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NATIONAL CAPACITIES

A MODEL FOR NATIONAL STRATEGY

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Marius Ostrowski

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The Fellowship Team

Lucy Smith is the 2024-25 Heywood Fellow. She is supported by a small team.

- **Lucy Smith** — Heywood Fellow. Lucy was previously Director General for Strategy at the Department for Environment, Food and Rural Affairs and for UK Governance Group at the Cabinet Office. She was Constitution Director and Principal Private Secretary to Nick Clegg as Deputy Prime Minister.
- **Zainab Agha** — Visiting Practitioner. A Director in the Cabinet Office, Zainab has 20+ years' experience working in senior public policy and economist roles across the UK civil service and internationally including in Namibia, Ghana, Tanzania and Pakistan. Her most recent roles have focused on devolution and intergovernmental working.
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NATIONAL CAPACITIES

A MODEL FOR NATIONAL STRATEGY

The UK has the opportunity to craft a new approach to national strategy that promises to transform the practice of long-term planning and policymaking. In our paper *Long-Term, National Strategy: Designing a Contemporary Practice of National Strategy*, we set out a framework for national strategy-making, which includes among its central tenets the need for a clear account of the key determinants that affect the UK's ability to carry out 'national action' on various scales. Yet developing such a new framework requires more than just minor adjustments to the strategic activities of the UK government. Instead, it is a task that has extensive implications for how the whole country operates — not only Westminster and Whitehall, nor even the organs of the UK state, but the *whole* of UK society. The challenges and trends that provide the context in which the UK finds itself, and in which its national strategy takes shape, hold true for organisations across all of civil society. Businesses and financial corporations, courts and regulators, broadcasters and print media, arts and sports bodies, faith groups, colleges and universities, housing associations, hospitals, and (by no means least) families and neighbourhoods all contribute their own various efforts to the overall contours of 'national action' — and they face their own equivalent questions to government departments and devolved authorities. These are questions around making policy comprehensively and at scale, relying on practices of choice-making, and concerned with the specific roles each stakeholder plays.

This means that the new national strategy framework should be designed in a way that makes meaningful sense to — and can be easily applied by — strategic actors in any corner of UK society. It has to hold together and foster consistency (or at least minimise the most egregious dissonances) between the strategic approaches taken in different policy areas, over different geographies, and by different stakeholders. Yet in doing so, it also needs to remain sensitive to each one's particular priorities and requirements. A collective process is required to understand the trade-offs involved in developing a coherent, replicable strategic response to the UK's challenges and trends — which includes tracing carefully how decisions in one part of society spill over into others, and the complex chains of causal interaction this gives rise to. At the same time, delivering a new national strategy cannot just rely on government capacity (existing or prospective) alone, but needs to leverage existing capacity across UK civil society as well, from the public to the private and third sectors. Too much of how policymakers conceive of and think about national strategy is based on the assumption that it is only government that has levers that can be pulled to achieve large-scale, meaningful outcomes in society. This limited view risks leaving out of consideration the often equal if not greater powers that non-governmental stakeholders can wield to considerable society-wide effect. In that respect, *national* strategy is about much more than *government* strategy. Rather, it is more accurate to see it as a broader framework, which draws on, and in turn informs, strategies pursued by all the entities and organisations that belong to

UK society — from business and university strategies to roadmaps and forward plans developed by hospital trusts, charities, utilities providers, and many more besides. On that basis, rethinking how the UK 'does' national strategy includes a key requirement to understand how *all* of these bodies and organisations confront their strategic decisions. This includes coming to an analytical judgment about how (1) up-to-date, (2) internally coherent, (3) mutually consistent, and (4) effective their respective approaches are, and to what extent they are all pulling in broadly the same or crucially different strategic directions.

This raises questions about who all the stakeholders in national strategy are, and how they are intended to fit together into a coherent relationship. Is government only one of several equal stakeholders in national strategy? Is it a 'first among equals' that exercises strategic stewardship over them? Does it take a 'corporatist' approach of subordinating the various components of civil society to its own strategic direction? Or is its purpose more that of backseat facilitation, clearing the path for other stakeholders to successfully meet their goals with a high degree of mutual autonomy? If the role of government is pushed too far into the background, this loses the advantage of carrying out strategic thinking in the only society-level bodies explicitly designed to think in the *public* interest, and think *for* the UK as an entity. This would fail to make the most of the administrative tools that are exclusively vested in the state and leave strategy to the less socially binding and less coordinated decisions of other stakeholders. However, if the government overreaches, it risks 'crowding out' needs-led strategic collaborations (1) in specific policy areas, (2) in specific geographic places, and (3) among specific stakeholders. This stifles creative insights from organisations at the forefront of future-scoping for their respective domains, and reduces national strategy to solely government strategy, with a veneer of 'consent-washing' via the participation of outside stakeholders.

As we discuss in our paper *UK National Strategy in Historical Perspective: Turning Points and Ideological Developments, 1850–2025*, the UK has veered towards both of these extremes at different times in its strategic history. In the modern policy era, the UK has tended towards withdrawalist minimalism about the state's role in two major periods — the 'nightwatchman' era of marginal interventionism in the late 1800s, and the state retrenchment advocated by neoliberal sovereigntism in the late 1900s. Meanwhile, its embrace of maximalist intervention reached its zenith in the central planning associated with total mobilisation in the early-to-mid-1900s. In between, the UK experienced several periods of less pronounced conviction about the relative strategic role of the state, marked by various attempts at compatibilism, oscillation, uncertainty, and ultimately generally a transition towards a new settlement. The model of national strategy we set out remains fundamentally agnostic about which of these ideological approaches is the right one to take at any given moment in time. Instead, the common factor they all generally share is a particular view of the strategic stakeholders that shape the UK's 'national action' as forming a 'flotilla' — a group of strategic actors with many individual members, who can be arranged and configured in a large number of different ways, and who

may be more or less aligned on the overall strategic direction they are all heading in.

There are many different ways that UK policymakers can bring the various stakeholders that make up its strategic 'flotilla' into play when they develop a national strategy, each of which requires them to carefully weigh up the balances they must strike between these stakeholders in order to make the overall strategic outcome as effective as possible. To start, national strategy needs to construct a comprehensive overview of who precisely all these stakeholders are, and where the relevant bodies and organisations happen to be located in UK society. As a method of analysis, this is already somewhat familiar from existing approaches that seek to apply different forms of systems thinking to the country as a 'national unit'. These typically view government departments, businesses, schools, the media, and so on, as a series of separate societal 'players' that interact with each other to achieve social outcomes. But merely mapping a country's strategic stakeholders does little to resolve the question of how to involve them alongside each other in national strategy development — i.e., how far stakeholders should aim to converge or diverge (collaborate, coordinate, cooperate, compete, and so on) in their contributions to national strategic outcomes. In particular, rigorous stakeholder analysis requires a thorough grasp of what precisely each stakeholder's strategic contributions actually are. When they are acting strategically, what are they doing? What specific strengths (and, where relevant, weaknesses) are they bringing to bear on the country's overall strategic direction?

To address these limitations, this paper offers a new way to evaluate a country like the UK from a systems perspective. We can think of a country as a dynamic ecosystem: a complex entity made up of several smaller entities, which engage in different kinds of activity and interaction at the same time. To get an accurate sense of what this kind of national ecosystem is like, we cannot just look at a static topographical or anatomical map of where these smaller 'parts' sit within the larger whole. Instead, we have to describe 'what a country is like' in terms of 'what it does', in terms of the outcomes it brings about as a society, and how it achieves them. We can model this as a series of input–output processes that take place across the country, which different members of society actively carry out, individually and collectively, in the context of the wider ecosystem. This allows us to examine (1) which *inputs* are the fundamental 'building-blocks' of 'what a country does', and (2) how they fit together as 'moving parts' to effect societal outcomes. This changes the angle through which we try to grasp the role of different strategic stakeholders. Rather than treating them as strategic units to be mapped, this paper shifts the focus onto the inputs into societal processes, locating stakeholders in terms of how they fit in with these 'moving parts'.

With this framing in mind, this paper identifies five factors that represent the 'moving parts' of a country like the UK: its **people**, **means**, **resources**, **capital**, and **institutions**. These factors represent five *national capacities* that a country mobilises to achieve social outcomes, and which can be deployed specifically in pursuit of the country's strategic goals. Each of them comes in a range of forms, from highly concrete and

tangible (e.g. objects, people, things) to more abstract and intangible (e.g. concepts, social constructs, stores of value). These five capacities exist in aggregate at the national level, but in practice they are functionally divided and distributed among a series of quasi-autonomous *systems*, which can be grouped into broader *domains*, in line with the many kinds of social activity that make up the operations of a country viewed as a societal ecosystem. This policy paper examines each of these capacities in turn, providing a more detailed account of what belongs to each of them (at the systemic and national level), and the way they contribute to how a country works. It offers a general account of what a country is like viewed through this systems lens, using a model for how systems work as input–output processes, and how capacities fit into them.

To illustrate the model, the paper looks at two systems that are traditionally extremely important for national policymaking and strategy: healthcare and education. In each case, this paper identifies several key bodies and organisations who 'hold', 'own', or are 'in charge of' a particular portion of the country's medical and teaching and learning capacities. These are the stakeholders for each system, and it is possible to find similar organisations that play an equivalent role in every other social system as well. Mapping the stakeholders in national strategy and establishing how they contribute to the workings of the country as an overarching ecosystem, is a matter of determining what functional remit and responsibilities each of these stakeholders has within the operations of their respective system. Finding ways to include all these stakeholders within the relevant strategic interventions is thus vital to ensuring that the UK mobilises its national capacities to best effect.

A country as a national ecosystem

Developing a model for UK national strategy rests on the assumption that it is possible to analyse the UK as a single national 'unit'. This is not intended to suggest that the UK should be seen as closed, hermetically sealed, or self-contained. Aside from extreme cases of autarky or 'hermit' isolation, most countries in the global system are generally deeply connected to each other through various ties of reciprocal interaction, including cross-border flows (e.g., of capital, information, labour, resources, etc.). The UK is no exception: indeed, its historical approach has often been characterised by a strongly intentional push to maximise its international connections. Even so, countries like the UK are still described in geographically boundaried terms — as economies with domestic markets and industrial concentrations, as nation-states with borders and internal political subdivisions, as legal jurisdictions and constitutional territories, and so on. They may be (at least partly) open or porous to the other similarly boundaried entities around them, but they are not so diffuse that they blur into each other entirely.

In this light, the best analogy is to think of a country as a complex societal ecosystem, or 'social formation'. This makes it possible to analyse it as a distinct entity that enjoys a certain level of national functional aggregation. As such, the

country is made up of a number of different social systems, which operate in separate domains of activity (see fig. 1). We can think of a social system as a particular web of interactions and relationships among a set of social actors (individuals or groups) that follow a coherent pattern. Many such webs and sets of actors can coexist alongside each other in a society, and in practice, we are active — individually and collectively — in several systems at the same time. Yet we can distinguish each of these systems from all the others by the specific functions they serve: the specific kinds of social action associated with each one, and the processes that bring this action about.

Figure 1 — *The UK's domains of social activity and social systems*

Economy	Banking and finance — Business, industry, and labour — Commerce and trade — Consumption — Public fisc and state exchequer
Politics	Administration, policy, and public management — Diplomacy and foreign affairs — Policing and security — War and military affairs
Law	Citizenship, migration, and residency — Constitution and rights — Criminal justice and judicial affairs — Regulation and rule-giving
Culture	Cognition and ideation — Communications and the media — Entertainment, sport, and the arts — Faith and religion
Education	Experimentation, play, and testing — Innovation, research, and science — Learning and skills acquisition — Teaching and training
Social infrastructure	Accommodation and real estate — Amenities and utilities — Traffic and transport
Caregiving	Health and medicine — Nurture and parenting — Social care and support — Welfare
Environment	Climate and weather — Green spaces and the countryside — Nature and the biosphere

The separation between these systems and domains is above all a conceptual one. They are 'about' different things — specifically, different aspects of what a country 'does' when it works — and they involve adjacent but fundamentally independent kinds of social activity. Each of them sheds light on a different dimension of how a country or society appears, or how it presents itself — both internally to its members (a domestic audience) and externally within the global system (a foreign audience). Viewed through a commercial, financial, or industrial lens, a country is often easiest to understand as a market or 'an economy'. From a diplomatic, governance, or security perspective, it is a polity or 'the state'. The same goes in turn for the dimensions of 'what a country does' that the other social domains shed light on, seeing it respectively in terms of a jurisdiction, 'a culture' (or occasionally 'civilisation'), a repository of knowledge, a joined-up network, an organism, or a biome.

This is also a practical separation. Not everything that happens in each of these domains takes place equally everywhere in the country, in the sense that the geographical contexts, environments, or locations where they are 'homed' or 'housed' can vary greatly from one domain to the next. Different places and spaces can be more central or peripheral to 'what a country does' *overall*. 'The economy' is dispersed among various sites of activity, from industry clusters and financial hubs to ports and retail zones. 'The state' is concentrated disproportionately in key seats of government, such as in the capital city and devolved or regionally significant metropoles. 'Culture' is tied to specific artefacts and heritage sites as well as highly localised bodies such as galleries, museums, or 'arts quarter' clusters. Knowledge repositories are variously distributed based on the

level of specialisation they offer, from the fairly universal coverage of primary and secondary school catchment areas to the far less common university and college campuses and R&D parks. And in the most fundamental way, some areas in the country are more built up, 'developed', and urbanised, while others are greener and more rural.

Partly as a result of these spatial asymmetries, not all of a country's systems involve everybody who lives in and belongs to the country in exactly the same way. Instead, they rely on dedicated groups and individuals whose day-to-day lives and professional occupations steer their focus towards different aspects of what happens in the country, and who gain particular experiences and career expertise as a result. These experiences can be highly localised and specific to certain roles and social systems — people who work in investment banking or private equity, professional music or sports, faith leadership or social care. Or they may be widely distributed and (nearly) universally shared across the whole of society — citizenship and voting, shopping and home living, vocational training and medical treatment.

A successful approach to national strategy has to look at a country like the UK through the lens of both differentiation and integration. It must acknowledge the separations between its various domains and systems and the importance of the links and points of contact between them. This is especially true when it comes to the 'balancing act' of using policy to coordinate and foster alignment among what is happening in parallel in each of them. This, in turn, is also reflected in the divisions between public policy areas that are concerned with the courses of action government devises towards each of these different systems and domains. Each of them raises its own demands for strategic consideration, and it is not uncommon to find 'national strategies' developed separately for each of these policy areas (and systems) — industrial strategy and (geopolitical) 'grand strategy', education and health, migration and 'net zero'. However, a truly national strategy framework must find ways to harmonise these system-specific strategies and synthesise them into a single overarching approach for the national ecosystem as a whole.

Five national capacities

Treating the country as made up of a collection of interfacing and intersecting systems allows us to draw on generalisable accounts of system input–output processes to identify the consistent drivers that determine social change and the possible strategic responses to this change. Borrowing from sociological theories of social action, systems thinking, and management and production models, it is possible to define several consistent *capacities*: factors that play a key causal role in determining the success or failure of the various processes that constitute the operations of a given system. We can also aggregate across each of these capacities to the level of the overarching societal ecosystem, which gives us a number of *national capacities* that have causal significance for the country as a whole. There are five capacities that can be amalgamated, built out, refined, and scaled up from the systemic to the national level, where they act as five parallel dimensions of strategic analysis and development. In broad strokes, each capacity has its own defined role within a system's operations. For any system X that carries out activity x to create social output c, we can ask (1) *who* does x (**people**) (2) *with what* or *applying what* (**means**), (3) *to what* or *using what* (**resources**), (4) *due to what* or *supported by what* (**capital**), and (5) *where* or *in which context* (**institutions**). In turn, the same definition and disaggregation of these five systemic capacities can be translated to the aggregate level as well, to describe their role as national capacities within the operations of society at large.

1. Human capacity: people and active inputs

At the heart of a country lies its *people*, who do the various activities that make up the operations of society: the population as an aggregate human 'active input', the source of the mental and physical manpower that goes into all the activities that take place across society. This includes everything that shapes the 'motive force' that social actors can 'put into' the activity in question, ranging from their personal attributes and capabilities to the demographic profile of the country overall, and people's individual and collective identities. As an input, it 'activates' what happens in a country: people hold certain occupations and play certain roles, which expect them to fulfil various tasks and routines day-to-day. In these roles and routines, people learn to exhibit certain behaviours and mindsets, and develop a range of specific skills. As one of a country's national capacities, its people contain a number of key components, some of which are equivalent to particular psychological and physiological characteristics, while others reflect the statuses that people gain by participating in certain social systems (see fig. 2).

Figure 2 — *A country's people across different social domains*

Economic actors	Business executives (board members, owners) • consumers (clients, customers, shoppers) • financial service providers (accountants, insurers) • investors • managers • taxpayers • traders (marketing, retail, sales staff) • workers (farmers, manufacturers, miners, service personnel)

Political actors	Advocates (activists, campaigners, lobbyists, protesters) • armed forces (enlisted air, army, naval personnel, officers) • civil servants • diplomats • police officers (constables, support staff) • politicians (appointed officials, elected parliamentarians) • security services (counterterror personnel, intelligence personnel) • voters
Legal actors	Citizens • inhabitants (denizens, residents) • judges • jurors • legal parties (defendants, plaintiffs) • legal professionals (barristers, notaries, paralegals, solicitors) • non-citizens (foreign nationals, migrants) • regulatory staff
Cultural actors	Audience members (listeners, readers, viewers) • creatives (artists, musicians, writers) • entertainers • journalists (editors, columnists, reporters) • performers (actors, dancers, speakers) • publishers • religious leaders • sports professionals • worshippers
Educational actors	Counsellors • examiners • knowledge support staff (archivists, librarians) • learners (pupils, students) • players • qualifiers • researchers (academics, analysts, scientists, theorists) • teachers (lecturers, professors, trainers, tutors)
Social infrastructural actors	Constructors (architects, builders, surveyors) • commuters • couriers • developers • drivers and pilots (bus, car, train staff, plane crews) • homeowners • landowners • maintenance and repair staff (carpenters, electricians, engineers, plumbers) • property services (estate agents, property managers) • renters (landlords, tenants)
Caregiving actors	Carers • charity (donors, volunteers) • doctors • family members (children, parents, partners, siblings) • household services (cleaners, cooks, gardeners, nannies) • neighbours • nurses • patients • therapists • welfare services (agency staff, claimants)
Environmental actors	Conservationists • sustainable users (low polluters, recyclers) • wildlife

One of the key concerns that national strategy must find a way to grasp is how the country's human inputs factor into the challenges it faces. Across the various roles we play (e.g., jobs we are employed in, occupations we hold), each of us is empowered to own and required to fulfil a certain set of 'asks and tasks'. What precisely these roles are, what assignment of functions and responsibilities they entail, and how achievable they are for each of us, is generally a matter for the organisations we belong to — but at an aggregate level, national strategy needs to be mindful of how these individual tasks and responsibilities 'balance' each other and 'net out' across the country as a whole. Does each of us have the appropriate skills and adequate training to do what is required of us day-to-day? Are we relying on the most effective practical exercises and routines to do so? Do we have a clear sense of the evidence and deeper principles that underpin our activities? And from a psychological angle, do we have the morale and motivation to participate in the projects we each contribute to, as well as space for critical and independent

thinking? Each of these decides how we engage with — and how far we achieve — our own particular aims. National strategy then needs to consider how far the aggregation of these aims meets the country's overall strategic objectives. This is to do with understanding where error rates affect how we carry out our tasks, but also with consciously identifying systemic problems and suggesting improvements and solutions. Ultimately, this capacity also depends on a reliable degree of safety and security, along with provisions to maximise our welfare, and minimise the harms and strains we encounter in the course of our activities.

2. Technological capacity: means and instrumental inputs

Next are the *means* available to do the various activities that take place within a country, which are how people carry out society's operations: the methods and technologies that provide an 'instrumental input', to which people apply their manpower when they are conducting the tasks they are involved in. This covers anything that helps people turn their active efforts into impactful outcomes, individually or collectively, as well as how this aggregates to the national level for the country's social outcomes as a whole. These are inputs that 'facilitate' what happens: tools (such as equipment or machinery) and the techniques to apply them, buildings and places developed with certain activities in view, and infrastructure (grids, networks) that allows flows of people and resources to circulate around the country (such as communications, storage, or transport). We can also break down a country's means into some key components, which essentially add practical detail to how its various social activities take place (see fig. 3).

Figure 3 — *A country's means across different social domains*

Economic means	Banks (ATMs, branch offices, central bank office) • financial district • labour exchanges • machinery • malls (arcades, retail parks, shopping centres) • means of payment (cash, cheques, credit cards, digital currency) • production sites (factories, farms, fisheries, mines, plants, workshops) • supermarkets • tax collection infrastructure (digital, revenue office) • tools • treasury offices • working techniques (labour, management)
Political means	Electoral infrastructure • embassies and consulates • government buildings (departmental offices, executive offices, parliaments) • military doctrines (manoeuvres, tactics) • military installations (bases, garrisons, outposts) • police stations • weaponry
Legal means	Border infrastructure (barriers, coastguard stations, digital, entry points, guard posts) • court houses (courtrooms, magistrates' offices) • detention/processing centres • legal services (barristers' chambers, solicitors' offices) • prisons • regulator offices
Cultural means	Art equipment • arts/performance facilities (cinemas, concert halls, galleries, theatres) • broadcast channels/stations (radio, television) • connectivity (computing, internet, telephony) • digital media (emails,

	texts) • file sharing technologies • ID verification technologies • musical instruments • places of worship • press outlets (journals, magazines, newspapers, postal service) • print facilities • sports equipment • sports facilities (courts, pitches, stadiums) • ticketing • written media (books, letters, notepads)
Educational means	Classrooms • knowledge infrastructure (access cards, archival collections, book collections, digital records) • laboratories (office space, technical equipment) • learner IDs • learning techniques • lecture halls • museums • play facilities (games, playgrounds, toys) • teaching equipment (boards, textbooks, VLEs) • teaching techniques • training facilities (gyms, practice rooms)
Social infrastructural means	Airports • fire stations • residential homes (flats, houses) • ports • railway track network • roads • storage facilities (containers, servers, warehousing) • utilities infrastructure (electricity, energy grid, sewage, water mains) • vehicles (buses, cars, cycles, HGVs, planes, trains)
Caregiving means	Care homes (adoption agencies, retirement communities) • clinics (community hubs, GP surgeries) • exercise and gymnastic equipment • hospitals • household implements (childcare, garden, kitchen, sanitation) • medical treatments (mobility aids, physiotherapy, surgical equipment) • social security offices
Environmental means	Climatological installations (buoys, probes, satellites) • coastal installations (erosion protection, flood defences) • conservation infrastructure • forecasting models • forestry infrastructure • walking routes • waste minimisation facilities (carbon capture, disposal, recycling, treatment)

The task for national strategy is to understand which technological inputs the country has in place and ready to be applied, in order to come to a view on whether these are ones that will best allow it to achieve its national objectives. Having an efficient and reliable set of means on hand is a key precondition for any of us to successfully do what we intend, specifically to get the most out of our own input capacity. How well (and how closely) these means are set up in and around our personal 'area of effect' decides how immediately we engage with them, and how effectively we can turn our personal effort into concrete outputs. Again, this is decided in the first instance by the stakeholder organisations that we variously belong to. What national strategy needs to examine is how our moment-to-moment engagement builds up on aggregate into larger system processes that shape how well the UK deploys the total stock of means it has at its collective disposal. At a basic but vital level, how up-to-date and in what condition are the tools and techniques we rely on? How good is our predictive and preventative operational maintenance and repair? Are we able to ensure a consistent, steady flow of outputs? How good are we at reducing instances of breakdown, delays, and unplanned downtime? How well-developed are our capabilities for 'catching' defects, obsolescence, and substandard performance, such as in-built quality

control or redundancies? Beyond these minimum conditions, we also rely on having means that are well-suited for the specific tasks we have in view. They have to be either 'lean', 'precision' pieces designed to help us perform specific, highly refined functions; or multi-applicable, flexible elements that can be adjusted to respond to situational needs. For national strategy, this raises questions of how to keep track of processes of innovation taking place across the country's various systems and stakeholders, both for tools themselves and for the methods and techniques of using them.

3. Substantive capacity: resources and material inputs

Then, the *resources* a country has at its disposal, which society's activities are done (or happen) to: the wealth of natural or manmade substances that act as a 'material input', to which people apply means as they carry out their activities, and which are (often) qualitatively or quantitatively transformed as a result. This includes anything that people's efforts are targeted at or intended to affect — the 'starting-point' of necessary 'stuff' that is directly changed into social outputs. It includes all inputs, physical and tangible as well as mental and intangible, that 'underpin' what happens in a country: the unprocessed parts of the natural environment (land, water) that can be cultivated or extracted (e.g. for energy, food, or ores), synthetic artifacts (e.g. part-processed and semi-finished goods) from prior activity, data and information, and any other stocks that a country collects and accumulates. The country's resources also have several components, which all represent objects on a vast range of scales and sizes, from minuscule to (strictly) infinite (see fig. 4).

Figure 4 — *A country's resources across different social domains*

Economic resources	Commodities (goods, services) • crops (food, drink, produce) • exports • financial instruments (derivatives, shares, stocks) • imports • livestock • mineral ore deposits • property (consumables, estates, possessions, wealth) • semi-finished products • tax base • tillable land (arable, pastoral)
Political resources	National territory (airspace, homeland, overseas possessions) • secure zones (patrol areas, perimeters) • sites of engagement (battlefields, cybersphere) • votes (ballots, polls) • weapons ammunition (lethal, non-lethal)
Legal resources	Cases (claims, precedents) • evidence (submissions, witness testimony) • international waters • laws (bills, draft proposals) • legal documents (certificates, declarations, passports, visas, warrants) • verdicts (sentences, settlements)
Cultural resources	Audiovisual materials (cassette tapes, CDs/DVDs, films, photographs) • ideas (concepts, opinions, thoughts) • identity • information (data, digital files, messages, statistics, surveys) • sacred sites • sensory stimuli
Educational resources	Campuses (college, university) • experimental materials (chemicals, synthetic products, test subjects) • grounds • instructional materials

	(charts, handouts, pamphlets, slides, worksheets) • knowledge (abilities, insights, understandings)
Social infrastructural resources	Brownfield sites • building materials (ceramics, concrete, glass, steel, stone, timber) • commuter belts • electrical power • energy sources (carbon-intensive, nuclear, renewables) • fuel • house plots • packaging (mail, pallets, parcels) • undeveloped land
Caregiving resources	Household goods (domestic supplies, home furnishings) • in-kind benefits • pharmaceuticals • public health information
Environmental resources	Clean air • greenfield sites • natural topography (elevation, freshwater bodies, waterways) • nature reserves • parks • wild spaces

National strategy needs to understand what kinds of substantive inputs the country has available to be used (and often used up) on aggregate. For each of us, carrying out the tasks our roles (jobs, occupations) expect of us is only possible if we have enough of the right kinds of resources at our disposal whenever and wherever we need them. The key concern for national strategy here is to map out what this picture looks like on aggregate; whether the total amounts and overall standards of the resources that the UK's various stakeholders mobilise through their respective activities are appropriate to meeting the needs of the country as a whole. How far have the stocks and flows of these resources been optimised, through their cultivation and extraction, and their subsequent distribution? What ways have stakeholders found to minimise resource underutilisation and wasteful excess, with the lowest possible uptake and best possible usage of their inventories? How clear and familiar are the pathways for how we 'pass' resources through our particular activity sequences? Do we know when to insert them into our activities at the 'right' stage — 'initial', 'final', or somewhere in between? How well do stakeholders ensure effective resourcing through horizontal and vertical integration? This includes understanding what steps we take to minimise unnecessary effort when we handle resources, and above all minimise the chance of damage or rework. In practice, this means that a significant portion of national strategy development takes the form of quality control, alongside rigorous data-collection, evidence-gathering, measurement, and record-keeping of the country's resource base.

4. Fungible capacity: capital and investment inputs

Alongside and supporting these three core capacities is the country's *capital* reserves, which enable the activities on which society's operations rest to take place at all: fungible assets that represent an (actual or potential) 'investment input', which can be drawn upon to enhance or protect the activities that are happening across society. This includes 'hard' assets like financial outlays, as well as 'softer' assets like credibility and trust, which maintain or raise the impact of social outputs. Capital covers a range of inputs that 'multiply' what happens in a country: commitments designed to ensure that (more of) each of the other inputs is available, from people (e.g. boosting knowhow, hiring more personnel), to means (e.g. developing better technology, funding infrastructure projects), to resources

(e.g. buying more supplies, creating new sectors). A country's capital capacity also has several components, which cover the wide range of investments that can be deployed to make its various processes 'better' (see fig. 5).

Figure 5 — *A country's capital across different social domains*

Economic capital	Assets and liabilities (corporate, household, individual, public) • credit • debt • development (domestic and global, sectoral, spatial) • entrepreneurship • money (cash, currency reserves, digital) • savings • stock values
Political capital	Approval (favour, goodwill) • compliance (acquiescence, obedience) • intelligence (espionage, reconnaissance, surveillance) • leadership (courage, management, team building) • legitimacy • loyalty • trust
Legal capital	Coherence • 'good citizenship' • integrity (honesty, probity) • plausibility • reliability
Cultural capital	Credibility • diversity • faith • influence • language fluency (eloquence, multilingualism) • social memory • soft power (norm-entrepreneurship) • symbolic capital (honour, prestige, recognition) • talent • unity
Educational capital	Credentials • expertise (experience, specialisation, wisdom) • human capital • knowhow (knowledge transfer, skills) • literacy and numeracy • mentorship
Social infrastructural capital	Adaptability • flexibility • mobility • participation • transferability
Caregiving capital	Age and senescence • aid • bonding (bridging, community, networks) • charity • cooperation • death and mortality • empathy and sympathy • fertility and life • genetic disposition • human bodies and minds (demographics, (dis)ability, physiology, psychology, quality of life) • insurance • kinship • organismic constitution (physical and mental fitness, functioning, vitality, vulnerability) • reciprocity • social support • solidarity • wellbeing
Environmental capital	Degradation neutrality • fertility • physiognomy (intertidal levels, soil types, species composition, moisture and temperature gradients, vegetation types) • resilience • sustainability • weather patterns

National strategy relies on understanding the full range of fungible inputs that we can leverage — individually and collectively — to support and (re)generate the other capacities we have available to us, which otherwise become depleted or worn down as we mobilise them. Across its various systems, a country has many forms of social currency at its disposal, far beyond the narrowly economic definition of capital in (broadly) financial or monetary terms. Each of us uses them every day to 'smooth the path' for what we hope to do — committing our money, knowhow,

goodwill, credibility, and so on, to make it easier and likelier that we will achieve (and keep achieving) what we aim for. National strategy needs to take all these commitments together, to see what kind of social 'budget' or 'fund' the country has in stock, and how far it flows into supporting different processes throughout the national ecosystem (some more than others). Do we tend to outlay on fixed, long-lasting assets that become long-term features of our activities (e.g. factories, infrastructure, machinery)? Are we acquiring circulating consumables that are used up in these activities (e.g. components, information, energy)? Do we expend a variable portion on our human inputs (e.g. housing, skills, wages)? In each case, how much, where, when, and why? How are different stakeholders designing their investments to get more output out of each of these inputs — or at least avoid getting less output as a result of depreciation through wear-out? Part of what national strategy has to do is find a common basis from which it can manage this 'budget'. It must be able to assess the constraints that separate stakeholder decisions impose on the country's aggregate levels and overall kinds of investment, the 'return on investment' each outlay generates through output multipliers, and how easily outputs can be exchanged or (re)converted into further capital for reinvestment.

5. Structural capacity: institutions and social orderings

The final capacity is the country's *institutions*, which assemble the people doing activities, and the means, resources, and capital they rely on, in various clear and repeatable ways, and thereby direct and regularise how society's operations take place: the structures that arrange everyone and everything within it into a particular 'social ordering', which determines and oversees its (systemic and national) input–output processes. This refers to the communities, groups, relationships, and other dynamic interactions that make up society, which are inherited from, and shaped by, previous iterations of social activity, and which constitute the backdrop for all further activities to take place. Institutions 'coordinate' what happens in a country: they create contexts and hierarchies that people 'slot into', individually and collectively; they set out conventions and normative frameworks that impose expectations on people's behaviour, and control and regulate how they use a country's means; they decide the relative balance and distribution of a country's resources; and they steer the allocation and direction of a country's capital reserves. A country's institutions can also be disaggregated into several components, which act as conditioning parameters for how all its activities take place (see fig. 6).

Figure 6 — *A country's institutions across different social domains*

Economic institutions	Budgets • career structures • classes (employment, income, wealth) • competition and cooperation • economic cycles (business, investment, spending) • exclusive economic zones • fiat value frameworks • financial periods (quarters, years) • global/national markets (financial, goods and services) • industry sectors • planning (business, state) • professional associations (guilds, institutes, trade unions) • risk calculations • trade

	networks (export–import deals, supply chains) • trading and working schedules (daily, weekly)
Political institutions	Alliances and partnerships • branches of government (executive, judiciary, legislature) • branches of the military (aerial, land, sea) • democracy (manifestos, referendums, representation) • devolved authority areas (local, metropolitan, regional) • electoral frameworks (cycles, voting) • federations • government sectors • international and supranational bodies (EU, UN) • law and order • permanent state • policy areas • rivalries and hostilities • rules of war
Legal institutions	Borders and border zones • commitments (agreements, contracts) • constitutions • dispute arbitration • duties and obligations • judicial hierarchy (court/tribunal structure, rulings) • legal frameworks (body of law, rules of litigation, tort) • legal profession (advocacy, areas of law, specialisations) • licences • norms (truth, value, virtue) • professional ethics and standards • promises • quality control and regulatory frameworks • rights
Cultural institutions	Arts quarters • demographic communities • digital frameworks (internet protocols, programming codes) • languages (foreign, minority, national) • media landscape (blogosphere, broadcasting, podcasting, press, social networks) • national values • religious denominations (doctrines, faith groups) • science quarters • taboos • tastes (aesthetics, cycles, fashions) • 'the public' • traditions (artistic, heritage, intellectual, sporting)
Educational institutions	Career pipelines • catchment areas • classes (seminar groups, sets, tutorial groups) • education sectors (primary, secondary, further and higher tertiary) • learning schedules (after-work, full-time, lifelong, part-time) • methodological approaches (pedagogical, scientific) • qualifications (assessment criteria, grade scales) • subject areas • theories
Social infrastructural institutions	Home occupancy frameworks (freehold, leasehold, rental) • landownership • planning and spatial development frameworks • population (density, distribution, total) • urbanisation (cities, localities, towns) • utilities coverage and networks • travel catchment areas
Caregiving institutions	Branches of medicine • families (nuclear, relatives) • • friendship groups • generations and relative age groups • health catchment areas • healthcare trusts • human needs (flourishing, nutrition, quality of life, survival) • medical codes of conduct • neighbourhood communities • normal health parameters • population health profile • social circles
Environmental institutions	Areas of natural beauty • climate limits (carbon budget, habitable conditions, oxygenation levels, water salinity) • food webs • green zones (clean air, green belt, low emission)

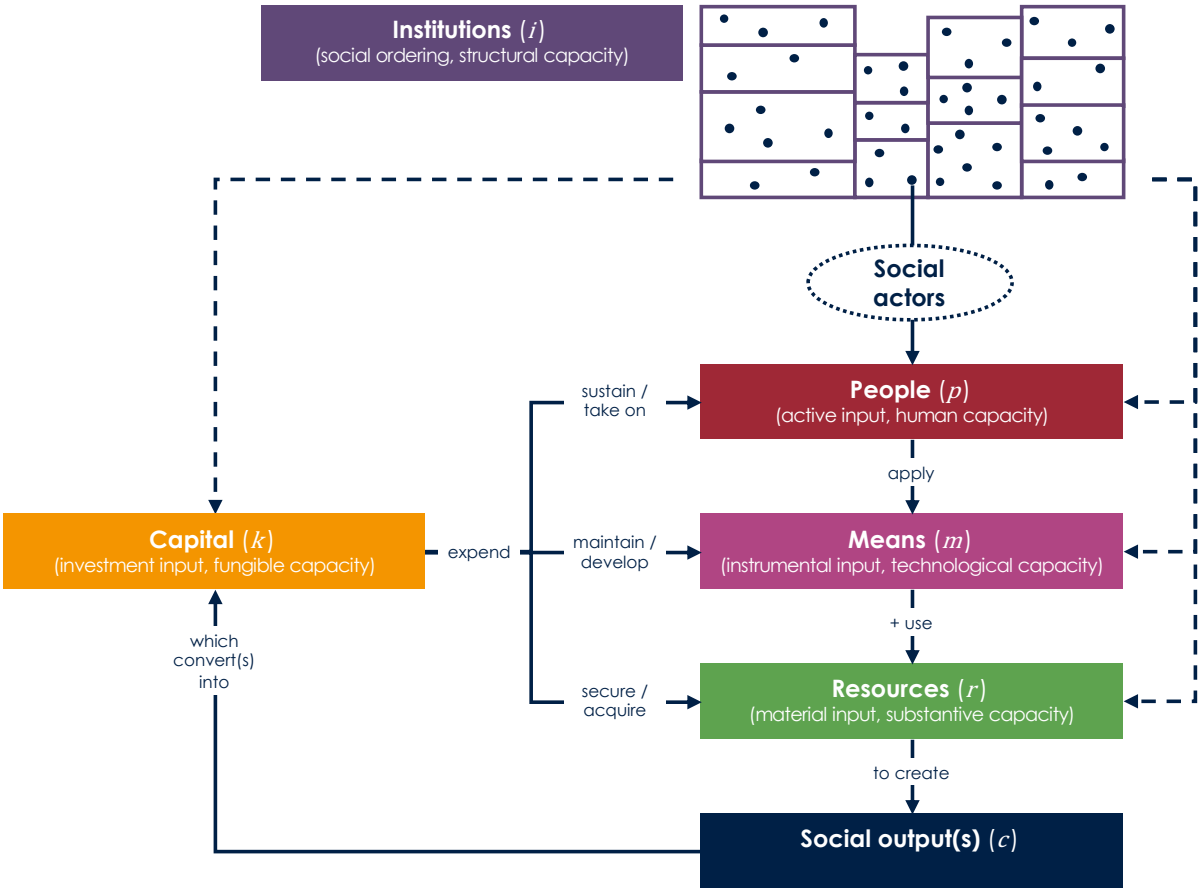
The final concern for national strategy is to get a sense of the structures across the country that determine how all the other inputs relate to one another. Fundamentally, the purpose of these structures is to impose predictable regularity on our activities by creating a series of repeatable formulas or patterns by which our

input–output processes abide — to provide the clarity and consistency we need to get the most out of our human inputs, means, resources, and capital. They shape the relationships and 'rules of the game' that decide how we deploy each of our capacities, providing layers of leadership, management, and supervision to ensure we do what we are supposed to be doing. Again, many of the most direct and immediate institutions we deal with every day tend to exist in a decentralised form, often internal to the stakeholder organisations we belong to (e.g., businesses, colleges, communities). How is their operational culture reflected in how we use the means available to us? How do their embedded norms of accountability, ownership, and responsibility affect how (far) each of us is given a stake in the overall distribution of their resources? How do organisational expectations and goals determine how they disburse their capital 'budget', and where the priority emphasis lies for positive returns and systemic improvement? National strategy needs to map these institutions thoroughly in order to understand how far these separate relationship patterns and rules align and clash with each other once they are built up and combined at the systemic or country level. This will help identify gaps and tensions, as well as areas of reinforcement and synergy in how the country's stakeholders 'hang together' as a whole. Insofar as national strategy exists to foster a sense of coherence and direction among all of us as engaged participants in society, it has to start by providing a framework within which we can understand what we are each 'bringing to the table'.

How national capacities work

To map out the country as an ecosystem in a rigorous way, we must clearly define what 'goes into' each of these five capacities, at both the systemic and national level. But to understand how these systems work, and how the operations of all the systems that make up a society combine to determine how the country works as a whole, we have to look at how these various 'parts' of the country interact. We can give a general account of how capacities interact within a social system, which also doubles as an account of how aggregate national capacities interact at the level of the country itself (see fig. 7). People (p) apply means (m) and use resources (r) to create social output(s) (c). This all takes place within the setting of institutions (i), to which people belong, and which frame how they carry out this input–output process. These expend capital (k) to support the other capacities, and procure more of them: to sustain or take on people, maintain or develop means, secure or acquire resources, and perpetuate or build institutions. We can understand this broadly as an input–output function: $c = f(p, m, r, k, i)$. To close the loop, social outputs can be converted (back) into capital in turn, which connects all the five capacities — human, technological, substantive, fungible, and structural — into a single overarching circulation.

Figure 7 — *A social system as an input–output process*

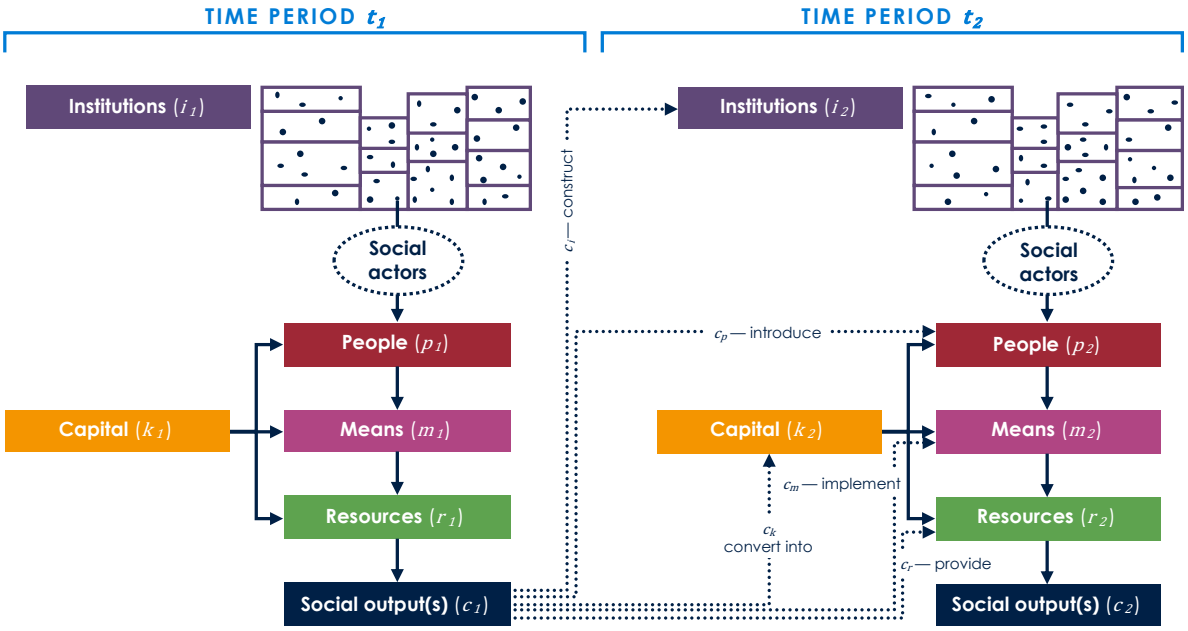


This model offers a snapshot of how the input–output process that lies at the heart of any social system works. But what this presents as a time-slice of a circular process actually plays out as a series of many successive iterations over time. What connects these are the various ways that the outputs created during one iteration of this process can be fed back into it at the next iteration (see fig. 8). The social output c of a system during time-period t_1 can directly affect any of the capacities available in that system in time-period t_2. A social system can introduce new people (c_p) to act as drivers of its active input (e.g. newly skilled workers, healthy citizens, upskilled learners), or conversely reduce their number. It can implement new means (c_m) to enhance its available instrumental input (e.g. new machinery, techniques), or remove existing ones and render them obsolete. A system can provide new resources (c_r) to fuel its material input (e.g. moving goods down the value chain, generating new insights), which may involve displacing or eradicating other resources. And it can construct new institutions (c_i) to change or refine its social ordering (e.g. new branch divisions, revised frameworks and rules), which may lead to breakdown and fragmentation in others. Any social output that is not directly allocated in this way can instead be converted into capital (c_k) and fed back into the process indirectly as investment input.

We can use this general model to grasp how particular social systems interact with each other, within the context of the country as a national ecosystem. Even with the shift from the circular time-slice to the iterations between t_1, t_2, …, t_n, the model is presented as a *closed* system: if any social output is reallocated between

iterations, this only takes place internally: the feedback loop from c to c_p, c_m, c_r, c_k, and c_i is entirely recursive. On the face of it, this suggests that every social system in a country is entirely autarkic, self-reproducing, and self-sustaining. But if we look at how social systems actually work, a major part of how different systems interact and interlink with each other is that each one of them has become 'specialised' in creating social outputs that not only (1) feed back into itself, but (more commonly) also (2) feed across into other social systems too. Specifically, rather than creating outputs that can be evenly or interchangeably allocated to *any* of the five capacities (c_p, c_m, c_r, and so on), their outputs are often geared towards feeding into some capacities more than others. A system's outputs may be more people-oriented (humanistic, e.g. citizenship, health, learning), more means-oriented (technological, e.g. communications, innovation, transport), more resource-oriented (materialistic, e.g. amenities, business, welfare), more capital-oriented (fungible, e.g. banking, experimentation, ideation), or more institution-oriented (structural, e.g. administration, constitution, regulation).

Figure 8 — *Social system process iteration from t_1 to t_2*



Part of what makes a country work effectively is that the social systems that are specialised in creating certain outputs can meet the 'input needs' of the other systems that depend on them. Even if systems are not individually self-reproducing and self-sustaining, the country as a whole is able to achieve that by aggregating across all its constituent systems and their capacities to the national capacities of the societal ecosystem. Or at least, it is able to do so to *some* extent: a large part of why countries like the UK open themselves up to cross-border flows (e.g. open commerce, relatively free movement) rather than insisting on total autarky is that this is how they meet 'input needs' they cannot generate wholly by themselves. This is true across all five national capacities: countries encourage immigration as a way to increase the size of the population and introduce scarce skills; they import technology and incentivise foreign infrastructure-building to boost their means; run

trade deficits in goods and services that they have in short supply to secure their resources; create attractive environments for overseas investment to bolster their capital; and welcome transnational help for domestic institution-building. From the perspective of national strategy, this is what makes it important to mobilise capacities across all of a country's systems, and incorporate as many as possible of the stakeholder organisations that control its capacities into a single 'flotilla' that is largely heading in the same strategic direction. Leaving out any system, or stakeholder, from this convergent 'flotilla' risks introducing traces of incoherence into the national strategy framework, and risks leaving underpowered the national capacities that this specific system (and its stakeholder organisations) are particularly focused on reproducing and sustaining.

To get an accurate sense of the status quo of the UK and its 'flotilla', national strategy must start from a rigorous evaluation of the 'health' of the country's national capacities. Such an evaluation must include a number of elements, at both the national and (where possible) systemic level:

- A sense of where the country's existing capacities are not only *assets* ('positive' capacities) but also *liabilities* ('negative' capacities), to find where the 'net balance' falls. This is key to deciding which capacities national strategy should 'lean into' (where they make an especially strong positive contribution to the country's 'health'), and which should be 'retired' (where their contribution is either negligible or strongly negative).
- A thorough assessment of the country's human, technological, substantive, fungible, and structural *over-* or *undercapacity*, especially where this particularly affects certain systems or geographies within the national ecosystem more than others. This is a crucial part of identifying the country's sectoral imbalances or societal 'strengths', as well as the place-based concentration or diffusion of its various activities — which strategy can choose to either remedy or reinforce.
- An overview of where national capacities are most exposed to *depletion* and *depreciation*, and where the normal operations of input–output processes lead to *waste*. This is useful to determining where interventions around (e.g.) efficiency, innovation, or sustainability should be targeted as a matter of strategic priority.
- A clear view of whether (and if so, where) the feedback from social outputs in time-period t_1 to inputs in t_2 is *positive* (enhancing, replenishing) or *negative* (inhibiting, reducing). This can help establish whether the rates of change within certain systems or for certain capacities are higher than others, in order to 'catch' future asymmetries and unevenness between them more quickly (if possible, before they arise).
- Overall, how all of these diagnoses correspond to key national considerations such as *growth* (the trajectories along which capacities are developing), *resilience* (e.g. 'floors' below which capacities cannot fall, or recovery rates after capacities have been deployed), *risk* (expected gains and losses that can accrue to a country/system from deploying capacities in certain ways),

and *stress* (the ongoing pressures that capacities find themselves under given normal or abnormal operations).

An evaluation along these lines should be *absolute* in the first instance, offering a qualitative and quantitative measure of each capacity, both for the country overall and disaggregated into each of its social domains and systems. It should also be *comparative*, tracking (1) how the country's 'status quo assessment' ranks when set against an equivalent analysis for the country's benchmark competitors today, and (2) where, and how far, its status now shows elements of growth and decline relative to equivalent evaluations at various points in its own past (either carried out at the time, or retrospectively).

Completing an assessment of the UK in terms of its national capacities is a vital prerequisite for knowing which parts of UK society would benefit the most from targeted national strategy interventions: where they are needed most urgently, or where they could have the most transformative effect. It is also a way to add concrete granular detail, especially at the level of individual social domains or systems, to the more abstract overarching vision for the country offered by the UK's prevailing national strategic ideology (now, or during previous periods of national strategy). This granularity has three specific elements. First, giving the UK a 'status quo assessment' — even one that remains private to those developing national strategy, rather than becoming public knowledge — helps turn the general worldview that policymakers use to 'read' the UK's domestic situation, both as they have inherited it from their predecessors, and as it stands relative to the domestic situation in other countries, into a *diagnosis* based on measurable (national and systemic) scores for each of its capacities. Second, following on from that, it converts the wide range of purposes that policymakers embrace, expressed as variously intentional effects or aspirational goals, into a common language of *objectives* defined in terms of (national or systemic) targets for any individual capacity. Lastly, it allows policymakers to turn the often implicit assumptions on which their strategic thinking or behaviour rests into far more explicit '*big bets*' framed as particular forecasts or hypotheses about what may or will (not) happen (nationally, systemically) to its various capacities. (For a more detailed discussion of our model of diagnosis, objectives, and 'big bets', see our paper *Long-Term, National Strategy*, and the elaboration of historical strategic ideologies in our paper *UK National Strategy in Historical Perspective*.

The fundamental idea behind this capacity-based model of national strategy is simple: for a country to successfully prepare a strategic framework, it must create accurate assessments of the challenges (strengths and weaknesses, as well as opportunities and threats) affecting each of the inputs to its aggregate and system-specific input–output processes. This includes formulating a dashboard that collates key metrics to help analyse and monitor its input–output processes, and a guide to identify the stakeholders that hold particular responsibility for how (some selection of) these processes operate on an everyday basis — and who must therefore be brought into play in different strategic interventions. The changing circumstances the country faces can have significant effects on (1) how any one of its five

capacities works on its own, (2) the interactions between them, bilaterally or in various larger combinations, and (3) the outcomes for individual social systems and for the national ecosystem as a whole. This means that national strategy must find a way to capture how specific social events, transformative trends, or other elements that characterise its current strategic context affect each of these five capacities — both at a national and a systemic level. The particular effects they have, and the challenges they pose to the 'moving parts' of the national ecosystem determine the targeted objectives and 'big bets' that national strategy has to take in view when it crafts a response. It goes without saying that this evaluation must be conducted with extreme care and precision: if any of these assessments are deficient or incomplete, this jeopardises the integrity of any strategy (national or systemic) that takes them as its foundation.

Illustrating the model: health and education

This model of social domains, systems, and capacities is deliberately couched in general terms, in order to set out a versatile framework that can be used to analyse and compare the very different activities that can take place under the auspices of a single national 'unit'. Of course, the same analysis that sees different social systems as part of a national ecosystem can also be squeezed or stretched to cover a societal unit of any size, from local and regional authorities to transnational and continental social formations. People, means, resources, capital, and institutions can be mapped in aggregate terms from micro to macro levels of place-based or spatial diagnosis — where the familiar treatment in terms of a country sits at a relatively 'meso' analytical tier. And where they can be mapped for single units, they can also be used to compare their capacity status quo with that of others that fall into the same place-based tier or geospatial category. This model errs deliberately on the side of parsimony, in the interest of creating a framework that resonates with as many different sectors of UK society as possible. It is designed to be replicated vertically and horizontally to capture the strategic decision-making approaches of different levels of governance, over different policy areas, in other countries, and among external stakeholders.

To illustrate how social systems work, and how different systems relate to each other within the context of a national ecosystem, it is helpful to look at two specific examples: (1) the healthcare and medical system, and (2) the pairing of the learning and skills acquisition and teaching and training systems. In each case, we identify the systems' particular function and specialised focus or purpose. We pinpoint the specific capacities that 'belong' to each system: for system X, its distinctive people (p^X), means (m^X), resources (r^X), capital (k^X), and institutions (i^X). We name a range of system-related stakeholders who are particularly responsible for these capacities — i.e. organisations who control (one or more of) them in a developed society like the UK. And we trace how each system's social output (c^X) feeds back into the wider societal ecosystem by reinforcing the inputs into other social systems.

Health

The healthcare and medical system, which is typically given its own health policy brief, belongs to a country's caregiving domain. Different branches of healthcare have their own specialised focuses, ranging from preventative to palliative medicine, from emergency interventions to lifelong care. Yet the function they have in common is broadly a salutary 'curative' function of healing people — i.e., boosting or restoring (as close as possible to) normal physiological or psychological capabilities and the quality of life attached to them — which in effect treats the country as a very large complex organism. Framing the healthcare system in input–output terms, its systemic capacities include:

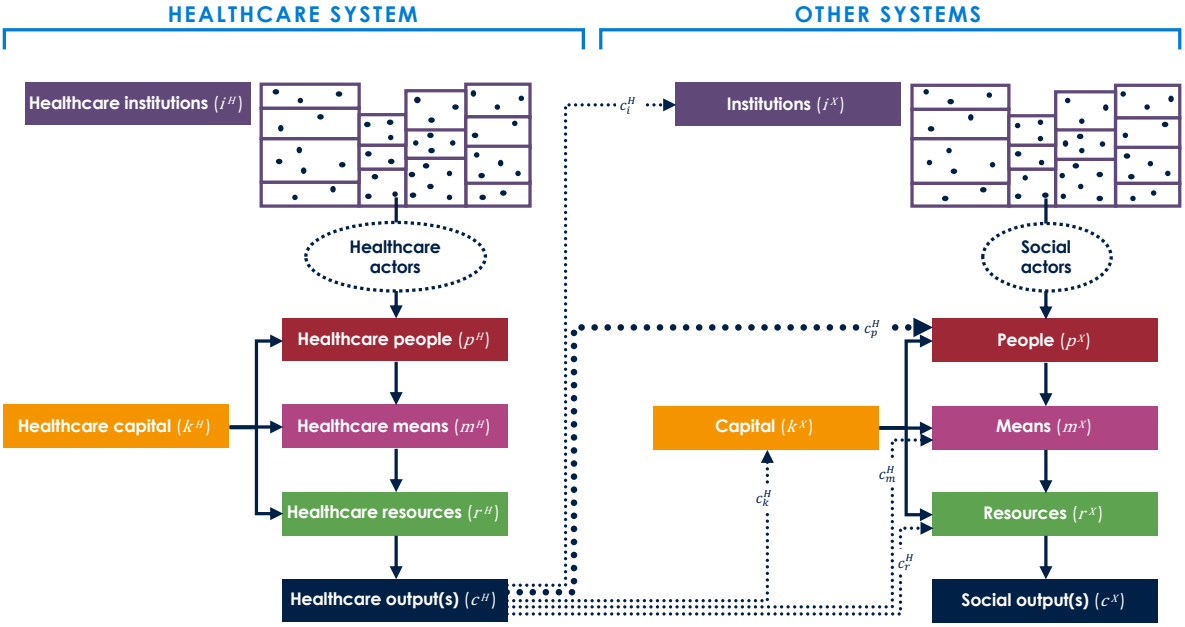
- **Healthcare people** (p^H): carers, doctors, nurses, and therapists, as well as (partly) patients themselves.
- **Healthcare means** (m^H): care homes, clinics, hospitals, medical treatments, as well as (partly) exercise and gymnastic equipment.
- **Healthcare resources** (r^H): pharmaceuticals, public health information.
- **Healthcare capital** (k^H): age and senescence, death and mortality, empathy and sympathy, fertility and life, genetic disposition, human bodies and minds, organismic constitution, and wellbeing, as well as (partly) aid, insurance, and social support.
- **Healthcare institutions** (i^H): branches of medicine, health catchment areas, healthcare trusts, medical codes of conduct, normal health parameters, and population health profile, as well as (partly) families, friendship groups, human needs, and neighbourhood communities.

The range of stakeholders for these healthcare capacities is wide-ranging. They include health and social care providers (GPs' surgeries, hospitals, nursing homes), their commissioning bodies, health ministers and health department officials, local authorities, doctors' and nurses' professional associations, pharmaceutical and medical technology firms, insurance companies, medical research institutes, and many forms of 'care in the community' volunteer bodies (including charities and non-profits).

In this case, the output (c^H) of the healthcare system is physiological and psychological wellbeing. The national capacity that wellbeing feeds back into especially strongly is the people (i.e., $c_p^H \rightarrow p^X$) that 'activate' input–output processes across a country's social systems (see fig. 9). Healthcare staves off the ailments and injuries that might otherwise prevent social actors from performing their tasks to the peak of their abilities, boosting their fitness as well as their mental and physical condition. On a macroscopic scale, wellbeing has medium-to-long-term effects on the precise demographics of the country, such as its age and generational profile, average life expectancy, and incidence of chronic illnesses and disabilities. The healthcare system also raises health- and safety-consciousness and awareness among members of society, avoiding toxic, unsafe, or unsanitary behaviours. Interestingly, this may also have 'negative' consequences for the country's human capacity, as a larger, older population may become

'underfunded' (e.g. underemployed, welfare-reliant) overcapacity relative to its other national capacities. Wellbeing also feeds back indirectly into other capacities. Medical care can prevent public health crises from fragmenting social ties in neighbourhoods or social circles, or disproportionately affecting certain communities. It boosts the usability of (especially) public transport and communications infrastructure, and lowers (e.g.) contamination risks associated with agriculture, land, and water. And by boosting individual cognition, lowering tiredness, and supporting rest, healthcare can support effective interpersonal deployment of expertise and memory.

Figure 9 — *The healthcare system*



Education

Meanwhile, the teaching and training and learning and skills acquisition systems are a good example of two systems that are conceptually separate but highly intertwined in practice. Both belong to the education policy brief, which is generally coextensive with the educational domain. The function of the teaching system is dissemination: demonstrating, embodying, sharing, and transmitting certain abilities and skills, or models of interpretation and understandings. The equivalent for the learning system is internalisation: (self-)developing knowledge and knowhow, gaining it through new experiences and observation, or adapting, changing, expanding, and improving what is already familiar. Both systems view the country as essentially a living storehouse of knowledge and skills. The capacities of the teaching and learning systems are:

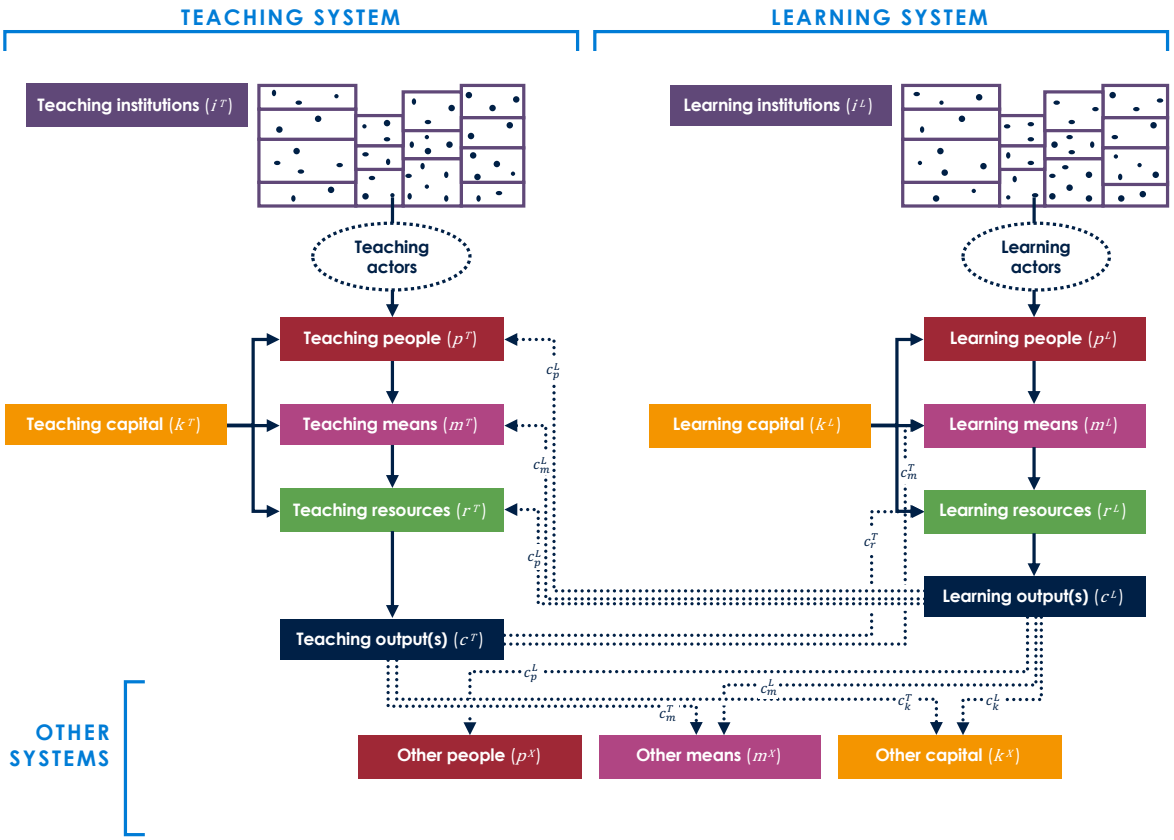
- **Teaching people** (p^T): lecturers, professors, trainers, tutors, with the support of counsellors, examiners, knowledge support staff, and qualifiers
  Learning people (p^L): pupils, students, and (indirectly) players and researchers
- **Teaching means** (m^T): classrooms and lecture halls, teaching equipment and techniques, and (partly) training facilities
  Learning means (m^L): knowledge infrastructure, learner IDs, learning techniques, and (partly) play and training facilities
- **Teaching and learning resources** (r^T, r^L): campuses and grounds, instructional materials, knowledge
- **Teaching capital** (k^T): expertise, knowhow, mentorship
  Learning capital (k^L): credentials, human capital, literacy and numeracy
- **Teaching institutions** (i^T): catchment areas, education sectors, methodological approaches, and subject areas, as well as (partly) classes
  Learning institutions (i^L): career pipelines, learning schedules, and qualifications, and again (partly) classes

Some of a society's educational stakeholders bridge both teaching and learning capacities, while others are more specialised on one or the other. Key organisations are education providers (colleges, schools, universities), their managing trusts, alumni and donor organisations, education ministers and department officials, local authorities, accreditation bodies, academic quality controllers and regulators, teachers' and lecturers' professional associations, learners' forums and student unions, high-skill and knowledge-intensive businesses, and education charities/non-profits and NGOs.

We can describe the symbiosis between these two systems in simple terms: teaching fosters learning, in that the teaching system creates several of the inputs needed for the learning system to operate successfully (see fig. 10). The output of the teaching system (c^T) is (concrete, explicit) knowledge and knowhow, which provides the material we are meant to internalise ($c_r^T \rightarrow r^L$), and the tools that help us do so ($c_m^T \rightarrow m^L$). In turn, the output of the learning system (c^L) comprises (abstract, explicit–implicit) abilities and skills, interpretations and understandings,

which are channelled back into the stuff ($c_r^L \rightarrow r^T$), methods ($c_m^L \rightarrow m^T$), and also the skillset we use ($c_p^L \rightarrow p^T$) to deliver more teaching. Beyond this feedback loop, knowledge and skills are channelled especially into national capacities of people ($c_p^L \rightarrow p^X$), means ($c_m^T, c_m^L \rightarrow m^X$), and capital ($c_k^T, c_k^L \rightarrow k^X$). They provide social actors with mental and physical boosts to their capabilities, enhancing or improving how they act (e.g. their dexterity, intellect, speed, or strength). They spread awareness of specific approaches, techniques, and tricks for how people in different occupations can carry out their tasks. And knowledge and skills can build up into expertise and memory that can be leveraged within and across systems: covert intelligence that can be used to eke out (e.g.) commercial, diplomatic, or military advantage. Yet they can also feed through into the remaining capacities as well. For instance, instruction forms the basis of the expectations and traditions that influence how system processes take place, while professional and 'soft' skills transform the management and mentorship dynamics within occupational teams. In a similar way, knowledge and skills shape the kinds of data, information, and statistics that the country collects about itself and its global partners and rivals.

Figure 10 — *The teaching and learning systems*



Conclusion

This paper has outlined a new way of thinking about how a country like the UK works: as an ecosystem that operates through a series of interlinked input–output processes, spread across several domains and systems of activity. The driving forces behind both the national ecosystem as a whole and the various systems it comprises are five capacities: *people*, *means*, *resources*, *capital*, and *institutions*. These national and systemic capacities are key to mobilising strategic advances across a country, as part of achieving societal change and development in a broader sense. They are the social actors that implement strategic decisions and pursue strategic objectives; the instruments and materials these actors use when they do so; and the investments and social orderings that underpin how they do it. We can grasp the outcomes of these decisions and objectives in terms of social outputs that become part of the country's future capacities as they feed back into the next cycles of its input–output processes. Among policymakers, a 'joined-up' approach to national strategy has to look at these capacities both (1) as national aggregates and (2) as they exist in different domains and systems, and across different policy areas. It also has to understand which bodies and organisations 'hold' or 'own' different fractional portions of these capacities, in order to capture precisely which stakeholders need to be mobilised (and how, where, and in which combinations) to develop and deliver strategy across society.

The model this paper outlines lays the conceptual foundations for policymakers to ask deeper questions about how a country like the UK works — and, taking that as a starting-point, how it could work *better*, and what precisely they need to do to bridge the gap. Of these questions, many of the most urgent and rewarding concern the exact relationship between the five capacities. What do the input–output processes they each contribute to look like 'in action': at the national level, at the social domain or system level, or for particular stakeholders or even individuals as members of the societal 'flotilla'? Do some social activities lend themselves more easily or intuitively to being modelled in terms of these processes than others? Are all five capacities of universally equal significance or value, or are there situations where the balance between them tilts in different directions: again, nationally, systemically, all the way down to (inter)personally? Related to that, does this affect where government, business, or other members of the strategic 'flotilla' should generally target their interventions — e.g. 'pulling up' capacities that are lagging behind, or 'pushing ahead' capacities they see as key to advancing the state of society as a whole? How vulnerable are these capacities and the social processes they underpin to strategic challenges — either 'homegrown' (endogenous, self-imposed) or 'foreign' (exogenous, other-imposed) in origin? And are some capacities more prone than others to self-reinforcing dynamics of (e.g.) deterioration if they are neglected, or improvement if they are untrammelled — or do they require constant active strategic attention?

These questions may initially sustain a modicum of distant philosophical interest, but in all cases they can very quickly grow to command immediate policy urgency as well, requiring policymakers to move quickly from theoretical reflection to empirical

enquiry. This raises the further consideration of how, and where, policymakers should develop the capabilities to offer a well-supported view on each of these questions. This paper has alluded to some clear ways that the UK's capabilities could be extended in order to fully realise the new ways of characterising the country that the national capacities model offers: (1) a dashboard or another similar up-to-date monitoring mechanism that can keep track of its social inputs, or a basket of reliable proxy metrics; (2) a repository of national organisations that can be leveraged as a relatively detailed 'order of battle' for the various members of the national 'flotilla'. At its most parsimonious, these would require certain targeted extensions of existing statistical and oversight capabilities within UK state and other societal institutions. But moving from these to proactive national strategy requires developing additional analytical and directive capabilities — at least at the centre, however defined and wherever located, but also plausibly diffused geographically or across systems in order to refine their coverage and extend their reach. Even more than specific bodies accountable and responsible for national strategy, these capabilities require a sense of strategic process: a clear 'how to' account that allows *any* strategic actor across the UK to apply this capacity model to their own situation, and leverage their understanding of their own absolute and comparative 'health' to inform and refine their subsequent strategic choices.

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