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Making the whole greater than the sum of the parts

A pragmatic, and novel, approach to building high-performing teams – and introducing the new science of *organodynamics*

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The challenge

This paper is a challenge. An inspiration, or indeed call-to-arms, to the System Dynamics community to make a real impact. For one of the major needs of all organisations – from government departments to major corporates, from local voluntary organisations to family businesses – is to improve teamwork. What organisation doesn't have 'teamwork' as one of its core values? But how many organisations actually deliver it?

In my experience, very few. For sure, from time to time, groups of individuals get together to address a common task. Many succeed, and some get a buzz – "gee, that was good to work in that team". But when the project is over, things degenerate to the *status quo ante*.

Why is this? Why is it that the most espoused management value maps onto such a limp reality?

I believe that the fundamental reason is that people don't really know – and the emphasis there is on the word 'really' in the sense of 'fundamentally' - how to do it.

That's one hell of a strong statement. Especially in the light of the libraries of books on the subject, and the man-decades being expended as you read this as students sit in HR courses at colleges, universities and business schools around the world. For sure, there is a mountain of stuff on teamwork. Or rather – to my mind – not stuff but fluff. Most of the literature on teamwork, to me, is both soft and flabby. No true substance. No true grit. Yes, plenty of wise psychology, and many helpful rules-of-thumb, and lots of things I would never have thought of myself. But unsatisfactory from both an intellectual and a pragmatic point of view.

And that's where the systems community can make a real difference. For, as I argue in this paper, the systems approach provides exactly what is missing: a profoundly intellectual understanding of just what – precisely – teamwork is, and, as a consequence, a robust framework for rigorous, well-structured and positive action.

I'm certainly not the first person to map systems onto teamwork – we are all aware of many other, earlier contributions, not least Peter Senge's seminal *The Fifth Discipline*. But I believe that there are still far too many people out there who wouldn't recognise a system if it bit them on the butt. [The great irony, of course, is that the action of most feedback loops does indeed bite the unwary manager on the butt – but she still doesn't recognise it!!!] So the systems community needs to go out and evangelise, and demonstrate powerfully how a systems viewpoint can add not only insight but also value too. And of course we all have to have a deep understanding ourselves.

So, that's what this paper is about. It's about presenting my views, and offering them up for challenge and review. But more importantly, it's about stimulating our own energies to get up and ***do*** something. Something real. And one of the keys to doing something real is to speak the other person's language. That's what I've done in this paper: to speak the language of Joe Businessman and Joanna Publicservant. So if that upsets Aristotle Academic, so much the worse for him.

Introduction

The purpose of this paper is to discuss a pragmatic, hard-edged and well-founded approach to enhancing teamwork.

In tackling this issue, I am alert to three particular problems:-

- Firstly, any discussion of this topic inevitably leads to a discussion of corporate culture, and this is a very nebulous, amorphous concept.
- Secondly, teamwork itself, though universally acknowledged as important, is often perceived as 'soft', and simply a matter of 'bonding'.
- Thirdly, we've all been here before: initiatives involving 'culture change', 'change management', 'high-performing teams' come and go, and can lead to considerable cynicism.

The fact of the matter is that these problems are real, and they cannot be ignored. So a major objective of this paper is to approach the subject in a pragmatic, tangible, hard-edged way, based on a considerable body of very well-established principles – principles which, to my knowledge are very rarely applied, and so will be seen as new and fresh.

Summary

- The incentive to enhance teamwork implies the presence of a deeply-held belief that more commercial value can be created by bringing the existing parts of the business (business units as well as individuals) closer together than by leaving them as they are.
- The realisation of that additional value will not happen of its own accord – it will only happen as a result of deliberate and effective action.
- I suggest that the actions needed to bring this about will fall under three headings:
  - enhancing the **flow of energy** through the business, as manifest by the quality and effectiveness of leadership throughout the organisation
  - improving the **connectedness** between the various parts of the business, as evidenced by the alignment of policies, procedures and processes; the nature of communication; the way in which objectives, targets, and performance measures encourage (or discourage) co-operative behaviour; and the depth of mutual trust
  - sensitising people to the importance of **constraining** their choices and behaviours to those that optimise the whole, even at the perceived expense of sub-optimising the local part.
- I encapsulate the essence of my argument as the 'Three Laws of Organodynamics', the organisational counterpart to the physical sciences' Three Laws of Thermodynamics:
  - ***The First Law of Organodynamics***
    Organisational energy must continuously be created lest the organisation itself be destroyed. That's what leadership is all about.
  - ***The Second Law of Organodynamics***
    Organisations will spontaneously degenerate into chaos, and can only be prevented from so doing by ensuring effective connectedness between all the constituent parts of the organisation.
  - ***The Third Law of Organodynamics***
    Organisations will hit rock bottom when individuals fail to constrain their behaviour voluntarily.
- I further suggest that a powerful and pragmatic way of making something real actually happen is:
  - firstly, to compile a series of well-crafted 'mini case studies', each of which describes a current situation illustrating a selected aspect of energy flow, connectedness or constraints
  - secondly, to use these case studies as a way of provoking a discussion for how things might, and should, be different
  - thirdly, to harness the results of this discussion as an agenda for change.

My starting point is to explore the basic premise underpinning the concept of teamwork: that value can be created, and captured, by bringing the existing parts of the business closer together, as indeed implied by the familiar phrase "the whole is more than the sum of its parts".

Is this necessarily true? When the scale of activity increases by bringing 'parts' together, is it always the case that the 'whole' is inevitably greater?

Is the whole necessarily greater than the sum of the parts?

No. It isn't.

Indeed, there is much evidence that the 'truth' is quite the converse – that, in business, the parts are greater than the whole. Three categories of evidence are:-

- 'asset stripping', in which much business glory was won by breaking a number of large businesses into bits, and 'releasing value'
- 'spin-outs', in which larger business explicitly and deliberately separate start-up businesses, in the belief that the 'young' business will be more successful 'growing up independently of its parent'
- the failure of many mergers and acquisitions to deliver that elusive 'synergy' that featured so visibly in the marketing hype that heralded the 'greatest merger of all time' (as they all are).

This evidence leads to the *reduction ad absurdum* that the only sustainable business model is the solo entrpreneur-plus-acolytes; or to the not-so-absurd conclusion that each type of industry has a maximum 'critical mass' beyond which further size becomes counter-productive. "Where, then, is that critical mass?" is a question that will keep the business school community in business for years; from a pragmatic point of view, businesses usually become aware of the question only when they have gone beyond it.

Does this suggest the possibility that seeking to enhance teamwork will push a business beyond the brink, and destroy, rather than create, potential value? The three points made here paint a gloomy picture – but it isn't all bad news.

Two situations in which the whole can indeed be greater than the sum of the parts

Despite the evidence for the 'let's bust it all up' school of thought just presented, there is also some compelling evidence the other way.

Firstly, there are a host of businesses which are large and successful too, and many have survived over very long periods of time - Unilever, Shell, GE and Microsoft to name but four (some more examples are given in *The Living Company* by Arie de Geus).

And secondly, there are two conditions under which scale intrinsically creates value: physical networks, and intellectual networks – the common thread, of course, being the concept of the network.

The value-creating potential of a physical network is well known, as made real by the recognition that 'one phone is no value to anyone, but a network of 100 phones creates huge value'. What may be less obvious is the similar value-creating power of *intellectual* or *knowledge-based* networks. This power is best demonstrated by two examples:-

- the power of sales referrals – if two sales forces agree to share, unconditionally, their respective networks, the sales opportunities can more than double, this being an example of constructive knowledge sharing
- the power of innovation – the cliché that 'two heads are better than one' is profoundly true as regards creativity, generating ideas and innovation: indeed there are a number of theoretical models that suggest that the creative power of a group can potentially increase *exponentially* with the number of members of the group, this being an example of constructive intellectual networking (see, for example, *Smart Things to Know about Innovation and Creativity*).

What makes intellectual and knowledge-based networks different from physical networks, of course, is that they are dependent on the willingness of people to co-operate. If they refuse to do so, or, more subtly, not incentivised to do so, they won't, and so the network 'breaks'. Most organisations are very adept at engineering and ensuring the complete integrity of their physical infrastructure, but do they take the same amount of care to engineer and maintain their corresponding intellectual infrastructure? Maybe that's precisely what enhanced teamwork is all about.

The successful exploitation of the value-creating opportunities offered by both the physical and the intellectual networks is a great prize, but winning the prize will not happen by itself, of it's own accord. It requires active, deliberate management. The key question is therefore "How can we do this?". This paper will return to this specific question on pages 8 to 10: for the moment, however, we discuss a pragmatic framework, based on the concept known as 'emergence', which provides some fundamental insights.

Emergence

The simple sentence "I went to the bank" conveys meaning. That's obvious. But what is rather less obvious is that the meaning we all understand is a property of the ***sentence as a whole***, and ***not*** a property of any of the words individually (such as 'the'), or indeed of subsets of the words (such as 'I went to the'). Furthermore, if I connect the words together in a different way – "the went I bank to" - the meaning disappears (although if I struggle hard enough, I can make it out).

Over the last 50 years, a considerable body of knowledge has been developed, known as **'systems theory'**, in which a 'system' is defined as 'a community of connected entities'. In this definition, the emphasis is on the ***connections*** between the entities of which the system is comprised, and in this way, a system may be distinguished from a 'heap', which is formed from the same entities, but in a state in which they are not connected.

The sentence "I went to the bank" is a system in terms of this definition, in that the component entities, the individual words, have been connected together in a specific way, in contrast to the 'heap' "the went I bank to".

And the meaning that we infer from the sentence "I went to the bank" is an example of **'emergence'** – the existence of properties of the ***system as a whole***, which cannot be inferred from the properties of the entities that comprise the system. (For more information, see *Emergence*, by Steven Johnson, and *Seeing the Forest for the Trees*).

And it is emergence that underlies the cliché "the whole is greater than the sum of the parts". The identification of 'wholes' and 'parts' is in fact a reference to 'systems' and 'entities', and the possibility that the 'whole' might be 'greater than' the sum of the 'parts' is all about the emergent property of the system as a system, as compared to the heap of the parts.

Emergence is therefore the key to creating, and capturing, the additional value created by enhanced teamwork.

Self-organisation

The sentence "I went to the bank" is a trivial example of a system; it is also static. Another, more vivid, example of a system that is neither trivial nor static is a hurricane. In this case, the entities that comprise the system are molecules of water, and the constituents of the atmosphere; the emergent properties that this system displays are its huge physical structure, and its enormous destructive power.

These emergent properties of the hurricane as a whole cannot be inferred from any study, however exhaustive, of an individual water molecule; furthermore, these emergent properties are maintained for a considerable time, even as the hurricane moves. And as it moves, it does not retain exactly the same shape, for it 'bends' and 'weaves'; what is maintained is the generic structure of a vigorously rotating vortex. It is almost as if the hurricane is a living being – but it isn't. Rather, it's a manifestation of a special type of emergence, known as **'self-organisation'** – the ability of a complex, dynamic system to preserve an overall, ordered, cohesive structure – and even purpose - despite the essentially chaotic behaviour of the individual entities within the system.

Another example of self-organisation is the behaviour of a flock of birds; another is the pattern of stripes on a tiger; another is the regular rhythm of our heart beat.

And another is the performance of a high-quality team: in the language of systems theory, teamwork is the self-organising, emergent property of a community of people which becomes evident when that community begins to behave as a system, rather than as a heap.

When the heap becomes a system, the whole begins to become greater than the sum of the parts. So, if we wish to ***make*** the whole greater than the sum of the parts, and hold it there over time**, we need to build a 'system', and stop it from disintegrating into a 'heap'**.

Three key insights

Self-organising systems have been the subject of much study, and it is now well-established that self-organisation, as exhibited by systems from a hurricane to a flock of birds, from the stripes on a tiger to a high-performing team, results from:-

- a **flow of energy** through the system
- a very carefully-tuned and precise degree of **connectedness** between the entities comprising the system
- the spontaneous willingness of the individual entities within the system to **constrain** their patterns of behaviour.

To make this more concrete, consider the high-performing team of Manchester United. The energy flow operates at three levels: each player individually breathes, thereby pumping energy into their own bodies; the crowd, with its songs, cheering and atmosphere, creates enormous quantities of energy to keep the team going; and Sir Alex Ferguson, in his role of manager, also injects energy into the team, motivating them, chastising them, encouraging them. In more general terms, much of the role of leadership is about the injection of energy into the team.

As the game takes place, there is a superlative level of connectedness between the players. Part of this is about shared vision – the team wants to win, and winning in this context is very well-defined. But within this overall umbrella, the players are highly connected in real time, sending each other visual and sometimes oral messages, watching and anticipating the play. Communication – in both directions – is a vital element of connectedness, and each player uses all his senses, actively and continuously, to maintain that connectedness and to act on it. Beckham would not play half so well if he were wearing a blindfold and earmuffs, for this would deprive him of all sensory perception; at another level, the connectedness between the players is quite intuitive, for they do not send each other text messages or emails saying "move into the clear space on the left, and I'll pass you the ball there".

The third attribute, constrained behaviour, is rather less obvious, but it is there absolutely. At any point in the game, Beckham has many choices: if he's off the ball, he can run anywhere; if he has the ball, he can run with it, pass, kick at goal. Which choice does he make? Does he act in his own, personal interest, so that he 'looks good'? Or does he do whatever is in the team's best interests? By selecting that single action that is in the team's best interests, he is constraining his behaviour: by choosing – voluntarily and largely intuitively – 'this' action rather than 'that' one; he is exercising constraint.

So, what does all this mean?

It means that if we wish to realise the value of enhanced teamwork, we have to ***make*** the whole greater than the sum of the parts. And making the whole greater than the sum of the parts requires us to create a self-organising system from the organisation's component entities; a self-organising system that can exhibit the emergent property of enhanced commercial performance. And the ***only way*** this can be done is by creating the conditions in which:-

- there is a powerful **flow of energy** through the business
- the component parts of the business are appropriately **connected**
- the component parts of the business exercise, voluntarily and intuitively, appropriate **constraints**.

All three conditions must apply simultaneously.

In the absence of the energy flow, the whole structure will fall apart, as the system disintegrates into a heap. That's what happens in living organisms, for when the energy flow stops (we stop breathing), we quite literally fall apart (we die and decompose). And that's what happens in organisations too. So there is an enormous call on sustained leadership, at all levels.

If the entities are not appropriately connected – for example, if the communications are poor, if the policies, procedures and processes are not aligned, if the performance measures drive divergent behaviours, if there is no trust – the system ***cannot*** behave as a system. It must degrade into a heap.

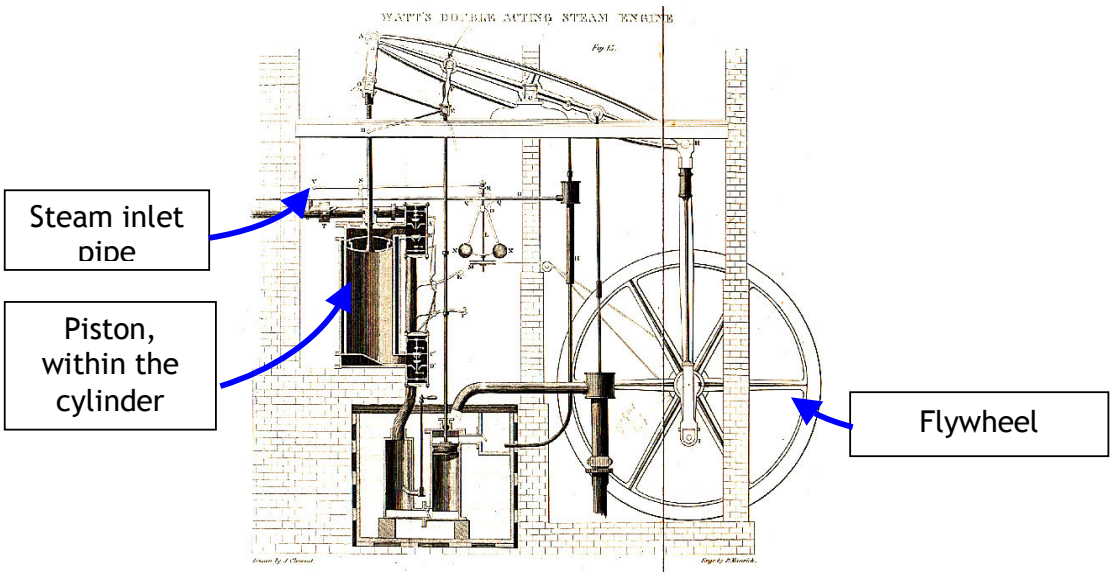
And even if the entities experience strong energy flow, are well-connected, but do not voluntarily constrain their behaviours – for example, if sales people compete destructively with each other, if there is an attitude of 'not invented here', if people behave parochially or myopically - then forget it. No way can the whole ever become greater than the warring parts. No way can that alluring prize of physical and intellectual networking ever be won.

Introducing the new science of *organodynamics*

Three fundamental concepts – **energy flow**, **connectedness**, and **constraints** get you thinking: thinking about the possibility of three 'laws' which encapsulate how these concepts apply to real organisations. Triplets of laws, in fact, have some currency in physics – Kepler's Three Laws of the Planets, Newton's Three Laws of Motion, and the Three Gas Laws (Boyle's, Charles's and Gay-Lussac's), to name three sets of three. But the triplet that is of particular relevance here is associated with arguably the greatest intellectual achievement of the nineteenth century physical sciences – the science of thermodynamics.

Thermodynamics is all about how to extract work from systems, in particular, the type of system we call an 'engine'. Most of the development of thermodynamics took place before the invention of petrol or diesel driven internal combustion engines, so the kinds of engine that were studied at that time were steam engines – steam engines rather like the one shown in the diagram:

James Watt's "Double Acting" Steam Engine, 1782



This is a line drawing of one of James Watt's steam engines, the purpose of which is to make the large *flywheel* rotate. Steam from a boiler (not shown, but to the left of this diagram) passes through the *steam inlet pipe* and enters the *cylinder*, so driving the *piston*. The way in which the steam is introduced into the *cylinder* powers the *piston* in both directions, hence the term "double-acting". The up-and-down motion of the piston rocks the horizontal beam (at the top of the diagram), so causing the *flywheel* to rotate.

Steam engines are of course 'systems', for they constitute a 'community of connected entities': the boiler is connected in a specific way to the cylinder and pistons, and the piston is connected to the 'working end' of the engine, say, a water pump (for keeping mines dry), or to a flywheel which can drive a weaving machine (so powering the industrial revolution), or a set of wheels (so forming a 'locomotive'). If these 'entities' are not connected together, or connected in a rather different way, the engine just won't work. So an engine is indeed a system.

The power source for a steam engine is of course the steam, created by boiling water using the heat produced from burning coal. Overall, what the engine does is to release energy trapped in the coal as heat, and transform that heat into useful work: all the paraphernalia of the boiler, the cylinder and the pistons are simply the means by which this all happens. But they are necessary features of the system, for if heat is simply applied to water, the water gets hotter until it all boils away – no useful work is done at all. It's only when the steam is linked to the rest of the carefully designed system that useful work can indeed be done.

Can organisations be considered as well-crafted 'engines'? Engines in which various inputs are combined together by a well-designed system to create useful work? And if, so, is there a parallel between the laws of thermodynamics, and a new science of *organodynamics*? Those of you familiar with the Three Laws of Thermodynamics can skip the next section and go straight to my discussion of the Three Laws of Organodynamics; but for those of you that might appreciate a quick refresher, let's take a closer look at thermodynamics...

The Three Laws of Thermodynamics

The First Law of Thermodynamics

Energy can be neither created nor destroyed.

This is a statement of conservation of energy. It states that 'energy' can manifest itself in many different ways – such as what we call 'heat' and 'work' - but the total energy (of the universe, in fact), is constant. So, in the case of an engine, the amount of energy manifest as work that the engine might do can never be greater than the amount of energy released by the burning of the engine's fuel.

The Second Law of Thermodynamics

Systems spontaneously degrade from an ordered to a disordered state.

The Second Law of Thermodynamics is one of the most profound of physical laws, and it is also notorious for being one of the most difficult to understand. That's because it is often stated in a rather obscure form, such as "It is impossible to construct a device which operates in a cycle and has no effect other than performance of useful work and the exchange of heat with a single reservoir". Let's park this one for a moment (despite it's being attributable to the great nineteenth century physicists Lord Kelvin and Max Planck), and focus on the law as stated: *Systems spontaneously degrade from an ordered to a disordered state*.

In essence, this statement encapsulates our experience that many real-life processes act spontaneously in one direction only. You can put milk into black coffee and the two fluids will spontaneously mix, but even if you wait from now until doomsday, the coffee will never separate itself from the milk; an ice-cube will spontaneously melt in your whisky, but whisky-and-water will never form neat whisky and an ice-cube of its own accord; your teenage son's tidy room becomes a tip within five minutes, a natural phenomenon which never, just never, works in the other direction.

These unidirectional events are part of our every-day experience, and are closely associated with our perception that time flows only forwards and not backwards. And central to our understanding of our time – but often not explicitly recognised as such - is our experience of 'order' and 'disorder'. If, for example, we see a film of a tall chimney being demolished and falling to the ground in fragments, this transition from a highly ordered state (a neat vertical stack of bricks) to a highly disordered state (a million bricks strewn randomly on the ground) causes us to infer that time is moving in the right direction; if, however, we see the random mess of bricks suddenly organise themselves into a tall chimney, we infer that the film is running backwards.

The Second Law of Thermodynamics tells us that the natural state of things is for order to be transformed into chaos; that this transition from order into chaos will happen spontaneously, of its own accord. This is true. But it does not deny the existence, the maintenance or indeed the creation of ordered states. Rather, it tells us that if we wish to create order out of chaos, or to prevent something ordered from degenerating into chaos, then we have to do something very deliberately and actively: ***we have to expend energy to create and maintain the ordered state***. As indeed all parents know all too well as they tidy that teenage son's room.

The Third Law of Thermodynamics

It is impossible to reach the absolute zero of temperature in a finite number of steps.

Measurement is integral to many aspects of the physical sciences, and all measurements are made according to appropriate scales. The zero value of many measurement scales is arbitrary, and agreed by some sort of convention: measurements of position on the earth, for example, are made by reference to the zero of the Greenwich meridian for east-west measurements, and the zero of the equator for north-south measurements. It turns out that temperature is rather special: although the zero of the centigrade scale is set (arbitrarily but conveniently) as the freezing point of pure water, it is now known that there is in fact a temperature below which you just cannot go. This is known as 'absolute zero', and corresponds to about 273 degrees (on the centigrade scale) below the freezing point of water. In physical terms, temperature is a manifestation of molecular motion, and the absolute zero of temperature corresponds to the point at which all molecular motion ceases. The Third Law states that although the absolute zero of temperature exists, in practice, we can't reach it. We can get close, but never there.

Well, that's enough of that!! Let's get back to teamwork and organisations...

The Three Laws of Organodynamics

The First Law of Organodynamics

Organisational energy must continuously be created lest the organisation itself be destroyed. That's what leadership is all about.

In contrast to the First Law of Thermodynamics, which states that physical energy can neither be created nor destroyed, the First Law of Organodynamics states quite the opposite: that organisational energy must continuously be created. For if it isn't, the organisation will degrade and fall apart. From a systems point of view, this recognises that an organisation is an open system, through which energy must flow to maintain order (as indeed demanded by the Second Law of Thermodynamics!!). But from an organisational point of view, this throws the spotlight on how fundamentally important it is for energy to be injected into, and continuously to flow through, the organisation. This places a huge demand on leadership. But it is indeed a necessary one, as Louis XIV of France, who referred to himself as "The Sun King", clearly understood well.

The Second Law of Organodynamics

Organisations will spontaneously degenerate into chaos, and can only be prevented from so doing by ensuring effective connectedness between all the constituent parts of the organisation.

The Second Law of Organodynamics mirrors that of Thermodynamics. In particular, it stresses that, in addition to the energy flow required by the First Law, the maintenance of order – and hence the organisation's ability to perform useful work - depends critically on the effective connectedness between the constituent parts of the organisation. Just as an engine won't work if its constituent parts are connected any-old-how, so an organisation won't work if its component parts are not well, and effectively, connected together.

There is also an alternative statement of the Second Law of Organodynamics just as there is of the Second Law of Thermodynamics. If in thermodynamics "It is impossible to construct a device which operates in a cycle and has no effect other than performance of useful work and the exchange of heat with a single reservoir"; then, in organodynamics, we can state "Not only is it quite possible, it is absolutely inevitable, that an organisation will go round in circles, generating increasing amounts of heat, and progressively less useful work, unless the organisation works very hard indeed to do otherwise".

The Third Law of Organodynamics

Organisations will hit rock bottom when individuals fail to constrain their behaviour voluntarily.

If the Third Law of Thermodynamics states that the absolute zero of temperature can never be attained, the Third Law of Organodynamics states that the rock bottom of organisational behaviour is all-too-easy to reach. And it is reached when people 'do their own thing', in their own interests, and regardless of everyone else. And, given the hierarchical nature of most organisations, in which increasing power and authority is progressively concentrated in fewer hands as we ascend the organogram, the Third Law of Organodynamics can come into effect as soon as a few people at the top start behaving as independent entrepreneurs rather than as team players.

Let's get real

So, let's come down from the dizzy intellectual ivory tower of systems theory, nineteenth century science, and the new science of organodynamics. It's time to get real.

Delivering the promise of enhanced teamwork is in essence about creating the 'Manchester United' of your industry, out of your existing 'players'.

There are all sorts of approaches to building high-performing teams, and there is a school of thought that it's all about having a one-day abseiling event in the mountains, and managing to learn – and remember - the first names of our colleagues' partners. Yes, these help. But there is more to it than that. And the purpose of this paper is to suggest that a very powerful, pragmatic and hard-edged way of doing precisely this is to use the Three Laws of Organodynamics to define a series of real, meaningful and insightful questions that probe the three key issues of energy, connectedness and constraints:

- ***First Law: Organisational energy must continuously be created lest the organisation itself be destroyed. That's what leadership is all about.***
  - What are the energy flows through the business?
  - What are the sources of that energy?
  - How is that energy maintained?
  - How is that energy transmitted, without dilution, right through the business?
  - Do all levels of leadership have a shared vision?
  - Do they articulate it consistently to their teams?

- ***Second Law: Organisations will spontaneously degenerate into chaos, and can only be prevented from so doing by ensuring effective connectedness between all the constituent parts of the organisation.***
  - Do the objectives, targets and performance measures applied to the different parts of the business encourage collective, or individual, behaviours?
  - What are the contexts in which the different parts of the business interact? Are these interactions harmonious and productive? Or adversarial and dysfunctional?
  - What is the nature of the communication between the different parts of the business?
  - How well do people in different parts of the business know one another, especially people in positions of authority and responsibility?
  - And, fundamentally, how strong is mutual trust?

- Are our policies, procedures and processes naturally aligned, or are they all-over-the-place, implying that much time and energy is wasted on doing things more than once?
- When a new manager takes over, does that manager take over the 'in-tray' as 'work-in-progress', accepting his or her predecessor's decisions, or does the new manager say "we need to review this"?
- What specific, concrete examples are there of dysfunctions and disconnects? What can we learn from this?

- ***Third Law: Organisations will hit rock bottom when individuals fail to constrain their behaviour voluntarily.***
  - To what extent, if any, do different parts of the business compete for the same resources (markets, customers, products, people, investments...)?
  - What is the nature of that competition? Is this competition co-operative (we both recognise the resource is finite, so we voluntarily agree to share the resource so as to optimise the outcome for the business as a whole) or adversarial (I'll grab whatever I can, regardless of my need, and even more regardless of yours)?
  - To what extent to performance measures encourage, or discourage, behaviours which optimise the whole rather than my part?
  - To what extent does the reward mechanism explicitly recognise and encourage decisions which optimise the whole, especially when they sub-optimise my part?
  - What specific, concrete examples are there of situations in which choices or decisions have been made in which the key players have constrained their behaviours to optimise the whole at the expense of their part? And indeed to optimise their part at the expense of the whole? What can we learn from this?

From diagnostic to action

In the first instance, I suggest it is very valuable to compile a series of brief case studies which describe succinctly some situations which the business is experiencing today, or has experienced in the recent past – case studies which illustrate some real, concrete aspects of energy flow, connectedness and constraints.

This will give real data about what has actually happened (so ensuring that the facts are not contested) and perceptive insights into how things might be different (so identifying what actions need to be taken to move from 'here' to 'there').

In itself, this does not deliver any action or indeed any change; rather, I see the process as the vehicle by which an agenda for change can be meaningfully discussed across all the relevant players at a workshop. And once agreement has been reached, the stage is well set to make something pragmatic, realistic and sustainable actually happen.

In this way, the use of some well-crafted and carefully selected case studies, within the framework of energy flow, connectedness and constraints, forms a pragmatic, effective and successful approach to making the whole indeed become greater than the sum of its parts, to build a truly high-performing team.

So what can we actually *do*?

So there's the challenge. And the opportunity. To go out there and show how the systems perspective can add intellectual integrity, pragmatic robustness and – most importantly – real value to that oh-so-important process of building high-performing teams. And it's all about energy, connectedness and constraints.

And what can we actually do? How can we, as the key systems community around the world, make something real happen? Yes, maybe there are things that we can do as individuals. But maybe there are things that we could do, that would have more effective outcomes, if we were to behave – and I'm sure you've anticipated my thinking here – as a high-performing team ourselves! Now there's a thought! What do we have to do to behave as a high-performing team to take the message of how to build high-performing teams elsewhere? Where does our energy come from? Do we have the right sort of connectedness? And are we constraining our individual behaviours in the appropriate ways?

As I said, there's the challenge.

Footnote – the Zeroth Law

Aficionados of thermodynamics might have come across the so-called 'zeroth' law which states "If two bodies are in thermal equilibrium with a third, then all three bodies are at the same temperature". This is in essence a definition of temperature. It's analogue in organodynamics might be "If two organisations are in commercial equilibrium with a third, than all three organisations are commercially dead". This is in essence a statement that stasis in commercial world is a step on the road to commercial extinction – change, evolution and dynamism are essential for organisational survival.

References

The Living Company, by Arie de Geus, published by Nicholas Brealey Publishing (1997)
Pages 9 to 16 discuss the characteristics of long-lived companies.

Smart Things to Know about Innovation and Creativity, by Dennis Sherwood, published by Capstone (2001)
Pages 155 and 156 give a model for the exponential power of intellectual networks.

Emergence, by Steven Johnson, published by Penguin (2001)

Seeing the Forest for the Trees – A manager's guide to applying systems thinking, by Dennis Sherwood, published by Nicholas Brealey Publishing (2002)
Pages 14 to 16 discuss emergence and self-organisation in general; pages 184 to 188 relate these concepts to teamwork.

Introductory Chemical Thermodynamics, by Dennis Sherwood, published by Longman (1971)
There are lots of texts on thermodynamics, but this happens to be one I know especially well.

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