Finanzdelegation
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100 ans

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Swiss Federal Audit Office

125 Jahre

Risk prediction through knowledge information management

Prof. Jean-Yves Mercier, Geneva

Risk has become part and parcel of our daily lives, which does not mean that we always know how to deal with it. Could we really have predicted the collapse of Swissair? Are genetically modified organisms (GMOs) dangerous or is this just a knee-jerk reaction on the part of public opinion after the mad cow business? To what extent does the Government feel responsible for global warming? There are many issues devolving by default on politicians, and for which they are often ill equipped.

Perceived risk versus real risk

The difficulty with managing risks today lies in our propensity to evaluate the future using statistical models that are far too rational to be able to deal with the changes in society. Far fewer people die, after all, die of bovine spongiform encephalopathy (BSE) than are killed by road accidents or smoking. This of course does not stop the public from voicing its opinion far more stridently on mad cow disease than on the dangers of driving. A person's or group's perception of a risk has only very tenuous links with the concrete threat that such a risk represents for each individual.[1]

The difference between these two types of risk is not just linked to the unknown element in BSE but is also a direct consequence of what one intuitively expects of the State within our European civilisations. An earthquake or a flood are also unknowns but they are seen as fatalities. Conversely, the public will sit in judgment on those they have elected if homes have been allowed to be built in danger zones. In a way it would be seen as not having respected the order of things. This reaction would never have existed two centuries ago. Divine will explained everything. Today the human race is projecting itself towards the future and is trying to direct it. Risks are therefore no longer perceived as being external, what nature does to us, but as the result of human input, what we have done to nature. We are faced with the consequences of

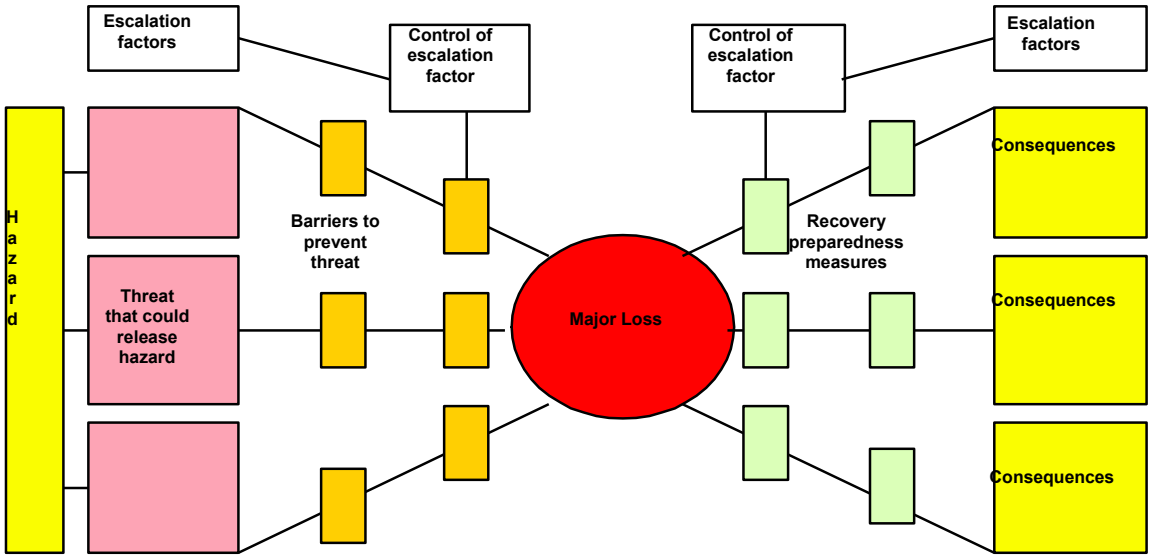
[1] Albert Serra, Ric de ruptura social: soms solidaris?, in : Observatori des Risc : Informe 2001, Institut d'Estudis de la Seguretat, Beta Editorial, Barcelona, 2001, pp. 214 - 233

our growing mastery of the living world. There are areas where we have succeeded in increasing uncertainty rather than reducing it.[2]

Hence there is a confusion in people's minds between the positive side of taking a risk, which is a sign of an entrepreneurial spirit, and the negative side of running a risk, going against natural law. If you take a risk, you are influencing your destiny but as this influence is not neutral, it engenders a sort of need to offset risk with security, i.e. it is a *calculated risk*. In most areas of life today people have to make a snap decision without always being able to check out the consequences of their choices or any changes in public opinion. Politics has been accused of not exercising due caution in connection with the contaminated blood supplies in Europe. At the same time, we in the Western world feel that the authorities have been too alarmist regarding the spread of AIDS even though the figures are actually a lot higher than ten years ago. Despite that, the perception of risk carries more weight in the public mind than its quantified reality. Risk management is a political matter involving social/ responsibility, not merely a matter of insurance.[3]

A lack of indicators in respect of perceived risks

The difficulty here is that, whereas a concrete risk is quantifiable in terms of frequency and severity, a perceived risk cannot be predicted using standard management scenarios. The consequences of potential events can be evaluated from sophisticated statistics based on models used by the major British and North American insurers.[4] These statistics however are based on the past, hence on known risks.



[2] Michel Serres, Hominescence, Le Pommier, Paris, 2001
[3] Anthony Giddens, Risk, The 1999-2000 lectures, http://www.lse.ac.uk/events/ LES Events, http://www.lse.ac.uk/Giddens/lectures.htm
[4] Cf. scenario below Jean-Paul Conoscente, Loss and control model, EQE, San Francisco, 1997

Conversely, the task of politics is to identify new risks. In response to road accidents, to come back to this example, competent organisations were set up long ago to take appropriate action. With BSE, GMOs or the collapse of Swissair there is no option but to attend to the most urgent needs first by means of a crisis management that, more often than not, is improvised. The immediate consequences are of a medical, financial or social nature with a backlash for politics of a loss of face and credibility that at best means a change in top management and at worst destabilises the whole governmental structure. It is essential therefore to know how to predict emerging risks.

Denial and fragmentation of responsibilities

To respond to the many people it comes into contact with, the public sector/ organises its internal communication flows in line with the groups within the sector/: hierarchical units, project groups, think tanks as well as statutory groups and ad hoc networks. These structures are built up around targets, methods, resources and constraints, or quite simply contacts. Whether or not this is the result of a conscious effort, it comes from a strategy to reduce and organise the complexity of the various exchanges within the institution. *Organisational complexity* is therefore the bedrock of the State's intelligence in that it is each system's own response to its conflicting needs to give information some sort of structure and at the same time allow it to circulate freely.[5]

But this natural progress has its drawbacks. Structure is mostly given in response to external or political constraints. Similarly, information flows are configured more or less officially on the basis of the internal contingencies of bureaucracies the world over, the bureaucratic phenomenon.[6] This structuring of information inhibits two expressions of deviation from the norm that are essential to its survival.

The first is individual initiative. There is no such thing as an event which, we find out later, has already been identified by a competent agent. The US government is about to make sweeping changes to the Federal Bureau of Investigation (FBI) merely on the evidence of agents who had warned about the risk of terrorist attacks before 11 September 2001. How can we fail to feel concerned when we know that the Government is only deploying its resources in a rather pettifogging sort of way and therefore only responds to known situations. We need to acknowledge that the institution/ is made up of a huge information network and can therefore no longer deny individual responsibility, the only way we have of being able to warn of a new risk. But as the Government cannot really aspire to becoming a network of entrepreneurs, it will have to find a way of pooling the thousands of individual alarm signals that it generates and then sift through them.[7]

The second point to make concerns decision-making. At times there are enough players who can access information on an emerging risk. At other times it is all the players combined who, by cross-checking the data to which they have access, could be alerted to new types of dangers. Organisational complexity entails an extreme fragmentation of the units to which

[5] Jean-Yves Mercier, Le pari de l'intelligence, Cahiers de l'ASO, Geneva, 2000
[6] Michel Crozier, Le phénomène bureaucratique, Seuil, Paris, 1966
[7] Alvin Toffler, Les nouveaux pouvoirs, Fayard, Paris, 1990

these players belong. In addition, the units do not correspond to one single hierarchy on account of the 'cascading' phenomenon. Belonging to different levels of the State fragments responsibilities. There is no longer any incentive to be socially/ responsible.[8] The fragmentation of administrative activities among discrete systems of an increasingly indistinct network shifts the entire responsibility for information co-ordination to the end of the production line, i.e. politics, which is a parlous state of affairs given a world so complex. Since organisational complexity is here to stay, the challenge is to find ways of cultivating a sense of responsibility when processing and transmitting information within the vast network of the public sector.

Risk prediction by activating/ the knowledge network

Information management is concerned with identifying alarm signals from the institution / establishment but sifting through these indicators and deciding what is relevant information is a question of intelligent information management, in other words, knowledge management. We need to make use of *knowledge management* in order to predict risks. We can see here what we can learn from this knowledge management movement.

For example, the creation of a risk observatory cell is a good start but does not go far enough. We still need to know how to activate available *knowledge networks*[9], which is a new type of management. The Government clearly needs to move on from simply taking stock of performance / service// processes and start thinking in terms of management spaces within which the various components of the network can interact. There are five sorts of space:[10]

- A space for taking stock and deciding on which direction to pursue
- A space for individual checking through of potential information
- A space for documenting/ information
- A space for the collective processing of indicators
  and
- A space for group decision-making.

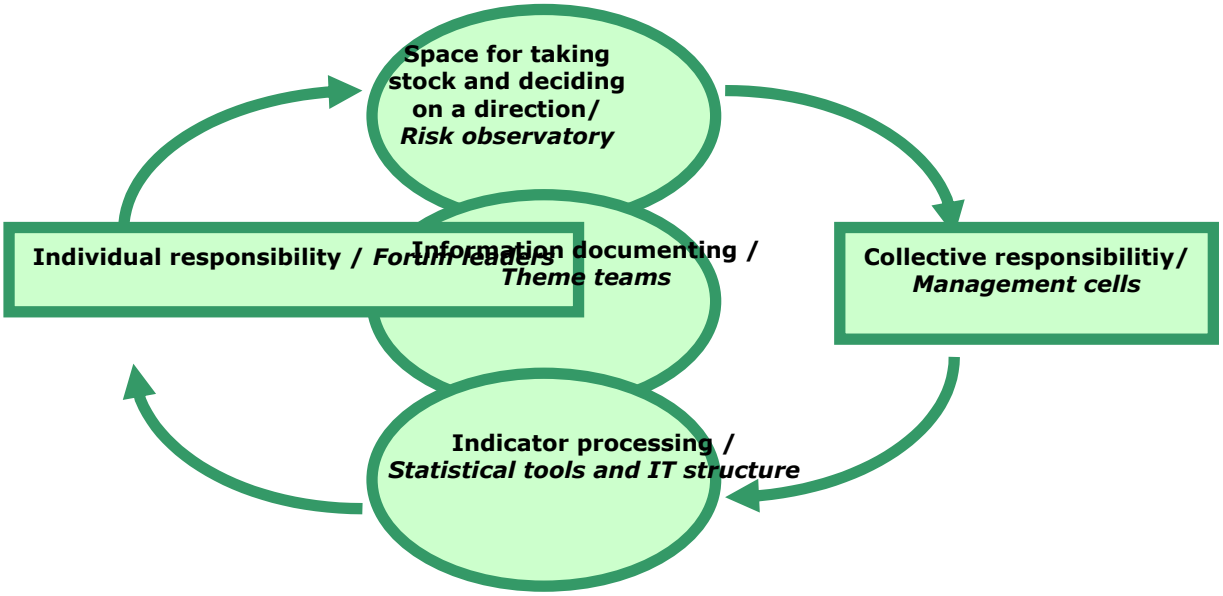
The ideal *space for taking stock and deciding on a direction* is a risk observatory which oversees the whole process, as exists elsewhere in Europe. Such an observatory acts as a horizontal body whose initial task is to identify any risks as seen by the establishment / institution and organise them into broad levels of concern. For example, the risk observatory in Catalonia has chosen to focus on transport, employment, environment, public health and social/ breakdown risks and risks linked to developments in the employment market. Once these directions are given the go-ahead by politics, the observatory then becomes a pilot entity. For the observatory to maintain its independent spirit/ it is important for it not to manage the various sectorial projects itself but to become and remain the special link between the grass-roots community and politics.

Information documenting/ teams will therefore be in place for each line of work. Ideally, these will be linked to the departments/ affected by the risks that the teams have to identify, such as

[8] Gilles Barouch, La décision en miettes, L'Harmattan, Paris, 1992
[9] Gilbert Probst et al., Managing knowledge, Wiley & Sons, New York, 1998
[10] Jean-Yves Mercier, Les réseaux du savoir au service de l'innovation, Cahiers de l'ASO, Geneva, 2000

public health. The teams work methodically using a series of standard knowledge management[11] questions that they explore in detail by identifying them with specialists working in and around the public institution / establishment: for instance, what are the emerging risks linked to developments in the workplace? What indicators alert us to their occurrence such as, in the case in question, the growing preponderance of social / interpersonal problems and psychological disorders over physical accidents at work? How do we categorise them when the link between work and psychosomatic problems is unclear? How can we analyse how relevant these are or work out what they cost? What method should we use to transmit the results? The results are constantly passed around the teams under the supervision of the risk observatory to encourage a mutual learning process about these new issues.

Similarly, groups of horizontal subject/department projects are being set up to organise the *collective processing of the information* gathered by each team. What common statistical tools are needed? What IT tools are needed to access and enhance data? And how can we structure the knowledge base? Recent experience shows that IT tools provide an extremely solid structure for the exchange of knowledge. The major consultancy firms have found this to be the case. If people are sharing standardised knowledge, it is easier to build up the body of knowledge by thinking upstream in accordance with rational and economic management ideals. As information is difficult to define in this instance, it would be better to construct an *a posteriori* tool based on situations encountered to define the various types of risks more clearly.



The next step is to nurture this until it, slowly but surely, becomes an institution. There is always a danger of creating an ideal artificial system. In stark contrast to the State, it is in the nature of human beings to be haphazard and disorganised in getting hold of information. The role of risk forum leaders is therefore to encourage *individual checking of potential information* by creating spaces for debate, through the Intranet or in workshops, for example. The aim is

[11] Gilbert Probst et al., op.cit., 1998

both to find recurrences of indicators which are as yet unknown, i.e. the *frequency* dimension, as in the case of psychological and behavioural risks, as well as indicators which are less common but which seem to relate to a subject with a great potential impact, the *severity* criterion, as in the case of BSE. Rather than creating an information filter, we are trying to channel the information to pre-empt the validation of any individual lack of responsibility. There are network leaders throughout the organisation focusing on groups of risks highlighted by the observatory.

Theme teams, knowledge processing project groups and risk forum leaders are tools which are only of mutual benefit when supervised by the observatory. As I said earlier, the observatory is not a competent body. It is just a facilitator of the information network and as such has the role of centralising issues likely to need risk processing and identifying the appropriate degree of responsibility. Lastly, with emerging risks there is a need to create *collective responsibility and decision-making spaces*. It is up to the observatory to provide politics with good configurations rather than to take on the entire burden of the unknown. Its real role is to draw up and allocate a budget to cells managing new risks which are still largely undefined but which have at least been identified.

From scapegoats to risk prediction

In the last analysis, the action I am proposing here is only a model for redefining responsibilities within the network of players making up the public sector. The complexity of the Government and its relations with its partners means that it can be more in touch with today's world and hence can afford to take risks. But this very complexity brings with it other risks which we now have to manage, like offshoots of those risks which we have brought under control in the past. We will not succeed in managing these risk by falling back on simple reflexes or by looking for scapegoats for each situation but by constantly redefining responsibilities in a large network of less common indicators in order to pre-empt tomorrow's risks and stay one step ahead.