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Previous attempts to mitigate financial risk

Defence PFI/PPP and prime contractorships were introduced into the UK almost concurrently between 1990 and 1992 respectively. Why were they being introduced? The answer is not as simple as just finance and the ability to provide long term structures (which incidentally introduced new risks), but primarily to try and remove the risk that had been borne by government and its departments of state which had proved themselves inadequate to the task of procuring complex technical

and sociotechnical systems. But this transfer of risk was a misnomer. It was quite clear to those within both the technocracy and commercial industry that the risk was never transferred, although it might have been paid to do so - it remained with the government with liability remaining on the tax payer.

The risk-reward ratio which had been expected to transfer risk in fact never did, which resulted, certainly initially, in a new revenue based business model for commercial industry which had little, if any, real accountability as its management and contracting capabilities were far superior to those of the customer organisations; which unfortunately had little understanding as to how to contract for assured affordable service provision and were restricted by the dogmas of self-referencing bureaucracy which displayed, to those organisational observers trained to be aware, autopoietic characteristics; where all processes ended up being assessed in terms of sustaining the psychology and physiology, if not the morphology, of the organisation.

Current systematic assessment used to appraise decision makers of a complex solution's attributes actually hinder rather than help; presenting a false level of confidence as it fails to provide an understanding of the systemic nature (measured in terms such as effects-based-operations) in a recursive manner which reflects the dynamic nature of these complex procurements, where responsibility (with associated accountabilities) for actions that will move the system ahead will change over time.

Hence, accountability was then, and remains I suspect, a difficult issue which has never really been grasped; the reason being, which I will develop later, that like a flock of starlings, although it is made up of many individual birds, it is difficult to select any one at any particular time as a result of the complex nature of the whole which stems from the numerous interactions (relationships). Thus post hoc analysis is in reality rendered useless as a result of equifinality and its amorphous nature; the ex ante planning and accountability being lost within the whole.

For example on both the demand and supply sides individuals were, and are, required to agree annually their: responsibilities, authorities, objectives and accountabilities. On the demand (customer) side this seeming acknowledgement of

liability to bear the consequences for failure was in reality a dissimulation, as the stakeholder organisations existed in vertical 'top level budget' stove pipes, to which the holistic nature of 'customer' was oblique; a problem of trying to understand the holistic nature of a complex system through aggregation (the sum of the parts invariably does not make a satisfactory whole). Whilst on the supply side, although it might again appear that the MD/CEO etc might be held as the principal point of accountability, the very nature of commercial industry was to ensure that any contract signed reflected a verifiable system, and not necessarily a viable one (again more later), that compliance with any contract to which payment depended would invariably be subject to grey areas such as buyer/seller criteria; with the initial contract (particular experienced in the USA) being considered as just the starting point for contract, engineering or service provision changes. Industry was fully aware that the mediocrity of the buyers contracting capability would lead to dilution of requirements, with subsequent negotiation leading to a combination of performance reduction or cost/price increase.

These challenges were meant to be tackled by the Office of Government Commerce (OGC) project management guidance, including gateway reviews etc, supported by Green, Orange and Magenta Books for procurement, risk and policy evaluation respectively; but what wasn't tackled was the complexity. The solutions designed in order to provide a verifiable solution were never, and still aren't, tested for viability; evidence of which is so numerous that from a UK plc perspective it is embarrassing. Even the National School of Government does not understand how to understand complexity, yet I suspect ALL reports going to the Public Accounts Committee contain reference to the complex nature of the problem they are investigating; which seems somewhat akin to the limitations experienced by the seven blind men who try to identify an elephant or Tolstoy's fish swimming in the Mississippi which couldn't find any pattern to its environment.

One of my later PFI experiences comes from the period 2004./5 when a Government team was, as they put it, striving to: "Raise their Game as a PFI Customer" a description which reflected what they also described as a period of "adversarial relationships" and the need for a system orientated approach, what one might describe as a search for a new 'ontoeπισtemology' (things are wholes and need to be understood as wholes). Here's an extract from the team's publicity:

.....One of these is the steps being taken is to embrace various Office of Government Commerce (OGC) initiatives such as the concept of appointing Senior Responsible Owners (SROs) for projects, which as the name implies should help to ensure that projects are 'owned' effectively at senior levels by staff who will be accountable for making sure that major issues are tackled at an appropriate stage; that projects and the implications of projects are viewed holistically, where necessary, across all lines of development; and that peer review of projects is carried out at critical points in the life of a project.

The more something changes, the more it stays the same

Hence, it seems logical that accountability depends on where you stand. If you stand within the system, which in this case is clearly a superordinate system, you may have difficulty seeing beyond the operational or tactical picture and being capable of relating this to the policy or strategy; yet this in reality prevents an holistic approach; relying instead on what in

sociotechnical speak are holistic tasks.

As a short piece for critical thought on autopoiesis I like to consider this extract from Beer:

.....any cohesive social institution is an autopoietic system because it survives, because its method of survival answers the autopoietic criteria; and because it may well change its entire appearance and its apparent purpose in the process. As examples list: firms and industries, schools, clinics, and hospitals, professional bodies, departments of state and whole countries.

If this view is valid, it has extremely important consequences. In the first place it means that every social institution is embedded in a larger social institution, and so on recursively - and that all of them are autopoietic. This immediately explains why the process of change at any level of recursion (from the individual to the state) is not only difficult to accomplish but actually impossible - in the full sense of the intention: 'I am going completely to change myself'. The reason is that the 'I', that self-contained autopoietic 'it', is a component of another autopoietic system. Now we already know that the first can be considered as autopoietic with respect to the second, and that is what makes the second a viable autopoietic system. But this in turn means that the larger system perceives the embedded system as diminished as less than fully autopoietic. That perception will be an illusion; but it does have consequences for the contained system. For now its own autopoiesis must respond to a special kind of constraint: treatment which attempts to deny its own autopoiesis.....

..... When it comes to political change, we are not dealing with institutions and societies that will be different tomorrow because of the legislation we passed today. The legislation with which we confront them does not alter them at all; it proposes a new challenge to their autopoietic adaptation. The behaviour they exhibit may have to be very different if they are to survive: the point is that they have not lost their identities. The interesting consequence is, however, that the way an autopoietic system will respond to a gross environmental challenge is highly predictable once the nature of its autopoiesis is understood. Clever politicians intuit those adaptations; and they can be helped by good scientists using systems-theoretic models. Stupid politicians do not understand why social institutions do not lose their identities overnight when they are presented with perfectly logical reasons why they should; and these are helped by bad scientists who devote their effort to developing that irrelevant logic.

In an era when rapid institutional change is a prerequisite of peaceful survival in the face of every kind of exponentially rising threat, it seems to me that the architects of change are making the same mistake all over the world. It is that they perceive the system at their own level of recursion to be autopoietic, which is because they identify themselves with that system and know themselves to be so; but they insist on treating the systems their system contains, and those within which their system is contained, as allopoietic. This is allowable in terms of scientific description, when the input and output surfaces are correctly defined. Nonetheless it is politically blind to react towards the container and contained systems in a way which makes such a model evident, because at these other levels of recursion the relevant systems perceive themselves as autopoietic too.

This seems to support the old adage that: the more something changes the more it remains the

same!

Responsible but not accountable?

Accepting your 'objectives' as either a civil servant or commercial manager/ director, requires clear description of responsibilities and accountabilities; this requires corresponding allocation of powers of authority and the resources which can be allocated for you to achieve your task. The task is again logically orientated to the purpose of the organisation and its desired outcomes, direction, which the higher levels of the superordinate system identify; that is where the eagle flies above the Mississippi and can see, judge, often through wisdom where the rapids are, where the whirlpool and chaos exist to disrupt the smooth linear flow. Rather like Parliament standing watch over the salmon in the Thames! They wouldn't expect the salmon to understand why the river has historically been polluted nor expect them to have the knowledge and resources to maintain its cleanliness, yet all these aspects are part of the human ecological system – which takes wisdom to perceive.

This would suggest that success should be measured at the relevant system level, although reality notes that for example congenial helpfulness, ability to work with colleagues, compliance to process are more often than not the measures of success, resulting in promotion and bonus, rather than the success of the superordinate system. Perhaps this is why we now have Senior Responsible Officers rather than Senior Accountable ones?

Building the wrong system beautifully

And this brings me to what seems the greatest problem for accountability within complex systems, which ALL prime contracts and PPF/PPPs are. As mentioned above the traditional and current methods for establishing what needs to be delivered to meet the customers' operational requirements are the use of established requirement capture tools such as DOORs, which has recently been acquired by IBM and forms the principal tool for use by OGC and government departments.; implementation then being through project management tools such as PRINCE2; all very commendable for complicated mechanistic systems, of which there are few. This is rather like using Newtonian mechanics to understand evolution or international politics. I know these tools well and the companies creating them from many years of practical application; they aware of my views of the shortfall. My intention is in no way to criticise them for this shortfall as they have more than adequately provided what the customer organisations' desired.

The shortfall is that they very adequately provide requirements capture in mediation between demand and supply sides to establish a verifiable solution. That is a solution that can be contracted for and it is believed at the time of contract can be proven in terms of eventual service delivery; or possibly often in prime contracting for a particular product or service by modelling. Verification, therefore, is about establishing the set of codifiable criteria (performance, function etc) for building the system right.

BUT, the reality is that this process does not establish if the verifiable system is viable - that is that it is the right system not just that it is a system that can be built right. This shortfall comes

about as a result of the complex nature of the system where there are currently believed to be no codifying theory and method that can be contracted for that represents the laws underpinning the complex nature of the complexity.

Thus the current approach seems somewhat akin to Hume's inferences, which typically rely on assumptions that events of a certain type are necessarily connected, via a relation of causation, to events of another type which through induction seeks to find the common thread that connects them. But we know that within complex systems this is not the case as the relationships are too complex, rather like in the three ball problem in physics, for traditional analytical thinking.

Building the wrong system right does not make it any less wrong!

In Treasury terms this suggest that we need to move beyond the three Es of economy, efficiency and effectiveness to something resembling three Vs; viable, validatable and verifiable.

Linking complex systems with organisation strategy

In an organisation, strategy serves to guide and give coherence to decisions and actions. In a whole system made up of many organisations there is just as much need for strategy but its form needs to be different. The mechanism of accountability is different in a complex system when it is seen as a whole - there is no one owner or boss of the system who is responsible for its functioning and to whom people are accountable. Decisions are made in a variety of situations and need to be sensitive to individual circumstances. No one set of rules can encompass all the possibilities; what is needed is a new conception of strategy - one that sets out the common principles that guide action throughout the system. In this type of approach the strategic question becomes really important as it necessitates a clear understanding of the normative level's goals, which are, or should be, transmuted into the operational delivery; delivery, which has its own set of tactics for translating the economy [i.e. the resource] into effectiveness, through appropriate efficiency of process and productivity.

For strategy to work it has to be simple although it takes an inordinate amount of intellectual effort to derive it from techniques such as scenario planning, strategic thinking, strategic planning etc. In successful systems 'strategy' is simply a 'pre-programmed behaviour' [rather like the flock of birds at the beginning] it directs operational delivery and informs policy. The steer forward and feedback so necessary to provide direction for the organisational system; a thought I will return to.

What does all this mean for accountability?

In a commercial setting, power is represented in terms of capital and labour. However, in our political system power is given by the electorate to political parties and individuals who the electors believe will deliver something; i.e. direct the power in a particular recognisable and desirable direction.

Power is a scalar quantity – it requires direction to be of use. That direction is provided by those

we elect - we expect them to have that quality which is so necessary to any form of leadership – wisdom. Politics is the art and science of government and governing, just as the complexity of Watts steam governor directs the output of an engine or the cybernetics of the helmsman governs through regulation and control the passage of a vessel. It is applied at the normative level and measured as output by the operational system in terms of outcomes in the environment. Therefore, politics is not, or should not be about managing the

operative system. This is the responsibility of management, which is a profession for the administration of, in this case public undertakings, and for which it should be accountable; just as the normative level should be accountable for ensuring that the whole system of delivery is correctly tuned and guided in the right direction.

A short digression on blood transfusions:

Think about the current financial system, everyone seems to think it's a complex system. They are not just probably but certainly right; recently we have had it described as requiring a blood transfusion to solve its problems. But is this really the case, what does a blood transfusion do if the problem is not the just the quantity of blood (ignore at the moment that blood also gets rid of waste matter although this is important) but the problem may [is] in fact the nervous system, the system that controls, regulates and directs the system – if that is the problem then no matter how much blood you pump in it won't alleviate the problem; although it may temporarily hide the true ailment. For some the current financial crisis was not unexpected, it had been planned for with contingencies taken as early as January 2006

Disraeli's observation that: practical politics consists of ignoring facts seems to recognise that decision making often has an inverse relationship to information i.e. the more information the less certainty, the less easy it is to make a decision. Pilots experience this all the time when they are being tested on an annual basis for their ability to make decisions when subjected to various levels of cockpit instrument failure. The fewer instruments, the less information, the easier it is to make decisions and fly the aircraft – however, there is an optimum point for efficiency. Bertrand Russell defined power as the "production of intended effects" He also pointed out that the love of independence of individuals in organisation and the love of control of officials to create uniformity (order) and limit independence is related to both size of organisation and density of power. The balance of power can swing from either one of independence or dependence. These are all factors which in their own way seek to either disguise accountability or seek to control uncertainty to such an extent that it removes flexibility; that quality which allows evolution.

This seems relevant, as organisations develop processes, routines and establish values all of their own (without consciously recognising their autopoietic nature); which is important as this is how the ethos, experience and capabilities of the organisation are passed on. But these values and processes can become ends in themselves rather than means to the organisations goals; what it says on the tin. The organisation comes to measure the achievement of its members by their contribution to the internal cohesion of the organisation rather than their contribution to its purpose.

An unforeseen attribute of such systems, which again results from the inability to apply accountability, which is a measure of regulation, is their generation of a self-seeking nature which is sometimes described as autocatakinetic; self-organising. Why should this be a problem? Because they are self-amplifying sinks that pull potentials (resources) into their own development and continuation, hence, away from equilibrium, through the Law of Maximum Entropy; but that is another story.

Is accountability within our power?

The fundamental problem is not PFI or prime contracting, it is complexity. Currently the defence administration can do no more than talk about it; note earlier comment on procurement, risk and policy evaluation. Complexity as we know is not easy to understand, it is a painful demanding thought process which invariably is ignored, being replaced with more comforting procedural activities and processes which have seemingly worked before. However, in complexity all systems are different in their interaction with their environment – hence, it is pointless trying to benchmark, as what are you benchmarking? A good example of this in Wales is Beecham's Beyond Boundaries, where he advocates benchmarking for best practice with other local authorities in England; but they are all different if they are complex and all this does is hide the problem, whilst allowing decision making and traditional audit.

To provide accountability it seems logical that we need to understand the nature of the complexity we are dealing with. People often make the point about nature such as the interchangeable nature of forms of accountability, yet I feel the importance of this word is not really developed. If we are to have accountability we must first understand the nature, the interrelationships between the system's variables (constants do not effect the nature of the system although they have an important role). It seems sensible therefore that we need to understand the rules of the inter-actions.

As an aerosystems aviator and engineer I often found it strange that with so much complexity, with its corresponding uncertainty, the best we could do was design systems that were anticipated to fail; and therefore we needed to design in safety (bounding) systems to reduce that possibility. By adding these extra systems we in fact increased the complexity and actually introduced new modes of failure.

What has been surprising is that neither UK (probably also the USA which I have experience of) officialdom nor business has really felt the need to develop an understanding as to how complex systems respond to internal and external influences (neither do econometric models with their statistical and deterministic nature) Although 'system dynamic' models go some way, they are in reality somewhat down stream of what I am talking about; as I am particularly concerned with the translation of policy into a viable system, to which system dynamic modelling can then be applied to provide the performance and functionality documentation against which a contract can be let.

We seem to be currently limited by the experience of the practitioners where a traditional set of codified artefacts are resistant to change, understandable as

change is risk, it dilutes the intellectual and professional capital already invested, it creates new experts and relegates those that cannot change. Perhaps this is why in Germany they are already educating and encouraging children to tackle the complexities of complex systems.

But complexity is the name of the future and it needs to be auditable as parts of its regulation, hence, possess accountability; without real accountability we will fail to create future competitive and comparative advantage as we move into a new financial and economic environment.