7 Sensitivity analysis as practical modal realism

Introduction

A constant theme of this book is that the routine, daily work of management is overwhelmingly given over to managing and where possible reducing the threat of organisational entropy. In this chapter, the example is a 'Sensitivity Analysis', a widely used management tool which addresses the possibility, given certain outcomes, of a major increase of organisational entropy. The disorganisation in question would occur if there was significant variance between the way events actually turn out and the current provisions within the approved strategic, financial and operational plans of the organisation. Part of the work of addressing the possibility of such variance is the construction of counterfactual possible worlds and the assessment of their likely correspondence to current projections. On the basis of that assessment, management actions are formulated to address the issues which would arise should any of these possible worlds turn out to be the actual world. What senior managers are doing when they do this is grappling with the problems posed by what might be called the 'modal logic' of organisational possibility.[1]

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Possible worlds

The example we have chosen was prepared by the senior management team for a task group set up by the Board of Directors and is relatively straightforward.[2] This has the significant advantage of not requiring us to provide extensive contextual detail when describing how it works and hence allows us to concentrate on the *reasoning* which is going on.

Some distinctions

We start by marking a distinction between what we will term the 'attitudinal' and 'possible' worlds of the manager. The attitudinal world is the configuration of courses of action, social actors, institutionalised norms and values, material resources, external forces and whatnot with which the daily life of the manager is taken up and in the management of which he or she is immersed.

The attitudinal world is the *gestalt* of daily management which constitutes the reality of management experience. This gestalt is constituted by the matters which they take seriously as offering grounds for inference and action. A possible world is a narrowly constructed configuration of the attitudinal world – a configuration to which the manager turns for the specific management purpose of plan evaluation. As we keep stressing, the attitudinal world is permanently subject to the emergence of the unforeseen. This is precisely not the case in the construction of possible worlds. They are entirely foreseen and circumscribed worlds.[3]

It is important to be clear about the character of the reality we are examining. These worlds are 'real' not simply in W.I. Thomas's sense that if management believes they are real and acts on their belief then they will be real in their consequences. Within the managerial attitude, they are both doxastically real and metaphysically real in that each of them is a way the actual world could turn out to be. Indeed, it is stronger than that. One of them, or something akin to it, is what they are assuming the actual world will turn out to be. The point of constructing these worlds is to estimate the ~~degree~~ and ~~risk~~ of entropy likely to be present at any of them and what could or should be done to manage that risk. The reality of the risk is a direct derivative of the reality of the possible world. Each possible world has its risks. The question for managers is not whether these risks are real, for they all are, but how likely they are to eventuate. Just as David Lewis (1986), a leading figure in developing the logic of possible worlds, claimed his possible worlds were not fakes, fictions, or fantasies but real worlds constructed for important philosophical purposes, these possible worlds are possible real worlds constructed for important management purposes.

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Because the possible worlds we will discuss are financial, we need to make a further distinction, namely between management-constructed financial possible worlds and management-constructed financial descriptions of activities in the attitudinal world.[4] In Chapter 5, we described how a financial account provided projections of the state of an operational organisation at particular points in time (the Income & Expenditure account) and over a defined period (the Cash Flow). The numbers in the account represent the activities being carried out. Managers know the representational nature of these numbers, and considerable time and effort is spent evaluating the degree of verisimilitude between the reality of organisation as experienced and its reality as depicted in the financial description. Of course, since the conventional management mantra is to 'manage by the numbers', precisely what the numbers are telling you about the actual state of the organisation when they are at variance with experience, takes on considerable importance. In a Sensitivity Analysis, because all the representations are of possible future states, there is no possibility of divergence between experience and representation. For the purposes of the exercise, what the counterfactual numbers come to is what the possible organisation is to be. They are not abstractions from the actual world but constructions of very likely 'possible actual worlds'. Just like other financial descriptions, they are co-produced using formatted schedules as ordering devices designed to allow the assessment of the degree of organisational entropy associated with them.

Possible world pairings and their constitution

A Sensitivity Analysis is a planning support document, a familiar class of management objects. We treat the Sensitivity Analysis as a 'lebenswelt pair' which requires the closing of the praxeological gap between the documentary account and the grasping of the management implications of that account. This gap is closed by finding and following the instructions provided in the documentary account.

Planning support documents provide supplementary material, offer further explication and analysis, or try to head off particular counter-arguments raised within the course of a plan's development and approval process. The analysis itself consists of a number of pairings, the most obvious of which are the schedule and its text. These two are designed to be read together. In addition, jointly they are paired with and designed to be read against the set of formally approved strategic plans. In both pairings, the documents are mutually explicative. The analysis makes sense in the context of the plans; and the schedule makes sense in the context of the text. What the plans come to as plans (that is, their strategic robustness) and what the text is glossing are determined reciprocally. The familiar processes of mutual elaboration and specification are at work here. This is not to say each component could not be interrogated individually, but the elements of the analysis, and the analysis and the plans, are designed to be taken together.

The worlds of a Sensitivity Analysis are entirely financial.[5] The elements making them up (what in the jargon are called 'the drivers') are set out in the strategic plans. They consist in financial structures and their outcomes. These are:

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> A working operation defined as a bundle of costs (within the financial model) entailed by the 'delivery model' in the plan. In universities, elements of such models have become increasingly formalised as emphasis has been given to ensuring maintenance of standards in learning, teaching and assessment by the stipulation of activities to be carried out. Alongside the specified LTA activities are 'support' and 'infrastructure' activities which are included in the delivery model (and hence the financial model).
>
> A set of revenues (again within the financial model) generated by the delivery model through the organisation's interaction with its surrounding environment. The range of possible interactions is limited to the financial.
>
> A set of financial consequences (surplus/deficit and cash flow) resulting from the balance of costs and revenues associated with the operation of the delivery model.

The Sensitivity Analysis traces the effect of variations in the drivers upon the outputs. It attempts to estimate how sensitive the current objectives and targets might be (that is, what level of change would follow) to the variations in the drivers. Each world is a specifically constructed and worked through analysis of those effects.

There is a fourth pairing. The Sensitivity Analysis is also paired with a set of management actions elaborated in the text. The purpose of the analysis is to act as a stimulus for and rationalisation of management action in the conditional future tense. Should any of the actual possible worlds be realised, given what is known now, this is what would be done then. Plan, Sensitivity Analysis and putative actions make up an integrated architecture of management modal logic in the face of the contingent unfolding of possibilities.

The construction of possible worlds

Like the other management objects we have discussed, the Sensitivity Analysis was designed for a particular set of users undertaking a particular activity. It is purposeful in two senses. It is designed for a purpose, and to be used for a purpose. The envisaged users are the Board of Directors and Senior Managers. These groups are presumed to have a working knowledge of CU's objectives, values and motivations and how these are articulated in the strategic plans. This knowledge is what makes the mapping of the financial schedules and the text visible. Seeing the mapping involves tracking an array of reciprocal adjustments across both the financial model and the management model of the institution. The document glosses these adjustments and what they will entail. The financial model is the approved composition of revenues and delivery costs (revenue model and delivery model) required to achieve the current targets. The management model is the framework of operational arrangements needed to support the financial model. The financial model and the management model are taken as given background for the analysis. The pairings we just described provide a determination of the gap between possible future variance in costs and revenues on the one hand, and currently envisaged targets for future revenue on the other, and what will need to be put in place to manage the consequences of that variance. In some 'worlds', small adjustments will allow targets broadly to be retained. In others, targets will have to be re-fashioned or dispensed with entirely.

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So far, we have identified two required sets of background knowledge: the plan and the financial and operational models. In addition, an understanding of and trust in the normal operation of financial procedures is taken for granted. To enable real planning, these have to be trusted because they are already deeply embedded in the routines of the organisation's affairs. To change them would involve large-scale changes in the way the financial administration was carried out. This is not simply a matter of assuming the probity of the financial team or that nefarious financial practices are not and will not be used by managers. In management discussions these two possibilities are always set aside (unless . . .). Rather, what we are pointing to here is trust in the robustness of the accounting processes generating the numbers upon which the analysis is based. Despite the fact that the institution is not yet in operation, despite the fact that the numbers used are derived from procedures which are not all that transparent, despite the fact that some of the numbers have had to be extrapolated because no relevant values are available, despite all these things,

to interrogate the accounting infrastructure would have meant sacrificing the analysis. This was an outcome no one wanted. In addition, given the information which was available and usable, it was assumed that running the exercise in any other way would result in much the same outcomes. The aim was not to test the method or the financial processes, but the robustness of the projections which were embodied in the extant plans.

A third set of required background assumptions, perhaps as important as the others, is about the significance of what is not in the schedule. We have said each 'scenario' is not an exhaustive description of all the features of the possible world it describes. It is the world as defined for the analysis. The list of 'scenarios' is not exhaustive either. This is the set deemed managerially relevant for the presumed users. The horizon of managerial relevance is given by the filters set out in the top right- hand corner of the financial analysis. The filters act as an Occam's razor for possible worlds. The worlds excluded are those where CU produces a deficit significantly more than £1.5m together with a negative cash flow for more than three years. The Board and Senior Managers know such conditions would render CU financially unviable. Response to a world in which the institution was unviable would not be redirection and redesign but dissolution. At this point, planning for dissolution was not on anyone's agenda!

The filters provide the logic for the variances in the drivers. Holding all other revenues to target but reducing HEFCE income below 90% of target will make the institution unviable. There is no point in working through the case where HEFCE income falls to 85%. There will be no managed response other than 'exit'. The filter logic works for the other scenarios too. Holding other incomes at target and reducing the Strategic Health Authority income below 90% makes the institution marginally viable after three years. Once again, the effect of further reduction in the health contract is excluded. In all but three of the 'scenarios', cash flow is negative for more than three years. Whilst on its own this does not indicate 'unviability', it would pose serious management challenges. The logic of the 'scenarios' described expresses the boundaries of management manoeuvre in the face of its known risks. What no one can plan for, of course, are the unknown risks.

Just what is it everyone is assumed to know but disregards about these worlds? Take, for example, the composition of the 'Baseline'. When the analysis was constructed, CU was not fully operational. It had no functioning processes through which the elements of the model were delivered. Its operation was largely given over to planning in 'shadow mode' and so the figures used were reasoned and reasonable predictions, since there were no current inputs and output values to feed into the financial model. Everyone knows these numbers are projections. The documented Strategic Plan contains a sketch of the delivery model to be used, a sketch derived from the ratios of revenues to delivery costs contained in the financial plan within that strategy document. This sketch represents the outline of how it is hoped the organisation will run. The numbers in the Strategic Plan are assumptions about how resources and their associated costs in the predecessor organisations will translate into the CU operating model. Never mind the other scenarios, even the 'Baseline' is composed of future perfect numbers.

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The text of CEO087 provided alongside the Sensitivity Analysis sets out revisions in the numbers in response to events which have happened since the financial plan was initially constructed. These revisions imply correlated changes to the 'best guess' estimations for revenues. They too are revised versions of the targets set out in the plan and originally derived from information provided by the predecessor institutions.[6] These revisions reconfigure the management gestalt of the institution. The CU of the Sensitivity Analysis is not the CU of the Strategic Plan. It is different, but not entirely different. The work of doing the analysis is the discovery of what that difference is and what it means.

Here is the summary of the revisions set out in the circulated document CEO087.

> In reviewing the revenue projections, it was decided:
>
> 1. To retain HEFCE FTE growth targets at the levels set out in previous projections. These targets formed the basis of the bids to the various funding partners.
> 2. To include HEFCE Moderating Teaching and Widening Participation additional formula driven funds but only at current levels held by The College. Other formula-driven funds for CU will be identified in the Funding Letter from HEFCE to the universities.
> 3. To set the SHA contract at the level offered in the initial negotiations with the Health Authority. This represents a 20% reduction on the 2005/06 contract value. We fully expect this position to ease considerably. If the contract returns to the 2005/06 levels of recruitment, this will lift the SHA contract value by £400k in 2007/08, £800k in 2008/09, and £1.2m in 2009/10.
> 4. To assume that The College will achieve approval of its build programme before the deadline set in the contingency arrangements. If they do not, up to £10.2m may be released at the end of Phase 1 which could be used either to reduce CU's debt or to reduce future borrowing requirement.
>
> The following revisions were made to the modelling of costs:
>
> 1. Staffing levels and costs for 2007/08 were set by the requirements of the agreed TUPE transfer arrangements and full year costs for planned incremental posts.
> 2. Academic staff payroll costs were set to increase at 15% of incremental revenue.
> 3. Central services staff payroll costs were set to decrease year on year from 26% to 22% of income.
> 4. Central services non-pay costs were set at 6% of income.
> 5. Charges for services provided by partner Universities were set at 1.5% of income for 2008/09 onwards. The projection for 2007/08 is 1.3%.
> 6. Internal capital investment was set at 2.5% of income.
> 7. A two- year long-term loan repayment holiday was assumed.

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Each of the eleven points above is a header for a complex blend of sound information, plausible inferences, and tested and untested assumptions and aspirations. Given the institution's current status, there is no remedy for this. The users of the analysis know this though *without further detailed enquiry*, they do not know and cannot know precisely which bits of information are sound and which not, the bounds of plausibility on the inferences, which assumptions are tested and just how much of a gap there is between the resulting calculations and what could be defended. There and then, the only way of closing the gaps was by aspiration.

This does not mean the numbers are entirely mysterious. On the basis of their own experience, the Board and Senior Managers can make judgements about them. Take the first point: the growth in HEFCE FTE targets (ASNs). This is the main driver for growth in HEFCE revenue, and, as we have seen, is the central component of the financial plan. It was accepted that a combination of a drop in base HEFCE income and a drop in HEFCE FTE growth would be catastrophic.[7] The analysis does not have to say what everyone knows, and so assessment is only the impact of a shortfall on recruiting ASNs – that is, failing to grow at the rate proposed, not an actual reduction of the projected base for 2007/08. Achieving 90% of ASNs would leave the institution just about viable in terms of the balance of its costs and revenues. Eighty-five per cent would tip it over into unviability. Without significant cash injection, the institution would be insolvent and so, if it were to have a future, this would have to be completely different to the one currently envisaged. Equally, it was well known that there could be no clear definition of the costs of the TUPE transfer of staff. Some general principles had been agreed but the full cost would be understood only when the transfer actually occurred. What was known, though, was that there would be a significant increase in running costs. The figure of 15% functions as a conventional managerially reasonable number; not too low to raise eyebrows and not too high to raise concerns. Knowing where to pitch such estimations, especially in the face of a complete lack of experience of similar circumstances, is a delicate exercise in organisational acumen.

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The revised positions together with those costs which have been left as they were in the Strategic Plan, make up the financial and delivery model underpinning the analysis and expressed in the 'Baseline' surplus/deficit figure for 2007/08. This constructed actual is then projected for the following four years. This is the 'Baseline' possible world.

The 'Baseline' is a vector of financial consequences. So are the other 'scenarios'. Each is a counterfactual of the Baseline where one or more of the inputs has been varied. The worlds are ordered cumulatively as the variation in key revenues accumulate. Each world is what, as a financial entity, CU will turn out to be 'If HFCE income is 95% of target' or 'If HEFCE income is 95% of target and SHA income is 95% of target', etc. With these changes in inputs, the projected CU worlds are tracked as they evolve through the planning period.

There is one final feature of the schedule worth bringing out. The analysis tracks 'downside risk' only. This is unusual. Just as much as shortfalls, managers usually want to understand the risk of a 'success-disaster' consequent upon over-achievement of targets or goals. If CU recruited more students than could be

accommodated by its delivery model, this might imply significant increases in costs for space, teaching staff and other resources. Given this, excluding 'over-recruitment' to target is unsurprising though. No-one expected it to happen. The targets defined in the plan were exceedingly 'stretching' and were known to be so. Indeed, the Sensitivity Analysis was a response to the suggestion in some quarters they were too ambitious and hence the whole project was unlikely to be successful. Serious overachievement was not a world anyone wanted to devote time and energy planning for. Second, one of the premises of the plan is that what is currently felt to be a highly inefficient delivery model in the predecessor institutions will be significantly re-shaped as CU 'goes live'. At the global plan level, then, any marginal over-achievement is be used to 'mop up' resources that were currently under-utilised.[8]

Managing at possible worlds

The calculative logic of the Sensitivity Analysis produces ten possible CU worlds. In CEO087, these worlds are sifted and clumped to produce a deployable set of management responses. Those which the filter criteria render borderline or below are gathered into one set. The rest are grouped into four bundles 'similar enough' to enable coherent sets of management responses.

The borderline-and-below bundle is labelled 're-design', a term which implies the jettisoning of the current strategy and plan. Though it is a possible world, it is effectively set aside. Since they would almost certainly be the first casualties of any such outcome, the egological character of the management team's relevances means they are not going to 'waste time' thinking about what *someone else* would have to do if CU had to abandon its strategy. Some 'exit strategies' are gestured at, but that is all. The management team attends to what *its* problems will be.

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> **CU Re-design** (HEFCE or SHA below 90%)
>
> On this scenario, CU has major deficits in its first three years and negative cash flow extends into Phase 3. In short, the current CU strategy becomes unviable and would have to be completely re-designed. The most obvious way forward might be to integrate with one of the University partners, with The College, or even with another partner. Provided they were carried out in a carefully managed way, all would offer opportunities for significant reduction in support and overhead costs. Alternatively, the Board may seek an exit from HE altogether, though this may create major issues for stakeholders. Any disposal of the facilities on the Waterfront and College South site would have to be negotiated with funding partners.

The cumulative structure of the possible worlds is replicated in the cumulative logic of the responses to the scenarios. Actions to be taken build incrementally as the differences from the baseline increase. Since no one expects the divergence from the baseline to be exactly as laid out in any of the scenarios, showing a

'tuneable set' of responses reinforces the visibility of a rational and controlled management strategy capable of responding effectively to an array of possible outcomes. At each world, actions are taken to manage revenues and costs. Managed Start Up is the least divergent from 'Baseline'. Here priority is given to getting as close to target revenues as possible and to making compensating cuts to the delivery costs:

> **Managed Start Up** (Base Line; ASNs above 85% of target)
>
> As indicated above, on this, CU posts deficits in 2007/09 and 2008/09. Cash flow remains negative for the first three years. However, the assumed SHA contract and HEFCE formula-driven revenues are conservative/pessimistic. Nonetheless, the central goals of the 2007/08 and 2008/09 operational planning and implementation will be to focus energy and attention on, first, securing the revenue growth set out in the plans and, second, reducing and controlling costs in order to reduce the negative impact of any initial deficits.
>
> Four lines of action are underway to ensure that the *revenue targets* are achieved or improved upon:
>
> 1. As explained above, we expect to close the SHA contract at base levels closer to the 2005/06 levels than currently assumed in the planning numbers.
> 2. To ensure targets are met, significant emphasis is being placed upon curriculum development, extensive marketing and public relations development, as well as proactive student recruitment. In the past, there has been very little emphasis on explicit market development of this kind.
> 3. Faculty and network partner plans and resulting performance will be monitored for delivery of improved retention rates. At present, The College does not monitor cohort progression and so no historical information is available. Informal indications are that in some areas this offers a major opportunity.
> 4. We will seek accelerated value release from The Quay through earlier than planned student residence development.
>
> The immediate actions to be taken regarding *costs* are:
>
> 1. To profile staff ramp up over 2007/08 to ensure a break even position is achieved.
> 2. To reduce the planned staffing ramp up for 2007/09 with particular emphasis on central services staff.
> 3. To review other cost categories with a view to minimizing the deficit in 2008/09. Key tools in this will be the introduction of a cost allocation model as part of annual planning, the use of course costing processes in curriculum planning, extensive provision of fully costed campus services for The College, extensive use of the VLE for curriculum management and course delivery, and cost sharing of network points of presence with regional partners.

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4 The Board is aware that CU's start-up costs are currently planned to be significantly greater than originally envisaged. Examples of such costs are: the TPS pensions transfer, dual validation and accreditation, and VAT on partner-provided services. The last of these has led to the need to minimise rather than maximise the use of back office and IT services from the universities, and to plan carefully the provision of common campus services with The College. As part of planning for 2007/08, ways are being sought to ameliorate the impact of such unforeseen costs.

From this platform, the remaining three scenarios gradually pare out more and more cost as the world realises greater variation from the Baseline targets, goals and levels of activity. Here is what the team call 'Managed Re-Direction'.

> **Managed Re-direction** (HEFCE 95% or SHA 95%)
> Without major corrective management action, recruiting to 95% of the HEFCE or SHA targets over the 2007/10 period will pose significant challenges to the achievement of the CU strategy. Major deficits will be returned in the first two years and for the HEFCE stream in 2009/10 as well. Both produce an extended negative cash flow.
> In addition to the actions outlined for the Managed Start Up scenario, further significant cost reduction will be required as well as growth in alternative revenue streams. The most obvious is CPD. Capital planning for Phase 2 could be scaled back considerably and the development of The Quay for academic activity could be postponed. This would allow early release of greater value from The Quay. With these actions implemented, CU could continue to grow but on a much lower trajectory.

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In providing these sketches of actions-to-be-taken, CU's senior management team is demonstrating to the members of the task group that it has understood the significance of the variations in its financial drivers and can offer an array of plausible responses which could be implemented. Such responses would allow the organisation to keep 'broadly' to its current strategy. Here 'broadly' can be taken to mean something between 'somewhat close to original plan' to 'heading in approximately the same direction but at a much slower pace'.

The financial schedule articulates a logic of incremental disparity between envisaged possible worlds and the constructed actual world of the Baseline. The management responses follow that logic. The text and the numbers go together. In the text, the logic operates at two distinct levels: successively stronger ameliorating responses across the bundles, and reciprocal emphasis on revenue model and delivery model. Each response is designed as a balancing of feasible management actions in the face of greater and greater challenges. Key here is the recognisability of 'feasible'. Across the set of 'scenarios', what we have called the 'management gestalt' of CU undergoes significant transformations. The analysis is designed to ensure the Board is convinced that faced with any or even all of these transformations, the senior management team would have

envisaged, planned and implementable compensating lines of action. No miracles are required, no white knights, no *deus ex machina*. Given the premises of the Sensitivity Analysis, and in particular the application of Occam's razor on possible worlds, the logic of the management proposals maps onto the logic of the possible worlds. Building the analysis so that the Board could see the mapping is all the senior management team could hope to achieve. Merely to have claimed that a modified strategy could be delivered would not have been as convincing as the demonstration of what actions would need to be taken for it to be done. Finding that demonstration in the schedule and the text is the work of understanding the Sensitivity Analysis.

Conclusion

In a discussion of philosophical questions regarding the 'reality' of sub-atomic particles, Ian Hacking tells the following story. Talking with a friend about the measurement of changes of a charge on a niobium ball used to detect quarks, he was told if, as the charge changed in strength, it flips from positive to negative, that is an indication of the presence of free quarks. 'So,' asked Hacking, 'how do you change the charge?'

> 'Well, at that stage,' said my friend, 'we spray it with positrons to increase the charge or with electrons to decrease the charge.' From that day forth I've been a scientific realist. *So far as I'm concerned, if you can spray them then they are real.*
>
> (Hacking 1983: 23; emphasis in original)

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In this discussion, we have shown how managers at CU created a number of real possible worlds and designed responses to them No doubt some will query this, suggesting 'what-if' exercises generate nothing more than envisionments, speculations, or even phantasmagoria. That is not what they represent for the management team. For them, securing the plausibility of the analysis and their responses to it was a test of their managerial competence. Paraphrasing Hacking, we are inclined to say: 'If you think the future of the organisation (and hence your job) is on the line, if you can't show you can manage them, then possible worlds are real!' Showing that if they had to, they could manage the relevant possible worlds they had constructed was all the management team could do, and exactly what it did do.

Notes

1 That there might be structural similarities between the social organisation of this engaged managerial grappling and the social organisation of the engaged grapplings of professional philosophers struggling with the logical problems of possible world semantics (e.g. Lewis 1973, 1986, 2001) would be one interesting consequence of reversing the usual order of dependency and treating philosophising as itself a practical activity. See Liberman (2007).

2 The whole analysis is given in a document labelled 'CEO087'. The core financial section is set out in the Appendix to this chapter. Relevant excepts from the interpretations of the financials and the planned interventions contained in CEO087 are cited in the text.
3 Let's be clear here. We are not suggesting they are exhaustive (i.e. denumerably infinite) inventories of what will be the case. Rather, whatever properties the possible world is defined as exhibiting are all the properties that world needs to have. They constitute the-world-for-all-the-practical-purposes of planning.
4 This distinction, along with many such, brings out the ramified nature of the manager's attitudinal world.
5 This makes Sensitivity Analysis different to scenario analysis. In the latter, it is common to vary political, economic, social and technological conditions, as well as the financial aspects.
6 The extent to which the management team had or could get a good grip on the verisimilitude of all these figures was a constant concern for both the Board and the team itself – a problem of practical epistemics if ever there was one!
7 In Chapter 5, we discuss activities set in train when it was discovered just such a catastrophe had occurred.
8 Saying this does not mean that should such a state of affairs come to pass, its management would be easy. Resources are rarely where growth is.

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Appendix

CU Strategic Plan: Financial sensitivity analysis

Filters
deficit > £1.5m
negative cash flow > 3 years

Surplus/Deficit

Scenario					2007/08	2008/09	2009/10	2010/11	2011/12
Baseline					–132.00	–668.00	482.00	2066.00	3472.00
HEFCE 95%					–462.00	–1141.00	–325.00	853.00	1849.00
HEFCE 90%					–973.00	–1594.00	–1067.00	139.00	474.00
HEFCE 100%	SHA 95%				–419.00	–881.00	263.00	1842.00	3242.00
	SHA 90%				–707.00	–1093.00	44.00	1616.000	3012.00
HEFCE 95%	SHA 95%				–749.00	–1352.00	–542.00	672.00	1618.00
HEFCE 100%	SHA 100%	ASN 90%			–307.00	–947.00	144.00	1569.00	2824.00
		ASN 85%			–395.00	–1084.00	–21.00	1322.00	2501.00
HEFCE 100%	SHA 100%	ASN 100%	O/S 95%		–132.00	–683.00	450.00	2017.00	3405.00
			O/S 90%		–132.00	–702.00	424.00	1975.00	3340.00
HEFCE 100%	SHA 100%	ASN 100%	O/S 100%	R&E 75%	–173.00	–692.00	451.00	2024.00	3417.00

Cash Flow

Scenario					2007/08	2008/09	2009/10	2010/11	2011/12
Baseline					–32.00	–650.00	–622.00	262.00	2497.00
HEFCE 95%					–362.00	–1453.00	–2202.00	–2456.00	–1802.00
HEFCE 90%					–693.00	–2237.00	–3702.00	–4956.00	–5643.00
HEFCE 100%	SHA 95%				–319.00	–1150.00	–1335.00	–670.00	1339.00
	SHA 90%				–607.00	–1649.00	–2046.00	–1602.00	180.00
HEFCE 95%	SHA 95%				–649.00	–1951.00	–2911.00	–3380.00	–2954.00
HEFCE 100%	SHA 100%	ASN 90%			–207.00	–1104.00	–1402.00	–1001.00	602.00
		ASN 85%			–295.00	–1329.00	–1786.00	–1623.00	–333.00
HEFCE 100%	SHA 100%	ASN 100%	O/S 95%		–32.00	–665.00	–668.00	168.00	2338.00
			O/S 90%		–32.00	–684.00	–712.00	84.00	2190.00
HEFCE 100%	SHA 100%	ASN 100%	O/S 100%	R&E 75%	–73.00	–715.00	–713.00	135.00	2322.00

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