# Course and workshop notes assuming that *Introducing Systematic Simplicity to Manage Decisions* or *Enlightened Planning* are used as a part of the course or workshop foundation background and follow-up reading

Chris Chapman March 2021

Section 1 of these notes assume that you have read the book *Introducing Systematic Simplicity to Manage Decisions* and are familiar with the basic terminology and concepts if you want to implement the ideas in these notes. The remaining sections of these notes assume that you have read the book *Enlightened Planning* and are familiar with the implementation ideas explored in that book if you want to implement the ideas in sections 2 to 8 these notes, and you may have also read *Introducing Systematic Simplicity to Manage Decisions*. However, all eight sections of these notes should make reasonable sense at an overview level even if you are not familiar with either of these books, but you want to explore the possibly of using them as part of a course or workshop foundation background and follow-up reading, perhaps after reading one or both book samples from this website.

Section 1 of this note shares my views on in-house professional workshops for specific organisations based on the book *Introducing Systematic Simplicity to Manage Decisions* without any direct reference to the approaches discussed in later sections of these notes*.* It was first drafted in March 2021, for insertion as a new first section in a set of notes originally drafted in June 2019 when this website was being initially setup to support the book *Enlightened Planning* on its own.

Sections 2 to 6 of this note shares my current views on open and in-house professional courses and workshops plus related university courses and workshops based on the book *Enlightened Planning* which focus on:

 2. project risk management,

 3. project management,

 4. operations management,

 5. corporate management,

 6. operations, project and corporate management as a coherent and fully integrated set.

Section 7 considers very short workshops or presentations on any of these areas of focus using both books, with a focus on section 6 concerns and some revisiting of the section 1 discussion.

Section 8 provides a concluding overview. This includes a few summary comments related to adapting for your use the ‘Project Risk Management’ course PowerPoint slides provided separately on the Systematic Simplicity and Enlightened Planning website. They are discussed in terms of their use on a slide by slide basis in section 2, assuming you would probably want to drop or revise some, but the complete set is a suitable starting point. They are discussed at an overview level for the purposes addressed in sections 3 to 7. The majority of these slides could be used as a starting point for section 3 courses, perhaps half of them would be relevant to some section 4 to 6 courses, and a very limited selection could support the very short workshops or presentations discussed in section 7.

Section 1 is very brief, intended as an initiating overview which the discussion of section 7 can add to, revisiting the initial section 1 discussion in the light of all subsequent discussion.

Section 2 addresses a university course with the title ‘Project Risk Management’ which uses the book *Enlightened Planning* as the primary recommended reading. Section 2 also considers related professional training courses and workshops provided on an in-house or open basis which can use comparable slides with a different emphasis tailored to suit the participants and the length of the course or workshop. Providing a copy of *Enlightened Planning* as part of the professional course/workshop package of supporting materials would be normal practice. The nature of this university course has been driven by the evolution of the professional courses and workshops more than the other way round, and the section 2 discussion reflects this when directly relevant.

In both professional and university course and workshop contexts ‘Project Risk Management’, the mainstream term for this management area, is arguably both inappropriate and out-of-date. The reason is because it implies a focus which is usually far too narrow for reasons addressed by the section 2 discussion, elaborated in both books.

Section 2 discussion is focussed on the only area where I have current experience of using *Enlightened Planning* as the primary book for a comprehensive course, building on more than three decades of providing directly related professional courses and workshops on an open and in-house basis as well as university courses. Sections 3 to 7 successively build on preceding sections, making direct use of the experience underlying areas discussed earlier as well as experience underlying the areas being addressed directly. This approach to writing these notes means that section 2 is relatively long, sections 3 to 7 relatively short, but sections 1 to 7 as a whole are as helpful as I could make them.

Section 3 considers how a course or workshop on ‘project management’ could use a closely related set of slides and a very similar overall course structure, with a range of degrees of emphasise of other complementary material, ideally as part of a portfolio of other project management courses and workshops.

Sections 4 to 6 briefly outline the more radical changes needed to address courses or workshops with a focus on ‘operations management’, ‘corporate management’ and ‘operations, project and corporate management as a coherent and fully integrated set’.

Section 7 briefly addresses very short workshops/presentations on all of the above topics, with links back to the section 1 discussion.

Section 8 provides some concluding overview comments.

## Section 1 – The book *Introducing Systematic Simplicity to Manage Decisions* as a basis for in-house professional workshops for specific organisations

*Introducing Systematic Simplicity to Manage Decisions* was not written to be used as the basis for in-house professional workshops, or for open professional workshops, university courses or workshops. It was written for a very broad target audience, and I assumed that most readers would not have supporting workshops or lectures. However, I believe that *Introducing Systematic Simplicity to Manage Decisions* does provide the best available primary recommended background reading for any in-house professional workshop or presentation aimed at initiating a general understanding of the desirability and implications of that organisation adopting a systematic simplicity approach, and one of my clear secondary goals when writing it was meeting this need.

Figures from the book *Introducing Systematic Simplicity to Manage Decisions* which can be downloaded from the Systematic Simplicity and Enlightened Planning website might be printed for use with these notes, or accessed simultaneously.

Making use of the figures used in Part 1 of *Introducing Systematic Simplicity to Manage Decisions*, and building the body of your workshop around the discussion of these figures for chapters 1 to 5, is probably a reasonable base plan starting point for many organisations. The associated selection of topics and the emphasis and extensions will have to be tailored to the messages people will want to hear and warm to, or ideally be positively hooked by, plus the messages they need to hear which may be uncomfortable, balanced to suit the organisation and the particular subset of people being addressed.

As one example, a useful place to start for many organisations is a version of the chapter 1 discussion of minimum clarity estimates, the ABCs of target estimates, and modest increases in clarity linked to clarity efficiency. You will need Figures 1.1, 1.2 and 1.6, but 1.3, 1.4 and 1.5 might be optional choices. You may find it convenient to skip most of the chapters 2 and 3 discussion, but briefly introduce the idea of moving up the clarity efficient boundary portrayed by Figure 1.6 to achieve risk efficiency and then use Figure 2.1 to talk about the risk efficient boundary concept, then talk about BPs approach as discussed in chapter 3 in summary terms, before moving on to a focus on chapters 4 and 5, using Figures 4.1 and 5.1. This may be more than enough material to cover for an opening workshop/presentation, and a reasonably leisurely rate of progress with a lot of discussion can work much better than trying to do too much with most groups. However long this opening might take, it might be built on in a fairly wide variety of ways, depending on the organisation’s needs, and the time available in follow-on sessions, which may be contingent upon the earlier sessions.

## Section 2 – ‘Project Risk Management’ courses and workshops

This section is based on the 2020 version of my MSc level course ‘MANG6143 Project Risk Management’ at the University of Southampton, which was revised to a modest extent from the 2019 version to make use of *Enlightened Planning* as its main text. This section makes extensive reference to the slide set for this course, provided separately on the Systematic Simplicity and Enlightened Planning website. This course acquired the title ‘Project Risk Management’ about 20 years ago when it was first introduced, using the book *Project Risk Management: Processes, Techniques and Insights* (Chris Chapman and Stephen Ward, 1997, John Wiley & Sons). From 2012 until 2019 this course used the book *How to Manage Project Opportunity and Risk: Why* ***uncertainty*** *management can be a* ***much*** *better approach than* ***risk*** *management* (Chris Chapman and Stephen Ward, 2011, John Wiley & Sons), the retitled and significantly revised third edition of the 1997 *Project Risk Management* book.Initially this course was attended by about 25 students from two MSc programmes. In 2020 this course was taken by 250 students from about ten MSc programmes, some run by the Southampton Business School, some run by other Faculty of Social Sciences schools and Faculty of Engineering schools. In 2019 I decided not to renew my part-time teaching contract with the University when the current one expired in July 2020, and my Southampton Business School colleague Dr Mario Brito is now leading the course, having engaged in a transition sharing of the course delivery and assessment in 2020 as well as earlier involvement.

Because the 2020 MANG6143 slides reflect using the new *Enlightened Planning* book, they are different to the 2019 MANG6143 slides they were developed from. However, the changes from my 2019 course to the 2020 form are not dramatic – the course has been evolving in this direction since the early 2000s.

The same slides as the 2019 MANG6143 basis with a few relatively minor omissions and revisions have been used for recent annual IPMA (International Project Management Association) Advanced Training Workshops in Copenhagen titled ‘Managing Project Opportunity and Risk in New Ways’, a three day programme which has also been run for about 20 years, with an evolution pattern shared with MANG6143. Slightly shorter versions of the earlier IPMA/MANG6143 slides were used for two day open and in-house variants of the IPMA course which I provided on about a hundred occasions in London, Toronto, Huston, Chicago and about a dozen other locations in Europe. With minor modifications to the slides, but more significant delivery modifications, I think the 2020 MANG6143 course slides provided separately are a suitable starting point basis for both professional and university courses and workshops. Some discussion of example areas for modifications associated with professional groups rather than university students are provided in this section.

The *Enlightened Planning* book is appropriate mandatory reading for the 2020 MANG6143 Project Risk Management course for reasons explained in the revised course handbook which students see to guide their course choices. However, *Enlightened Planning* was not written with supporting courses in mind, it is not a textbook, and its use for reading which supports course presentations or lectures has to reflect this in ways which this section addresses. Some comments specific to professional courses are also included, and to a significant extent my university courses in this area have always been driven by my professional courses rather than the other way round.

With very good reason you may prefer course or workshop titles other than ‘Project Risk Management’ for courses or workshops comparable to my treatment of MANG6143. You will have to choose a title which reflects the way your version of the MANG6143 course integrates your view of project risk management with the rest of project management, addresses interdependences between project, operations and corporate management, and interprets all ‘risk’ management in terms of addressing opportunity as well as risk using an uncertainty management framework which embraces variability uncertainty, ambiguity uncertainty, capability-culture uncertainty and systemic uncertainty as well as event uncertainty. The IPMA course title ‘Managing Project Opportunity and Risk in New Ways’ is one possibility, but ‘Project Opportunity, Risk and Uncertainty Management’ is another, and the particular slant you decide to give a course you lead may suggest a wide range of further possibilities.

I am assuming that you will modify the MANG6143 slides provided separately to suit the nature of your audience and the messages that your approach to the *Enlightened Planning* concepts emphasises, as well as the length and other features of your course. Your modifications may be significant, but the slides provided should give you a useful starting place.

You will probably find it convenient to print the MANG6143 slides so you can refer to them while reading these notes if you are not just skim reading these notes, or print the notes but read the discussion of each slide that follows with the slides on your computer screen, or access the slides and notes simultaneously.

**Slide 1** obviously has to be tailored to your particular course or workshop, and the slide set as a whole should use your organisation’s name.

**Slide 2** provides the bullet points I find useful to open any course or workshop with. Modified to suit your concerns it may play a similar role.

I use the first bullet point to suggest all MANG6143 students will find it useful to see their participation in this course as a project, initially to clarify what they hope to achieve, later to clarify what they need to do. For professional courses with small numbers of participants I initiate a very brief discussion of what different members of the group each want to take away from the course, explaining that I want to ensure our joint understanding is aligned, treating the period we will all be working together as a project without saying so.

The fifth bullet point is used to explain where the case studies came from briefly, and how the case studies will be used. For MANG6143 I ask the students to spend 30-60 minutes working with a few colleagues on a ‘team’ response to each of the four parts of the Transcon case plus the Samdo case for discussion at the beginning of the lecture sessions in weeks 3, 4, 5, 6 and 7. This timing means they have 4 hours of lectures before they need to prepare for and then discuss Transcon part 1, a further 2 hours of lectures between subsequent case study discussions. I indicate we will discuss appropriate responses to the questions posed by the case study exercises for about 15 minutes at the beginning of these lecture sessions, using slides I will make available later, provided separately from the case study text the students are given access to at the outset of the course. For professional courses run about 8 hours per day for two consecutive days, I usually use a one part version of the Transcon case which does not break it into four parts after lunch on day 1, with the Samdo case used after lunch on day 2. Participants spend about an hour preparing a presentation for the one-part Transcon and the Samdo cases in teams of 5 to 10 people, depending on course numbers, preferably in separate syndicate rooms, starting whenever they have finished lunch, in the way IBM UK first used the Transcon case study. Each team gives a brief presentation to all the other teams, we discuss the differences, and I then provide a brief outline of my views using the slides provided separately. For the IPMA courses, which are run over three days with a short final day, I have experimented with the four part version of Transcon and a three part version, but settled on a two part version. Different professional course presenters will have different views on what works best for this kind of issue, as I discovered when working collaboratively with IPMA colleagues, who encouraged me to develop the multiple part treatment, and from whom I learned a great deal. My IPMA course was always one of about half a dozen different courses run concurrently, with considerable social interaction between all participants as well as direct collaboration by the presenters of different courses.

The other bullet points play fairly obvious roles, but it may be worth noting that MANG6143 students need to be encouraged to ensure they have access to a copy of the course book to read as the course progresses, while I would ensure that professional course participants are always given a copy as part of their course materials package to read later. Further, because the Transcon case is the basis of *Enlightened Planning* chapter 7, MANG6143 students need to be advised to leave reading chapter 7 until after they have used this case study, and professional course participants might be given comparable advice.

**Slide 3** bullet points provide an agenda for part 1. I simply explain this and let participants read the slide while making overview observations, a device used throughout this slide set.

**Slide 4** provides simple nominal basic definitions of the ‘uncertainty’, ‘risk’ and ‘opportunity’ concepts discussed a length in *Enlightened Planning* chapter 1. I think it is important to briefly outline the nature of these issues at this point, and take questions if participants are puzzled, but let participants read about the detail later.

**Slide 5** states definitions which I think need to be clear at this point, explaining briefly that the whole course is about clarifying what is involved in this ‘opportunity efficiency’ view of ‘best practice’.

**Slides 6 to 8** facilitatebriefly discussing the general nature of ‘projects’ adopted and seeing all management in terms of three interconnected areas: operations management, project management and corporate management, as elaborated in *Enlightened Planning* chapter 1.

**Slides 9 to 15** facilitate a more detailed discussion of the *Enlightened Planning* chapter 1 treatment of project lifecycle structures, drawing on a modified form of detail in tables taken from Chapman and Ward (2011). I do not think participants need to read the 2011 book to benefit from this sort of additional detail in the slides used for lecture/presentation purposes, an approach used frequently in this slide set.

**Slides 16 and 17** provide a basis for discussing the seven Ws framework, the second of the four frameworks associated with the four Fs concept.

**Slides 18 and 19** provide a basis for discussing the five portrayals of uncertainty elaborated in *Enlightened Planning* chapter 1, the composite nature of ‘sources of uncertainty’, and the nature of common practice ‘risk’ as events or conditions seen from this ‘five portrayals of uncertainty’ perspective.

**Slide 20** is a slide you may prefer to omit. I find it useful to distinguish the *Enlightened Planning* perspective from the Chapman and Ward (2011) perspective and lead into slide 21 concerns, but I can appreciate why some people might prefer to avoid bothering with it. It is one example of perhaps several dozen slides which I find useful, but understand why you may prefer to omit them, or use alternatives.

**Slide 21** provides a basis for discussing the role of third of the four Fs.

**Slide 22** is an agenda outline for the overview of selected aspects of *Enlightened Planning* chapters 3, 4 and 7 addressed by the following set of slides.

**Slides 23 to 25** provide a basis for discussing the minimum clarity approach to estimation, the basic implications of mandating a range estimate basis and eliminating point estimates, and some related aspects of the relationships between opportunity, risk and uncertainty.

**Slide 26** provides a basis for a very preliminary introduction to PIGs (probability-impact grids or graphs), in terms of how they compare to a minimum clarity approach from an enlightened planning perspective.

**Slides 27 to 29** provide a basis for a brief initial overview of the *Enlightened Planning* discussion of using decomposition of sources of uncertainty to enhance clarity and associated clarity efficiency, beginning with an explanation of the way BP decomposed sources of uncertainty for their North Sea projects in the E&D strategy stage as an example of a high clarity approach, and the Nichols approach to re-estimating the cost of Highways Agency projects in the concept strategy stage as an example of a modest clarity approach. The slide 29 efficient frontier view of clarity efficiency can then be discussed with the BP approach interpreted as a point like b1, the Highways Agency approach interpreted as a point like b2, and the minimum clarity approach interpreted as a point like ‘c’. This is different to the *Enlightened Planning* chapter 3 initial explanation of slide 29, and I think it complements the book’s approach in a useful way. Further, I think this is one useful example of simpler presentation approaches for issues discussed in much more detail in a different manner in the book which supports the presentations/lectures, a strategy adopted throughout.

**Slide 30** provides a basis foran initial discussion of risk efficiency in an efficient frontier framework using the same format as slide 29, explaining that slide 30 was the conceptual basis for slide 29, and outlining the Markowitz portfolio theory basis of slide 30.

**Slides 31 and 32** provide a basis for discussing risk efficiency and inefficiency plus related opportunity efficiency in a high clarity analysis context using the chapter 3 discussion of a BP example, including enlightened caution, enlightened gambles as explored with IBM UK, and enlightened prudence. I see these slides and this discussion at this point as well worth some detail and considerable emphasis. The need to seek risk efficiency, take risk that is bearable to increase expected reward, and avoid imprudent levels of risk, is central to what any course or presentation using *Enlightened Planning* has to be about.

**Slide 33** facilitates generalising the high clarity single attribute discussion associated with slides 31 and 32 and point b1 on slide 30 with a modest clarity portrayal of risk efficiency which is also a useful basis for discussing multiple attributes using the photocopier example discussed in *Enlightened Planning* chapter 4.

**Slide 34** employs the BCS example from Chapman and Ward (2011). It is useful to illustrate an even simpler framework for exploring important reasonably complex multiple attribute risk and opportunity concerns in a context involving a contractor bidding for work involving a new floor covering for a kitchen or bathroom. A central concern is persuading a customer to trust the contractor and use a ‘time and materials’ contract instead of insisting on a ‘fixed’ price contract which is actually conditional on assumptions which may not hold about the state of the floor under the current floor covering. There are wider implications as well as direct financial cost and profit concerns. There is no need for participants to read Chapman and Ward (2011) to understand the points made. However, you may prefer to avoid using the BCS example here and later, simply dropping it, or using another example.

**Slide 35** has also been taken from Chapman and Ward (2011). It provides a basis for introducing three generic processes for project risk management provided as guides by professional bodies which are relevant comparators for the SPPs (specific processes for projects) proposed in *Enlightened Planning*. These three guides are discussed in *Enlightened Planning* chapter 7, but not in terms of this level of process detail.

**Slides 36 to 38** are from *Enlightened Planning* chapter 7. They provide a basis for an initial discussion of the fourth member of the four Fs, building on the first three. This process framework and its role in the four Fs is central to what *Enlightened Planning* in a project planning context is about.

**Slide 39** provides a basis for an initial discussion of the universal process (UP) concept as explored in *Enlightened Planning* in chapters 1 and 2, further developed and illustrated in chapters 5 to 9. A brief exploration of the way it underlies the SPPs developed in chapter 7 is the focus.

**Slides 40 to 42** provide an outline agenda for the course a whole which has a useful form for finishing the part one presentation – a list of ten key shortcomings of many common practice project risk management processes which participants can read later to indicate where the course is going.

**Slide 43** is a basis for a brief review of part one, questions and discussion.

**Slide 44** initiates the part two course lecture/presentation discussion of the basic SPP. It provides a basis for discussing the strategy of the approach adopted. The intent of the approach taken to part two of the MANG6143 course is selective use of the approach adopted in Part II (chapters 5 to 11) of the Chapman and Ward (2011) book (focussed on the E&D (Execution and Delivery) strategy stage) blended with *Enlightened Planning* chapter 7 material in a way which enriches reading *Enlightened Planning* without requiring participants to read Chapman and Ward (2011). In summary the *Enlightened Planning* nine phase basic SPP structure and terminology is adopted, seeing ‘project risk management’ as a fully integrated aspect of ‘project management’ as a whole, but for some lecture purposes it is convenient to assume that an enlightened planning approach might not be adopted until the E&D strategy stage is reached. The book assumes this same basic SPP ought to be used from the outset, initially in the concept strategy stage using a simplified prototype variant of the E&D form to be used later.

**Slide 45** can be used to emphasise that the processes used to plan a project and associated uncertainty management advocated by an enlightened planning approach are not checklists to be followed by rote. They need to be viewed as an interdependent set of guides to be used for higher order project planning and management associated with the processes used for each specific project, a ‘planning the planning’ process which has strong capability demands in the capability-culture sense.

**Slide 46** can be used to explain that if those involved are using an enlightened planning approach for the first time, they will need a more detailed analysis approach than those who are highly experienced, because they will be less capable of judging which shortcuts will work and which will not in this particular context. This implies going down a learning curve is important, and where an organisation is on this learning curve is a determining factor or driver when choosing an appropriate approach. This idea can be illustrated by explaining that BP took about 6 months for their first E&D strategy stage assessment of an offshore North Sea project using a prototype basic SPP, but they were taking about 6 weeks to do comparable studies within a year or two. It is related to the idea that an understanding of what a high clarity approach can achieve is comparable to useful theory to be used to choose low clarity approaches suitable for the context, but making the right choices in practice involves craft as well as science, and craft skills are acquired via experience. This lies behind the idea that it is useful to employ high clarity BP examples to explain what is involved initially throughout part two of this course, then discuss related lower clarity examples.

**Slide 47** can be used to indicate that part two of the course will now consider all nine phases of the basic SPP in sequence, one at a time. For some purposes it is useful to see the last two phases as ‘quantitative’ analysis building on earlier ‘qualitative’ analysis, with the first two phases focussed on providing the ‘basis of analysis’ for the following seven phases.

**Slides 48 and 49** initiate discussion of the ‘capture the context’ phase. This ‘capture the context’ phase is directly comparable to the ‘define the project’ phase in Chapman and Ward (2011) terminology if ‘project risk management’ using the basic SPP is not initiated until the E&D strategy stage. However, if enlightened planning is initiated at the beginning of the concept strategy stage as recommended in Chapman and Ward (2011) and assumed to be the adopted approach in *Enlightened Planning*, there are no earlier concept strategy stage plus DOT strategy stage or preliminary E&D strategy base plans to build on. For MANG6143 purposes it is useful to discuss prototype basic SPP use by BP in the E&D strategy stage initially, then explain the evolution towards the WSL discussion which is the focus in *Enlightened Planning*.Slide 48 facilitates exploring ideas like many project management staff start to think about defining a project in the E&D strategy stage in terms of an activity structure, and what those activities involve, visualising more clarity in terms of a more detailed activity structure. However, even in the E&D strategy stage a very simple activity structure can be much more clarity efficient than most current practice, to facilitate more effective decomposition of the associated sources of uncertainty and responses to those sources. Further, in all strategy stages there is a need to move away from a traditional ‘task’ orientation towards an ‘objectives’ orientation, and formally define the project and its context in terms of all seven Ws and all of their associated plans plus their goals-plans relationships within a lifecycle structure. The role of the seven Ws framework portrayed by slide 49 is central to understanding the way the different strategy progress stages have to work together in a coordinated manner within the strategy gateway stage structure, as discussed in *Enlightened Planning* chapter 7, and this is a good point in the part two course development to outline these ideas.

**Slide 50** is used in Chapman and Ward (2011) chapter 5 in a ‘capture the project’ role. It is useful to elaborate the treatment of this phase in *Enlightened Planning* chapter 7. It is a useful framework for explaining how in the E&D strategy stage BP used a prototype version of the basic SPP to produce summary documents which clarified the overall project lifecycle structure being used and the current position in that lifecycle, other key project context issues plus all other relevant seven Ws concerns, and the nature of the simple (20-50) activities structure (with an aspirational target of 20) used to portray a billion £ project. This can then be linked to the *Enlightened Planning* discussion of the WSL example in terms of the even simpler plan structures needed for all seven Ws in the concept strategy stage.

**Slide 51** is a basis for making the point that the four tasks noted which are not portrayed on slide 50 are common to all nine phases and they are all crucial. This can be generalised to emphasise the immense value of capturing with clarity in a way everybody involved can access and understand this kind of information, plus its ongoing value when other comparable projects are of interest. BP and all other earlier users of prototype basic SPP approaches saw this as a major benefit of their variants of this approach, and I think it is worth significant emphasis as an important capability-culture asset. This leads into slide 52.

**Slide 52** provides a basis for discussing the importance of making the best use of all available capability-culture assets like skills and knowledge and dealing with capability-culture liabilities effectively. It also opens the door to broader discussions about building capability-culture asset sets as an investment, a topic you may want to return to later.

**Slide 53** facilitates revisiting the simple BCS example used earlier to illustrate a very simple context in the concept strategy stage, then explore the WSL example used throughout *Enlightened Planning* chapter 7. I think the WSL example’s illustration of the effect of the Net Present Value discounting issues on all stages following the concept strategy progress stage is usefully explored very briefly here, leaving the details of the recommended approach to discounted cash flow concerns for later discussion in part three of the course.

**Slides 54 and 55** initiate discussion of the ‘select and focus the process’ phase. Slide 54 facilitates starting to develop the idea that for an organisation with significant capability-culture enlightened planning assets this phase may be a quite sophisticated ‘planning the planning’ process. For any organisation this phase requires leadership by someone with requisite process design skills, but while this course will provide an overview understanding of what this involves as it progresses, only a few key aspects are worth exploring now. This phase is comparable to the ‘focus the process’ phase discussed in Chapman and Ward (2011) chapter 6, although it has to deal with choosing appropriate approaches to basic project planning as well as ‘project risk management’ concerns. Slide 55 uses this comparability and a figure from chapter 6 of Chapman and Ward (2011) to provide a basis for discussing some basic issues like understanding the lifecycle concerns for the *process* being planned (as distinct from the *project* being planned). For example, ‘will the process being planned be used extensively, making investment in a careful process development effort appropriate, or is this a simple single application case?’ Another key issue is ‘on whose behalf is the process being used, and what are the process objectives?’ Top-down process design at a strategic level can be discussed using as an example an occasion when a board level meeting with UK Nirex directors was used to shape an understanding of what they thought the key issues to be addressed were. I could then use this to plan an appropriate analysis of the ‘project’ which was central to the UK Nirex organisation at that time. Following this ‘scope the process’ discussion to agree a strategic plan for the process to be employed, ‘plan the process’ at a tactical level can be discussed briefly, exploring what form of modelling and associated analysis looks appropriate, what resources are desirable and available, and what time frame is available. Sometimes the time and resources available drive a ‘design to cost’ approach.

**Slide 56** provides a basis for discussing a list of process objectives which *may* be relevant, with a view to each application of the basic SPP selecting those objectives relevant to that particular project and its lifecycle position. In my view the first six objectives are always relevant, and the next four are important options to consider, but senior management discussion of all these possibilities with a good understanding of what is involved is important, clearly communicating the agreed position. The last two are illustrated with examples drawn from a Gulf Canada study for the Hibernia project and an Acres strategy discussed in *Enlightened Planning*. The Hibernia study also illustrates a variant of the focus phase, when after several days of talking to a range of Gulf staff in the process of ‘scoping the process’ for assessing the cost of a proposed offshore gravity structure to produce oil I came to the conclusion that the Gulf staff I had been talking to had an understanding of the issues which implied an important change in the questions being addressed was needed.

**Slide 57** facilitates discussing concerns which need attention in this phase that are often not addressed.

**Slide 58** is the basis for finishing the discussion of this phase by briefly exploring several examples. The BCS example is useful as a very simple example of a predesigned process based on a laptop mounted spreadsheet application to be used for a discussion with a potential client by the contractor to indicate a preliminary view of a fixed price if that is what a customer has requested, subject to conditions (assumptions) like the condition of the floor under the current floor covering, plus the lower expected cost and anticipated variability if a time and materials contract is used. The Highways Agency example as explored in *Enlightened Planning* chapter 7 is a more sophisticated example, but still relatively simple and predesigned for simplicity to demonstrate the level of bias in current estimates and why a very different approach to all cost estimating plus underlying planning would be more clarity efficient and opportunity efficient. The National Power example as explored briefly in *Enlightened Planning* is more sophisticated still. The WSL example, which is explored in more depth in *Enlightened Planning*, can be used to finish this discussion.

**Slides 59 and 60** initiate discussion of the ‘create and enhance plans’ phase and the ‘shape base plans using models of some key issues’ phase. These two phases are explored in *Enlightened Planning* chapter 7. They involve a key generalisation of the Chapman and Ward (2011) PUMP approach, treating all of the ambiguity uncertainty resolved by basic project planning prior to any contingency planning as central to the basic SPP. Slide 59 provides an initial overview of the ‘create and enhance plans’ phase, and suggests starting to understand what is involved is usefully facilitated by considering some of the issues addressed by the modelling aspects of some very simple approaches to the following phase. For example, an activity (task) planning structure for a project’s base plans is needed from the concept strategy stage onwards, but as discussed in *Enlightened Planning* chapter 7, the level of detail required in the concept strategy stage is minimal relative to what is usually employed later for E&D strategy stage planning and later tactical planning, which means that basic activity-on-arrow network models assuming finish-to-start precedence relationships as initially used for CPM and PERT modelling are not flexible enough – a much more general treatment of precedence relationships is required. When working with BP in the E&D strategy stage I quickly found it was essential to use precedence diagrams based on activity-on-node representations, which could be used to portray overlaps which might be uncertain, start-to-start and finish-to-finish precedence relationships, and other generalisations. The generality of this approach is absolutely essential in the concept strategy stage. I limit my MANG6143 treatment of these two phases to slides 59 and 60 plus the use of slides 61 and 62 to discuss *Enlightened Planning* chapter 7 examples plus slide 63 to generalise, but you might want to develop this discussion considerably.

**Slide 61**, taken from *Enlightened Planning* chapter 7, is a convenient basis for discussing precedence diagrams generally, elaborating the way it is used in this context in the book when discussing the need to seek a general framework for thinking about activity precedence relationships.

**Slide 62**,also taken from *Enlightened Planning* chapter 7, is a useful basis for discussing a very simple project duration-cost trade-off model directly comparable to the chapter 5 economic order quantity model, and the wide range of generalisations in the project management literature, including models accommodating different activity structures associated with different technology choices. The purpose is outlining the significant complexity involved, which is all part of the ambiguity uncertainty which needs to be managed at this point in the process.

**Slide 63** can be used to explain what the basic SPP might have addressed in the concept strategy stage and the DOT strategy stage if the BP project managers associated with the E&D strategy stage discussions had a remit which included earlier project lifecycle involvement in terms of these two phases as well as the rest of the process. This can then be linked to the WSL discussion in *Enlightened Planning* chapter 7.

**Slides 64 to 66** initiate discussion of the ‘identify *all* relevant sources, responses and conditions’ phase. Slides 64 and 66 provide a basis for an introduction and conclusion to an extensive discussion based on slide 65, taken from Chapman and Ward (2011) chapter 7. *Enlightened Planning* chapters 3 and 4 as well as chapter 7 are useful background to explaining the basic ideas involved using slide 65, but you may find the approach to discussing the BP examples in Chapman and Ward (2011) chapter 7 is also useful. Drawing on the *Enlightened Planning* chapter 3 approach I start with the issue of beginning with the highest priority concerns – the most important source of uncertainty in the activity of greatest concern – weather during pipelaying in my first live study for BP, the Magnus project. I explain that separating weather as a source of uncertainty in month by month rate of progress Markov process framework let the project planning team address a key source of progress variability using very good monthly wave height data for the sea areas in question, and see what weather would do to their plans given different lay barge capability assumptions and different assumed start dates. I then explain wet buckles as the next key source of uncertainty they addressed as a separate source. I explain dry buckles as a minor problem associated with a residual of all identified and unidentified minor concerns not worth separate treatment, with in this case half a dozen or so further examples worth explicit identification and separate treatment. The conceptual difference between this list of sources and a common practice risk list is explained and emphasised. To illustrate the treatment of primary responses I use wet buckles as an example. To illustrate secondary sources, I use the pig sent through the pipe to dewater it during the repair of a wet buckle getting stuck, with a tertiary risk if the air pressure is turned up to pop it through. I explain most of the time it is not worth getting into this much detail, but this may mean that comparable decision trees embedded in probability trees are implicit ambiguity uncertainty structures which are not independent of other sources of uncertainty and aspects of the overall plan. For example, a discussion with BP of this example in terms of possible loss of pipe leading to ordering more than what they expected to use led to suggesting a strategy of common pipe types so a surplus from one project could be used on the next project. Discussing this with Stat Oil triggered wider standardisation policy developments. As later discussions will clarify, this kind of understanding of uncertainty is not limited to activity structures – it can be used in other kinds of plans within the seven Ws structure.

**Slide 67** is a useful summary of generic response types from Chapman and Ward (2011) which I review with illustrative examples. Using it at this point makes it clear that understanding responses is a crucial part of understanding uncertainty, and the importance of preventative as well as reactive responses, with a degree of prior preparation required for many reactive responses.

**Slide 68** facilitates moving away from the BP examples into very different illustrative contexts discussed in *Enlightened Planning* and in some cases explored in very introductory terms using slides 69 to72.

**Slide 69** is worth using at this point as an example of a simple but effective decomposition structure for all the uncertainty associated with the construction of a motorway for concept strategy stage assessment considering just three uncertainty component sources specific to any particular motorway, with a fourth uncertainty component source associated with EU rules and motorway quality policy decisions affecting all motorways, a fifth component associated with inflation. This Highways Agency example and the figure used to portray the first three sources is discussed in *Enlightened Planning* chapter 7 in these terms. The relatively large contributions of sources 1 and 3 explain the bias associated with earlier estimates and their common practice basis. The relatively small contribution of source 2 explains part of the clarity inefficiency of a common practice risk list approach. These issues are worth developing, and this discussion sets up discussion of slides 70 to 73.

**Slides 70 to 73** are discussed in *Enlightened Planning* in chapters 7 and 4 in ways which can be usefully developed here.

**Slides 74 and 75** are adapted from Chapman and Ward (2011) chapter 7, and they provide a useful basis for finishing the discussion of this phase. If course participants are interested in reading any of Chapman and Ward (2011), chapters 7 to 11 are especially worth attention, because they develop detail about PUMP phases which are very closely related to basic SPP phases. Course presenters using these slides will also find these chapters particularly relevant in terms of providing detail which *Enlightened Planning* omits.

**Slides 76 and 77** initiate discussion of the ‘structure *all* uncertainty’ phase. Chapman and Ward (2011) chapter 8 is the source of slide 77 and provides more detail. The role of general responses as well as specific responses is a central issue for this phase, developed in *Enlightened Planning*, including the National Power example which I use here.

**Slides 78 to 80** facilitate using and building on the *Enlightened Planning* chapter 4 discussion of employing effective portrayals of source-response structures. I think the slide 78 format is very powerful if reasonably high clarity models are of interest, and a key aspect of all good high clarity practice which is also useful as a useful underlying conceptual framework when lower clarity approaches are adopted. Slide 79 discusses key links with alternatives, usefully discussed at this point for several reasons, demonstrating generality and flexibility being one of them. Slide 80 relates to a Chapman and Ward (2011) chapter 8 discussion of a ‘forensic risk management’ study addressing which party was responsible for a cost overrun in the cost of rolling stock for the Channel Tunnel which facilitates discussion of complex feedback loops and inappropriate contracting approaches relevant to the discussion of the next phase initiated by the next slide.

**Slides 81 and 82** are the only slides I use to discuss the ‘clarify ownership’ phase in fairly brief terms. The way lifecycle position affects the concerns addressed is the focus of slide 81. I start with a discussion of the corporate approach to risk ownership at the outset of the lifecycle of the kind of projects being considered. The BP approach in the 1970s and early 80s is a good example of an organisation very successfully adopting a strategy of owning and managing offshore North Sea project risk directly on the grounds this was best corporate strategy position because they could afford to take the risk (sometimes using joint ventures with other energy majors) while their contractors could not, and they were the most capable party to manage it. They later moved into fixed price contracts which arguably was part of changes that led to their 2010 Gulf of Mexico disaster, with a current cost estimate of 60 billion US$. The UK MoD is a good example of an organisation that adopted a policy of giving risk to their contractors as far as possible in most cases, with some notable major failures as a direct consequence, and some notable successful exceptions to the usual cost increase engineering by their contractors. Work I did with UK Nirex is a good example of a mid-strategic planning stage assessment of work package structuring to try to contain risks within contract packages to make use of multiple relatively small local contractors for political reasons. The WSL discussion in *Enlightened Planning* chapter 7 can be used as a basis for further discussion which could be quite extensive, especially if you explore some of the *Enlightened Planning* chapter 11 discussion. This is an important area, and it is one you might want to expand on. Slide 82 taken from Chapman and Ward (2011) chapter 9 can be used to simply point out the need for overall strategic planning of the kind associated with the WSL discussion followed by detailed tactical planning of individual contracts, being very careful about ‘the devil in the detail’.

**Slide 83** provides a concluding discussion for the ‘qualitative’ phases on the first pass through the process, prior to discussing the last two phases, which introduce ‘quantitative’ analysis of some sources of uncertainty. Interpretation of project level concerns plus process level concerns in both quantitative and qualitative terms becomes the concern in these last two phases, building on all of the earlier phases.

**Slides 84 and 85** are a useful basis for discussing the relationship between alternative approaches to objective probabilities and the role of objective probabilities in the assessment of subjective probabilities. You may prefer to skip my five-minute use of the month of birth exercise if a professional course is involved (as I do), or if you have a better way into these issues for university students. Most students quickly see 1/12 or 30/365 as a reasonable axiomatic objective probability estimate, then the scope for variability about this expected outcome, some of this variability dependent upon class size. Students are often surprised by the actual outcome when those with birthdays in June raise their hand when asked to do so at the end of the exercise, when the outcome is not close to the anticipated 1/12. The first two examples from practice build on BP examples used earlier, and the three further examples are explored in *Enlightened Planning*. The sequence of these five practical examples illustrates successively increasing levels of difficulty associated with using ‘objective’ data.

**Slides 86 and 87** initiate discussion of the ‘quantify *some* uncertainty’ phase, making summary statements about issues which I outline and discuss briefly.

**Slides 88 to 98** have been retained from my 2019 MANG6143 slides because they provide a useful basis for explaining the historical evolution process from my 1974-5 work with Acres on two Canadian projects discussed in *Enlightened Planning* through the 1975-83 BP work including software development to the *Enlightened Planning* explanation of the histogram and tree (HAT) approach now advocated. You may prefer to go directly to slides 99, 100 and 101, then draw on the *Enlightened Planning* chapter 3 discussion, perhaps with other intermediate slides and discussion.

**Slide 99** is central to the chapter 10 discussion in Chapman and Ward (2011), which you may find useful to clarify your own understanding, building on the *Enlightened Planning* discussion of this phase. The first point that I emphasise here is the importance of ordering the sources addressed to begin with the ones that currently seem to matter most in the area of the plans being addressed that seems to matter most – like weather in the pipelaying context discussed earlier if duration uncertainty is driving cost uncertainty and duration plus related cost uncertainty in the E&D strategy stage is the current focus. The next point is asking the question ‘is it useful to quantify this source, or would treatment as a condition be more appropriate?’ On a first pass using a low clarity approach to size the uncertainty is often sensible, but later refining or restructuring a source confirmed as important may be crucial. It is always important to move on to the evaluate phase for a very small set of sources before adding further sources to the set being analysed, gradually building up understanding of closely related sources and associated responses within activities, then within closely related activities. It is crucial to avoid quantification of all the sources and then evaluation of all the sources using a single Monte Carlo simulation run.

**Slide 100** repeats slide 24 used earlier to facilitate the start of an overview discussion of the rationale for the HAT approach developed in *Enlightened Planning* chapter 3 and employed in following chapters.

**Slide 101** in conjunction with slide 100 can be used as a basis for exploring as much of the *Enlightened Planning* chapter 3 discussion of the figure this slide is based on and alternative modest additions to clarity as you wish to at this point.

**Slides 102 and 103** facilitate first discussing multiple scenarios in the slide 101 sense as explored in *Enlightened Planning* chapter 3 and chapter 9, then using a common interval approach within a single or multiple scenario approach, as introduced in terms of numerical examples in chapter 3 and used throughout the book. The issue is making all participants reasonably comfortable with the basic rationale of the HAT approach, letting them avoid getting into the details if that is their preference, but indicating in outline why this approach is more flexible and more effective than most common practice approaches based on simulation using specific distribution assumptions which may or may not be appropriate.

**Slides 104 and 105** are used at this point to discuss why an *Enlightened Planning* perspective suggests PIGs should be eliminated from all risk and uncertainty management toolsets for the reasons developed in chapter 7, but the practical difficulties course participants may have in terms of dealing with others who disagree.

**Slide 106** facilitates a summary discussion of the quantify phase, leading into the evaluate phase.

**Slide 107** discussion can start by building on the idea that as soon as a few key sources of uncertainty have been quantified it may be appropriate to evaluate this subset and think about issues like the possible need for data or an initial assessment of specific response strategies. To combine any two sources dependency has to be addressed, and dependence structures need very careful assessment at this point in the analysis, as discussed in *Enlightened Planning* chapter 7. Chapman and Ward (2011) chapter 11 is the source of this slide and useful further reading for course participants who would like more detail.

**Slide 108** used again at this point is a useful illustrative example of some of the detail. For example, source 1 involves two sources at the outset of the activity which are mutually exclusive, a good reason for combining them and putting them first. Source 2 involves two further sources which are both involved throughout, with some construction problems perhaps being weather dependent, but combining them suggested their joint effect was negligible, a good reason for combining them and putting them second. Source 3 is a little bit bigger than source 2 in its effect, but it was still assumed to have a fairly limited effect. Source 4 follows because its effect is bigger. What matters most is 5 and 6, with 6 following 5 because it was thought to be the most appropriate to deal with first in terms of discussions with those involved in the award of the contract, along with the data sought to verify source 5 which confirmed its size but revised views on dealing with it. As discussed in *Enlightened Planning* in chapters 4 and 7, The general issue here is ‘sensitivity diagrams’ are a key evaluate phase tool, used at a wide range of levels during the building of understanding, later for quite different presentation purposes. If analysis does not use sensitivity diagrams, from an *Enlightened Planning* perspective the kind of structured understanding of uncertainty which is needed is missing, and the analysis is defective (clarity inefficient) in this sense, a point which needs emphasis here.

**Slides 109 and 110** have not been used earlier in this slide set, both come from Chapman and Ward (2011), and you may prefer to omit them, especially 110, but both are useful in my view. Slide 109 illustrates the portrayal of a sequence of activities, a higher level of composition than the slide 108 activity level. I find slide 109 useful to consolidate participants’ understanding of a hierarchy of nested sensitivity diagrams for both duration and cost. At board level these diagrams are understood top-down with very selective elaboration of what really matters. But they need carefully building bottom-up by those doing the analysis. Slide 110 illustrates a simpler much more modest level of clarity sensitivity diagram, implicit in the BCS analysis and not needed directly, but useful conceptually to understand the BCS spreadsheet model, with a directly equivalent role in the Transcon case study. The Highways Agency example used in *Enlightened Planning* chapter 7 is a much higher clarity and more sophisticated application of the same linear sensitivity diagram format, also based on minimum clarity estimations of the sources involved. It is important to avoid participants confusing sensitivity diagrams and decision diagrams, which play very different roles, also in high and low clarity forms with a broad range of levels of sophistication.

**Slides 111 to 113** used again at this point facilitate a discussion of how conditional decisions need to be addressed as understanding of the relationships between sources of uncertainty and associated specific and general responses are considered in a nested fashion, starting at the bottom, and gradually building up what may ultimately be a very complex understanding of the structure of the uncertainty associated with the whole of the project plans being currently considered plus further plans associated with other aspects of the seven Ws considered later, perhaps initially in the current project lifecycle stage, and perhaps again later in following lifecycle stages. Discussion of slides 111 and 112 can focus on the *Enlightened Planning* chapter 3 discussion of the BP examples initially, also drawing on Chapman and Ward (2011) chapter 11 discussion of further BP examples. This discussion can then address the WSL examples used in *Enlightened Planning* chapter 7. Slide 113 revisiting the chapter 4 photocopier example in detail is a useful basis for going beyond consideration of a single attribute like duration or cost, to discuss opportunity in terms of trade-offs between attributes, some not worth measuring, some not measurable. Assuming the Transcon case study has been discussed by this point in the course, further related examples can also be revisited here, discussing Transcon in terms of the underlying IBM UK issues.

**Slide 114 and 115** provide a basis for finishing this discussion of the evaluate phase, looking at the way the use of the evaluate phase evolves during the project lifecycle stage of current interest, from the end of a first pass analysis perhaps only 10% of the way through an iterative process. The goal of the first pass is clarity about how the remaining 90% of the time and effort available ought to be spent to achieve clarity efficiency. Iterations have to continue until the analysis results are fit for purpose.

**Slide 116** facilitates a brief discussion of alternative approaches to combining different sources of uncertainty at the level discussed in *Enlightened Planning*, so participants understand the role of the HAT approach as it is used in this book and course, the way Monte Carlo simulation can be used in practice, and the background roles of methods based on moments, discrete probability models and functional integration.

**Slide 117** is a basis for a discussion of alternative approaches to dependence when combining two or more sources of uncertainty and modelling associated dependence structures including those associated with specific and general responses plus secondary sources. *Enlightened Planning* illustrates all of them, and Chapman and Ward (2011) provides a more detailed discussion of some of these issues in a project management context. Most participants will not be interested in the detail in terms of the underlying mathematics, but it is crucial that all participants understand the importance of addressing dependence in a way which does not involve bias associated with underestimating its importance, and the nature of the approximations involved if simple approaches are used.

**Slide 118** concludes part two of the course.

**Slide 119** outlines the agenda for part three, building on the very modest attention to phases preceding the E&D strategy progress stage in part 2. This exploits the structure used in Chapman and Ward (2011), which my treatment of MANG6143 continues to draw upon. I believe any course focussed on project risk management or project management as a whole should use this approach. It involves a departure from the *Enlightened Planning* chapter 7 approach, which was designed to use a much briefer discussion of all the strategy progress and gateway stages in their concept strategy, DOT strategy and E&D strategy stage sequence. But you may choose to differ, sticking to the *Enlightened Planning* chapter 7 approach, depending upon what you want to emphasise.

**Slide 120** draws on a Chapman and Ward (2011) table and you can use related discussion as an initial basis for revisiting the way the first three strategy stages address different parts of the seven Ws structure and some of the different roles for the basic SPP and gateway SPP this implies.

**Slide 121** provides a basis for discussing the role of the D&A (devils and angels in the detail) progress stage, building on the *Enlightened Planning* discussion of the need for this stage. It is hinted at as a possibility in Chapman and Ward (2011), but not included in the PUMP treatment.

**Slide 122 and 123** facilitate a discussion of gateway stages after each of the four strategy progress stages. Being clear about the significant uncertainty in the early stages which needs gradual reduction as these stages successively add substance to the plans is discussed in some detail in *Enlightened Planning* chapter 7, and this needs to be discussed here. You might reuse slide 73 here, drawn from the Nichols Highway Agency report to the Secretary of State for Transport, and used to discuss WSL in *Enlightened Planning* chapter 7.

**Slide 124** provides a basis for discussing how the basic SPP used in the E&D strategy stage can be adapted for use in the DOT strategy stage drawing on two studies which used the BP prototype version of the process plus the BP software as a starting point, described in *Enlightened Planning* chapter 7, in more detail in other references which that book provides. It also provides a basis for generalising these ideas in a current safety and security context, drawing on *Enlightened Planning* chapter 9 material. I do not spend much time on this, letting participants follow up with the suggested further reading if it is of particular interest.

**Slide 125** can be used in a very similar way to address using the basic SPP in the concept strategy stage using the UK Nirex example as discussed in *Enlightened Planning* chapter 7 and the Chapman, Ward and Klein (2006) reference that chapter provides. I do not spend much time on this either.

**Slide 126** is a useful basis for building on the discussion associated with the last two slides using the WSL discussion in *Enlightened Planning* chapter 7 with a focus on getting an appropriate value for the discount rate in the concept strategy stage because of the way an inappropriate discount rate leads to selecting the wrong design choices as well as selecting the wrong projects. This is a core *Enlightened Planning* chapter 7 issue, and in my view, it is worth elaborating what is involved in terms of participants developing their understanding of the controversy and its impact using the significant number of following slides focussed on this issue. You may prefer dropping some or all of this follow-on discount rate discussion, perhaps adding material in other areas which are of special concern for you.

**Slide 127** begins an initial discussion based on the cited paper (Chapman and Cooper, 1983b) with reference details in *Enlightened Planning*. Gavin Warnock, a Vice President of Acres Consulting Services responsible for developing the business case for a hydro-electric power station at Susitna Falls which would provide power for most of Alaska asked me to use my BP experience as a starting point for an approach to the NPV calculations driving business case concerns. The way using BP analysis ideas for NPV based assessment motivated prototype *Enlightened Planning* generalisations is a useful starting point. It led to the conclusion that any decomposition of uncertainty in terms of a detailed time period by time period model was seriously counterproductive because of the very complex systemic uncertainty driving interdependencies, and moving in the opposite direction towards the composition of uncertainty into a very simple basic structure was actually the key to understanding what really mattered. In this case what really mattered was the terminal value of the Susitna project infrastructure (roads and dams) which would have to be built. They constituted about 90% of the capital cost, and they would be as good as new given maintenance at the end of the 50 year planning horizon adopted for hydro-electric projects. The ‘spinning machinery’ (turbines and generators) which would need replacement after 50 years were only about 10% of the capital cost. The current approach assumed that all 100% of this terminal value was zero, but the argument we made was the infrastructure involved was actually an appreciating asset, and it was crucial to recognise this. The paper and initial discussion based on the slides which follow uses a simpler example to illustrate the framework before applying the same framework to the Susitna Falls example, in part because it is simpler, in part because the simpler example illustrates the generality of the framework – what really matters may not be terminal value. The simpler example considers the business case for insulating the walls of a house in the UK. The same framework in this case identifies the planning horizon length defined by how long the house owner expects to live in the house as the source of uncertainty that really matters, leading to a discounted payback period analysis. In the UK Nirex example, the discount rate was what really mattered, for reasons central to the whole of this discussion.

**Slide 128** sets out the very simple differential cash flow parameter structure used for the Susitna and house insulation examples, initially explained in terms of the house insulation example.

**Slide 129** considers inflation, recognising different rates that may matter.

**Slides 130 to 132** define NPV, compose the parameters into a simpler structure, then generalise the parametric analysis idea behind using ‘Internal Rate of Return’ (IRR, the discount rate which equates NPV to zero).

**Slides 133 to 135** explain the first five steps of a process which provides the required parameter estimates and explores the sensitivity of the NPV to changes in the value of n, the planning horizon duration, showing that as n increases from 2 to 3 the NPV becomes positive, rising to the expected value of £152 by the expected value of n = 5. What the slide 135 sensitivity table clearly demonstrates is a relatively small loss if the house owner insulates and then moves in a year, a very large loss if they do not insulate and have still not moved after 10 years.

**Slide 136** generalises to test the other parameters, none of which involve the same level of uncertainty relative to the flip value when NPV becomes zero.

**Slide 137** uses the same framework to consider the hydro verses coal-fired power being addressed at the time for Susitna (new gas fired power stations were not allowed), n = 40 years being the conventional lifetime expectation for a coal-fired power station.

**Slides 138 to 141** outline a directly comparable approach to the UK Nirex example discussed in Chapman, Ward and Klein (2006), using slightly different notation. In this case the real discount rate was the key. In the 1990s at the time of this UK Nirex project decision by the Department of the Environment, HM Treasury were insisting on 6%. I argued that about 3% was more appropriate, which transformed a £100 million NPV advantage associated with deferral of nuclear waste disposal for 50 years into a £2000 million NPV disadvantage. In 2003 HM Treasury revised their advice, to rates lower than 3%, in effect admitting that their 6% was incorrect.

**Slide 142** explores why probabilistic analysis underlying the expected values used in the simplified NPV framework proved useful on this occasion – demonstrating the value of higher clarity modelling in areas where there are benefits for several different reasons.

**Slide 143** is the basis for briefly exploring what the 2003 HM Treasury position in their Green Book reveals about past and ongoing confusion around discounted cash flow analysis as discussed in Chapman, Ward and Klein (2006) and in *Enlightened Planning* chapter 7, the latter using the WSL context to explore the impact on both what projects get accepted and what design approaches are adopted.

**Slides 144 and 145** facilitate exploring the goal programming perspective which *Enlightened Planning* argues is essential to cope with the multiple objectives almost always relevant in decisions using discounted cash flow analysis, slide 146 coming from the Chapman, Ward and Klein (2006) paper.

**Slide 146** facilitates a very brief discussion of the need to see these ‘project management’ concept strategy stage concerns in the wider context of corporate strategy formulation, perhaps pointing to *Enlightened Planning* chapter 9 as one exploration of this perspective which participants may find relevant to their concerns.

**Slide 147** provides a framework for discussing why ‘client’ organisations need to understand their ‘contractors’, and vice versa. This discussion can draw upon the Transcon case study, and the messages in that case study which are relevant to all organisations.

**Slide 148** builds on the way the discount rate illustrates one aspect of the need to see all four strategy progress and gateway stages as interdependent, drawing on further issues discussed using WSL in *Enlightened Planning* chapter 7. A key one is the need in the concept strategy stage for simplified but unbiased prototype E&D strategy stage input provided by the people who will later lead the E&D strategy stage plus simplified but unbiased prototype DOT strategy stage input provided by the people who will subsequently lead the DOT strategy stage. It is also worth highlighting the transitional watershed nature of the final strategy gateway stage in terms of issues like the need to clarify strategy before investing in detailed planning which will be wasted if strategy changes.

**Slides 149 to 157** provide a framework for a brief or more detailed exploration of the lifecycle stage structures after the final strategy stage gateway has been past, drawing on Chapman and Ward (2011).

**Slides 158 to 160** conclude part three, first discussing examples of alternatives to the recommended SPPs, then discussing the need to adapt any appropriate generic process starting point to each particular organisation, as discussed in *Enlightened Planning*. This adaptation requires the use of some form of UP concept. Why explicit use of the *Enlightened Planning* chapter 2 UP concept is a suitable basis is worth mentioning at this point, even if the UP has received negligible attention earlier, and further exploration building on this at the start of part four may be worth modest or more significant attention, depending on your participants.

**Slide 161** sets out a structure for a brief overview of the part four agenda.

**Slide 162** provides a basis for an initial discussion of the UP concept, which might briefly outline any key aspects of *Enlightened Planning* which you think are immediately relevant. The role of project risk management processes in shaping the UP concept and the UP concept’s ongoing role in shaping whatever specific processes an organisation adopts are key aspects I emphasise in a very brief overview of its history and role.

**Slide 163** is a basis for arguing that any organisation needs people who can use some form of UP to shape their ‘project risk management’ and more general project management approaches, and one well designed and developed version used by people who can apply it widely is a significant corporate capability-culture asset. This has implications which may not be an immediate priority for participants, but they should be aware of the possibilities, and equipped to support corporate developments in this direction if and when they become relevant.

**Slides 164 and 165** facilitate a brief discussion of using the UP as employed in *Enlightened Planning* chapter 5 in a simple traditional Operational Research mode which initially addresses problem structuring, modelling and solving in traditional terms but makes sure that the ‘right questions’ get answered. It contrasts moving from a current order quantity of 2000 to 1500 based on the first pass analysis to moving to 7000 and then a completely new kind of agreement with the supplier.

**Slides 166 to 168** facilitate a brief discussion of using the UP as employed in *Enlightened Planning* chapter 6 in an SP development mode, using the IBM/Transcon context as a basis. If course participants have used the Transcon case by now, and have already been exposed to slide 167 discussing Transcon, participants may find a summary of some of the additional ideas developed in chapter 6 very useful. Even if you do not use the Transcon case study, these ideas link the basic traditional UP employment ideas underlying chapter 5 to the process design and development ideas underlying the SPPs explored in chapter 7 which are central to ‘project risk management’ and project management more generally.

**Slides 169 and 170** facilitate discussion of corporate planning in top-down terms, drawing on *Enlightened Planning* chapter 8. If course participants have used the Samdo case study by now, this discussion can build on the Samdo discussion, but if you do not use the Samdo case study, the same key issues can be emphasised here, briefly or at more length, in whatever ways you think are most important. I think the structure provided by slide 169 for Canpower is worth exploring, along with some example variants for other kinds of organisations of interest to the participants. The points made on slide 170 can provide a summary as well as a basis for some further discussion of aspects of relevance to the participants.

**Slide 171** allows a very brief focus on some of the key concerns addressed in *Enlightened Planning* chapter 9 which I think all participants should be aware of.

**Slides 172 to 185** address some key implementation issues from a change management perspective, updating a slide set which has a basis that I have found useful at this point in professional courses for many years, because both open and in-company professional course participants usually want specific advice about what to do next week in their organisations based on the course, and university students also find these ideas useful.

**Slide 172** is an agenda outline.

**Slide 173** initiates the idea of selling a ‘best practice’ perspective with a ‘brand name’ that suits the organisation. Some organisations may want to stick with ‘project risk management’, but there is a good case for a different label in many contexts if this is feasible, geared to what kind of changes are planned. At this point the first question is ‘what changes are possible, and which of them does this organisation need to make, with what priorities?’

**Slide 174** is a simple summary list of key objectives which I have found organisations respond to positively, and professional course participants like to discuss at this point in the course.

**Slides 175 to 182** allows elaboration of specific *Enlightened Planning* operational tools and conceptual toolset components which participants like to be clear about using effectively, recognising that their organisation currently may not use many of the ones they find particularly attractive. For example, slide 175 facilitates a discussion of the ABCs of targets and balanced targets which may not equate to expected outcomes, for reasons discussed in *Enlightened Planning* chapter 9 involving asymmetric penalty functions. It also facilitates talking about the use of target contracts, with contractual targets best viewed as commitment values by the contractor to the client, with the client usually needing further provisions in case the contractor does not achieve their contracted outcomes. Slides 176 and 177 build on this. Slide 178 moves on to the central importance of risk efficiency, slides 179 to 182 building on this to address opportunity efficiency in terms of some of its basic components.

**Slide 183** goes back to the earlier agenda list and facilitates direct discussion of the summary points.

**Slide 184** facilitates a brief or more lengthy discussion of contracts and governance processes, in my view a really crucial area for all organisations and all those trying to move their organisations towards more enlightened approaches.

**Slides 185 to 189** provide a useful way to finish. Slide 185 sets up a discussion of slide 186 (linked to Transcon if you use this case study) and slide 187 (a more general view of the corporate benefits discussed in *Enlightened Planning*). Slides 188 and 189 play obvious roles.

I do not see a direct role for the book *Introducing Systematic Simplicity to Manage Decisions* as recommended reading for this kind of ‘Project Risk Management’ course, whatever it is called, and believe *Enlightened Planning* as the recommended main text for university courses with Chapman and Ward (2011) as part of the secondary reading makes sense. However, those attending comparable open professional courses might find a copy of *Introducing Systematic Simplicity to Manage Decisions* a useful additional takeaway with a view to using it with colleagues in their organisation to start a dialogue about use of a systematic simplicity approach, and any Project Risk Management course could usefully mention it in this context.

## Section 3 – ‘Project Management’ courses embedding a section 2 perspective

The focus of the section 2 approach might be interpreted as a takeover of mainstream ‘project management’ by ‘project risk management’, or much more accurately, as a takeover of ‘project risk management’ by an approach to ‘project management’ which views ‘risk’ and all of the underlying uncertainty in a profoundly different framework to that employed by common practice with important implications for many other aspects of project management. If I were providing a professional open or in-house course/workshop or a comparable university course on ‘project management’ as a whole in the near future, I would see maintaining this perspective as essential, and at present I would see using the book *Enlightened Planning* as crucial. However, replacing the section 2 emphasis on Chapman and Ward (2011) with a suitable book or books covering aspects of project management which need attention they are not provided with in *Enlightened Planning* or Chapman and Ward (2011) would also be crucial, as would adjusting the slides and their use to reflect significantly less Chapman and Ward (2011) detail, significantly more material from the project management book or books replacing it at least in part. For example, the section 2 discussion of the ‘create and enhance plans’ phase followed by the ‘shape base plans using models of some key issues’ phase involving slides 59 to 63 needs massive expansion, as does the very focussed and limited discussion of capability-culture asset and liability concerns.

If the project management course in question was a university course intended as the only ‘Project Management’ course these students might take, I think there is a good case for a new textbook with a title like ‘Introducing Project Management with Strategic Clarity’, using the term ‘strategic clarity’ in a systematic simplicity sense, and the four Fs framework plus the Figure 9.1 framework for corporate strategy formation as discussed in chapter 9 of *Introducing Systematic Simplicity to Manage Decisions* as an overall central structure for body of the book. I think such a book needs writing, ideally as a collaborative effort incorporating different skillsets and perspectives from those involved, with at least one of those involved leading or intending to lead the initial teaching and development of such a course.

In the context of an MSc in Project Management, there is a strong case for a portfolio of courses and workshops designed to be fully compatible with a course like that discussed in section 2, with some evidence of the kind of interdependence and structure associated with the suggested structure for a book like ‘Introducing Project Management with Strategic Clarity’. A linking course is one possibility, but by no means essential. Each course and workshop in the MSc portfolio could employ its own different internal structure suitable for covering the very different perspectives which need to be part of the overall portfolio of perspectives relevant to the MSc course participants. But some interdependent changes relative to current mainstream topic structures are implied. My inclination is to favour this portfolio of ‘project management’ courses approach to professional project management training as well as MSc programmes. In my view it is essential for an MSc programme in Project Management, and for comparable professional in-house or open courses for project management professionals, like those run by the IPMA, to move in this direction. The central issues are not losing focus on the key messages in the *Enlightened Planning* book provided by its perspective and framework, but also doing justice to everything else which matters in compatible but different frameworks designed to serve different purposes, and moving at a pace which is quick enough without being too fast.

I do not see a direct role for the book *Introducing Systematic Simplicity to Manage Decisions* as recommended reading for the kind of single project management course or portfolio of project management courses outlined in this section. However, those attending comparable open professional courses might find a copy of *Introducing Systematic Simplicity to Manage Decisions* a useful additional takeaway with a view to using it with colleagues in their organisation to start a dialogue about use of a systematic simplicity approach beyond project management, and any project management course could usefully mention it in this context.

## Section 4 – ‘Operations Management’ embedding a section 2 and 3 approach

There is a strong case for arguing that an ‘Operations Management’ course or workshop based on the *Enlightened Planning* book needs to be designed using some of the same principles as those underlying the design of the 2020 version of MANG6143 discussed in section 2, but these principles need to be applied from an operations management perspective, with profound implications for the whole approach. For example, *Enlightened Planning* chapter 7 is no longer the core chapter, with the four Fs developed at the outset of the course presentations/lectures providing the basic structure for the following course discussion, initially skipping over or giving very light touch treatment to chapters 2, 5 and 6, emphasising chapters 1, 3, 4 and 7, and then giving a light touch treatment to a few key aspects passed over earlier plus chapters 8 and 9. My inclination is a balanced treatment of chapters 1 to 9, with an operations management perspective established at the outset and preserved throughout, presenting project management conceptual and operational toolsets as part of what all operations managers need to fulfil their roles, along with the chapters 1 to 4 foundation concepts which underlie all management. A balanced understanding of chapter 2 basic UP concerns as well as the application concerns addressed in chapters 5 to 9 is particularly important, because the clear role of the four Fs and the generic SPP set component for project management is only a component part of the framework set operations management needs. A course title like ‘Using Systematic Simplicity for Operations Management’ might be useful for this kind of course, to emphasise the approach and focus adopted.

If an ‘Operations Management’ course based on a fairly balanced approach to using the *Enlightened Planning* book was adopted, perhaps using a course title like ‘Using Systematic Simplicity for Operations Management’, seeing that course as just part of a broad portfolio of operations management courses involving a wide range of perspectives would clearly be essential. How far such a course might influence other operations management courses in terms of the kinds of interdependencies discussed in the last section is beyond my expertise to judge, but there would seem to be some scope for important interdependences to be explored.

I do not see a direct role for the book *Introducing Systematic Simplicity to Manage Decisions* as recommended reading for the kind of single operations management course discussed in this section, but it might have a role in a portfolio of operations management course as the basis of a course exploring interdependences linked to systematic simplicity.

## Section 5 – ‘Corporate Management’ embedding a sections 2-4 approach

There is a good case for using the ‘Operations Management’ approach in section 4 as a starting point, but taking a balanced view of operations management and project management as discussed in *Enlightened Planning* chapters 1 to 7 from a corporate management perspective. This corporate management perspective has to integrate all of this in a suitable variant of the top-down corporate strategy formulation plus all other aspects of corporate management framework developed in chapter 8, then add chapter 9 concerns. Some front-end treatment of the chapter 8 framework might be useful, analogous to the front-end emphasis of the four Fs for project management in the discussions of sections 2 and 3.

Chapter 8 certainly needs to be given much more emphasise, and become more central to the perspective taken, perhaps signalled by a course title like ‘Using Systematic Simplicity for Corporate Management’. Seeing such a course as just part of a broad portfolio of compatible corporate, operations and project management courses involving a wide range of perspectives would clearly be desirable.

The slide set would have to be radically different to the MANG6143 set used in section 2, but *Enlightened Planning* is arguably an ideal text in some ways if a systematic simplicity approach to a very broad view of corporate management is adopted, with *Introducing Systematic Simplicity to Manage Decisions* as one alternative. There is case for a variety of narrower views of corporate management with different approaches, but they will not be explored here. I believe the very broad view espoused by *Enlightened Planning* is important, with overall corporate management responsibilities including the direct management and separate governance of the way project and operations management interface and integrate with all other aspects of the organisation’s management.

## Section 6 – Courses on ‘operations, project and corporate management as a coherent and fully integrated set’ which embed the approach of sections 2-5

The book *Enlightened Planning* is arguably the obvious text for such a course, and there is a good case for a balanced sequential approach to chapters 1 to 9, emphasising throughout the need to avoid many different forms of silo structures and use a sophisticated understanding of separability to achieve effective integration across a range of boundaries in a clarity efficient manner. A course or workshop title like ‘Using Systematic Simplicity to Integrate Across Silo Structures and Corporate Boundaries’ might clarify the emphasis for participants and help to focus course design for course/workshop providers.

The book *Introducing Systematic Simplicity to Manage Decisions* is arguably the obvious text for a shorter version of such a course, and for a version making extensive use of other sources.

However, neither book was written as a textbook, and I suspect anyone wanting to provide such a course would, with very good reason, want to blend the ideas in my books with ideas of their own as well as those from many other sources.

## Section 7 – Very short workshops or presentations on any of these areas of focus

Very short workshops or presentations based on the *Enlightened Planning* book’s concepts in their current form which I have direct current experience of are limited. The most recent was an evening presentation of about an hour with following questions and discussion for the Southampton Business School evening seminar series attended by members of local organisations interested in a wide range of current management topics. A number of fairly recent half-day presentations for other business schools and consultancy companies to their clients based on earlier prototype variants of all the *Enlightened Planning* concepts are relevant background for thinking about the issues, but not direct models.

Choosing a focus and examples of interest to the participants which communicate the messages intended is clearly a complex issue, with complications which are specific to the intended audience, especially if a very broad range of concepts and application areas are options.

For most groups of participants my focus would be the *Enlightened Planning* chapter 3 estimation-efficiency spectrum concepts and some chapter 4 concerns, the *Introducing Systematic Simplicity to Manage Decisions* topics of chapters 1 to 5.

For example, starting with a minimum clarity approach to estimation, explaining why a very simple range estimate like William’s 10 +/- 8 weeks MoD example with an ABC of targets interpretation provides more clarity for less effort than most common practice can be a useful starting point, outlining its role within an efficient boundary view of clarity efficiency.

Higher levels of clarity on the clarity efficient frontier plus risk efficiency as demonstrated by the BP examples is also an idea of very considerable interest to most participants – saving perhaps £100 for every £1 expended on analysis effort as well as providing more credible plans and cost estimates.

Using high clarity decision diagrams to make risk efficient choices and distinguishing between good luck and good management, bad luck and bad management, and taking more risk to increase expected reward when that is prudent as part of an opportunity efficiency approach is also an *Enlightened Planning* chapter 3 message which is generally well received, motivating interest in learning more – the basis of the *Introducing Systematic Simplicity to Manage Decisions* chapters 4 and 5 discussion of the IBM UK culture change programme and its use of Figures 4.1 and 5.1.

The rich set of roles sensitivity analysis using sensitivity diagrams as illustrated by the *Enlightened Planning* chapter 4 discussion of Figure 4.1 intrigues most groups and also motivates an interest in learning more, and beginning to understand some of the complexity which makes a systematic simplicity approach pay big dividends. There is a directly comparable discussion in chapter 3 of *Introducing Systematic Simplicity to Manage Decisions*.

The comparatively simple linear decision diagrams used to seek risk efficiency for a primary attribute but also address secondary attributes illustrated by the photocopier example discussed in *Enlightened Planning* chapter 4 using Figure 4.3 is always appreciated in terms of explicitly confronting attributes not worth measuring or even non-measurable in a clarity efficient manner which can be linked to more sophisticated commercial examples like the IBM concerns addressed in the bidding context of chapter 6. Chapter 3 of *Introducing Systematic Simplicity to Manage Decisions* and later part 2 chapter 10 discussion cover the same ground.

Just mentioning how these issues can become very complex, using *Enlightened Planning* chapter 9 or chapter 8 examples, or the discount rate issue in chapter 7, can take very little time but be important – parts 2 and 3 examples in *Introducing Systematic Simplicity to Manage Decisions*. It is crucial to make sure everyone understands that very difficult complex concerns can be seriously challenging, and pretending otherwise is not helpful.

You may find these ideas a useful trigger for selecting a series of examples which can be outlined in simple terms to deliver your key messages, but your choices will clearly have to be driven by what particularly interests you, as well as your participants interests as you understand them.

Revisiting section 1 and the use of *Introducing Systematic Simplicity to Manage Decisions* plus its figures for in-house professional workshops for specific organisations, the suggestions above are clearly consistent with the sparce suggestions very briefly discussed in section 1, and they provide some further areas that could be added using a treatment drawing entirely on *Introducing Systematic Simplicity to Manage Decisions* instead of *Enlightened Planning.*

One example of further ideas that might be considered is a direct discussion of some of the *Introducing Systematic Simplicity to Manage Decisions* chapter 11 material on evolving a corporate commitment to systematic simplicity, including Figure 11.1. However, I suspect this would be usefully delayed until those involved were buying into the idea that developing aspects of a systematic simplicity approach for the organisation in question made sense, and discussing what it might involve and then how to approach it were directly relevant.

## Section 8 – Concluding overview

*Enlightened Planning* was not written to be used as the basis for professional or university courses or workshops. As discussed in that book’s Preface in terms of different target audience groups, it was written for a very broad overall target audience, and I assumed that most readers would not have supporting presentations or lectures. However, I believe *Enlightened Planning* provides the best available primary recommended background reading for a professional or university course or workshop in the mainstream area usually referred to as ‘Project Risk Management’, and its use in conjunction with slides and an approach comparable to that discussed in section 2 is the best currently available framework for addressing this subject area. A key underlying assumption for me is using ‘how to do it’ detail drawn from Chapman and Ward (2011) in the slides, and presuming those interested in making professional use of the toolsets and skillsets discussed will make use of both of these books plus other sources, starting with references provided by these books. I am assuming that within this framework if you led a ‘Project Risk Management’ course you might make significant modifications to reflect your interests and experience and those of your course participants.

As discussed in section 3, a single course or workshop in the much broader ‘Project Management’ area could use the same basic structure as that discussed in section 2, but draw much less on Chapman and Ward (2011), and much more on a book which addresses project management in broad terms. However, a preferable approach is probably a portfolio of compatible project management courses and workshops, with one focussed on addressing the section 2 concerns.

As discussed in sections 4 to 6, more radical changes would be needed for courses and workshops which addressed using systematic simplicity for operations management, corporate management, or the whole of management, but a course based on the book *Enlightened Planning* which used perhaps half of the slides discussed in section 1 should be a viable starting point for the development of a course or workshop using your views and experience which reflects the interests and concerns of your course/workshop participants.

As discussed in section 1, elaborated and further developed in section 7, *Introducing Systematic Simplicity to Manage Decisions* was not written as a basis for workshops or courses either, but it may provide a suitable basis for some workshops or presentations, especially when those taking part may want the level of further back-up reading it can provide without going on to read *Enlightened Planning.* It may be particularly helpful in terms of supporting very short workshops or presentations for particular organisations aimed at persuading people to adopt a systematic simplicity approach or support those in their organisation who are doing so.

If you make use of the MANG6143 slides you will need to use your own logo, acknowledge the source, and honour the copyrights of the publishers involved. If you make use of the figures from *Introducing Systematic Simplicity to Manage Decisions* you will also need to acknowledge the source and honour the publisher’s copyrights.