risk. Different competencies and skills are required to secure our leading risk management position in a rapidly changing world of society and work. [However, we believe we can easily tailor our approach to a wide range of contexts and promote our agile risk management discipline in many private and public sector organisations.](#)

A SWOT analysis is performed with the aim of identifying the key internal and external factors seen as important to achieving our goal. Deep understanding of our strengths and weaknesses (internal perspective), and the opportunities and threats that we face (external perspective), will help us achieve our goal by focusing on our strengths, minimise the threats we face, and to take the greatest possible advantage of opportunities available to us.

Our strengths and weaknesses are defined as characteristics of the actuarial professional that give an advantage or disadvantage relative to others. Opportunities are elements in the environment of the actuarial professional that could be exploited to use in its advantage. Threats are elements in the environment that could cause trouble.

Figure 1 provides an overview of the strengths, weaknesses, opportunities and threats for the actuarial professional. It should be noted that this overview is intended to capture the main overall characteristics of 'the' actuarial professional; it is not meant to be seen as an exhaustive personal profile.

Figure 1: SWOT analysis actuarial professional.



## Strengths

Deep understanding of mathematics, statistics and business management clearly is a strength for the actuarial profession. Furthermore, we are experienced in dealing with uncertainty, including the analysis of (quantitative) future projections. Professionalism in the form of strong values as accountability, objectivity and integrity is part of our DNA. The strong network of actuaries worldwide gives us a great advantage relative to others as it provides for example clear and high professional standards and a strong network.

## Weaknesses

The (non-)ability to look for and incorporate qualitative factors into forward looking (risk) assessments could be seen as a weakness of the actuarial professional. An example would be the calculation and publication of mortality tables, without taking into account latest developments of gene therapy, bioprinting, synthetic biology and nanotechnology. The tendency to get fixated on technical details and downside risk, preferably in our 'own' comfortable space (e.g. the pension and insurance industry) could be seen as other weaknesses.

## Opportunities

The actuarial professional faces multiple opportunities. Among others, there is an increasing demand for technical skilled personnel with a pragmatic and business approach, as businesses and the public sector face multiple increased challenges and greater uncertainty in a world that is rapidly changing. Furthermore, new risks arise in a rapidly changing environment that need to be managed. Also, innovative trends and developments (e.g. Data Science, Fin- and Insuretech) are great opportunities for the actuarial professional as they understand current business models in a quantitative way.

## Threats

Non-actuarial study programmes provide similar basis for risk management activities. This means other risk professionals could perform similar tasks than the actuarial professional. Not only other risk professionals could take over our tasks, also computer could take over *part of* our modelling tasks (e.g. automation). Interpretation and analysis becomes more and more important over time. It should be noted that this could also be seen as an opportunity. Furthermore, due to consolidations there is a substantial decline in employment in our traditional sectors. Last but not least, our 'prudent' reputation, could make us look less suitable to exploit the upside potential of things. This reputation is driven by our professional objectivity and tendency to focus on downside risk, among others.

## Confrontation matrix

In this paragraph, the SWOT analysis is further elaborated on by filling a confrontation matrix. In a confrontation matrix the strengths and weaknesses (internal perspective) and opportunities and threats (external perspective) are compared in order to see how they affect each other. At the same time, you see which elements have big influence and which have less influence by the number of pluses and minuses you see at the end of each row or column. The confrontation matrix is intended to identify strategic themes and answer the following questions:

- *Can we use our existing strengths to take advantage of the opportunities?*
- *Can we work on our weaknesses to prevent us from missing out on opportunities?*

- Can we use our existing strengths to reduce likelihood and impact of the threats?
- Can we work on our weaknesses to prevent threats to become reality?

Figure 2: Confrontation matrix

	O1 Increased demand for technical skilled personnel	O2 New risks	O3 Availability of data / data analytics	O4 Innovative trends and developments	T1 Non-actuarial study programmes	T2 Jobs lost due to consolidations and automation	T3 Our 'prudent' reputation	T Total
S1 Deep understanding of mathematics, statistics and business management	+	++	++	+	+	+	+	7+
S2 Experienced in dealing with uncertainty	+	++	+	+	+	+	+	4+
S3 Professionalism	+	+	+	+	+	+	+	0
S4 Strong network of actuaries worldwide	++	++	+	+	+	+	+	6+
W1 Ability to identify and incorporate qualitative factors into (risk) assessments	-	-	-	-	-	-	-	4-
W2 Tendency to get fixated on the technical details	-	-	-	-	-	-	-	3-
W3 Tendency to focus on downside risk (in the pension and insurance sector)	-	+	-	-	-	-	-	2-
Total +	4	7	2	1	2	2	1	19+
Total -	4	1	0	1	3	0	3	12-

#### Can we use our existing strengths to take advantage of the opportunities?

Looking at our main strengths and opportunities, our strengths seems to provide a solid basis for picking up on opportunities, although it should be noted that the pension and insurance industry still is the environment we feel most comfortable in. To take full advantage of O1-O4 we need to broaden our horizon. There seems to be a mismatch between the 'general' demand for technical skilled personnel and the limited scope of the actuarial education programmes.

#### Can we work on our weaknesses to prevent us of missing out on opportunities?

Our weaknesses do form a serious obstacle in taking advantage of O1-O4. The world is not in need of mathematical correctness, but good old common sense. Economic and financial crises of the past have proven that models and reality are two different things. To take the full advantage of the opportunities, actuaries have to learn to grasp the bigger picture, in which not only quantifiable elements play a crucial role.

#### Can we use our existing strengths to reduce likelihood and impact of the threats?

Our main threats (competing study programmes, consolidations, automation, and reputation) are not easy to deal with; dealing with them more or less means we have to change our culture and behaviour. The limited effect of 'professionalism' on the identified opportunities and threats is notable. Our strong worldwide network does give us a strong advantage.

#### Can we work on our weaknesses to prevent threats to become reality?

To prevent threats to become reality, we need to change our culture and behaviour, ultimately leading to a changing reputation. Integrating other disciplines into our actuarial societies and education programmes could be helpful in this. Moreover, working together in diversified teams of

more quantitative and qualitative actuaries on different subjects, will reduce the impact of our weaknesses.

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## Stakeholders' assessment

Traditionally, the risk management was seen just as a control function where it is regulatory in nature. It is now fairly norm and accepted (and even expected) that risk managers play an important role in strategic decision making.

According to Anette Mikes<sup>1</sup>, a Harvard Business School professor of risk management, involvement of CRO in board-level strategic decision-making depends on the quality and credibility of their insights. Typically, CROs fall into one of two categories: 'strategic controllers', who used the output of sophisticated risk models as their input to strategic issues or 'strategic adviser', who use risk management as trend indicators and use models as part of their judgement but do not let it drive it and draw on their business experience and knowledge of danger signs to anticipate emerging risks.

We think that this statement can also [be](#) extended generally to any risk management function. Risk functions and risk management roles in financial services firms have grown in importance in recent years, due in part to regulatory requirements such as Basel III, Solvency II and IORP II. However, risk management comes in different forms and there is lack of uniformity to the risk management role. Insight into the needs and expectations of our stakeholders gives us important information about the skill set required to be a good risk manager.

The following stakeholders are included in the assessment:

- Board of Directors
- Executive team
- Regulators
- Customers / insureds
- Rating agencies
- Shareholders
- Employers (IORPs)

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<sup>1</sup> <http://www.theactuary.com/features/2012/02/risk-management-actuaries-as-cros/>

Figure 3: Overview stakeholders' needs and expectations

Stakeholders	Needs/Requirements	Expectations	Current Appraisal of actuaries in risk management role
<b>Board of Directors</b>	<p>Board of Directors requires the risk manager to:</p> <ul style="list-style-type: none"> <li>• Be the second line of defence and ensure that the risk management system is appropriate and effective.</li> <li>• Ensure that the risks undertaken by the firm is understood, managed and mitigated.</li> <li>• Ensure that regulatory requirements pertaining to risks are adhered to.</li> <li>• Ensure that her management and communication of risks enables the Directors to meet their regulatory obligations.</li> </ul>	<ul style="list-style-type: none"> <li>• No surprises.</li> <li>• Open and honest communication between Board and risk manager.</li> <li>• Deep understanding of risk.</li> <li>• Analytical.</li> <li>• Ability to challenge across a wide spectrum of activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Good at technical challenge, analytical and critical thinking.</li> <li>• Depending on individual, good communicators but this is not universal. Linking to this is relationship building.</li> <li>• Reliance on professionalism.</li> </ul>
<b>Executive team – CEO, CFO, etc.</b>	<p>The CEO and the rest of the Executive team require a risk manager who:</p> <ul style="list-style-type: none"> <li>• Understands and manages risk in the context of business strategy and plan.</li> <li>• Is able to look at risks holistically and highlight issues and threats to decisions made.</li> </ul>	<ul style="list-style-type: none"> <li>• Consider downside as well as upside risks.</li> <li>• Pragmatic.</li> <li>• Agile.</li> <li>• Commercial.</li> <li>• Strategic.</li> <li>• Deep understanding of risk.</li> <li>• Analytical.</li> </ul>	<ul style="list-style-type: none"> <li>• Good at technical challenge and critical thinking.</li> <li>• Good holistic view and understanding of insurance operations.</li> <li>• May be more of a strategic controller than adviser where may over-rely on quantitative analysis to make a decision.</li> </ul>
<b>Regulators</b>	<p>Risk manager who is 'fit and proper' to have responsibility for overall management of the risk management system in the firm. When considering a risk managers' fitness and propriety, the regulator takes into account (bearing in mind proportionality principle) and be satisfied of the candidate's:</p>	<ul style="list-style-type: none"> <li>• Open and honest relationship with the regulator.</li> <li>• Early notification of issues that could breach regulatory requirement and meeting the regulator's objectives.</li> <li>• Deep understanding of risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Good at technical challenge and critical thinking.</li> <li>• Good holistic view and understanding of insurance operations.</li> <li>• Professional code can make thoughtful risk managers.</li> </ul>



Stakeholders	Needs/Requirements	Expectations	Current Appraisal of actuaries in risk management role
	<ul style="list-style-type: none"> <li>honestly, integrity and reputation, i.e. that they will be open and honest in their dealings and able to comply with the requirements imposed on them;</li> <li>competence and capability, i.e. that they have the necessary skills to carry on the function they are to perform; and</li> <li>financial soundness.</li> </ul>	<ul style="list-style-type: none"> <li>Analytical.</li> </ul>	
<b>Customers/insureds</b>	Customers/insureds want a risk manager to ensure that their needs are defended and they are treated fairly.	<ul style="list-style-type: none"> <li>Integrity and principled.</li> <li>Social awareness.</li> <li>Deep understanding of risk.</li> <li>Analytical.</li> </ul>	<ul style="list-style-type: none"> <li>Professional code and societal awareness can make thoughtful risk managers.</li> </ul>
<b>Rating agencies</b>	Rating agencies require an honest representation of the state of risk management in the firm so that they are able to accurately evaluate the financial health and management of the firm.	<ul style="list-style-type: none"> <li>Open and honest.</li> <li>Deep understanding of risk.</li> <li>Analytical.</li> </ul>	<ul style="list-style-type: none"> <li>Technical strength.</li> <li>Holistic understanding of insurance operations.</li> <li>Professional code can make more thoughtful risk managers.</li> </ul>
<b>Shareholders</b>	Shareholders require a risk manager who will manage the risk management process effectively and control and mitigate risks in order to protect and enhance the value of the firm.	<ul style="list-style-type: none"> <li>Diligent.</li> <li>Deep understanding of risk.</li> <li>Analytical.</li> </ul>	<ul style="list-style-type: none"> <li>Technical strength.</li> <li>Reliance on professional code may make a diligent risk manager.</li> </ul>
<b>Employers (IORPs)</b>	Employers require the risk management function to control and mitigate risks in order to protect properly the beneficiaries while limiting the sponsor support.	<ul style="list-style-type: none"> <li>Diligent.</li> <li>Deep understanding of risk.</li> <li>Analytical.</li> </ul>	<ul style="list-style-type: none"> <li>Technical strength.</li> <li>Holistic understanding of pension operations.</li> <li>Professional code can make more thoughtful risk managers.</li> </ul>

The above analysis shows that, if there is no unique role definition for the risk manager, there is however a general skill set requirement to allow him to perform well towards his different stakeholders:

- Good communicator
- Analytical
- Robust and able to challenge
- Pragmatic and have an open mind
- Good listener
- Relationship builder
- Critical thinking
- Ability to distil complex topics and issues into relatable and simpler term

Please refer to the AAE paper “Required skills to be a good risk manager” for an overview on the requirements needed to be effective and efficient as a risk manager.

## Evaluation of results

Combining our self-assessment with the stakeholders' assessment reveals that actuaries are strongly placed to take ownership and responsibility of the risk function in insurance and pensions. Their natural strength including technical capability, professional conduct and understanding of the business operations make very compelling arguments for having actuaries as risk manager. To enhance this skillset, actuaries are encouraged to develop their communication and relationship building skills. Whilst some actuaries do have highly honed skills in these areas, it should be highlighted as something that they should all continuously develop on to ensure that they remain in a strong position to grow in the risk area.

Whilst our stakeholders' assessment only delivered current stakeholders within insurance and pensions, the SWOT analysis provides broader insights into our possible future stakeholders. These possible future stakeholders are in need of more general technical skilled personnel with a pragmatic and strategic business approach. They must be willing and able to grasp the bigger picture and difference between main and minor issues.

Professionalism is a great asset, especially in the regulatory driven financial sector, and provides stakeholders of actuaries with a well-understood profile strengths to rely on. If we want to broaden our horizon to take a step into new opportunities and other industries, we might have to consider extending our skills, expertise and perhaps even values to match the requirements of these new stakeholders.

## Proposed strategy

In theory and in a broad sense, strategic options resulting from the SWOT analysis, taking into account the results of the stakeholders' assessment, can be classified as follows:

- **SO** options: options that combine our strengths and opportunities. We do what we are good at when the opportunities arrive.
- **WT** options: options that combine a company's weaknesses with external threats. We avoid business in areas where not only are there large external threats, but we do not have the competencies to compete.
- **WO** options: we prepare ourselves to seize an opportunity without having (all) the necessary competencies.
- **ST** options: using our strengths to turn threats into opportunities.

Let us focus on the SO and WO options, as the WT and ST options seem not very likely to pursue, given the results from the SWOT analysis.

### SO options

Given the rather limited influence we have on the threats we face, the SO options seem the most obvious. More concretely, in the past years the field of data analytics had entered the actuarial world (or vice versa). As we are 'good' with data, and the demand for data analysts is rising, this is a good example of an 'SO strategy'. However, question arises if we use our newly build skills in a way that helps us seize the opportunities we face and to be ~~and stay~~ present on board level.

### WO options

More challenging options would be the WO options: actively looking for ways to seize the opportunities, and in the meanwhile, working on our weaknesses. If we plot this on a data process (e.g. data collection / warehouse, data processing, data analysis, methods / techniques / models, interpretation, practical application), this could for example mean we focus not (only) on the data analysis and modelling side of things, but especially on the interpretation and practical application. In doing so, seizing the opportunities we face. As part of our modelling tasks will be executed by computers in the near future, this also means we turn a threat into an opportunity.