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# Applying a Dynamic Performance Management Framework to Wicked Issues: How Coproduction Helps to Transform Young People's Services in Surrey County Council, UK

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## ABSTRACT

This article explores how a dynamic performance management (DPM) approach can give policy makers a more integrated, time-related understanding of how to address wicked problems successfully. The article highlights how an outcome-based approach to solving wicked policy problems has to balance three very contrasting objectives of stakeholders in the policy making process – improving service quality, improving quality of life outcomes and improving conformity to the principles of public governance. Simultaneous achievement of these three objectives may not be feasible, as they may form an interactive dynamic system. However the balancing act between them may be achieved by the use of DPM. Policy insights from this novel approach are illustrated through a case study of a highly successful co-production intervention to help young people with multiple disadvantages in Surrey, UK. The implications of DPM are that policy development needs to accept the important roles of emergent strategy and learning mechanisms, rather than attempting 'blueprint' strategic planning and control mechanisms. Some expectations about the results may indeed be justifiable in particular policy systems, as clustering of quality of life outcomes and outcomes in the achievement of governance principles is likely, because behaviours are strongly inter-related. However, this clustering can never be taken for granted but must be tested in each specific policy context. Undertaking simulations with the model and recalibrating it through time, as experience builds up, may allow learning in relation to overcoming barriers to achieving outcomes in the system.

## KEYWORDS

Dynamic performance management; co-production; service transformation; service quality; public governance

## Introduction

The public governance literature illustrates how organizations from the public, private, and nonprofit sectors and communities need to collaborate to deal with social “wicked” problems, caused by the dynamic complexity characterizing today's societies (Bianchi, 2015; Head & Alford, 2013; Laegreid & Rykkja, 2014). “Wicked” problems characterize most of governmental planning, particularly where social issues are concerned (Rittel & Webber, 1973, p. 160). These are complex policy problems exhibiting high risk and uncertainty and a high interdependency among the causal factors. “Wicked” problems cannot be tackled by any single organization, and they typically spill over administrative levels and responsibilities. They are characterized by multilevel, multi-actor, and multi-sectoral challenges.

This dynamic complexity can be due to a variety of factors. Most important are multiple policy/decision makers who put different weightings on policy outcomes, requiring policy trade-offs in time and space;

multiple service pathways affecting the outcomes; decision levels that are sequentially connected, introducing rigidities into the system; time lapses between stakeholder actions and the system's outcomes; significant nonlinear relationships between causes and effects; and the unpredictability and uncontrollability of external factors (as perceived by policy makers) that may affect the system's outcomes.

Moreover, these problems are usually embedded in major social issues affecting modern life, whose interpretation is not unambiguous, because it depends on the value perspectives adopted—and these differ substantially between stakeholders. Therefore, simply gathering more information is not sufficient to understand and resolve them. Wicked problems imply that there are different interpretations of what the problem is and also that there are no definitive (i.e., true or false) solutions.

Public administration has always had difficulties in dealing with wicked problems. This is partly because many important results take significant time to appear,

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so that, when dealing with wicked problems, policy makers are prone to tackle short-term symptoms rather than long-term causes. This often divorces the interventions of public sector organizations from the outcomes they seek to achieve and also often results in sharp disconnections between different institutions and agencies, given their different processes.

The use of a short-term perspective and a sectoral approach in the formulation and implementation of strategies therefore tends to lead to a static view of the system and to a lack of coordination between different public agencies, nonprofit and private stakeholders.

This article explores how wicked problems can be more successfully addressed by policy makers through the use of dynamic performance management (DPM), in order to avoid some of these weaknesses of traditional performance management. The article highlights how an outcome-based approach to solving wicked policy problems has to balance three very contrasting objectives of stakeholders in the policy making process—improving service quality, improving quality-of-life outcomes, and improving conformity to the principles of public governance. It then demonstrates that this balancing act can be achieved by the use of DPM, an approach which has up to now only been applied to a very limited extent in public administration. Finally, the policy insights which can be gained from this novel conceptual approach are illustrated through a case study of a highly successful intervention to help young people with multiple disadvantages in Surrey, UK.

### **Widening the concept of performance management: Balancing quality of public services with public governance to achieve quality-of-life outcomes**

The challenges posed to public administration today by the many wicked problems it faces require the design and use of more ambitious and multifaceted performance measurement/management systems that can trigger decision makers' learning and coordination, strengthen their aptitude in framing dynamic complexity, and support them in pursuing sustainable outcomes.

The knowledge and practice of performance management has evolved significantly in the past three decades. In the 1980s, the nascent New Public Management movement focused on evaluating the so-called 3 Es (i.e., economy, efficiency, and effectiveness) of public services (Audit Commission, 1991; Pollitt & Bouckaert, 2011), often with a strong focus on cost reduction and outsourcing. From the late 1980s, this was broadened to an interest in how to conceptualize, measure, assure, and, eventually, improve the quality of public services (Bovaird & Loeffler, 2015). These

concerns with the 3 Es and service quality remain key to public sector performance management.

Subsequently, however, there has been considerable interest in outcome-based public policy making and management (Heinrich, 2002). The United Kingdom has been in the forefront of this movement (Bovaird & Davies, 2011), but similar trends have been identified in the USA (Moynihan, 2005), Australia (Hoque, 2008), and elsewhere in Europe (Pollitt & Bouckaert, 2011). From the 1950s, aggregate measures of well-being were developed, including the standard of living (UN, 1954) and quality of life (OECD, 1970). In more recent years, the OECD has been at the forefront of developing well-being and happiness indicators, through its Better Life Index (<http://www.oecdbetterlifeindex.org/topics/life-satisfaction/>). Following on from this, the UN Sustainable Development Solutions Network, which publishes the *World Happiness Report*, has created an SDG Index to track each country's progress toward the UN's 17 Sustainable Development Goals (Sachs, 2016). This change to quality-of-life outcome measures has been widely welcomed by policy makers, practitioners, and academics.

Another aspect of the pursuit of better outcomes in the last 20 years has been a recasting of the age-old concern with principles of government as “principles of governance,” and a growing interest in evaluating whether or not such principles are actually being implemented in practice—for example, through the World Bank's Worldwide Governance Indicators Project (<http://info.worldbank.org/governance/wgi/#home>). Since it is a basic axiom of Western philosophy that “the ends do not justify the means,” measuring conformity to these principles of governance would seem to be an essential complement to measuring achievement of quality-of-life outcomes.

Building on categorizations of the main public governance principles and processes by Kooiman (1993), Rhodes (1997) and Bovaird and Loeffler (2003), there is clearly a need to assess such principles of “good governance” as citizen engagement, transparency, accountability, human rights, the equalities agenda and social inclusion (gender, ethnicity, age, religion, etc.), ethical and honest behavior, equity (fair procedures and due process), respect for the rule of law, fair conduct of elections, representation and participation, and sustainability. These principles and processes of public governance are not absolute—their importance is likely to vary between contexts and over time, and different stakeholders are likely to have differing views on what they mean and how important they are. In practice, this suggests a “governance impossibility theorem”—it is unlikely that all of these principles can simultaneously be implemented to desired minimum levels. The assessment of the achievement of public governance principles has mainly been undertaken on a piecemeal, principle-by-

principle basis, with different methodologies developed to assess transparency and corruption (e.g., by Transparency International), accountability (e.g., by public audit offices), partnership working, etc. (Bovaird & Löffler, 2003, 2007).

There are therefore major literatures on performance measurement focusing on quality of public services, quality-of-life outcomes, and the achievement of public governance outcomes. They each claim a high level of political importance for their subject. This presents us with a problem—how can these three very different approaches be integrated? Separate evaluation of each dimension of performance on its own is unsatisfactory, as it is piecemeal rather than integrated and static rather than dynamic. Therefore, this article illustrates how qualitative DPM modeling can be used to provide generic insights which can support policy makers in addressing this wicked problem. Such modeling applies the system dynamics methodology (Forrester, 1961; Sterman, 2000) to performance management. Within a supportive learning environment with experienced facilitators, policy makers can use the insights from this DPM approach to enhance their understanding of the causes and effects related to policies, actions, and targeted results, and to identify when such cause-and-effect modeling around wicked issues may be inappropriate.

### The potential of a dynamic and outcome-based systems perspective for solving wicked problems

In the last decade, many OECD countries have started to develop new approaches that may enable them to deal effectively with wicked problems. To describe and implement these processes, both the scientific literature and practitioners have coined different terms. Among them are joined-up government (Christensen & Lægreid, 2007, 2013; Christensen, Fimreite, & Lægreid, 2014), whole-of-government (OECD, 2005), integrated governance, outcome steering (Hood, 2005), holistic governance, horizontal management (Peters, 2015), and new public governance (Osborne, 2010).

To implement such processes, three main sets of levers have to be synergistically managed by governments (Borgonovi, 1996):

- (1) institutional reforms,
- (2) organization structures and performance management systems, and
- (3) cultural and social systems.

In this way, agile governmental systems can be designed and implemented that can foster a more

pragmatic and intelligent collaboration among different stakeholders, not only in the public sector domain.

The implementation of such reforms also implies (at least in theory) the use of an outcome-oriented view of performance to frame and assess the desirability of policy effects. This approach not only considers outcomes in the short run but also in the long run. Furthermore, it not only focuses on the perspective of a single organization but also on the perspective of the relevant system which generates the observed problem behavior, including the achievement of public governance principles.

A DPM approach is particularly valuable in such contexts, since time disjunctions between actions and results, and nonlinear feedback relationships affecting policy outcomes, mean that decision makers cannot easily understand the structure and behavior of the systems in which their policies will be implemented. This approach may help them to detect the risks of unintended effects of policies which, although they may look consistent from a static and sectoral perspective, may fail in the long run because of lack of coordination or lack of adaptation (Ghaffarzadegan, Lyneis, & Richardson, 2011).

From this perspective, a number of challenges are associated with designing dynamic and outcome-based performance management systems—both inside and across public sector organizations:

*First*, such systems should not focus only on the “fixed period” *end results*, i.e., net change (“flow”) generated by the implemented policies in a given time period in the initial endowment of strategic resources in all the relevant organizations. Strategic resources are stocks of tangible or intangible assets available to policy makers to make their policies successful (Morecroft, 2007; Warren, 2002). Their dynamics depend on the value of corresponding inflows and outflows.

While these changes in the strategic resources generated by the end results are indeed important, they only provide one, limited snapshot. In order to understand the longer term workings of the overall system, it is important also to focus on the *performance drivers*, i.e., the critical success factors for achieving these end results. Performance drivers should be measured and monitored, and, where possible, changed to a more favorable state, in order to influence the achievement of desired outcomes.

Performance drivers are measured as ratios between the current strategic resource levels affecting performance and the desired levels (for instance, the “skills/desired skills” ratio). It is important also to outline the policy options which are believed to affect the strategic resources that will influence performance drivers, and—through them—the end results, which in turn will feedback on the strategic resources (Figure 1).

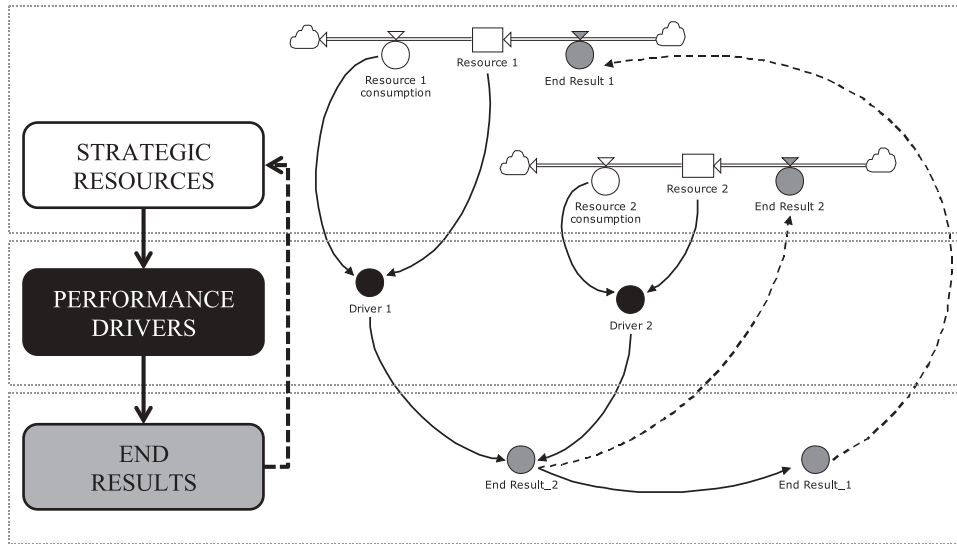


Figure 1. A dynamic performance management view.

Second, the relevant boundaries of performance management systems adopted by public sector organizations should not be limited to a single organization, since an outcome-based view of performance requires measures that can gauge the joint impact of all the organizations which are working together as partners. This implies that a system-wide view of performance should be combined with an internal view, by each organization (e.g., a municipality). The interplay of the two views will enhance a strategic dialogue among the key players, allowing effective management of each organization and also of the overall partnership to which it belongs. However, outcomes are also influenced by the behavior of target groups and wider communities, modeling of which introduces the concept of “coproduction.”

### Using a dynamic outcome-based perspective to frame the results of user and community-led coproduction

In order to use a DPM approach, a conceptual framework is needed to show how the resources from different stakeholders (including not only communities and individual residents and households but also organizations from the public, private, and third sectors) shape individual (or household) outcomes and community outcomes. This is illustrated in Figure 2. The interventions of public, private, and third sector organizations (TSOs) are complemented by activities of individual and community coproduction (Bovaird, 2007). We define coproduction as “professionals and citizens

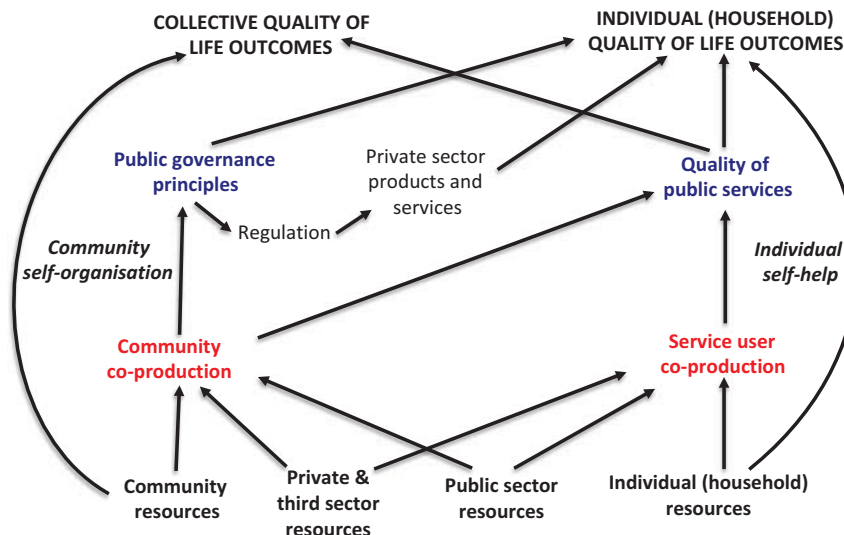


Figure 2. A conceptual framework for improving public and personal outcomes through coproduction. Source: Loeffler and Bovaird (2017).



making better use of each other's assets, resources and contributions to achieve better outcomes or improved efficiency" (Bovaird & Loeffler, 2016). Coproduction therefore brings together paid staff working in public services and citizens who may act as individuals or households or communities.

Clearly, coproduction (and particularly, community coproduction) requires a set of agreements as to how citizens will work with each other and with the public service provider to improve public outcomes. Therefore, public governance principles will need to be defined and operationalized to provide the "rules of the game" and the agreed processes by which citizens and organizations will work together.

When communities make a contribution to improve outcomes, e.g., by providing expertise, resources, and commitment to a public service within an agreed public governance framework, this is likely to increase the quality of the public service. However, not all forms of community coproduction involve contributing to a public service—in some cases, the outcome improvement is brought about by behavior change or public sector support for self-help and self-organizing. In the case of user-led forms of coproduction, people accessing public services may improve service quality through co-commissioning, codesign, co-delivery, or co-assessing a public service. This usually not only benefits the coproducing individual but often also improves the quality of life of other local people.

Of course, Figure 2 is a simplification of the actual relationships to be found in any specific policy system. For example, individual service users, where they play a role in co-commissioning public services, are likely to influence public governance principles. In another part of the model, community self-organization may improve individual household outcomes, not only community-wide outcomes. These scenarios are ignored in Figure 2 so that this framework represents a "core" schematic, on the basis of which more detailed frameworks can be developed for specific policy systems.

### A generic DPM model of a public policy system involving coproduction

In order to illustrate how the DPM approach can help address the wicked problem of an interacting set of governance principles, service quality changes, and quality-of-life outcomes, a generic model has been developed, of the type described by Morecroft (1988, p. 314) "Generic policy models are (usually small) models which display important dynamic processes that occur frequently ... [offering] modelers and policy makers a way of collecting and storing knowledge about feedback structure and dynamics of social and

business systems" (Morecroft, 1988, p. 314). Such models are "dynamic feedback systems that support particular but widely applicable behavioral insights" (Paich, 1985, p. 127). They are usually developed from a variety of information sources, such as case studies, published articles or surveys, personal knowledge, and experience from practice.

Though such models cannot be directly applied to any specific context, their value is to provide policy makers with a selective view of the feedback structure recurring in several policy domains. Therefore, generic models "are not appropriate for solving specific problems. ... [but rather] educational tools for learning about the fundamentals of complex systems ... [They] can improve policy making in general by upgrading the quality of a manager's mental models" (Paich, 1985, p. 130). They are therefore learning tools which can support the design and implementation of DPM systems (Bianchi, 2016; Bianchi & Rivenbark, 2014), which can enable decision makers better to frame trade-offs across time and space.

System dynamics modeling at the "insight" level is an established practice used to inform understanding of processes and is highly dependent on graphic demonstration (Warren, 2000, 2008; Winch & Joyce, 2006; Wolstenholme, 1999). It should not be confused with quantitative parameter-setting modeling, which sometimes occurs as a further stage of analysis.

The point of such modeling is to identify areas where dynamic factors (i.e., those with feedback effects within the system) may have important influence on the way a process occurs. Often, they are factors not directly within the control of an organization or factors within the control of the organization but constrained to operate at a "suboptimal" level.

Consequently, the qualitative system dynamics modeling approach developed in this article is a first step to designing and implementing a full DPM system. Where few specific data are available, qualitative modeling helps the conceptualization of a system's dynamic complexity, so aiding preliminary policy design and the development of more sophisticated simulation models for measurement and policy improvement.

Figure 3 illustrates a generic DPM model of coproduction activities by service users and local communities in order to improve the quality of life of local communities or service users. The figure illustrates one main end result, namely the change in quality of life experienced by service users or local communities. This in turn is influenced by three intermediate end results, i.e., those related to changes in:

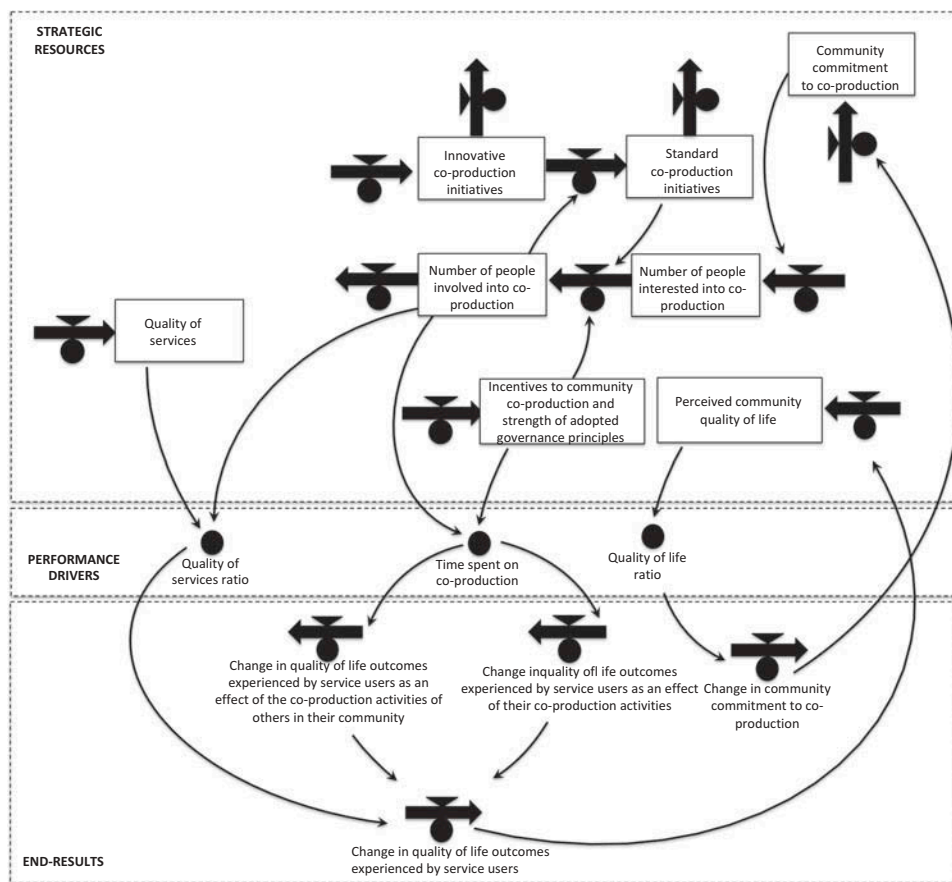
- Quality-of-life outcomes experienced by service users as a result of their own coproduction activities;

- quality-of-life outcomes experienced by service users as a result of the coproduction activities of others in their community; and
- commitment by citizens (service users and others in their community) to the concept of coproduction.

The performance drivers affecting the first two sets of outcomes are mostly related to the “attraction process” of getting citizens to be more interested in contributing to coproduction. This implies (a) finding what contributions each service user or other citizen could make to achieving the results desired and (b) designing and enabling the conditions which encourage and support these service users and other citizens to make these contributions, in a way which will be seen as mutually valuable. A performance measure that captures the described “attraction” process, at least partly, is the time spent on coproduction. The more time spent, the more committed the person is to coproduction (although in some negative scenarios, this may simply reflect an inefficient coproduction process).

In order to bolster this “attraction” process of convincing citizens to coproduce, public sector organizations must design conditions, promote values, and create imaginative incentives that enable and induce service users and other citizens to collaborate. To this end, better service outcomes and more convenient service processes are not enough—they also have to design approaches which respect governance principles (e.g., transparency, due process, equality of treatment, accountability, sustainability). This may require organizational changes inside the organization and externally with partners, which may take time to mature. This is depicted in Figure 3. through the resource accumulation process, whereby the incentives for coproduction and commitment to governance principles affect the number of people attracted to become involved in coproduction.

Increases in citizen’s quality of life are not only valuable as end results in themselves but also then form strategic resources, which affect the number of people in the community who are committed to coproduction and how much time they are prepared to devote to it. In Figure 3., this is shown by the



**Figure 3.** A DPM chart framing strategic resources, drivers, and end results, affecting service user and community quality of life through coproduction.

“converter” linking the end results to the number of people interested and involved in coproduction. In this “attraction” process, there may be a time delay factor, which means that over time, improvements in the end results may increase the average time each person allocates to coproduction, and also the stock of people who are prepared to participate in coproduction initiatives. A potentially powerful reinforcing loop, which may be able to trigger the further development of coproduction, occurs where innovative new coproduction initiatives (as a strategic resource) become seen as successful and therefore “standard” initiatives. This new strategic resource may itself increase the credibility of coproduction and therefore further boost the willingness of citizens to participate in coproduction and to spend more time on it.

A second performance driver is provided by the “quality-of-life ratio,” which involves a comparison between the perceived community quality of life and a benchmark, associated with different alternative measures (e.g., community expectations, quality-of-life levels perceived by the community in the past, perceived quality of life in neighboring communities, etc.). When community quality of life rises, it will increase this ratio, which in turn is likely to trigger further credibility of and commitment to coproduction. Furthermore, this increased commitment may reduce the outflow from the stock of people involved in coproduction (the “attrition” rate).

Though Figure 3 depicts a qualitative and generic or “insight” DPM model, rather than a detailed, customized, and quantitative DPM model, it can add value to policy design, since it can support communication and coordination among policy makers. In particular, identifying the variables related to the three different dimensions of performance, and framing the hypothesized causal pathways leading over time to changes in the performance drivers and the end results, is critically important. It allows the identification of design flaws in the system and interactive feedback effects which have been ignored or misunderstood. On the back of this “insight” model, a more detailed and calibrated model can be developed to support more detailed assessment of specific policies and a quantitative comparison between alternative decision sets.

The model in Figure 3 is at quite a high level of generality in relation to coproduction processes. When coproduction is analyzed in more detail, separate approaches can be distinguished which involve relevant citizens in co-commissioning, codesign, co-delivery, and co-assessment (Loeffler & Bovaird, 2017). Each of these four Cos entail a different process by which citizen involvement can make public services more

cost-effective and more closely aligned to the outcomes which citizens want. In this case, there may be some automatic gains in terms of achievement of governance principles—e.g., transparency is likely to be easier to achieve, since citizens are more closely involved in decisions and in actions. Moreover, citizens may be prepared to trade-off some other governance principles, as they are closely involved in decisions—e.g., there may be less need for formal accountability or citizen engagement mechanisms.

In order to operationalize the model in Figure 3, performance data at different levels are required. Performance data on service quality and quality-of-life outcomes are already gathered (to varying degrees) by public sector organizations, often following national government requirements. However, performance data on achievement of governance principles are usually collected unsystematically—e.g., data on the equalities agenda are probably quite good in most public services but data on transparency or citizen engagement are much less systematic.

If data to calibrate this model were regarded as a priority, then appropriate steps could be taken—e.g., central government could require a national citizen survey every 3–5 years to gather citizen feedback on outcomes and satisfaction with service quality (as was done in 2006 and 2008 in the United Kingdom). Such a survey nowadays would be expected also to gather information on citizen inputs to coproduction activities.

These data could be used to show that the configuration of activities might improve significantly, depending on whether one is using the standpoint of the citizen, the professional frontline member of staff, the top managers of service provider organizations, or the politicians commissioning the services. In particular, the absence of data on citizen inputs in fashioning and assessing the principles of public governance and in designing and delivering public services mean that current analyses of social cost-effectiveness and social rates of return to public sector interventions are greatly biased toward reduction of public sector inputs, rather than making best use of citizen inputs.

The next section illustrates how this generic DPM chart for coproduction can be applied to a case study of coproducing services for young people (SYP).

### Illustrative case study: Surrey SYP

In 2009, SYP in Surrey were seen as vulnerable to austerity-driven budget cuts. At the same time, a bold political decision was made to aim for zero NEETs (under 25s “Not in Education, Employment, or



Training”), although 10% of all Surrey young people were highly disadvantaged at that time. This sparked a radical shake-up of Council services, moving to a new holistic approach to the well-being of young people, unique in the United Kingdom (Loeffler, Bovaird, Van Ryzin, & Timm-Arnold, 2015).

Some services were recommissioned in-house but the majority were outsourced, almost all to TSOs. The results were remarkable. Although the overall budget was cut by over 25%, outcomes improved markedly—a 60% reduction in NEETs (becoming the lowest in England, and a much faster fall than nationally, which saw an average 17% reduction during this period), 90% decrease in first-time entrants to criminal justice system, 30% increase in young apprenticeships, and high satisfaction of young people. Moreover, by 2013, the number of professional staff working directly with vulnerable young people had actually increased.

At an early stage of the transformation process, the Council identified that for the vast majority of the approximately 100,000 young people in the county (Surrey CC, 2010), support from their schools, communities, and families and the benefits from the success and affluence of the shire afforded them a successful transition into adulthood. Many needs were common to all young people in supporting this transition; education, personal and social development, the development of identity, exposure to arts and culture as well as being safe, being healthy, and having fun.

Although Surrey young people experienced low levels of offending and antisocial behavior, low numbers of nonparticipation in education training and employment (3.9% of 16–19 population), low levels of teenage conception, low levels of homelessness, and low levels of substance misuse, the Council nevertheless believed that this performance did not represent the world class performance which it expected from its services, given the affluence in the county.

Despite the high overall level of well-being of young people in the county, their critical feedback in consultations and engagement work undertaken since 1997 had remained constant—Surrey’s transport network was difficult to access, expensive, and unreliable; bullying remained an issue; drug and alcohol issues continued to worry them; and they perceived that they were treated as a single group—and treated unfairly as a result. Moreover, their opinions did not appear to have had an impact on the issues that they faced.

Whilst the majority of young people did make a successful transition to adulthood, around 10,000 young people, about 1 in 10, had vulnerabilities which could mean they did not. In 2009, there were 1643 young people in the criminal justice system, 996 not

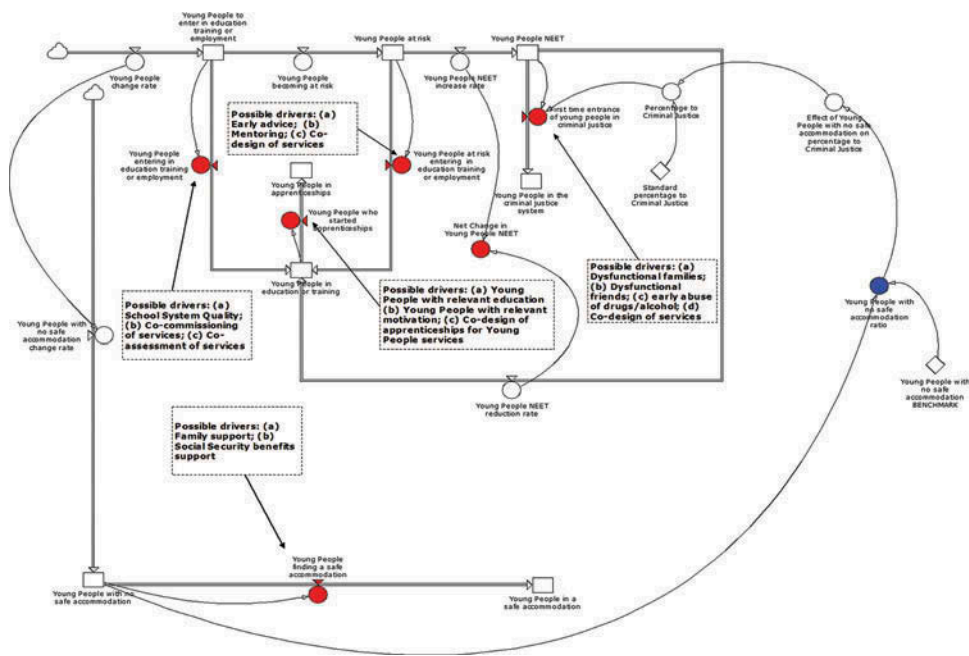
in education, training, or employment, 608 accessing drug and alcohol treatment, 374 who experienced homelessness, and 128 who were excluded from school. There were also geographical locations and neighborhoods where young people were less likely to make a successful transition to adulthood; e.g., one-third of young people not in education training or employment lived in just 20 electoral wards (out of over 200) and 10,000 young people lived in income deprived homes.

Although data systems did not provide a full picture of the overlaps in these groups, it could be seen that the majority of vulnerable young people had multiple needs. For example, half of all young people not in education training or employment had some form of special need and over half of young people within the youth justice system had a history of low school attendance. Additionally, there were minority groups such as Roma and traveler young people, gay young people, young people with learning and physical disabilities, and young people in council care homes who might not be vulnerable by definition but nevertheless faced challenges in making a successful transition that others might not have to face.

The evaluation of the recommissioning of SYP (Loeffler et al., 2015) showed that key factors in the transformation process were externalizing most services to TSO providers, taking a system-wide approach, focusing on priority outcomes for most vulnerable young people, engaging with young people as coproducers, and working in partnership with other public commissioners.

Figure 4 provides a simplified insight into the stock-and-flow structure for a preliminary simulation model, framing how a DPM approach can enhance the design and implementation of coproduction strategies. The figure traces the progress of young people through education, training, and employment and through the criminal justice system and the housing system.

More specifically, Figure 4 frames a temporal chain of experiences of young people in Surrey. A first critical step in the model is depicted by the two outflows from the stock of young people who enter into education, training, or employment. An important target for policy makers is to maximize the number of young people who are participants in education, training, or employment (the so-called PETEs, a system end result). Within a given time span (e.g., 1 year), the higher this outflow is, the lower the flow of young people becoming at risk will be. Among the performance drivers and related strategic resources affecting this end result are (a) school system quality, (b) quality and intensiveness of co-commissioning services by young people, and (c) quality of the co-assessment of services by young



**Figure 4.** A simplified and preliminary DPM stock-and-flow model of coproduction in the recommissioned Services for Young People, Surrey.

people, along with how well public agencies respond to these assessments.

A second critical step in the model is depicted by the two outflows from the stock of young people at risk. Here, the main target for policy makers is the number of young people at risk who become PETE (a system end result), rather than dropping out. Related to a given time span (e.g., 1 year), the higher this outflow is, the lower the flow of young people who become NEET. Among the performance drivers and related strategic resources affecting this end result are (a) the number of young people at risk who get good quality early advice, (b) the number of young people at risk who get good quality mentoring, and (c) the quality and extent of the contribution to the codesign of services by young people at risk.

Both these end results (i.e., the number of young people and of young people at risk who enter into education, training, or employment) increase the stock of young people in education and training (a strategic resource), in a given time period. This stock is then depleted by the outflow of young people who start apprenticeships in a given time period (a third end result). To increase this latter flow, possible performance drivers and related strategic resources which should be developed and deployed by policy makers are (a) the relevance of education received by young people, (b) the motivation of young people to develop their own skills and to contribute to social and economic life in the area, and (c) the quality and extent of

the contribution to the codesign of services by young people.

Another set of critical performance drivers and related strategic resources shown by the model refers to the first time entrance of young people into the criminal justice system. To reduce this flow, policy makers can act (a) to improve the behavior of local families exhibiting dysfunctional behavior, (b) to improve the behavior of the friends and others in the network of young people at risk who exhibit dysfunctional behavior, (c) to reduce the intensity and frequency of early abuse of alcohol/drugs by young people who are NEET or at risk of being NEET, and (d) to improve the quality and frequency of service codesign by young people in the local area who are NEET or at risk of becoming NEET.

The model also shows that safe accommodation policies for young people affect the end results in the area. The stock of young people with no safe accommodation influences the stock of young people in education, training, or employment. The flow of “young people finding safe accommodation” is affected by performance drivers and related strategic resources such as (a) the quality and intensity of family support and (b) the quality and intensity of social security support. The ratio between the stock of young people with no safe accommodation and its benchmark or target level provides another critical driver affecting the major outcome (end result) measure for the system, namely, the first time entrance of young people into the criminal justice system.

The model in Figure 4 therefore suggests some dynamic interactions which may have been important in the success of the Surrey recommissioning program, beyond the simple introduction of TSO providers, increased focus on young people who are NEET, or at risk of becoming NEET, and improved partnership working with other agencies. Such model provides the stock-and-flow structure to convert a DPM chart into a system dynamics simulation model.

As a generic insight model, it frames how the whole system works, at a macro level—i.e., who are the main players, which strategic resources they can affect, how such resources will change the performance drivers and end results over time, and how the end results will change the strategic resource initial endowment. This allows policy makers to see the “big picture,” to be explored in subsequent steps of the modeling process, rather than simply exploring one “frame” in great detail. Furthermore, it highlights certain parts of the process which may have played important roles, although they have not been the main focus of policy making—e.g., in Figure 4, the interaction of unsafe accommodation in influencing how young people who are NEET can become enmeshed in the criminal justice system by committing some criminal act or indulging in antisocial behavior.

Figure 5 frames, through an influence diagram, the main feedback loops, in order to provide insights to relevant stakeholders in coproduction to help them to design and implement sustainable policies. The signs on the arrows in Figure 5 show both direct and inverse relationships between variables. A reinforcing loop has

a positive polarity, while a negative polarity implies a balancing loop (Forrester, 1961). The balancing loop “B” shows the medium-term outcomes that can be generated by combining both service co-commissioning/codesign and co-delivery/co-assessment policies. This loop is balancing, since it aims to pursue system stability, by assuring that coproduction policies will reduce the stock of young people who are NEET to the desired level. It describes how attracting more young people and involving them in co-commissioning leads (after a delay) to a reduction of the stock of young people who are NEET. This increases the demand for coproduction, which boosts energies and efforts toward the improvement of the quality and intensiveness of coproduction services (performance drivers). This, in turn, further develops young people’s participation in service co-commissioning.

The reinforcing loops “R1,” “R2,” and “R3” show the amplifying returns that coproduction policies may generate in the medium-long run. Specifically, the loop “R1” shows how increasing the number of young people involved in co-commissioning will increase the time spent in coproduction (performance driver). This will increase community quality of life (long-run outcome end result) and will attract more young people into service co-commissioning. (This latter relationship, however, is not fully proven in the literature—some studies have shown the opposite relationship; see Bovaird, Stoker, Loeffler, Jones, & Pinilla Roncancio, 2016.)

The loop “R2” shows how a reduction of young people who are NEET may decrease (after a delay) the stock of young people in the criminal justice system.

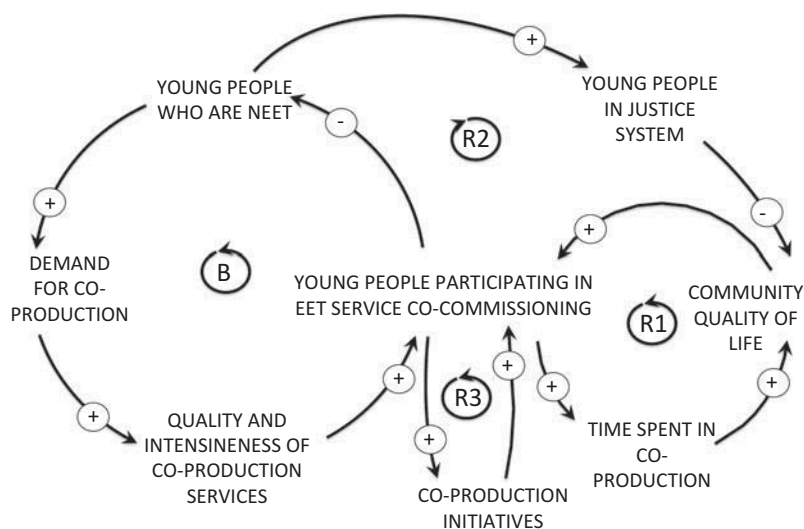


Figure 5. A simplified influence diagram framing processes and outcomes from coproduction in the recommissioned Services for Young People, Surrey CC.

This will increase community quality of life and will encourage more young people to participate in service co-commissioning. This will further contribute to reduce the stock of young people who are NEET.

The loop “R3” describes how more young people participating in service co-commissioning will increase the number of coproduction initiatives, which will further boost the involvement of young people in service co-commissioning.

These feedback loops highlight how the dynamic effects of interventions in “secondary” services (e.g., those related to the justice system or to family support, not directly related to education, training, or employment interventions) may be key in achieving success in reducing the number of NEETs. Consequently, as achievements in one period may derive from interventions in previous periods, evaluation of interventions to reduce the number of NEETs must take account of the time paths by which outcomes are achieved. Moreover, path dependence may characterize the system.

Clearly, innovation in the system, e.g., through coproduction, entails risks, which also need to be built into the model. The links depicted in Figures 3 and 4 are not certain to work—they have a probability of failure attached to them, higher for the more innovative approaches. This is not an argument to eliminate risk, since it is usually associated with innovations promising higher levels of performance. Rather, it suggests the need also to incorporate resilience, which allows the different stakeholders (especially service users and service providers) to bounce back, once failure does occur somewhere in the system (Bovaird & Quirk, 2016).

A final set of feedback loops affects the coproduction activities of young people themselves. These coproduction activities are likely to contribute significantly to the outcomes they achieve—and this varies with their motivation, their experience, and the opportunities which they are offered. It is also influenced by how convincing they found the response by the public agencies in the system to their coproduction in the previous time period. This part of the model has typically been neglected in public policy. The Surrey case study suggests that it succeeds best when it involves one-to-one working between professionals and vulnerable young people, and peer support and mentoring by young people for each other.

### Policy implications

The model presented in this article identifies some dynamic interactions which may have been important in the success of the Surrey recommissioning program, beyond the simple introduction of TSO providers, increased focus on young people who are NEET, or at

risk of becoming NEET, and improved partnership working with other agencies. Such a model provides the logical structures for the next phase of modeling, in which a DPM chart and an influence diagram are converted into a quantitative system dynamics stock-and-flow simulation model, using appropriate local data, to support strategic learning, communication, and performance management in the “multi-actor” context described here.

As a generic insight model, the stock-and-flow structure portrayed in Figure 4 is purposefully aimed to frame how the whole system works, at a macro level, giving policy makers a better grasp of the “big picture” in a system-wide analysis, rather than simply exploring one “frame” in great detail.

Moreover, the model identifies feedback loops with important implications for policy. It highlights how the dynamic effects of interventions in “secondary” services (e.g., those related to the justice system, not directly related to education, training, or employment interventions) may be key in reducing the number of NEETs, demonstrating the need for joined-up policymaking and management in the public agencies dealing with SYP. Again, it demonstrates that achievements in one period may be significantly affected by interventions in previous periods—evaluation of interventions to reduce the number of NEETs must take account of the time paths by which outcomes are achieved. Moreover, path dependence may characterize the system. This modeling demonstrates that policy development must seek balanced effort—over time, between actors, and across areas, if desired results are to be achieved.

A DPM approach can also usefully support decision makers in responding to the policy resistance that dynamic complex systems often embody. This phenomenon may imply that after a given set of policies has been adopted and implemented to fix a problem, the system may respond by showing a performance improvement in the short run. However, in the long run, problems may bounce back, often stronger and more pervasive than in the past—this can only be successfully tackled if the longer term system-wide effects are understood.

This conceptual model in Figures 4 and 5 provides a sound basis for the construction of a full simulation model, allowing policy makers to sketch and explore alternative scenario plans in designing and implementing coproduction strategies in the Surrey CC case, with a more detailed and quantitative analysis, as the next step in a strategic learning process (Bianchi & Tomaselli, 2015).

### Conclusions

This article has explored the different contexts for the role of public sector decision-making, showing that



simultaneous achievement of key outcomes, service quality dimensions, and governance principles may not be feasible—and that the modeling of the balance between these different sets of results needs to recognize that they form an interactive dynamic system. This means that politicians may need to accept that they are not determining the achievement of optimal outcomes in a predictable cause-and-effect chain but rather shaping the emergence of acceptable outcomes in a difficult-to-predict set of system-wide relationships.

Some expectations about the results may be justifiable in particular policy systems. For example, quality-of-life outcomes are likely to cluster, as many outcomes are strongly inter-related (e.g., poverty and ill-health). Outcomes in relation to the achievement of governance principles are also likely to cluster, as many governance principles are strongly inter-related (e.g., transparency and accountability). However, this clustering can never be taken for granted but must be tested in each specific policy context.

The interactions between service quality, quality-of-life outcomes, and governance outcomes are likely to be much harder to predict in advance and may, in some circumstances, form a complex adaptive system. Performance improvement simultaneously across these three sets of policy results is therefore not a policy goal which can realistically be set. There is therefore a need for a political decision on what balance between service quality, quality-of-life outcomes, and public governance outcomes is desired so that some modeling can be done to indicate whether this balance is feasible.

This article has provided a novel and practical template for developing a conceptual framework which can support policy makers in the decision-making process. The complexity and system interdependence highlighted by the DPM approach suggests that policy development needs to accept the important role of learning and emergent strategies, rather than control and “blueprint” strategic planning.

The policy intervention system, as shown in Figure 4, contains feedback loops which have important implications for policy, as shown in Figure 5. They highlight how the dynamic effects of interventions can ripple through the whole policy system, demonstrating the need for joined-up policymaking and management. They show that achievements in one period may be significantly affected by interventions in previous periods—consequently, over-hasty evaluation, or evaluation which only looks at narrow parts of the system, is likely to lead to misleading judgments. They show the nature of the risks which necessarily arise from innovations, such as coproduction, and suggest ways in which resilience might be incorporated in the policy system so that the different

stakeholders can bounce back, once system failure occurs (as it is bound to happen in any innovative system).

The model needs to be further developed to take account of the “transaction costs” of coproduction (and, of course, of traditional service delivery mechanisms). These involve, for example, gaining the trust of the service users and communities, whose coproduction the public sector wishes to engage. Again, there will be a need to ensure the employment and motivation of public services staff who understand and are committed to coproduction—and similarly to change the values of other partners. Although it may well be perceived by many stakeholders that both transaction costs and risks would be higher under coproduction, providing a barrier to its introduction, it is not clear that this is so. Providing simulations with the model and recalibrating it through time, as experience builds up, may allow this perceived barrier to be addressed. As the time paths of these changes are currently little understood, DPM may be a key tool for unpicking the role of transaction costs in system change, an aspect of policy evaluation which has been seriously under-researched up to now.

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