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Modelling complexity

Making sense of leadership issues in 14–19 education

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Modelling complexity

Modelling of statistical data is a well established analytical strategy. Numerical data lend themselves to visual depiction as stronger or weaker elements of a system, acting sequentially, collectively or even randomly, together or in opposition, upon a given situation. Statistical data can be modelled to represent, and thereby predict, the forces acting upon a structure or system. Models in quantitative analysis are derived from the data, and given sound data and expertise in modelling, can be used to theorise the system investigated and predict future scenarios.

Qualitative analysis lends itself similarly to visual representation. Diagrams and figures are commonly used to present concepts and theory (see, for example, Maslow, 1943 or Adair, 1983). In educational research, models are less often used to represent and to analyse the inter-relationships presented by the qualitative data themselves. Miles and Huberman (1994) advocate data display as an analytical tool, and offer a wide range of examples and instances for its use. They emphasise the developmental interaction between display and analytical text, where display enables the researcher to summarise data, identify themes, patterns and clusters, discover relationships and develop explanations (Huberman and Miles, 1998). Analysis carried out through concept-coding lends itself to modelling, where the strength of a particular factor, its location within a system, and its coexistence with or effect upon another factor can be identified and represented. Models

based on qualitative analysis can offer further insights into situations and systems, and can enable predictions of future scenarios in a similar way to modelling based upon quantitative data.

Modelling as research methodology

Models offer a simplification of reality by showing relationships between key variables, factors or phenomena. Inevitably this involves a process of reduction: a process which in turn may increase understanding.

The construction of models is necessarily the construction of knowledge.

(Eriksson, 2003: 203)

The knowledge constructed through the model is both abstract – offered in idealised or representational form – and abstracted – selected from the perceptions and experiences of the researched and fitted into mind-patterns governed by the perceptions of the researcher (David, 2001). It can be used developmentally, as a tool for understanding and as an agent for change.

A model is an external and explicit representation of a part of a reality, as it is seen by individuals who wish to use the model to understand, change, manage and control that part of reality. (Pidd, 1996: 722)

A model can also be dynamic, in ways in which linear text, however skilfully used, is not. As Miles and Huberman (1994: 11) comment:

Text ... is terribly cumbersome. It is dispersed, sequential, poorly structured and extremely bulky.

Presented with a model, readers can explore the display from any starting-point; they can attempt to read it in any sequence, or concentrate on a chosen aspect of the model to stimulate their understanding. They can hypothesise what would happen if elements of the model were missing, or if their impact were increased or diminished. The process of filtering the data through the model enables further understanding. In the 'sciences of the imprecise' (Moles, 1990), models can enable both the researcher and the reader to construct and to test out theory, by considering the model in another context, and adapting it to represent knowledge as it is perceived. For the rapidly changing systems in the world of education, modelling enables the researcher to understand, to predict and to enable decisions to be based upon those predictions.

Modelling is particularly applicable to theory-seeking case studies. These types of study are chosen as 'particular studies of general issues' (Bassey, 1999: 62), where a case is chosen and examined because it is expected to be in some way typical of something more general, in order to construct theory by means of 'fuzzy generalisations'. Modelling can be used both to build and to test these generalisations. Stake (1995: 2) comments about case study: 'The case is an integrated system. The parts do not have to be working well, the purposes may be irrational, but it is a system.' Models can be built from the systems identified in the case study; they are influenced by the understanding and viewpoint both of the researcher and the participants, and do not constitute a definitive 'reality'.

The increasingly complex contexts within which leadership is enacted can be analysed and explored through modelling. The second part of this paper demonstrates how modelling was used to examine leadership issues in partnerships for 14–19 educational provision in England (Briggs et al., 2007), where leadership encompasses multiple organisations.

Exploring leadership issues in 14–19 partnerships

This example draws upon research funded by the Centre for Excellence in Leadership which sought to analyse leadership issues in partnerships for 14–19 educational provision (Briggs et al., 2007). Partnerships offer a complex context

for leadership, where multiple leaders are involved who are simultaneously responsible for the work of the partnership and of their own institution.

A national survey of 14–19 partnership coordinators was conducted and four case studies were carried out in North East England. The literature review conducted for the study suggested three themes to underpin the analysis of the data: policy, partnership and leadership. The key aspects of each theme are discussed below, leading into a discussion of the modelling process.

Policy

Partnerships are a feature of all the major education policy initiatives introduced by the UK government in recent years, whatever their primary aim (Arnold, 2006). The educational policy framework for 14–19 year olds relates to provision for learners both before and after the statutory minimum school leaving age, involving multiple webs of partnership for the provision of education, employment and training, to offer young people an effective transition to a productive and fulfilling adult life. From 1997 onwards, with the White Paper *Learning to Compete* (DfEE, 1997), through the Learning and Skills Act of 2000, the Education Act of 2002 and the *14–19 Education and Skills* White Paper (DfES, 2005), there is an emphasis upon the collaborative provision of flexible pathways for academic and vocational provision for learners aged 14–19. Policy for this age group focuses upon the principles of inter-agency working and coherency in meeting the needs of the group as a whole while tailoring services to individual young people's specific needs (Dickinson, 2001). Leadership of individual institutions is contingent upon the need to offer 'best provision' for each young person within the partnership.

Regional Learning Partnerships, which support education strategy and collaboration between providers at a regional level, were established in England from 1999. They have carried out their work within an almost constantly changing policy environment which has had an impact on their development, particularly in relation to clarity of purpose, credibility and capacity (Rodger et al., 2003). Nested within these partnerships are local voluntary groupings for collaboration over 14–19 education and training provision, referred to here as 14–19 learning partnerships.

Partnership

In spite of the rhetoric of collaboration, current government policies 'incentivise individual institutional self-interest and do not sufficiently stress collective thinking and area planning' (Hayward et al., 2006: 39). The *2005–6 Annual Report of the Nuffield Review into 14–19 Education* (Hayward et al., 2006) highlights the tensions produced by the climate of competition between educational providers and by funding mechanisms which reward recruitment and attainment. The authors of the *Review* comment further that the measures in the government's 14–19 Implementation Plan (DfES, 2003) which are intended to address collaboration 'remain weak in comparison with the measures . . . that encourage competition' (Hayward et al., 2006: 40). They consider that a move from weakly collaborative systems to more strongly collaborative systems, in particular strongly collaborative systems of partnership, are needed in order to:

- address disaffection among learners through reforming secondary education as a whole;
- pool local area resources efficiently; and
- reduce social segregation which is currently exacerbated by funding differences.

If partnership is to be successful, there must be strong incentives for the partnership leaders to collaborate. As Arnold (2006) notes, wherever partnership is discussed and in whatever forum, there is general agreement on its principal benefits. In the 14–19 education context, partnerships make individual learning pathways possible. They also potentially offer local economies for a cost-effective and coherent curriculum. However, there are both cultural and practical barriers to partnership. Rudd et al. (2004), investigating a range of types of partnership between education providers, report a fear of the unknown, where partnership working requires staff to work in new ways and be open to perceived 'scrutiny' by others. They report that competition between providers, fostered by previous government policy, has hindered collaboration, and that personalities and previous cultures may not have been conducive to partnership working.

The literature offers some evidence of successful partnership working. Rodger et al. (2003) report evidence of positive outcomes and impact through better information, understanding and awareness among partner organisations. Significantly, collaboration over joint educational provision was the area of least

progress. Rodger et al. conclude that there is no 'single' or 'right' model of Learning Partnership delivery, and that the most effective Learning Partnerships are not simply 'delivery machines'. They observe that some of the key characteristics associated with effective partnership delivery are:

- a strong management and coordination team;
- clear vision and strong will to get things done;
- effective structures for internal communication; and
- an ethos of inclusiveness.

These characteristics offer some indication of the leadership needed in such contexts. A report prepared for the DfES in 2003 identified good collaborative practice, for example, in the Tyne and Wear Learning Partnership, where success was attributed to the partners' conscious efforts to achieve equity and commonality, which 'contrasts with the hierarchical and positional power-based roles and relationships so often in evidence' (DfES, 2003: 45).

Success for partnership leaders appears therefore to be balanced upon a policy-sharpened knife-edge, where incentives for collaboration may be more theoretical than real. This raises questions as to how educational leaders within partnerships are to lead and be led for the common good, and how they may balance the interests of their own organisation with the interests of the region, the learner and the partnership.

Leadership

Leadership within this context is clearly a complex activity. Senior, middle and first-line leaders in each organisation lead educational provision to the benefit of their own learners and their own organisation. Where there is collaborative provision for individual learners, or where a network of choice is offered collaboratively to learners, the focus of the leadership activity shifts. Within a partnership, in order to avoid hierarchical and positional power-based roles, leadership may fall to a trusted impartial coordinator. Current research (Rodger et al., 2003; Rudd et al., 2004) suggests that the motivating force for partnership work may be provided by a strong chair or coordinator, but that partners take a shared leadership role and have joint responsibility for outcomes.

New conceptual areas in educational leadership must therefore be developed to understand partnerships. Theories of leadership developed for single organisations (e.g. Leithwood et al.,

1999), especially distributed leadership (e.g. Gronn, 2003), have relevance for partnerships; distributed leadership offers a model of shared authority and shared responsibility for outcomes. Rudd et al. (2004) observe that in effective partnerships, stakeholders have a strong sense of ownership of the partnership; this involves a 'bottom-up' approach to decision-making, with everyone's views taken into account, and trust, honesty and openness between the partners, with a realistic acknowledgement of their individual strengths and weaknesses. This kind of partnership resembles a 'radix' organisation (Schneider, 2002), which operates through strategic alliances between organisations and has fluid and permeable boundaries, and an emphasis on lateral relationships across functions. For the 'weakly collaborative' arrangements evident in many partnerships to become more strongly collaborative, collective leadership has to encompass institutional difference and take account of inter-partner tensions and rivalries.

Modelling collaborative leadership

So how are policy, partnership and leadership linked, and how can the tensions and rivalries be understood and resolved? Drawing upon the synthesised data from the survey and case studies, the first model (Figure 1) links the three themes of policy, partnership and leadership, illustrating the motivating and constraining factors associated with each. The model enables the researcher and the reader to identify the intersection of leadership issues within the 14–19 Learning Partnerships with those of collaboration and response to government policy.

By setting motivators and constraints in opposition, the model illustrates firstly that government policy is both a key driving force for partnership and – through the mutual incompatibility of different policies – a key constraint. Policy offers strategic purpose and a legal driving force to the partnership; however, the next set of items in Figure 1 indicate that longer-established partnerships may have constructed strategy independent of government policy, based upon goals which they have in common. A strong message from this study is that partnerships need time to build collaborative leadership, to establish mutual trust and to develop partnership activity which is capable of riding the waves of policy.

The strategic leadership offered by the partnership as a whole depends upon mutual trust and goals which promote the common good.

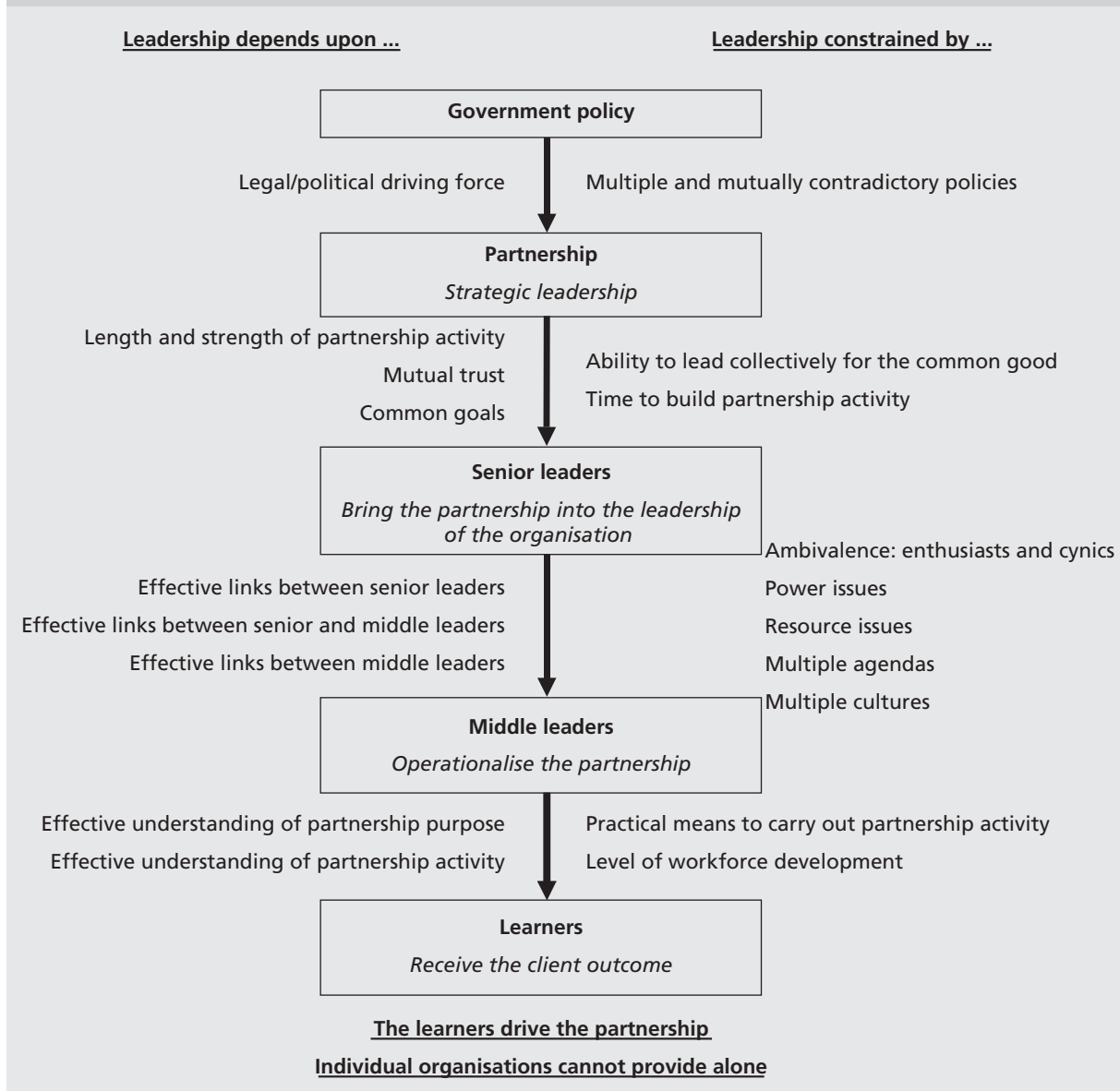
Building trust and identifying common goals takes time, but without these activities the difficult task of leading collectively will not be achieved. For example, leadership tensions in the partnerships at senior level arise out of conflicting goals and unacceptable levels of risk. It is vital that schools achieve well in terms of inspection, examination results and league tables. For partnership working to be encouraged, these national measures of judgement may have to change: currently they are a constraint to partnership working. 'Losing students' – or losing their achievements – to another partner carries financial risk.

Senior leaders who are partnership members each bring partnership activity into their own organisations. The model indicates that collaborative leadership in multiple organisations at strategic and operational level may be constrained by personal ambivalence, by power issues between organisations, by issues of resource, and by the differing agendas and cultures of each organisation in the partnership. However, the maturity of the partnership, and the degree of mutual understanding achieved may enable collaborative working in spite of these tensions.

As the model moves away from the primary partners – the senior leaders – operationalising the partnership becomes more difficult. The data indicate that the mutual trust and tolerance of difference established 'around the table' by partnership members cannot easily be translated into mutual trust among the multiple senior and middle leaders involved in the partnership. There may be little understanding of partnership work or of the operational culture and goals of partners. Effective links need to be built within and between organisations, at the strategic and operational level, if the considerable practical constraints of partnership activity are to be overcome.

What Figure 1 powerfully demonstrates is that the learners should drive the partnership: they are the *raison d'être* both of the partnership and the policy, and they offer a mutually agreed purpose for collaborative leadership. Individual organisations cannot provide for the multiple needs of 14–19 year olds alone – though some may think that they can. If learners simply 'receive the client outcome' as this model suggests, then they are powerless and disenfranchised. Partnership leaders make decisions on their behalf. The data indicate that learners are on the whole happy with their programmes, but that the process of choice and the choices offered to them depend upon local

Figure 1. Modelling policy, partnership and leadership



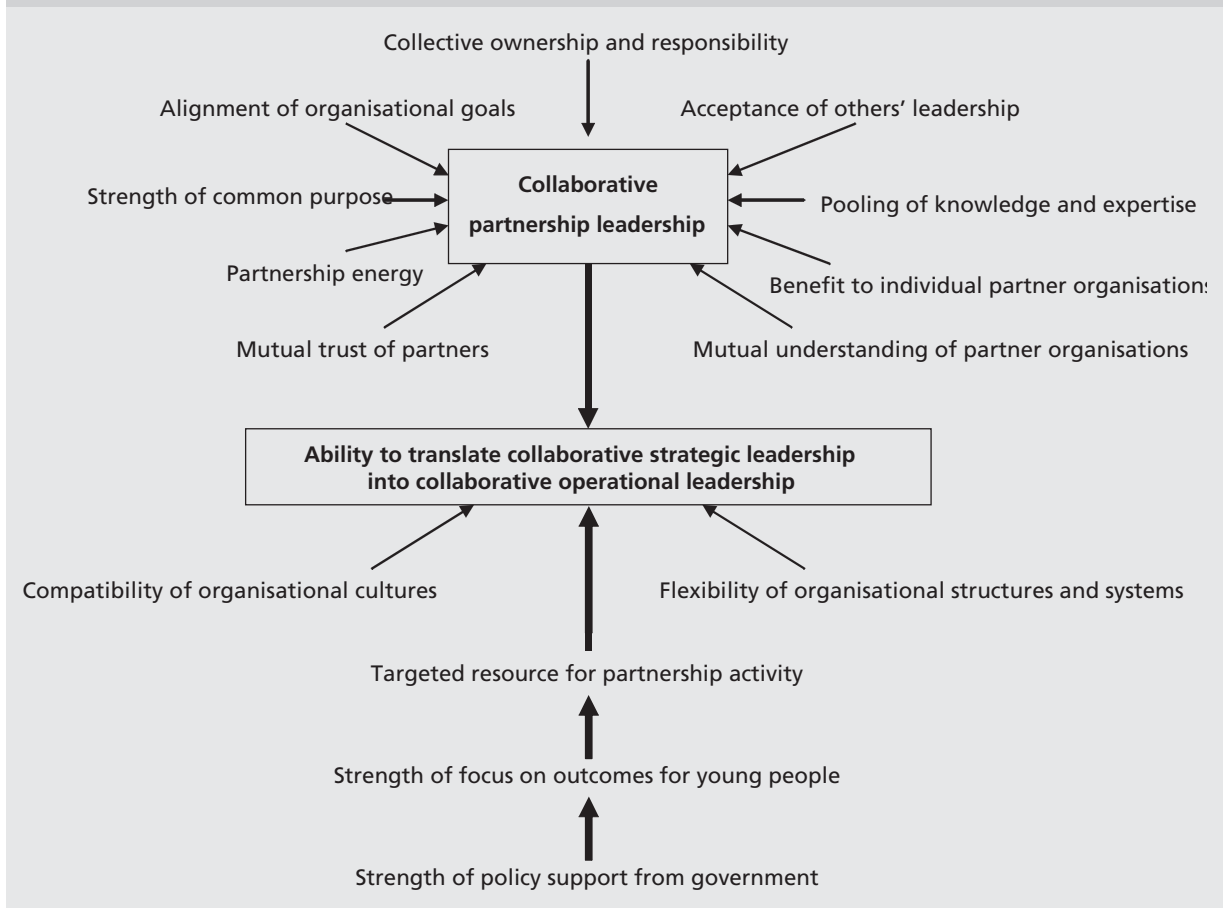
circumstance. In none of the case study areas were the systems designed to give learners a voice, and no partnership investigated by the project had yet achieved the sophistication of systems to make the 14–19 learning pathway smooth and coherent.

As a model, Figure 1 is quite simplistic. Each of the elements could be expanded, using further detail from the data. In its simple form, however, it becomes a tool for analysis both of the partnerships studied and others. Partners can consider the various elements to assess what strengths their partnerships have and where the weaknesses lie. The problems at learner and middle leader level may be common to such partnerships, and the key to strengthening these elements may lie in the upper parts of the model. What strengths does the partnership

currently display, and how can these be used to build the more difficult areas of operation?

The second model (Figure 2), focuses upon collaborative leadership as a key partnership activity. There is evidence from the literature, the survey and the case studies that the elements in the top part of this model are present to some degree in 14–19 partnerships. The model offers an ‘ideal type’. There will never be absolute alignment of organisational goals; individual and collective energy in the partnership may rise and wane; key players may find it difficult to accept each other’s leadership; an invisible balancing point of ‘good enough’ seems to be indicated for collaborative leadership to take place. Partners could use the model to understand what ‘good enough’ might mean for them, and to assess what would happen if one of these elements –

Figure 2. Modelling collaborative leadership



for example, acceptance of each other's leadership – were weakened.

Evidence of collaborative leadership, built upon collective ownership and responsibility, was apparent in all four case studies. Individual partners lead on matters where they have particular knowledge and expertise. Partnerships may be energised by the actions of the chair or coordinator; however, strength of common purpose and a determination to provide appropriately for the young people of the area are powerful motivators. The common strategic goal for the partnership can enable the individual goals of partner organisations to become, to some extent, aligned.

The type of leadership needed for the collaborative working illustrated in the top part of the model was summed up by one respondent as 'Machiavellian'. There is a need to keep power balances, an acceptance of others' leadership. Respondents indicated a preference for relatively strong-willed directive partnership chairs or coordinators who are trusted and respected: a feature which could boost partnership energy and strengthen common purpose. What appears to be needed is a combination of a trusted leader

who offers purposeful direction, and a perception among members that all partners are equal and have ownership of partnership activity. In seeking understanding of collaborative leadership, an observation from one respondent is particularly relevant:

[Partners may need] skilling up a bit regarding working together. I think we know about how to do it but I'm not sure we do. We're one-institution focused, and I'm not sure people have had experience of leading across schools or in federations.

Partners are developing their own understandings of collaborative leadership rather than following a particular known path.

Once again, an additional difficulty lies in the ability to translate collective strategic leadership into collaborative operational leadership, as illustrated in the lower layers of the model. The organisational cultures, structures and systems of the partner organisations may not be compatible, and collaborative leadership may founder at this operational level. There are few 'easy answers' to enabling access to provision across

a distance in rural areas, or to funding staffing resource across different funding regimes. The forces supporting the base of the model – the strength of policy support from government, the strength of focus on outcomes for young people by leaders at all levels and the targeted resource for partnership activity – are all essential for strongly collaborative leadership to be achieved. Currently, the strength and sustainability of this commitment in terms of policy, resource and compatible organisational cultures is uncertain.

Modelling theory?

The models presented as Figures 1 and 2 demonstrate ways in which the complexity of leading partnerships may be examined in order to evaluate and solve problems and plan for future development. They also have potential use for building theory. The multiple layers in Figure 1 and the cluster of elements at the top of Figure 2 offer some insight into the complexity of leadership across partnerships. Single-institution models simply do not fit the activity observed within systems of collaborative leadership. What is suggested by the data is a type of neural network, where leadership energy sparks and flows, where at any time one leader or cluster of leaders may move the partnership forward while others are less active. The energy for the network is generated both outside the network, driven by policy, and inside it, driven by the needs of the local economy and local learners. Collaborative leaders need to be dominant where their energy and expertise is needed, but also cooperative and alert to the common purpose of the partnership and the leadership of others. Above all, mutual trust is needed, and ways of spreading that trust beyond the partnership members ‘around the table’.

As partnership work continues in a range of professional settings, further depictions and definitions of collaborative leadership will emerge, and leadership theory will respond in turn. What this paper has offered is a starting point for this thinking and a tool for understanding the issues involved.

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