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## ScriptsMap: A tool for designing multi-method policy-making workshops

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### ABSTRACT

This paper reports on the development and structure of a framework – *ScriptsMap* – intended to facilitate the design of mixed method policy-making workshops. The *ScriptsMap* framework aims to provide a means of articulating and combining activities (which a script specifies) from two or more methods so that a facilitator or group facilitation team can construct, with the framework's aid, a thoughtful and careful design for a workshop. To provide an example of the framework, the combination of *system dynamics group model building* and *group problem structuring incorporating causal mapping with the use of a Group Support System* is used. The paper will illustrate *ScriptsMap*'s structure through an example of the use of the framework in practice.

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### 1. Introduction

When designing mixed method workshops using Operational Research (OR) methods, group facilitators are conscious they need to attend to a number of key considerations if an effective design is to emerge [41,28,35]. The situation is particularly intricate if the workshop is to address a complex policy-making task, one demanding attention to the composition of the group, client demands, a detailed focal task, and the facilitation team's own group process and modelling skills [13]. This complexity increases if the particular problem situation appears to require a mixed-method approach as issues relating to paradigm incommensurability [38], effective integration, and demands on facilitators and clients emerge [18]. However, for many of the policy making situations clients are facing, a mixed-method approach appears to provide the best option. This view is echoed by Mingers [36] who notes that when considering mixing methods the 'purpose is to generate a *richer and more effective way* of handling the problem situation' (p. 679, our emphasis). As such, a framework for thinking about workshop design is likely to be invaluable.

Complexity in workshop design is further compounded by the view that appropriate modelling designs should attend to three key objectives: the *speed* with which the problem situation can be addressed and agreements made, *inclusivity* of stakeholders (involving at least the key power brokers), and *robust analysis* [18]. These

three objectives are particularly germane if we seek to ensure that the team will agree that the options/policies are worth implementing—that they are politically feasible [16], through a coalition of support for them, ensuring a greater likelihood of success. A further key consideration is ensuring that the agreements can work over the long term—and that the dynamics within the system will not lead to unintended and undesirable outcomes. These overarching requirements are a powerful and demanding set of criteria when designing interventions.

Taking cognisance of the above considerations, this paper focuses upon an innovative framework design that facilitates the creation of designs for policy-making workshops. Policy-making workshops are chosen as they are typically complex in nature, require careful attention to negotiation amongst key stakeholders, involve multiple perspectives, and benefit from rigorously testing policies and strategies to ensure long term robustness. There has also been recent demand for more OR attention to be focused on this area [29]. The framework design emerged through the integration of two established methods – system dynamics simulation model building [22,43,49] and a specific strategy making approach – *Journey Making* [5] (which uses causal mapping as a way of employing in practice strategic management concepts alongside the use of a computer based Group Support System [6]). These two methods had not hitherto been used together in a workshop setting, although they had been used together off-line. Thus, the workshops that have to date been designed using *ScriptsMap* are mixed-method designs for strategy and policy-making workshops. The map is aimed to help those involved in group model building and who wish to design a framework for exploring and agreeing the best use of combined methods.

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The *ScriptsMap* itself is a framework for effectively combining particular sequences of scripted activities, products, and deliverables into a formal network to enable facilitators to construct appropriate combinations for workshops. To illustrate the *ScriptMap's* structure the paper will explain the rationale behind the formal network. In addition, the paper will provide an example from organizational practice before concluding with some comments about further research.

The authors anticipate that there is a range of potentially interested audiences for the work presented here. Firstly, this audience includes relatively novice facilitators who have undertaken courses on the specific approaches presented (System Dynamics and Journey Making) but who are, as yet, relatively inexperienced when it comes to designing workshops. The tool thus begins to help alleviate the concern that has existed for a number of years regarding the transferability of some of the OR modelling approaches [52], particularly 'soft-OR' [44] (Problem Structuring Methods). A *ScriptsMap* workshop design, based on the *ScriptsMap* framework, provides novices with both details on specific tasks (within the methods) and help in linking together the tasks to provide a design for a workshop. Secondly, experienced practitioners will be interested in the explicit articulation of scripts, products, and deliverables that are the result of combining systems dynamics group model building with group modelling for policy making using Journey Making. The *ScriptsMap* framework not only illustrates current modelling practice but may give rise to further possibilities by stimulating the creation of new combinations. Finally, academics and practitioners interested in designing new workshops by mixing other methods may find the framework useful as it provides a means to both examine the practicalities of mixing methods but also explore in more depth some of the conceptual considerations.

## 2. Background

The *ScriptsMap* emerged from ongoing interests in improving group model building [42,2,8,9]. The authors have all been involved in the development and use of models for systems thinking. Over the past 30 years, two of the authors have developed extensive knowledge and use of system dynamics modelling for policy making, and the other two authors have developed and used a specific 'soft-OR' approach for strategy making with a large range of management teams. Each pair was interested in learning more about, and integrating, the work of the other pair to augment their work both conceptually and practically. Initially this cross pollination took place at a subtle and peripheral level as conversations between the two pairs shed insight and possible extensions to each of the other pair's work. Concepts and techniques propounded by one pair were gradually introduced in to the working of the other pair and vice versa. This experience gave rise to the manifestation of a detailed network of activities illustrating both the components of the methods but also potential and realised links between them (new ways of working) which served as a vehicle for further discussion and practice (generating further adaptations). The network, acting as a dialectic, helped in teasing out some of the more subtle yet significant elements of each pair's philosophy and practice. This unfolding network subsequently gave rise to the design of a master class on systems and strategy thinking (see [7,18]) stimulating further adaptations and insights.

The success gained from these relatively small augmentations and the ensuing discussion about possible further integration led to both pairs embarking on two jointly delivered client projects. The first focused on a strategy making intervention that was augmented by system dynamics [6]. The second concentrated on an intervention where the client group wanted a system dynamics model developed but with the additional insights from strategy

making techniques. Both interventions yielded plaudits from the clients and important insights for the authors and gave rise to the desire to further explicate the processes of integrating the two approaches—both in terms of articulating fully what had been achieved and also what hypothetically could be undertaken. Other interventions have followed allowing further reflection.

The experiences gained from these interventions and the increasing desire to understand at both a conceptual (*why* and *what*) and practical level (*how*) gave rise to the *ScriptsMap* framework. The framework also aims to be a general platform for integrating methods, and, importantly, for translating the experience of facilitators to others.

Andersen et al. [9] argue for an increase in the dissemination of knowledge in system dynamics group model building projects to both help widen the familiarity of practices and also create a community for learning [42,50,45]. This interest is shared by those working in the group decision support field, in particular the work of De Vreede and colleagues whose work in collaboration engineering has led them to develop the *ThinkLets* approach [51]. Combining modelling processes with facilitation requirements and group/task management demands considerable skill [34]. As noted above, issues of transferability abound regarding the arena of soft-OR methods [33]. Facilitation of groups in its own right has high demands as noted by a range of researchers (for example, [47,1,28]), and the interaction between process management and content management is non-trivial.

Moreover, there is an existing body of work that combines System Dynamics with the particular strategy mapping approach and its predecessor SODA [20]. This ranges from forensic work [4] to the combining of system dynamics modelling with scenarios [25], and considerations for architectures [26].

However, there are some problems (as well as benefits) with mixing methods and these problems demand attention. The problems include concerns regarding paradigm incommensurability, levels of integration (whether it is at the tool level, technique level or entire methodology), and the form of integration [15,36–38,27,39,46]. One means of managing these problems is through a structure that explicitly considers the overarching theories or paradigms of particular approaches (the *why*), the methodologies themselves (comprising the *what*) and the techniques that underpin each approach (the *how*). These different levels provide a useful device when considering integration. Moreover, the process adopted by the authors – that of reflecting on practice, initiating interventions, and reflecting further – not only pays attention to the forms of mixing methods – that is working at either an enhancement [38] or enrichment [11] level, but also attends to the theory underpinning the practice of learning [10, 30].

## 3. Method/design

The *ScriptsMap* development, as intimated above, came out of a combination of Action Research [19] and case study review [21]. Both pairs of authors, acting independent of one another, had been extensively engaged with working with clients on policy and strategy making situations and had used these opportunities to both practically reflect upon the interventions and subsequently detect recurring patterns (as an informed case study review). These reflections provided the bedrock for the joint conversations which were augmented by the authors providing one another with research notes, *a priori* designs, relevant extant literature and the resultant outputs from the workshops. From these reflections emerged a range of possible combinations recognising not just the *how* but also some consideration of the *what* and *why*.

As part of the research effort, both of the interventions, used for this study, had been carefully designed in detail—providing useful insights in both the process of their creation (through the

discussion emanating from the synthesis of the methods) but also offering a design for post-intervention review. A particular benefit of these specific intervention workshops was being able to have all four of the authors present at each workshop. This provided not only a common experience set but also scope for one or more of the authors at any time to act as an intelligent observer and stand back from the demands of facilitation. Observation techniques included creating photographic records of the intervention, time-stamped process notes as well as real time reflection. The clients were also fully involved, providing comment on the designs, 'on line' feedback during the interventions and detailed and considered perspectives during the reviews. The post-intervention review included taking cognisance of the products of the workshops as well as observer generated material and client contributions. The review was a deliberate attempt to stand back from the detail and specificity of each workshop and begin to consider at a more abstract level the forms of integration, including activities, combinations and outcomes.

Furthermore as the authors sought to understand what had taken place and why, they realised that they needed to unpack many of the activities. This was partly because in some cases the activities comprised a series of sub-activities. These compound activities, whilst being completely understandable to the pair who generated them, were open to wide interpretations by the other pair. The constant challenge of "yes, so how do you do that?" or, "what do you need to have done before to do that?", or building on the shared experiences "why did you do that?" helped tease out what are essentially tacit practices combining many activities (one of the reasons that issues of transferability abound). This breaking down of the design into activities is similar to the processes adopted by those in the area of collaboration engineering where 'ThinkLets' are produced and combined to provide workshop designs and responds to calls for "sections of methodologies to be used separately" [23, p. 199]. For *ScriptsMap* these building blocks took the form of activities or scripts, products, and deliverables. The surfacing and discussion of these scripts, products, and deliverables subsequently allowed for

further clarity as they acted as a further dialectic to support conversation. The review process was not quick – the *ScriptsMap* framework has been in development for over a year as initial attempts to capture the elements were made.

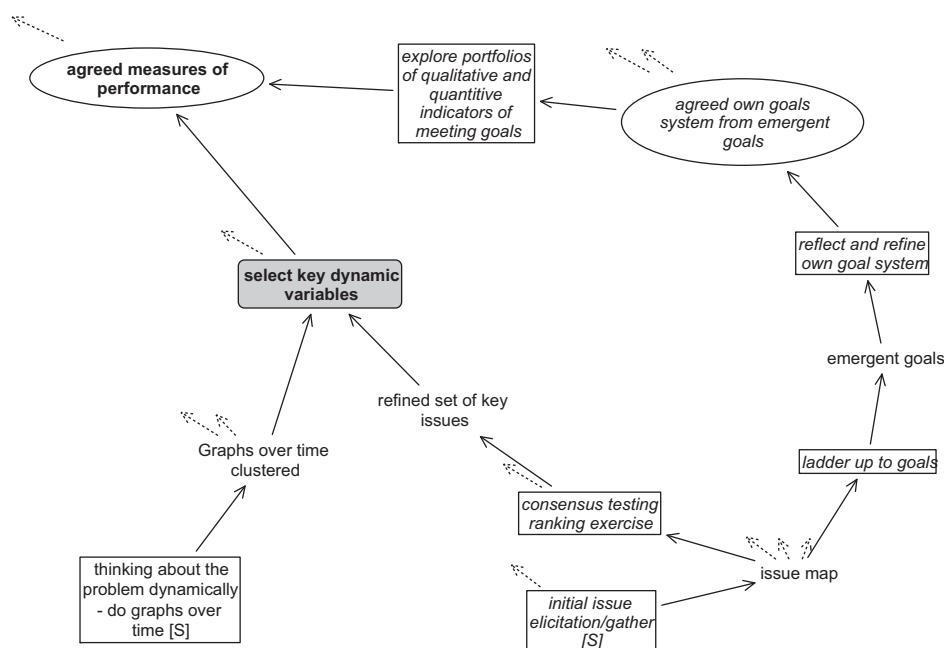
However, the aim of the *ScriptsMap* development process is not to produce a 'final product' but rather act as a framework to support both conversations about, and designs for, workshops. It is thus a framework designed to facilitate a conversation that spans the boundaries that separate the perspectives of the different modellers ('boundary object' [14,29,48]) which while not intending to be comprehensive encourages deeper understanding and learning. The deeper understanding and learning led to the design gradually gaining stability.

#### 4. *ScriptsMap* and its components

In order to effectively provide a framework for workshop design, *ScriptsMap* adopts a set of conventions that easily can be utilised to facilitate the design of any a policy making workshop. These conventions on first glance appear obvious but emerged slowly and certainly after experimenting with a range of possible conventions. The basic building block of a workshop is a "script". Fig. 1 contains a small portion of *ScriptsMap*, which figures prominently in the case example presented below and is used to reveal the structure of *ScriptsMap*.

*Scripts* are activities that typically take 20–50 minutes of workshop time and have a clear beginning and end. A script is represented in *ScriptsMap* as a rectangle. Examples in Fig. 1 include "thinking about the problem dynamically – do graphs over time [12]" or "initial issue elicitation/gather [26]," or "ladder up to goals [28]". Each of these activities is a well-defined script in the tool kits of the facilitators who have created *ScriptsMap*. The scripts are written as short statements which can quickly be read and should, with reference to the available literature on the methods, be easily understood.

Following each script in the map is a *product*, an outcome useful to the facilitators and sometimes the client group. *ScriptsMap*



**Fig. 1.** An excerpt from *ScriptsMap*, showing scripts and products alternating up along three potential workshop paths to "Agreed measures of performance." Those statements with boxes are scripts, those statements without boxes are products, and those statements with ovals are deliverables. The statements in italic represent those scripts and products 'belonging' to one pair (strategy), whereas those in standard font represent the other pair's contributions (system dynamics). Where statements appear in bold, these are new, combined scripts. The 'dotted' arrows reflect that the statement, script or product, can be combined with other scripts and products not displayed on this excerpt. For example, and noted below, the product 'graphics over time clustered' feeds into two other scripts. Note that a script marked as [S] is a "starter-script"—a possible initial script with no preceding scripts.



distinguishes two kinds of products: outcomes of a script that are of serious interest to the client group are considered *deliverables*; they function as “take-aways” for the group. Other outcomes of scripted activities may not be of particular lasting interest to the client group but are important stepping stones for the facilitators to use as inputs to follow-on scripts; we call these intermediate outcomes simply *products*. In Fig. 1, “Graphs over time clustered,” the “Issue map,” “Emergent goals” are all *products*. “Agreed own goals system from emergent goals,” and “Agreed measures of performance” are *deliverables*, as they would represent important group agreements and possible points of closure for the client group. The conventions in *ScriptsMap* are that deliverables are represented as ovals, while products that serve merely as intermediate outcomes providing input to other scripts are represented in plain text.

In terms of the framework's conventions, an analogy might help clarify the relationships between a script, a workshop design, and the *ScriptsMap* framework. Think of a script, as an individual LEGO<sup>®</sup> piece. Each piece has its own special shape and form, enabling it to be used for a number of different purposes. A workshop design is a finished LEGO construction—an artefact (design) that has been built by clicking together any number of the lego pieces. The *ScriptsMap* framework therefore corresponds to a manual for the full box of LEGO pieces. The *ScriptsMap* framework contains general instructions for creating any number of final workshop designs (LEGO constructions) by specifying in what order particular pieces (LEGO pieces) can be linked together. Thus, for example, it is likely that there are a number of possible workshop designs (constructions) that can be built from one specific starting script.

Fig. 1 illustrates an essential property of *ScriptsMap*: along any well-defined path in the map, scripts and products must alternate. A scripted activity always results in a product (which, circumstantially, may be significant enough to the client group to be a deliverable); products function as inputs to scripts that follow. The simple realization that scripts and products alternate proved to be surprisingly helpful in the development of *ScriptsMap*. Wherever that syntax was violated we knew that we had not done an adequate job capturing a potential workshop design path. The syntax test helped in breaking down the scripts into single activities rather than composite activities and resultant products. One of the significant breakthroughs and insights to the authors was the need to ‘un-collapse’ some of the cryptic, tacit steps each pair took. Whilst these scripts might be understandable to both members of the pair owning the script (but not always), it was opaque to the other pair. This process of articulating step by step what took place during particular workshop activities helped clarify the activities – providing important learning – and thus contribute to resolving some of the issues regarding transparency.

An advantage of using scripts, deliverables, and products as basic building blocks for designing complete workshops using the structure of *ScriptsMap* is that the formalisms of integrating these LEGO-like pieces are quite independent of any particular approach to strategic planning/strategy development. If practitioners from two different methodological traditions of strategy support use these broad formalisms for describing their work, the possibility exists for exploring points of overlap and possible collaboration between different sets of approaches. Illustrating the different scripts/product origins, further coding formalisms were used. For example, two of the authors of this paper approach strategy workshops from the point of view of Strategic Journey-Making using *Decision Explorer* or *Group Explorer*<sup>1</sup> (as described by [16,3]). In Fig. 1 scripts and products drawn from their work have been

presented as italics (a coding formalism). The other two authors come from a tradition of system dynamics group model building (as described by [42] and [9]). Their scripts and products are presented in a standard ‘normal’ font in *ScriptsMap*. (These different font formalisms are also used in Figs. 3 and 4).

Because both groups have been able to map their work into a common framework, we have been able to study the raft of individual scripts and products and explore designs that integrate both bodies of work. These integrated scripts and products are differently coded (using bold) in *ScriptsMap*. These are, as far as the authors are concerned, important new ways of working in that they create a new synthesis of the two methods providing added value to clients. In Fig. 1, the bold script “Select key dynamic variables” is one such integrated activity in which the authors combine their approaches. The deliverable “Agreed measures of performance” is also presented in bold text to flag it as the outcome of a script integrating multiple methods.

## 5. How to use the *ScriptsMap* framework to design a workshop

A well-designed workshop typically meets client objectives, responds to a clearly identified purpose, and is crafted after reviewing a number of possible designs, determined by the specific context. The workshop designer/facilitator must settle on a chosen set of activities (scripts), interim products, and deliverables that meet these myriad design criteria. How this process actually works in practice is illustrated in the case example below, which works with extracts of *ScriptsMap* (Fig. 1) to arrive at a specific design.

The organization – a network of health care providers – was about to embark on a state-wide strategy making/policy making effort. As part of these efforts, each participating member organization in the network had been asked to agree on what measures of performance it considered critical to benchmark its own performance against. Key staff members of the organizations were to come together for a retreat and the authors had been asked to facilitate an intervention to support this meeting. Fig. 1 presents an extracted portion of *ScriptsMap* that was used to design this workshop.

The top of Fig. 1 shows the final product of this workshop, “Agreed measures of performance” with three distinct possible pathways leading up to this final deliverable product (please note that this is only a section of the full workshop design). The left-most pathway contains mostly activities and products from the system dynamics pair indicating that this suggested pathway might be preferred by workshop planners who have a background in system dynamics group model building. This path to agreed performance measures uses a route that has been previously reported in the literature [32]. A workshop following this route would start by having the overall client group, usually working in small groups of two or three, draw graphs of key variables over time on pre-drawn time axes. The exercise jumpstarts the workshop by asking the clients to think about key issues as important quantities that vary over time. In addition, it forces clients more precisely to speculate on how these allegedly important variables have performed in the past and may perform in the future.

In the past, this ‘graphing script’ has proven most useful to elicit an early set of candidate variables to be used in the construction of a system dynamics model (as indicated by the two dotted arrows linking out of “Graphs over time clustered” to other parts of *ScriptsMap*). However, for the purposes of this workshop, the *ScriptsMap* design suggests to the workshop designer that the group could use some sort of voting or preference ranking applied against these clusters of graphs over time to arrive at agreed measures of performance. If the larger strategic intervention was

<sup>1</sup> *Decision Explorer* is software that is able to display and analyse causal and cognitive maps. It used in problem structuring (see [17]). It is available from www.Banxia.com. *Group Explorer* is a Group Decision Support System that uses a local area network of laptops that are able to communicate with a public screen that

(footnote continued)

displays a causal map that can continuously be edited in real time by participants. It is available from the authors at Strathclyde Business School.

intended to include any system dynamics modelling, this might be a fast and effective way for the group to arrive at “Agreed measures of performance”.

A second pathway on the right hand side of Fig. 1 contains a sequence of activities and products that are all displayed in italics indicating that this sequence is consistent with the approach to strategy described elsewhere [5]. Indeed, this pathway is precisely the sequence of activities that Ackermann and Eden describe in some detail in their text-book approach (pp. 50–66). The starter activity involves eliciting a candidate set of linked issues that define the initial boundary of the issues that span the current strategic intervention. The resultant collection is then examined to determine whether any of the issues impact upon another—thus transforming what is in essence a list, into a network of issues. The facilitator is then able to identify those statements that are “heads”—that is statements that have arrows leading into them, but no arrows out-going. When mapped on the screen for the group to see, these issues become a first cut at goals, since goals can be seen as the underlying values or objectives that trigger the issues (that is, the statements are only issues because they either attack or support an objective/goal). The “Ladder up to goals” script denotes an exercise in which the strategy facilitation team prompts the client team to focus on the ‘head’ issues in the system to think through what higher level purposes or goals they might be leading to. This exercise leads to a set of “emergent goals” identified by the group.

Up to this point, the *ScriptsMap* has suggested two workshop designs that have previously been described in the published literature and that can be associated directly with one of two strategic intervention approaches—Strategy Making or System Dynamics group model building. The *ScriptsMap* also suggests a third pathway up the middle that integrates the two approaches. This third pathway, representing the integration, was the chosen path for the case study and is described more fully elsewhere [6]. The table in Fig. 2 presents a first draft of an integrated workshop design (following this middle path) for arriving at agreed measures of performance. This route was chosen due to two factors. The first was that the client, when reviewing the options, felt that whilst the “graphs over time” script was valuable, she did not think it would be a good starting point. Partly because the group had never thought in this manner before and partly because she felt that the group would benefit from getting their issues out on the table—it would be an emotional release for them. Thus elements of the Strategy Making approach appealed to her. However, given that the organizations had already produced a simulacrum for a stock and flow diagram, understanding the dynamic effects on this would be of immense value suggesting this too be

included within the intervention. Integrating the two approaches provided the design that she believed would ensure greatest likelihood of the group arriving at a successful outcome.

According to the *ScriptsMap* design the integrated workshop design has in principle two starting points—“thinking about the problem dynamically” and “Initial issue elicitation”. However, as mentioned above a combination was required and so, as indicated in the table in Fig. 2, the proposed workshop begins the starter script described as the second path. Using a table allowed the authors to be more specific not only about the Public agenda and Products – representing the *ScriptsMap* design – but also to include further facilitation notes that they believe would be helpful, timing, etc.

However, instead of traversing the right hand side of Fig. 1, in the Health case, the design focused next on the extraction of the ‘central issues’ script—those themes (bundles of material) that have many links in and out of them. This set of ‘most central’ issues became the input product for a second group-oriented script, labelled in Fig. 1 as “Consensus testing ranking exercise,” a script that uses ranking, prioritizing, and issue cross-mapping activities to arrive at a refined set of key issues. Notice that these central issues were initially developed within the context of all the strategic issues facing the group, were identified by considering which had the greatest combination of incoming and out-going causal links, and were also ranked as high priority by the group—a judgement call. It is not known however whether these issues represent a set of temporarily important political concerns within the organization or if they are issues that have emerged over time and will remain important future measures of organizational performance.

To begin to appreciate and consider the ramifications of how the issues might behave over time, that is their dynamic importance, the next step in the workshop design was to use the refined set of key issues as an input elicitation device. “Thinking about the problem dynamically” as noted above, has often functioned as a starter script. However, in this integrated workshop design, the script is no longer a starter script since the ‘graphs over time’ exercise is grounded in the refined set of key issues, a product of a previous activity. However, the activity of thinking about the problem dynamically—drawing graphs over time—is essentially the same script employed in the first workshop we described, but in this case the participants are working with a refined set of issues. Presenting this task after the issue surfacing yielded the anticipated outcomes as, although group members did report that they had found the activity difficult, because of their familiarity with the issues and the facilitators they felt more able to undertake the task and did identify some useful insights.

The workshop concluded with an activity that is described in *ScriptsMap* as “Select key dynamic variables”. However, this

Time	Public Agenda	Facilitator Notes	Products
	Initial issue elicitation/gather	Starter script. Use group explorer to elicit issues	Issue map
	Extract central issues	Analysis of map to identify issues with many in- and/or out-links	Most central issues
	Consensus testing ranking exercise	Use ranking facility of Group Explorer	Refined set of key issues
	Thinking about the problem dynamically - do graphs over time	Starter script but here in context of refined key issues. Have group graph and cluster plots of key variables over time	Graphs over time clustered
	Select key dynamic variables	Activity will use refined set of key issues and graphs clustered over time	Agreed key performance indicators as deliverable product

Fig. 2. Framework of a design for a workshop to obtain agreed measures of performance for a health care agency.

activity is now a different activity from the first workshop described above because in this integrated approach the group has available to it an extensive refined set of key issues as well as a clustered set of graphs over time that have much more group time and detailed thinking backing them up.

At this point, the group deviated away from the excerpt of the script presented in Fig. 1 so that they could consider different policy options. Using a flow diagram, which had been converted into a stocks and flow diagram, they considered the different bottlenecks in the system and explored options for resolving these blockages. Their final activity was to consider which of the various options had the greatest likelihood of being implemented. This revised design also integrated the two approaches—giving rise to further new scripts and providing valuable insights (see [6]). The ScriptsMap framework thus facilitated the structuring and generation of scripts allowing for continual development of workshop designs through both the incipient structure and the scripts/products already generated. A more extensive view of components in a ScriptsMap is shown in Fig. 3 (please note it is not intended that this map should be able to be easily read, but viewed as illustrating a greater amount of the workshop design possibilities).

**6. Connecting ScriptsMap-generated workshops to client value**

In the case study discussed above, when designing the workshop, the authors began with the presumption that the health care organization sought to arrive at agreed measures of performance. We did not ask any probing questions about why any health care or social service organization might want to invest its resources in such activities. Thus, it could be argued that there was a potential for lack of clarity regarding the overarching purposes to the

workshop. One means of resolving this lack of clarity, and strengthening the ScriptsMap framework as a whole, is to provide script designers with the support (formalism) to explore how the different scripts support a generic set of key objectives noted at the beginning of this paper (and commended for good policy making). Fig. 4 provides an illustration.

The figure shows that in the eyes of the authors, and based on their experiences both practically and theoretically, one of the possible objectives of a ScriptsMap design is to help groups of managers and policy makers agree on ideas worth implementing (noted earlier in the paper as being key to successful policy making). In order to reach this objective, the group must be able to identify ideas that can work and are sustainable in the long term. The group must have confidence in the strategy over the long term. In order to meet these three key objectives, the group needs the capacity to develop ideas based on agreed upon strategies and policies that are solid candidates for possible implementation. These objectives have been discussed elsewhere Andersen et al. [7].

Thus, Fig. 4 provides an illustration of how ScriptsMap designs might attend to key objectives associated with workshops and thus recommends that client groups explicitly consider what they are aspiring to, and why. In laying out the ScriptsMap framework, we seek always to keep these ultimate goals in mind, always mapping both scripts and products upwards to these paramount objectives. Some of these objectives require addressing issues of group cohesion and confidence—they require procedures that are considered legitimate by the group. Other objectives require that the ideas are logical and aligned with external realities facing the group. Finally to meet these objectives the group needs to engage in clear-eyed activities that keep it focused on external stakeholders and within the dynamic system that shapes an endogenous view of the organization's strategic future.

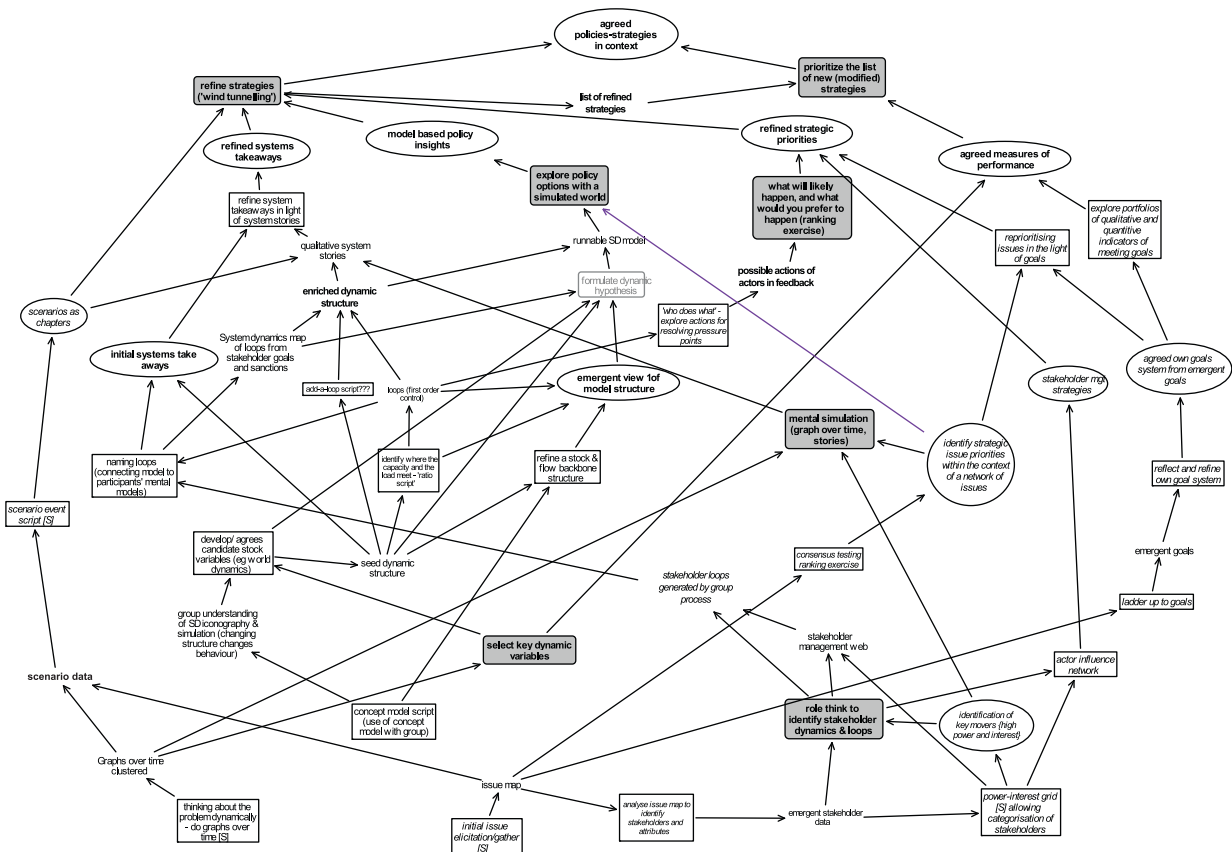


Fig. 3. More extensive extract of ScriptsMaps.

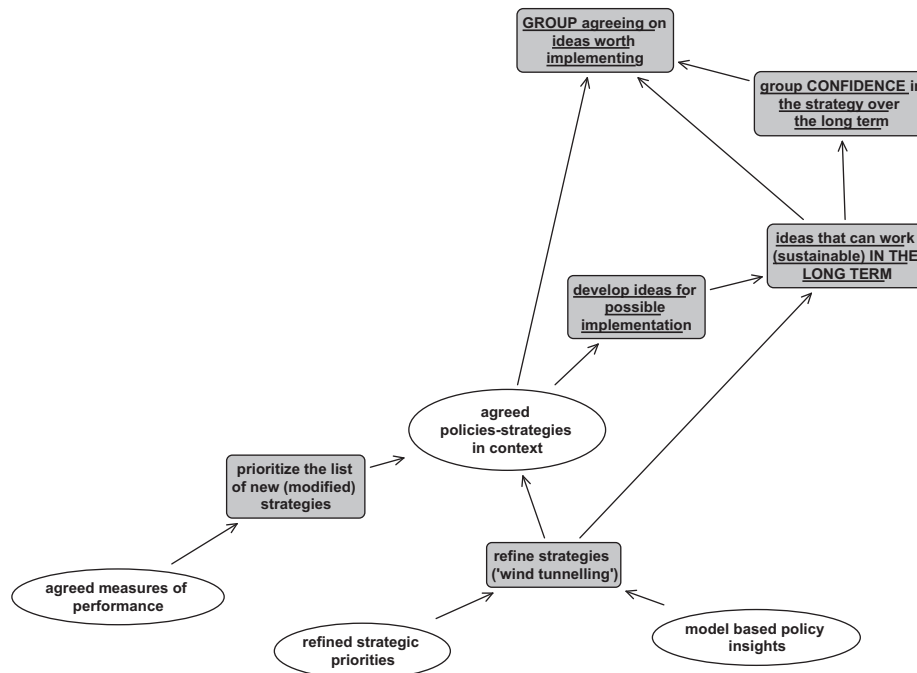


Fig. 4. Extract of *ScriptsMap* showing overarching model building goals (depicted with underline and boxes).

## 7. Conclusion

As is always the case, there are limitations associated with this approach to mixing methods, workshop design, and transferability. The first, and probably most significant, is the fact that the framework and designs provided in this paper are only one way of eliciting the wealth of knowledge regarding workshop design currently existing among group model building facilitators. The second is that the framework has been developed with respect to two approaches only, and has had the luxury of being developed by facilitator/researchers who are particularly interested in one another's work, and who work in pairs allowing for observation, compare and contrast.

However, as noted early on in this paper, the authors were interested not only in looking at ways of integrating their particular methods but doing so in a manner that was careful, thoughtful and robust—attending to the WHAT and WHY as well as HOW. Whilst it was not their original intention to design a framework that would have wider application, this emerged from the process of gradually developing and refining the formalisms for building a *ScriptsMap*. By focusing not only on the techniques within the approaches but also the overarching objectives (including the theoretical underpinnings) and how they are able to support one another, the authors believe that some of the issues of incommensurability across mixed methods are reduced. In addition, the formalisms and framework have provoked deep conversations eliciting valuable insights into some of the more subtle and tacit nuances of the approaches (often missed in academic writing). These nuances of process can then be further disseminated managing issues of transferability.

Whilst recognising that the framework undoubtedly needs further refining, the structure lends itself not only to the development of integrating a particular strategy modelling approach and a distinctive system dynamics process but other combinations of modelling approaches (both quantitatively and qualitatively oriented). It could be argued that where the combination of modelling approaches traverses the soft/hard divide [40] being more explicit about each script and product can provide enormous assistance. Thus the authors expect to widen the scope and utility

of the *ScriptsMap* framework by working with others within both the Systems Dynamics and 'soft-OR' fields to increase the range of designs incorporating different scripts and products. Starting with those with considerable experience in group model building is a logical option (for example [24,31,41,50]). Additionally it is conceivable that over time there will develop a blurring between approaches—resulting in the new scripts being developed being neither pure system dynamics nor pure 'soft-OR' but a powerful combination of both.

Furthermore, as more approaches are disaggregated into scripts, products, and deliverables using the formalisms then a number of further benefits are likely. For example, there will be more choice of workshop design that enables a better matching of modelling skills and client demands. The framework through gradually increasing in scripts and products (LEGO blocks) facilitates an adaptive process potentially stimulating creative new designs. It is the authors' contention that there are many of these new creative designs each being quite different from the one noted in the case discussed in this paper.

A final benefit relates to the earlier mentioned issue of transferability. By breaking down apparently complex approaches into discrete scripts then those relatively inexperienced facilitators of workshops are provided with more support. It was clear to the authors that the process of both developing the framework and producing designs had an enormous impact on teasing out implicit or tacit knowledge. This not only benefited the synthesis of the approaches as the subtle yet significant aspects were not missed but also yielded interesting conversations at both the intra-pair level as well as inter-pair level. Thus a better understanding of each of the methods was gained. Many of these hard won contributions dealt with philosophical concerns helping to ensure that the integrated designs were not only practically feasible but also conceptually (the WHY).

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