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# Interesting swans are blank, not black

**Summary**
Measuring risk is a risky business. The analysis rests on a host of assumptions, each of which can invalidate model outcomes and lead to the wrong decisions. For some risk types, such as operational risk and enterprise risk, it would appear that modelling is even beyond hope since there are an infinite number of interfering factors. A solution could be to step away from the attempt to create a probabilistic model, and to adopt a radical scenario approach. A recent publication discussing black and blank swans appears to support this notion.

**Dear reader,**
Risk managers in general, and operational risk managers in particular, are under scrutiny. What exactly do they contribute to the profitability, stability and well being of the bank and its stakeholders? Newspapers and the general public note that risk management was in place, and still major events happened. In some quarters, risk management is even blamed for the problems in today's banking. It is argued that risk management created a false sense of security.

A popular book that supports this view is *The Black Swan* by N. Taleb. He won applause by his insistence that unimaginable events[1] might have devastating consequences and that all attempts to harness such events in a model are futile at best and harmful when given too much credit. The book offered little comfort to risk managers, who were basically urged to simply give up.

Now, Elie Ayache has published a book, *The Blank Swan,* that takes up the challenge of providing an alternate approach. One that does not rely on probabilities to discuss uncertainty[2]. There are interesting lessons for risk managers in his approach.

**Doing business is not risky, it is uncertain**
In 'normal' circumstance, risk managers are good at predicting and pricing, e.g., credit card losses. Predicting and pricing losses for more complex products, e.g. CDOs or CDSs, is harder, and once the normal circumstances no longer apply, becomes a joke. The word normal is of course the culprit here. In technical terms, we can substitute normal with statistically well behaved. Once that assumption is dropped, risk managers are typically helpless. And as we should know by now, business is seldom statistically well behaved.

The central idea in *The Blank Swan* is that to understand business, probability is often a misleading notion. Traditional risk management, using notions of probability, assumes an enumerable universe of possible outcomes. Reality is very different. Uncertainty is inherent in doing business. The kind of uncertainty that does not develop according to a limited number of pre-set paths, but what is

[1] He mistakenly calls these events 'highly improbable', which undermines his entire thesis. If they are merely highly improbable, it would imply that a small but realistic probability can be associated with the event and that an underlying model exists and can be known. Taleb is often confused by his own ideas.
[2] In fact, the book discusses the nature of derivative markets, but can be narrowed down to uncertainty. Be aware that the book is written for philosophers. It makes more references to Heidegger and Deleuze than to Black and Scholes.

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sometimes called deep uncertainty[3]. Rather, business (and its associated risks) is much like the flow of history itself. In *The Black Swan*, Taleb despairs at the impossibility of knowing all the causes and associated probabilities and suggests to give up trying. In *The Blank Swan,* Ayache takes the next step and suggests to shift our focus to scenario analysis and the effects of various scenarios as the basis for analysis.

**Shift towards scenario analysis**

This focus on effects is extremely useful for hard-to-quantify risks, such as operational risk and enterprise risk. In practice, this would be done as follows:

A. Develop a set of scenarios
   Note that these scenarios are not expected to be exhaustive, mutually exclusive or even to be predictors. Thus, we should also resist the urge to assign probabilities to these scenarios. The best way to develop the scenarios is to agree on a focal point (e.g. the introduction of credit cards for dogs), to examine existing assumptions and beliefs coupled with a detailed analysis, such as SWOT (strengths, weaknesses, opportunities, and threats) or SEPT (social, economic, political, and technological trends).
B. Examine the effects of the various scenarios on the risk environment in question, e.g. liquidity or counterparty risk. These effects should be quantified, but it is not useful to associate probabilities with the scenarios.
C. A conservative view would take a sample of the more extreme scenarios as possible results and would base decisions based on the corresponding risk appetite.

Here is a simple example of such output for the topic: *The next thing in credit cards (CC)*

| Scenario | Assumptions | Effects | Impact on risk | Risk appetite |
|---|---|---|---|---|
| CC for dogs | Tied to owner's bank | Many disputes, revised CC limits | Loss of recourse | Up to 100 USD/m |
| The holiday CC | Valid for max 1 month | High costs, new client base | Reduced loss profiles | Up to 1,000 USD/m |

In this case, the risk appetite might accommodate the short term credit card and reject credit card implants for dogs. Note that probabilities do not play a major role in this decision making process.

**Conclusion**

In a well known passage in Hemingway's *The Sun Also Rises*, an entrepreneur explains how he went bankrupt, namely "Gradually and then suddenly." In a nutshell, this is the prediction problem facing all regulators, rating agencies, risk managers and business owners. The black swan which, by definition, radically changes contexts is beyond our ken. Refocusing on a blank swan, scenarios to be analysed, however, reduces the reliance on pure probabilistic models, and allows for a greater recognition of different environments and developments.

[3] A clear explanation can be found in Frank Knight's 1921 classic book *Risk, Uncertainty and Profit*. There, a distinction is made between Risk (where probabilities can be ascertained) and Uncertainty (where probabilities cannot be ascertained).