Journey to the Fractal

1 Overview

There are many ways of arranging Activities (verbs) and Resources (nouns) to get things done. In broad terms the approaches fall into three categories: 1. Hierarchy (group), 2. Heterarchy (group) & 3. Autonomy (individual). These are the three options that we explored in our journey to design a business structure (model) fit for our future.

The journey to the Fractal (virtual company) structure was as painful as it was rewarding as we experimented with the many different organisational structures with varying degrees of success. Our journey was long and is best not covered in this summary document, but it ended up in an exciting place with an innovative solution to the problems we faced. We called the structure 'the fractal; as the virtual companies that we created were fractals of the statutory company itself i.e. all the processes (activities) that were being carried out in the statutory company were all passed down to each virtual company.

The virtual company approach places each employee of a statutory company (business) in a virtual company (they have all the security of being employed but they are arranged as if they were a separate mini businesses). It is probably best to use an analogy to describe it: imagine you own a market place with multiple stalls; each stallholder has to procure, display and sell their offering. They collect the money and work out if they made a profit or loss.
It really is that simple; each person within a statutory company runs their own virtual company. The statutory company provides four services: 1) resources (incl. money & space) 2) aggregation services (including brands & overall accounts), 3) Model provision (business structure, ruleset & measures & supporting IT), and finally 4) support services (incl. coaching & learning) all of which the individual virtual companies must pay for.

In return an individual gets a guaranteed, market competitive, basic salary and when they generate a profit they get to keep 20% (these percentages may vary) to take home and a further 20% to use for investment purposes in the virtual company. Of the remaining 60% of the profit; 20% goes to the tax man, 20% goes into the investment pot of the statutory company and 20% goes to the owner(s) of the statutory company as a dividend.

At the end of every month each individual is responsible for producing their measures of performance in forming contracts (value) and satisfying them (quality, delivery, price & control) successfully (profit) plus a range of Financial reports (statement of financial position, statement of retained earnings and a statement of income) to ensure they are meeting a previously agreed level of performance.

In summary, the business is split up by outcome (cake) rather than process (mixing, baking, icing…) and each individual is responsible for all the Arrangements of Activities & Resources associated with forming contracts and satisfying them profitably. There is no ambiguity as to the value of the contribution of an individual, it is there in black and white and is irrefutable evidence of the ‘Magic’ and effort brought to bear (or not!). No other person can rob a person of their success or protect them from their failure.

2 About People

Julian came from a background in the humanities and had studied both psychology (he was a trained counsellor) and to a more limited extent anthropology and sociology. I, however, had very little formal training in the humanities but had a lot of experience working with people. What was clear is that if we were to design a business model to engage people then I was going to have to learn more about the humanities, and Julian was going to have to learn more about business structures and rulesets.
The first step was to produce a model of “what it was to be human”, as this was going to inform the design of our new business model(s). I struggled away for some time getting my head around the humanities but eventually I produced a model that seemed coherent to my mind’s eye and that Julian agreed with. It was this model that was to be so important in our future designs. Looking back, I am quite clear that if it were not for that initial model of “what it was to be human” we would have made some mistakes that it is unlikely we would recover from.

3 About Fractals

A Fractal is a pattern that is repeated at every scale. They appear frequently in nature; a good example is a fern:

The challenge we had was to take the structure/ruleset/measures that applied to a Statutory Company and apply it to all the Virtual Companies. i.e. the virtual company was a fractal of the statutory company. Given that the relationship between a Statutory Company and a State is via a contract (incorporation); this being an agreement that the statutory company will follow the requirements laid out by the state (typically expressed in a ‘Companies Act’) then it would seem sensible that the relationship between the Statutory Company and the Virtual Company was governed the same way. This necessitated the introduction of a Virtual Companies Act and the ability for a Virtual Company to be formed and incorporated into a Statutory Company.
4 About Environment (structure)

We recognised, early on in our journey, that changing the environment (structure/rule set/measures) did indeed elicit different behaviours in human beings but this left us with a significant challenge; what did an environment (structure), that optimised the growth of a human beings, look like? Neither Julian nor I could answer this question! The bizarre paradox was that both of us could, quite easily, answer the question for a Tomato plant (i.e. greenhouse, water, soil, nutrients……).

So, if an abundance of Tomatoes was required, what was it that a person had to do to achieve this outcome; we asked ourselves? Bizarrely when I was asked the question by Julian; I answered, not with the obvious “you start with a tomato seed”; but rather I described the environment (structure) that had to be put in place first (greenhouse, water, soil, temperature, humidity, stakes, string……..) in fact, I never mentioned the Tomato seed, as if it were just an aside. When I asked the same question of my son, Rory, he started with the Tomato seed and then described the environment that needed to be created to produce an abundance of tomatoes; given the fact that he had never grown a tomato plant in his life he described the optimum environment rather well. As an aside, when I asked him “what was the ideal environment for the nurture of a human being?” he also found that much more difficult to answer, but he did give it a good shot. He mentioned resources such as food, heat, shelter……. activities such as education, sport, hobbies ….. and social aspects such as caring, sharing, love. He was rather better than me at describing the environment that best supported his nurturing!

To get an abundance of tasty Tomatoes a person has to go to great lengths to provide the optimum temperature, humidity, nutrition so that, a seed, placed in this environment had the potential to grow and deliver fruit in abundance. Clearly there were many precedents which could assist us in our challenge; but somehow it was all a bit different when it came to looking inside ourselves to distinguish the optimum environment (structure) to nurture a human being into a strong and sentient person that could deliver an abundance of value add, both for their own benefit, and for the benefit of the wider society that they fitted into.

For a start any environment (structure) that we created must be free from command and control. If a ‘seed’ was planted, shouting at it and bullying it to achieve an end goal that may not be to its own self-interest seemed to be well short of a nurturing environment! However we did have the problem that the environment (structure) had to be whole and complete, so if instructions were not to flow down from above then the responsibilities placed upon the directors of a business (fiduciary duties) had to be flowed down to every individual. We had to create a structure that nurtured human beings, but also ensure that they complied with all the legal and regulatory requirements.

This was to be no easy task, but looking at the natural world did help and we even went to the extreme of employing an anthropologist so that we could better understand the nature of the human behaviour and the adaption to the wider environment. Not many companies of our size had a resident anthropologist!.

After a number of failed experiments at creating, what we thought at the time was the best environment to nurture human beings, but which ultimately failed; we ‘stumbled’ across the,
what is now called the Fractal structure. A human being placed within the fractal structure does indeed grow to express their potential; without the necessity of a ‘supporting’ hierarchy.

5 About Metrics & Measures

Over time we created a clear distinction between metrics & measures. **Metrics** were associated with process and **Measures** were associated with outcome.

In order to see the impact of the changes that we were making to the business we needed to create a simple framework of Measures. The Measures had to represent the agreements that the company was making with its Customers, Suppliers, Shareholders & Employees. In other words, the Measures had to be based around Contracts. The business was continually forming contracts with Customers, Suppliers, Shareholders & Employees and we had to find a simple set of Measures that would keep track of the business’s ability to “form contracts & satisfy them successfully”.

We needed a Measure for ‘Forming Contracts’, another Measure for ‘Satisfying Them’ and finally a Measure for ‘Successfully’. After some exploration we came up with the following six measures:

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The six outcome Measures, we selected, were the ultimate synthesis of all the other Measures that we had identified and were the minimum that reflected the business performance in the future, present & past. We were to use these Measures from the very start of our change program and any changes that were made, were made in the context of these Measures. Ultimately it was these Measures that identified that the original change program (i.e. the extrinsic application of change) that we put in place was not delivering any positive results and despite much effort being put in by some clever consultants the ‘pendulum always swung back’. It wasn’t until we started to change the structure and ruleset that we started to sustainably change the performance of the business.

We found that having outcome Measures was not enough to fully describe the nature of the business and its ongoing success or failure. It was clear from our early interventions through the extrinsic implementation of Lean and other such like programs that we needed to introduce some Metrics for people. After much exploration we decided that it was an individual’s Disposition to Order (structure) that best defined their abilities and success going forward. Initially a person’s disposition was unknown but it did not take long (3 month or so) for a person’s Disposition towards Order to be expressed and evaluated. See table below:
A person’s Disposition level was evaluated to account for all six Dimensions identified in the Fractalwork model i.e. the intrinsic needs/purpose, motivations/process & skills/practices and the extrinsic arrangements, resources & activities.

As an example and using the Dimension ‘Needs’, a person would be evaluated as follows:

- **Creator** – Had distinguished their own Needs from first principles properly accounting for individual context. Could formally demonstrate that their Needs aligned to a clearly demonstrated intent.

- **Changer** – Had adopted a list of Needs and had made some changes to them to reflect individual context. Could clearly demonstrate that the Needs aligned to an intent

- **Follower** – Had adopted a list of Needs. Could formally demonstrate that the Needs aligned to an intent.

- **Pre-follower** – Had been given and agreed with a set of Needs, under oversight.

- **Drifter** – Had no interest in distinguishing their Needs.

- **Starter** – Had not yet begun the exercise of Needs evaluation

### About Personal Growth

What was most interesting, was that when a person was evaluated (within 3 months) as a ‘Follower’ within a particular environment they never changed their Disposition level. They did grow & improve, but this improvement was constrained within their Disposition. Even as the environment changed, demanding a different Disposition, the individual within that environment did not rise to the challenge and change their Disposition. People were far more fixed than we first had imagined.
Despite much effort and expense we came to accept that Growth was constrained within a person’s Disposition level. As an example if a person had a Disposition of Follower then, over time, they would grow their qualitative and quantitative capabilities to become a better follower i.e. they would produce more with less errors.

Whilst traditional command and control systems may get the best out of Drifters, Starters and Followers it seemed to be at a significant cost to the growth of Changers & Creators. By providing a new environment that allowed each individual to express their true potential benefited hugely the Changers & Creators as it allowed them to ‘push on’ without constraint.

7 About Business Agility
As we pushed forward in our journey we distinguished that the Structure in place (i.e. hierarchical and functional) was being stressed by the reality of a competitive environment that was continually changing and the inability of the organisation to respond to this change. The people in the business were bridging the gap between the demands of the marketplace and the inability of our internal Structure to respond to this reality. Essentially the Structure that was originally in place (one man, one task) was, at its heart, inflexible and was designed, appropriately I should add, to be inflexible i.e. to produce high volumes of standardised products/services (fast moving consumer goods and the like). Given our business produced a wide range of products in low volumes, our Structure did not support our competitive environment. The challenge, however, was significant as this traditional Structure is supported by our education system and wider societal norms; if we were going to design, and successfully implement, a new structure we were going to have to consider these wider issues. Throughout our different pilots (experiments) we distinguished that the Structures we designed had a significant impact on the behaviours of the people that inhabited the Structure. If we were getting unwanted behaviours, we learned to revert back to the design of our Structure to identify the root cause of these behaviours. Rarely were the behaviours that we saw on the ground irrational when viewed from the perspective of a person within the Structure (environmental psychology is truly king!)
It became ever clearer to us that we had to design our Structure around our product/service deliverables and the competitive environment that each product/service existed within. We split our product range down into three different categories: runners (fast moving), repeaters (medium moving) and strangers (slow moving), and what we found was that each of our products could be produced in the required quantity by one man (with some limited assistance from automation). This knowledge was to inform our future designs of business Structures and was ultimately to lead to the development of the fractal model.

One important lesson we did learn from this part of our journey, was that it was not one business structure fits all. The structure must be matched to the requirements of the product/service, and the competitive environment that it exists within. I can quite see why a business would wish to introduce a ridged hierarchical and functionalised structure if they were producing a high volume of high value add, homogenous products/services within an environment that does not change significantly and labour costs are low. I just can’t see this same structure working with low volume of low value add, heterogeneous products/services in an ever changing competitive landscape where price is globalising and being driven down by global competition and labour costs are high.

One interesting point of note however, is the impact of automation on these traditional hierarchical & functionalised structures. As automation becomes more widely available and in man sized units, the output from a single person is being leveraged significantly. The globalisation of product/service price (price down) and the localisation of labour cost (cost up) is driving increased automation across all market sectors and this in turn is driving new organisational structures & rulesets and their resultant change in behaviours. The Fractal was our design to meet our requirements, but each business will require its own organisational design (structure & ruleset) to meet its requirements.

There has started quite a significant agile movement across the world, it is interesting to note that all business models are Agile to some extent or another. Agile as a process cannot effectively be applied as a patch to overcome some weaknesses in a business model's agility. A business model ultimately has a “sweet-spot” and if this “sweet-spot” does not encourage agile behaviours then no amount of agile consultants will make what is blatantly not agile, agile.

Agility is thus an outcome from a business model that has been actively designed to be agile. Different business models encourage different levels of agility in the people that inhabit them. It is thus important that prior to creating or adopting a business model that an assessment is carried out of the level of agility it encourages and the level of agility that the market space demands.
8 About Business ‘DNA’

This is a strange heading for a section of a document on business, however it is quite intentional. Each cell in our body contains identical DNA (deoxyribonucleic acid, a self-replicating material that carries genetic information used to build a person). The clever bit about this is that all the different parts of our body i.e. hair, eyes, liver, kidneys all derive from exactly the same DNA that expresses itself in different ways. So the ruleset is identical throughout, but the outcome is quite different. How this common ruleset expresses itself in different ways is beyond the scope of this document but the analogy was not lost on both Julian and myself when designing the fractal structure.

In a traditional (hierarchical and functional) business structure, the DNA (ruleset) is cut up into small ‘strands’ and passed to an individual who is responsible for this small ‘strand’ of activity. This approach makes each individual, within an organisation, a specialist and dependant on the other individuals in the organisation to do their bit, if an outcome is to be delivered successfully. This approach would seem to be ideal as it saves all the waste associated with each person having to contain all the ‘DNA’ of the organisation. So why does nature not work like that, if it is such a good idea?

The truth is that in-order to make good decisions and contextualise work, individuals have to understand the wider context e.g. as a salesman, does a person have to understand finance? The answer must be yes, as how would they know the cost and cash-flow implications of what they are selling. Of course you could have a meeting with a finance person and get this information, but soon you would be ‘drowning’ in meetings as you had to meet the production, design, purchasing, logistics …etc functions. The only way of avoiding this ‘death by meetings’ would be to standardise and fix everything down; however this in itself is a dangerous strategy as innovation by competitors soon overwhelms this standardisation approach.

By giving each person in an organisation a complete set of business ‘DNA’ and allowing the individual to choose how they expressed this seemed to Julian and I, the best way forward. As it turned out there were huge benefits in flexibility as each person in the organisation was capable of completing a core set of activities (sales, purchasing, design, production, accounts, logistics…) under most circumstances.
About the Virtual Company Approach

The virtual company approach is a way of working that makes each person responsible for the Arrangements of Resources and Activities that go into forming contracts and satisfying them successfully. By way of analogy; imagine that instead of a single person being responsible for driving a car, it is decided that the tasks are to be split up by process; one person is allocated responsibility for steering, another for braking, another for changing gear and finally another for staring out the window and instructing the rest what to do. How do you think all of this would work out? Not very well I imagine, let alone the risks associated with any one person not fulfilling their role efficiently and effectively or for that matter not turning up at all! This is how we run traditional businesses; the production of the Outcome that satisfies the customer requires the input of multiple functions such as; marketing, sales, design, production, finance, …… etc and, just like in the driving analogy all these functions somehow must magically work together efficiently and effectively to satisfy the demand, or not as the case may be. This is the problem that Julian (my business partner) and I were faced with, when turning around the fortunes of a small business, and the virtual company approach was the only solution that worked for us.

So…..what does a virtual company look like? The best way to describe this is by first viewing a virtual company from the perspective of its external interactions:
Having created the above models, detailing the external interactions and internal workings of a virtual company it became clear to us both that a virtual company, was in fact, a fractal (repeating pattern) of the larger statutory company itself. This was a revelation to us both and guided our thinking throughout.

10 About Cultural Shift

Possibly the largest hurdle, that we had to contend with, through our change program was the transitioning of the people from the existing functional & hierarchical (command & control / conform & comply model) to the new fractal model based on multiskilling & self-determination. On paper it all seemed relatively easy as, by then, we had the destination (‘to be’) structure quite well defined and thus all we needed was a bridge from ‘old world’ to ‘new world’.

The cultural shift program started well as the individuals could see a direct benefit from the changes in structure & ruleset being made; however, things started to get tougher as the command and control (management) started to become less commanding and controlling and there was an expectation, on the individuals, to self-direct. This increase in responsibility was, for some individuals, not what they wished for and they chose to move on to new opportunities. For the individuals who did stay on the journey, they went through a stage of liminality where the ‘as was’ structure was being deconstructed and the ‘to be’ structure had not fully been comprehended and integrated. This period of liminality was especially difficult for both the designers of the new structure & ruleset and the people in the business who were ‘inhabiting’ the new structure & ruleset. During this period people did behave in rather inappropriate ways and we did lose both customers and money, however the lessons learned through this period were important to the culture as it moved forward and embraced the fractal structure.
11 About Business Model Design

It would be nice to think that out of a blinding flash of inspiration the virtual company approach was created and a totally new business structure & ruleset came about, but that was not the case. The truth is rather different from this, they say that ‘necessity is the mother of invention’ and, to a large extent, this is how the system was developed. However, this empirical approach was informed by Julian’s previous work in a small engineering business and his interest in the humanities and my previous work in engineering and commerce within large corporations and my interest in organisational structures. What both of us did recognise was what we had been doing was deeply flawed as it elicited behaviours in human beings which were not aligned to the best interest of the customers, the business and paradoxically themselves. They say that a business is a ‘money making machine’ so how come when you ask an employee anything about money they simply don’t know. The real truth is that a traditional business is best viewed as a social institution which exists within a wider culture. Traditionally, work is viewed as a sacrifice to gain reward and our language has been conditioned to support this view. Phrases like ‘work life balance’; ‘work to live not live to work’; ‘compensation’, ‘clock watching, ‘Monday morning blues’, ‘Friday afternoon cars’ are commonplace. Typically a person spends 1/3 of their waking life at work - surely they would owe it to themselves to derive 1/3 of their self-expression and growth and would settle for nothing less?

Every business has a design; but few businesses are consciously designed, somehow we expect our businesses to be of a good design through a random process of patching problems. The phrase ‘trying to make a silk purse out of a sow’s ear’ comes to mind.

It was not until we had mapped every single Arrangement, Activity & Resource within the business that we revealed the arbitrary nature of the boundaries that exist in a traditional business structures (models) i.e. marketing, sales, design, production, finance, employment … etc. are just categories of activities NOT ACTIVITIES and materials, methods, machines, man … etc. are just categories of resources NOT RESOURCES.
In a functional and hierarchical business each person has a place in the organisation; a glass box if you like; as the organisation evolves a web of bargains are entered into as each person adapts to the box they have been put in; knowing of course that they cannot exist in isolation. Unfortunately as the organisation changes or is forced to change to adapt to the requirements of the outside world, these web of bargains soon get tangled and stressed. It is this tangled web of bargains that prevents the organisation from moving forward and ultimately leads to its failure. A patch to overcome a particular issue in one part of a business may well cause a problem in another part of the business.

It is helpful to see a business as a whole and complete system, with each part of the system impacting every other part of the system. Using the analogy of a bicycle (a system), if a part of the bicycle (front wheel) is altered this will impact all other parts of the system (to a greater or lesser extent).

There is no silver bullet to designing an organisational structure, and I am still of the belief that it is unwise to simply import an organisational Structure from outside; but this is what almost all companies do; whether wittingly or unwittingly. It is interesting question to ask a board of directors: “Who is responsible for the design of your business structure?” It is not often that this results in a straight answer; or for that matter and answer at all!

12 About Change

Prior to making any changes within the business both Julian and I spent some time on the approach that we would use. This was a lengthy discussion but we both were happy with the final approach, which was to have two ‘Pillars’:

1. The impact of any change was to be measured at statutory company level using our agreed performance measures of forming contracts (v) and satisfying them (q, d, p, c) successfully (p). N.B. Initially improvements were never measured locally; as benefits in one function of the business were often negated by deterioration in other functions of the business. Our final move to the virtual company structure (model) did allow us to measure performance individually and then aggregate up to give the statutory company’s performance.

2. We would use a ‘Scientific Approach’ to change; in other words we would: 1. observe problems and capture data about the problem; 2. identify multiple possible solutions to the problem and select a preferred solution & predict results; 3. test the preferred solution through piloting and obtain actual results; 4. compare our predicted results against the actual test results and make a judgement of success or failure; 5. if successful we would implement across the whole business.
It would be fair to say that most of the changes we made had little positive impact on the performance measures; typically those which were sold by consultants as silver bullets with high impact. Unfortunately, and to our cost, we believed them until we worked out otherwise. There were no silver bullets, just rigorous endeavour! Change is painful and in each moment you do not have many options, the challenge is to work out what options you do have and then choose carefully what to do, and this is where an overarching philosophical perspective is essential. The right choice is often not the obvious choice! At all times we were guided by a philosophy of creating an environment to allow human beings to express their natural behaviours and bring their ‘magic’ to bear, it is this ‘magic’ that is the first thing to be sacrificed on the altar of ‘command and control’ (do as you are told!).

It is worth remembering that in changing times, ‘difficulties confront men’, what previously worked often stops working and the answers to the problems are rarely simple.

One hugely important lesson we both learned was that prior to making any change the ‘As Is’ and ‘To Be’ situation must be modelled. No changes were implemented without firstly modelling the situation.

13 About Adding Value

Adding value is a difficult concept to grasp, as just creating order out of disorder (reversing entropy) does not necessarily add any value. Value add can only be assessed through transacting an Outcome with another person, it is this transaction that values the entity and allows the value add to be calculated. Taking the ubiquitous example of cake making: a person can combine resources (ingredients: flour, eggs, butter, sugar…) with activities (buying, booking in, mustering, mixing, cooking, icing…) using an arrangement (recipe …) – see diagram below - to produce a cake; but this in itself does not add any value. Only when a cake is traded for another person’s resources (money!) does this value a cake. After a cake has been valued through a ‘trade’, an assessment can be made of the value added. If the cost of Ingredients and other overheads exceeds the price paid for the Cake then value has been subtracted; however if the price paid for the Cake exceeds the cost of the Ingredients and other overheads then value has been added.
14 About Aggregators

One of the challenges of specialisation is that inevitably some form of aggregation is required in order to supply the customer with the range of products (resources) they demand. Take the example of farming; in the past farmers used to grow multiple crops (cereals, vegetables……) and rear a range of animals (pigs, sheep…) but as farmers have specialised, the need for aggregation has increased. This aggregation has come at a significant cost to the farmers as the aggregators (supermarkets, and the like) have gained power and influence in the supply chain, as they are the party that stands between the producer and consumer.

The example above equally applies to the specialisation in skills (activities). As specialisation in skills has increased over time the role of an aggregator has become essential in order to deliver an outcome. Just like in the above farming example, there has been a significant cost to the workers as the aggregators (project managers, and the like) have gained power and influence in the supply chain as they are the party that stands between the workers and the customer.

The role of the aggregator (manager) in the supply chain has become hugely expensive, to a point where the producers & workers are no longer able to compete in the global market place.

It was clear to us both that we could no longer afford the role of aggregator (manager) if we were to compete with our global competitors. This inevitably meant that the producers had to multi-skill. The problem we came up against was that our education system rewards specialisation and the more educated a person the more specialised they tended to be. If we were to succeed in the long term then we would have to grow multi-skilled people who did not require the services of an aggregator in order to produce an outcome.

15 About Magic

Julian distinguished, early on, the importance of an individual’s Vision, Values and Responsibility (VVR). We also distinguished ‘Culture’ as the combined VVR of the individuals in a group. The question then was; how could we influence the VVR of each individual, so as to drive change at group level? Clearly it is not possible to command someone to change their VVR and simply writing a company mission and values statement fell a long way short of a genuine improvement in VVR. However, we did see an opportunity to influence VVR indirectly through effective boundaries (rules/constraints/structures) and measures. With the appropriate boundaries and measures an individual’s best adaptation was to bring positive VVR to bear, which in turn inevitably leads to improvements in performance (trader and stakeholder Q, D, P & C). The perspective taken was that people are ultimately adaptive; if the boundaries and measures are contradictory or dysfunctional this will lead to inappropriate behaviours and a broken culture.

It was not until relatively late on in the project that we started to see that we had already integrated VVR through the distinguishing of six key skills. These six skills were realisation (make happen), imagination (look forward), self-discipline (process follow), creativity (problem solve), cooperation (work together), and curiosity (gain knowledge) [RISC3].

It was an important leap forward when, after much ‘discussion’, we synthesised a person’s Needs, Motivations & Skills into the term ‘Magic’.
We further distinguished that Resources (nouns), Activities (verbs); combined through Arrangements (incl. legal regulatory, contractual and other such constraints) could be synthesised into ‘Situation’.

**Magic (within a person) + Situation (within a structure) = Performance (of an outcome)**

In conclusion, a person’s ‘Magic’ expressed through a ‘Situation’ within a structure delivers (∝) an Outcome’s ‘Performance’ Value + (Quality, Delivery, Price, Control) + Profitability & so…

\[ M(\text{NMS}) + S(\text{ARA}) \propto P(V+QDPC+P) \]

Often it is difficult to see how the constraints created by a well-designed business structure influence the behaviours and values of the individuals within it. It is worthwhile using the analogy of a traffic roundabout which, if well designed, shapes the behaviour of the drivers using it. The structure (both physical and rule based (i.e. always give way to the right – at least in the UK!) assists the smooth flow of traffic at a junction and lets individual drivers navigate to their appropriate destination. The roundabout is designed with a clear purpose in mind, it rewards the appropriate behaviours that support the purpose and if used correctly should encourage an individual to express the correct values (i.e. it is in their best interest to stick to the rules). Of course all structures are tested by reality, and unfortunately not all people use the structures in the intended way. At a roundabout some people, rather than flow onto the junction, having pre-looked for a gap to fill, simply stop and then look for gaps, other people drive too fast up to the junction and are unable to stop and plough over the roundabout. However a well-designed roundabout will minimise these unwanted behaviours.

Traffic Lights, unlike roundabouts, are inherently based on command and control (do as the lights tell you!); roundabouts require more of the driver, as it is up to the driver to select the appropriate moment to enter and exit the structure. Clearly these different type of structures illicit different behaviours; they required careful design so that behaviours expressed align with their wider purpose.

16 About ‘Flow’

It became clear in our ‘Journey to the Fractal’ that all we were trying to do was create a smooth flow in the marketing, design, sales and production of our products. We set ourselves a challenge to flow one of our products through the whole organisational structure, but soon found that the flow was continuously disrupted as it passed through the functional and hierarchical boundaries of the business and this disruption was significant. In designing a
functional structure I always had a flow model in my mind. I kept asking myself “how could I get an outcome to flow, without stopping, from demand to supply”? I could see how I could get contiguous flow but surely the best achievable had to be continuous flow. This flow analogy stuck with me throughout the design process and informed my every move.

In the traffic light and roundabout metaphor I could clearly see how a roundabout created much better flow than a traffic light. I could also see that when flow was disrupted, i.e. when traffic lights turned red, that drivers would frequently disengage and often start texting or playing games on their mobile phones; all illegal but none the less it was occurring. I also noticed that this poor behaviour did not occur on roundabouts as the drivers were rewarded, by the design of the structure and ruleset, for maintaining concentration and flow.

By integrating all the activities and resources into a single, customer focused, cell significantly assisted in improving the continuity of flow.

17 About Audit

Shortly after starting off our journey we decided to ‘re-equip’ our workforce with improved skills. We embarked on a company-wide training program which was a significant financial commitment for a small company. Unfortunately this money turned out to be largely wasted as the there was little shift in performance (V+QDPC+P). Towards the end of the training program we had implemented, as a totally disparate activity, a monthly audit regime. The audit was designed to ensure that all contracts (purchasing, sales, employee and shareholder) were being adhered to and that there was adequate control in each of the virtual companies. At the time, we embarked on this focussed audit program, as a bit of a last resort as we had tried just about all other actions we could think of to improve employee engagement in the system that we had created. After a period of time we did notice that there were indeed some improvement in our performance measures but we were not sure that it was just down to audit alone. Given this small improvement we implemented a wider audit regime to ensure that audit was implemented across a wider range of the systems business processes. Bingo… we continued to see improvements in performance and yes we were confident that audit was playing a key part in improving engagement in the system. It all seems a bit obvious looking back from where we are now, but at the time we did not believe the positive impact the audit would have. I do have to stress one point however and that is the importance of auditing to a contract and not just blindly auditing to a regulatory standard that may or may be called up in a particular contract. Contracts are indeed king!

18 About Conflicting Business Structures

Julian and I came from backgrounds that were very different; I had previously been employed within large corporations; let’s call it Structure 1) whose outcome is based on repetition, standardisation, high volume, reductionism & determinism, homogeneous outcomes - an organisational structure for volume manufacture; whilst Julian had been employed within a small company, let’s call it Structure 2), whose outcome is based on design, generalisation, indeterminism, heterogeneous outcomes - an organisation structure best suited for design. This was to be the problem; as I introduced more STRUCTURE this crushed Julian’s MAGIC and as he introduced more MAGIC this was to crush my STRUCTURE. Julian tried to morph tools (design processes, human skills measures….) that work really well in Structure 2 into a form that Structure 1 will accept and I tried to morph tools (lean, process control….) into a form
that Structure 2 would accept. Unfortunately where Structure 1 requires rigidity (hi-fidelity is the goal) this is in direct conflict with Structure 2. (innovative solutions to problem is the goal) So, from Structure 1 you can have firm deadlines, you can plan, you can specialise, you don't have to take responsibility for an outcome (just a process), quality in either built into the process or not, testing is already written and is implemented in line - there is lots of STRUCTURE but little room for human MAGIC for Structure 2; you cannot have firm deadlines, you can't plan with any accuracy (Bayes theorem....), specialisation is dangerous and the solution lies in the compromise, everyone must work to a common outcome, Speed comes from maximising quality, there is lots of human MAGIC but little room for STRUCTURE.

The problem was Anxiety; the people living in the word of Structure 1 expect to work in Process and for the future to be Deterministic and when it is not then their anxiety spikes to a level that they become dysfunctional (fight or flight, usually flight i.e. disengage) The people living in the world of Structure 2 expect to work on Outcome and for the future to be Indeterministic are equally anxious when the structure required to mitigate the anxiety of the people in Structure 1 is applied to them and they no longer have the space for their MAGIC. This is the problem that we had to solve. What was to be done? The fractal structure is what we came up with as it allowed an individual to choose and was adaptive to both Structure 1 & 2 circumstances i.e. had STRUCTURE but left room for MAGIC.

19 About Responsibility

The changes that had most impact on the business were those changes that increased the level of responsibility required of the people. This was for many reasons but, put simply, people make better decisions when they are responsible. It became clear to us that if each person in the business was responsible for everything that the business was responsible for then we would have a responsible business. It is long story and far beyond the scope of this introduction, but in conclusion it was not until we had fully distinguished each business activity & resource and placed the responsibility for these on each and every person, that we truly started to get remarkable results (see also section 'about leadership'). It is not by mistake that each cell in our body contains our entire DNA and then expresses a specialisation!

Early on we created a great metaphor to capture the concept of responsibility. We called it the 'Responsibility Barrel'. What we tried to do was to create a 'barrel' with no leaks i.e. the individual was responsible for all the Activities and Resources in their virtual company. Even the smallest leak in the barrel would cause all the water to escape. Any 'sniff' of Command & Control would cause the barrel to start emptying. Responsibility leaks were identified through excuses and extrinsic blame. The key for us was to not to see it as a people problem but rather to identify it as a system problem. Only when we felt that the system was 'leak free' did we then focus on the person.
About Management

In a traditional business the perceived ‘sweet spot’ for ambitious people is seen to be at the top of a hierarchy; there is more money, more status, more security and more control over the organisations resources. What is interesting about the position of this ‘sweet spot’ is that it is so far removed from the actual value adding activity. ‘Success’ therefore is to move away from value adding activity to non-value adding activity. Sadly for the business and its customers, as the people in the business are inevitably drawn towards the ‘sweet spot’, less and less value is being added and the business eventually fails to deliver what it was set up to do (too many Chiefs and not enough Indians the expression goes!).

A business is set up to make money from the design, production marketing and sales of Outcome(s). Those people (managers, et al) who are not directly involved in the value add activity (design, production marketing and sales) are in fact a tax on the value adders. This tax is of course hidden within the complexities and nuances of the accounting system, but none the less, the only money available is the money the customer pays for the Outcome(s) minus what is paid out for purchases. This money must be shared between all the people involved in adding value and their management and support activities (HR, Quality….). It is really simple, the more money spent on management and support activities, the less money is available for the value adders and for profit!

Command and Control systems are a natural adaptive outcome from hierarchy; simply put, if a hierarchy is created sophisticated command and control systems evolve in order for the people at the top (command & control) to maintain their status and security which is predicated on the success of the people adding value at the bottom (conform & comply). As the top of the hierarchy places more and more rules and demands on those below, the command & control system soon hits a complexity barrier and subsequent changes become patches to individual problems rather than a solution that is contextualised within the wider system. These patches in turn lead to more complexity and soon the system goes into failure as the individuals within it no longer understand it and become paralysed and withdraw their responsibility.
From previous experiences I could see the destructive impact of management, not because they were bad people, but because of the behaviours they elicited in their direct subordinates. The ‘Merry Dance’ of contractual power between manager and managed was complicated and time consuming and always ended up with one of the parties being over responsible and one being under responsible. This imbalance of contractual power, responsibility and therefore growth came to be an unsolvable problem until the structure was changed. Bizarrely, the same ‘Merry Dance’ of contractual power existed between the functions (marketing, sales, design, production ……) and it was not until all the functions were eliminated that the problem was finally removed and the withheld potential of the people flowed in abundance.

In any hierarchy the ‘world view’ of the people in ‘senior’ positions inevitably becomes distorted as they ‘lose sight’ of the day to day operations of marketing, sales, design & production (and any other operational activities). As the view of senior management becomes increasingly more abstract and removed from the reality of day to day business their ability to analyse to the required detail becomes disrupted and their synthesis, on which decisions are made, becomes distorted from reality and decision making is often poor and out of proper context.

21 About Business Leanness

It was clear early on in our journey that ‘Lean’ (i.e. the Toyota production system) was of great value in eliminating waste / non-added value activities. By way of example the ‘5 whys’ tool presses a person to dig out the true source of a problem rather than just the symptoms. What was perplexing, however was that the tools were being shunned by the people. It was a bit like a baker shunning an electric mixer! It just made no sense. It was not until we had explored the command and control system, and the time based nature of how people were employed did we start to realise that shunning the ‘Lean’ tools was indeed the best adaptation to a broken system. There was absolutely no benefit to the individual to reduce the number of hours worked as this in turn would reduce their income or put colleague’s jobs at risk (we called this the 3 M’s i.e. how did a change benefit me, my money and my mates). Only when we removed the constraint of pay/hours and changed to a cell based structure did we see ‘Lean’ being ‘sucked in’ rather than ‘forced in’. The truth is that the cost of forcing ‘Lean’ into a broken structure outweighs the benefits it generated, thus there is usually little or no positive impact on performance.

Early on in our journey we both read Taiichi Ohno’s must read book - ‘Toyota Production System – beyond large scale production’ as we were interested in the cultural elements rather than the tools he applied. In the section - ‘Starting from Need’, Taiichi Ohno is explicit in stating that the program addressed a structural issue. The change in the structure from an 'American' verb based structure to more align with the existing 'Japanese' noun based culture was seminal in achieving the goal of FLOW (‘Just in Time’ is just another way of getting to flow).

It was normal for the Japanese to be multi-skilled but to produce a single outcome (a sword….etc) this really assisted ‘flow’ as there is reduced demarcation boundaries between each of the skills and this avoids the build-up of waste at the boundaries.

Taiichi Ohno still had to work within the boundaries of the Japanese hierarchical system and, in my opinion, he didn’t clearly distinguish management, supervision and bureaucracy as an 8th waste (his 7 wastes were: overproduction, waiting, transportation, processing, inventory, movement & defects). He also did not expose the possibility of dissonance between the
demands of extrinsic management team and the demands of a worker’s intrinsic self-management. In my mind he didn’t see or address ‘the elephant in the room’. A significant percentage, typically between 25% and 50% of the labour costs in a traditional functional & hierarchical business is allocated to management, supervisory and bureaucratic overheads and to be truly lean this waste must be eliminated. The problem for Taiichi Ohno, as a senior manager in Toyota, is that he did not, at the time, consider himself as Type 2. ‘Muda’ (waste); but he was!! The fractal structure was designed to address this ‘elephant in the room’.

Note: Having redesigned the structure, we found that the best adaption to the new structure was to become lean & agile; in effect we got lean and agile for free; however, I do, in no way, wish to denounce the Lean tools as their overt distinctions really assisted us in our journey. The lean tools also assisted in creating a common language to discuss the concepts of Flow (JIT) and Autonomation (automation with a human touch)! At the risk of repeating myself; for lean to be successful and sustainable it cannot be applied as a process or a set of tools as this is simply a patch to a business model which at its heart does not encourage lean behaviours. As with agility (see section above “about business agility”), leanness is an outcome from a well-designed business model and not a patch to an existing business model.

It would be true to say that I came into the business with a strong sense that process/standardisation could solve all problems, if I could only get people to create and follow processes all would be OK; this is a common philosophy behind most IT implementations. In my head it was simple, get a person to write down a set of instructions, agree them and get them to follow them and finally measure them (command and control / conform and comply!). Julian came from a more person centric perspective where he saw the ‘Magic’ (the six key skills) that a person brought as the key to success. It was his thesis that people without the appropriate values would be incapable of creating and following the processes, rendering them impotent, and anyway it was almost impossible to produce a process to cover all the eventualities that reality places upon us. In other words, complex systems have so many variables (a complexity barrier) that it is almost impossible to design ‘one size fits all’ processes. As a game we mapped out all the processes that went into making a cup of tea – we distinguished 27 processes and apportioned a time to each process and determined that it would take 5.5 minutes to make a cup of tea. My wife, Julia, came home from work and made a cup of tea in less than two minutes (the kettle was already hot and that was not in the process!). So much for my approach!

The truth, however turned out not to be my approach of standardisation or Julian’s people centric approach, but rather a hybrid approach of Control Points (gateways or snapshots). We identified the important activities and resources that had to be controlled, but allowed the person to do as they saw fit as long as they met the requirements of these Control Points.

22 About Adaptation

The virtual company approach is design with an eye on modern environmental psychology (people are adaptive). Our goal was to design a System that human beings could inhabit, and adapt to, which would elicit the appropriate behaviours to support improvements in their Needs, Motivations & Skills (Magic) thus improving Performance (V+QDPC+P). After a journey of ‘100 mistakes’ the virtual company approach, as it is today, was produced. Human beings
placed within the boundaries of the system (structure) will, with rigorous endeavour, find the ‘sweet spot’; the sweet spot should deliver continuously improving performance.

23 About Diversity
It may seem on the surface that standardisation / optimisation has huge cost benefits, but this was not what we found. In 2010 we suffered a significant fire which would have closed many businesses of our size. I remain convinced that our structure, based around virtual companies (VCs), saved the business as the people in the business quickly adapted to the new environment and maintained the flow of product to the customer, they recognised immediately that they had to do this as their VCs were dependant on it. Ashby’s law of requisite variety seems to nail this; it states simply that “The larger the variety of actions available to a control system, the larger the variety of perturbations it is able to cope with”. In simple terms this means that a flexible system with many options is better able to cope with change. A system that is tightly optimised for a particular set of conditions might be more efficient whilst those conditions exist but may fail totally should these conditions change. In today’s world, conditions change daily and fortunately people, in their everyday life face these same challenges, and as it turns out the human mind is extremely competent at dealing with the complex and chaotic world around it.

24 About Outcome Thinking
I coined the term ‘Outcome Thinking’ to emphasise the importance of understanding the context of Outcome when carrying out an activity/process. I distinguish an Outcome as the entity that satisfies a formal contract / requirement / need; if a resource did not satisfy a formal contract / requirement / need it would form part of the process. Simply put; if a customer demanded a cup of tea, it was the cup or tea that was the Outcome and the ingredient resources (cup, milk, sugar, tea…..), work in progress resources (tea in pot, cup & milk…..) and the activities (boiling, adding, mixing …. ) all formed part of the process.

Delivering an Outcome that conforms to all requirements is the goal of any organisation. The processes used to produce a conforming Outcome must be constantly changing to deliver improvements in performance. It is impossible to capture the infinite complexity of the process even, as previously described, the making of a cup of tea! (if you think about it deeply enough you would have to go back to the big bang, or however nature created matter, to control everything). Process, by necessity, has to change constantly to adapt to the ever changing world, but it is the Outcome that remains the constant (at least in the short term!).

25 About Division of Labour
It may seem that breaking a processes into part-processes, and then getting a person to focus solely on one part of the process is a good idea but this we found not to be the case, and for many reasons.

Imagine the making of a simple metal nut; it is all that a person does all day, and the next, and the next…… the metal nut happens to go into a bicycle but the person is unaware of this as they just make metal nuts. Philosophically you cannot see the bicycle in the metal nut but you can see the metal nut in the bicycle and this is the problem. As the producer of the metal nut, it is the context of its use and it integration into the wider structure (the bicycle) that a person
has to be familiar with, after all someone’s life depends upon it! However this is not the biggest problem; which is a human problem, our brains are simply not designed to do repetitive tasks over long periods of time, we lose our sense of purpose and start to demand more reward in compensation (it is just too boring!).

A downside to the division of labour was the reality that it could not be divided; a big statement! By way of example let’s look at ‘checking or inspection’ i.e. confirming an item conforms to a specified requirement. This activity has a different label depending in which function (part-process) the checking is done. In a sales department the checking is called ‘Review’ e.g. contract review; in a design department it is called ‘First Article Inspection’; in a production department it is called ‘Inspection’ and in an accounts or quality department it is called ‘Audit’.

What we noticed, is that by splitting up the organisation into functions, this did not eliminate the need for the other functions within that function. Using the example of the sales function, they did indeed need to: Purchase items (e.g. paper, computers, desks, inks….); Design (e.g. processes), Produce an outcome (e.g. a sales contract); have Logistics (e.g. resources purchased had to be booked in & moved); have a Quality function for inspection (e.g. order/contract review); have a Human Resource function (e.g. assisting people), have a Financial & Enabling capability (e.g. to account for resources) – so the sales function had to have all the other functions within it! This was to be a bit of a revelation at the time (although it does all seem a bit obvious looking back), as we could now see and describe the nature of this complexity. It did seem a little strange that for the sales function to purchase some paper, that they would go to all the trouble of raising a ‘Purchase Order Requisition’ pass this to the purchasing function, who would then request suppliers for a formal ‘Quotation’, raise a ‘Purchase Order’, ‘Book-In’ the goods into a store, ‘Inspect’ the item supplied to confirm it met requirements, and finally arrange for the items to be ‘Delivered’ to the sales function (phew!…..). Surely it would be better for the sales function to purchase the items for themselves, handle the inspection when the item (s) arrived and then place the item in a suitable position (all very simple).

A further significant downside to the division of labour was the boundary created between functions and the formation of demarcation and special languages to support ‘in crowd’/’out crowd’ tribal behaviour. Nature fights over boundaries for good reason, it is about gaining sufficient resources to survive, the more boundaries, i.e. departments or functions, created in a business the more conflict will be generated and the more complicated become the web of bargains. I coined a phrase: ‘create a boundary; create a battle’!

The above has to be held in the context of the benefit to any hierarchy of the division of labour. For the specialist in one function to ‘ply their trade’ they are dependent on other people to do their bit to produce an outcome (i.e. a specialist cake ‘mixer’ requires that someone else obtains the ingredients, cooks the cake, ices it and packs & despatches it). Of course this then requires a special person to co-ordinate all these specialist. It does not take long before people see the role of co-ordination as a sweet spot; which it is!!

As an aside to this section; there is an expression that describes a person as ‘a jack of all trades and master of none’ a mildly derogatory statement about people who are generalists and in support of the specialisations of the division of labour. The original expression, however
was ‘a jack of all trades and master of one’ which clearly identifies that specialisation must be within a wider skill set if dependency is to be avoided.

26 About Team-working

I am often amused by businesses that have to send their people on teamwork training courses, given that humans are social animals and naturally form teams for a common purpose. It is strange indeed, that it does not occur to those ‘in charge’ that it may be the dysfunctional boundaries and measures that are causing the teamwork problem and that the ‘Teamwork Event’ is nothing but a short term patch to a long term and recurring problem

The virtual company approach chunks a business by Outcome (i.e. cup of tea) rather than process (buying, storing, mustering, mixing...) in order to remove these functional boundaries and present to a single human being the problem of forming contracts and satisfying them successfully. You may think that the benefits of specialisation would be lost but this we found not to be the case, it did not take long for an engaged individual to gain more skills than the so called specialist; after all it was in their best interest to do so and they weren’t expending significant amounts of effort engaged in internecine departmental rivalry!

27 About Leadership

My experience in large businesses had been that there was a significant emphasis on having great Leaders with powerful leadership skills, I was interested in what these ‘Leaders’ had done in-order to be recognised as ‘Leaders’. As it transpired most of these ‘Leaders’ were not in fact ‘Leaders’ but rather were ‘Follower, Leaders’ i.e. they followed someone else’s work and were not, as I originally thought, designers/creators who inspired others with their own Magic. I remember being told that one ‘Follower Leader’ was a great leader, as he had introduced some new tools into the business, when I enquired as to what tools these were, and when they were created by the ‘Leader’, I was told they were in fact the ‘Lean Toolkit’ and some other similar, well known tools. Given that any engaged person could have introduced these tools of their own accord, what was the ‘Leader’ for? Presumably to stimulate engagement, a role that a ‘Follower, Leader’ is not always suited to.

I did notice, throughout my career, that ‘stronger’ leaders seemed to be surrounded by weaker followers and it does make some sense; in effect the leader was taking responsibility from the followers, whilst the followers received the same monetary compensation (less responsibility; same money was the best adaptive strategy!). A dynamic was set up such that the more the leader stepped forward, the more the group of followers stepped back. This seemed to work reasonably until a crisis point was reached when the over responsibility of the leader could no longer cover for the under responsibility of the group of followers, and this is when the system inevitably went into a responsibility crisis.

It was clear to me early on in my life that there were two forms of Leadership; extrinsic (lead by a person other than myself) and Intrinsic (lead by myself). If I met a great person with great ideas and they managed to sell these to me, then on most occasions, I was happy to follow and why not! However as I came of age, I was no longer satisfied following other people purpose and wished instead to follow my own purpose; self-leadership was the only option for me.
28 About Disintermediation

When in the corporate world of manufacturing, I completed a market mapping exercise looking at the volume & value flows of product and the value (cost & price) as they left the manufacturing plant and flowed through the different channels (wholesalers, distributors, retailers & direct) to the end consumer. It was quite shocking to see the extent of price increase as product flowed through the multiple channels to the consumer and just how much the consumer had to pay; in many cases it was 5 x the price that the manufacturer received.

As a matter of interest, but not part of the market mapping project, I worked out the cost of the raw materials that went into the product and the direct cost of processing the product. Using these values it was clear to see that disintermediation (removal of non-value added activities) was not only essential outside the company but also inside the company.

The traditional way of achieving the goal of reducing ‘overheads’ is to centralise operations in a larger plant, thus the cost of these non-value adding activity is spread over a much larger volume of product. This however has a down side, in that the logistics costs inevitably increase and it is harder to serve the bespoke needs of a local markets. Inevitably products become more standardised and vulnerable to increased competition.

It would seem a more sensible approach to leave the means of production as close to the consumer as possible and to be of a size that allows for rapid product innovation to meet the requirements of the local marketplace; only in this way can a long term future be secured.

So; in-order to compete on a global stage not only are efficient (low cost…) and effective (on time, in full…) routes to market required but also management and all such like non-value adding functions within a company must be integrated into the value adding activity. It is simply too expensive to have a separate cabal of managers, accountants, lawyers, HR professional, quality managers….. et al.

In the corporate world I often heard a saying that went something like ‘think global; act local’. I often thought about this and concluded that this was not a sustainable winning strategy; in my opinion ‘think local; act local – globally’ is a much better approach.

29 About Analysis and Synthesis

At the start of this journey I was by nature a synthesiser (intuitive if you like), what that really meant was that I could avoid the hard work of analysis. The drawback was my synthesis was based on far too few facts and observations to really make a difference. It was the demand that this project placed upon me and the competition with Julian (a natural analyst) that drove me to confront my analytical demons. I was faced with the necessity to research problems in great detail only then was I able to bring my natural synthesis skills to bear. It was Julian’s analysis skills and his questioning of my synthesis that drove the integrity of the work. It is important to bear in mind that at the heart of all good work is the repetitive cycle or longitudinal spiral if you like, of Analysis, Synthesis and Action.
Possibly the most important piece of work that I completed was the analysis of all the Activities that were being carried out in the business and all the Resources & Arrangements owned by the business. This analysis was essential in the understanding of the ‘flows’ of Activities, Resources & Arrangements and allowed us to distinguish the Activities, Resources & Arrangements that:

- Added no value
- Added no value but were essential to adding value
- Added Value

In addition to this we also identified the Activities, Resources & Arrangements that:

- Contained high levels of Magic
- Contained medium levels of Magic
- Contained low levels of Magic

Having completed and mapped the business Activities (see example below), Resources & Arrangements and allocated them into the categories above, the next step was the synthesis into different structures that could efficiently and effectively produce Outcomes to meet the performance targets. It was these structures that were the basis of our pilot experiments.

### About Automation

What was clear to me, during my time in large corporations, was that people were enslaved by machines; it was the machine that drove the behaviours of people in an endeavour to keep the machine running as long as possible and at maximum efficiency. I recall that there used to be...
a separate print department where existed three people and a huge industrial photocopying machine; I used to go along to the department with what I wished photocopied, often just one A4 page, I filled out a ‘print requisition’ and sometime later, typically two/three days depending on the queue time, I got a phone-call to pick up the completed print.

How the world has changed; I now have a photocopier combined with my computer printer and the machine is now a slave to my demands. The world of automation is slowly humanising the world of work and we have to respond to this change. There is now a huge range of complicated and highly productive machines that are designed to be operated by a single man.

This process of ‘downsizing’ automation has helped up enormously in our drive to the fractal structure as one man surrounded by the appropriate machines can become extremely productive.

31 About Increasing the Average & Reducing the Variance

Part of the corporate toolkit I came with was an expression that goes ‘increase the average reduce the variance’ I didn’t know how valid this was going to be. As the journey progressed we realised that people are very different and that some people were not suited to the environment we were creating and that migration was the best choice for them. The voluntary migration of people due to the immutable constraints and measures that the virtual company approach placed around them had the effect of increasing the average and reducing the variance of performance in the remaining group.

In the corporate world it was often up to the management to make this stay/go decision based, at best on subjective measures, but usually on gut feel, emotion or relationship (like/don’t like).

32 About Living with Uncertainty

Uncertainty confronts all of us; our reaction to uncertainty is what drives our anxiety. In our efforts to assuage this anxiety we either make a futile effort to ignore it (denial) or we put dysfunctional systems (patches) in place to try and control it. Ultimately it is our ability to live in the face of uncertainty and to react to its demands that reduce our anxiety. Only when we face a reality that is whole and complete does our adaptation become appropriate and the anxiety is truly mitigated.

33 About Selfishness

As the journey of splitting the business up into individual virtual companies progressed, we were concerned about the selfishness that might be engendered by the environment that we created. Our concerns were well founded but paradoxically the eventual outcome was not as we expected. Initially people did act alone and without due consideration of others but this was not to be the ultimate expression of selfishness, as most people passed through this state (we lost some individuals, voluntarily I should add, who were unable to pass through this stage). The final state of selfishness was the recognition that no man could exist as an island and that it was in the selfish best interest of an individual to engage and share with others. What we distinguished to be the ultimate state of selfishness was to be ‘unselfish’; a state that exists as an emergent property from each person expressing their selfishness.
What was equally of interest, was our observation that, as people grew and the model of the world in their head became more evolved and holistic; their behaviours began to change from insular to integrating. As an aside, I often found people in corporate life to be selfish in the insular sense and I have to conclude that the structure that was placed around them forced them to stay in this inhibited state.

34 About Purpose

So why go to all this trouble to develop a new way of working? It seemed to us that the traditional way of running a business (hierarchy, function, command & control and conform & comply) contradicted the basic human requirement for Autonomy, Mastery and Purpose.

It was clear to both myself and Julian that people in their home lives were making complicated purchasing decisions, taking responsibility for themselves and often a family, were financially literate yet when they came into work they could not be trusted to do even the most simple of tasks (purchasing a pencil, was typically the responsibility of a special purchasing department!) without guidance and supervision. It did not take much of a ‘leap’ to distinguish that companies, utilising this traditional heterarchical and functional business structure, ‘double up’; on management i.e. the individual’s management capability (as demonstrated in their home-life) is superseded by a company’s management capability. Clearly this ‘doubling up’ is waste and should be removed if the company is to call itself ‘lean’.

Surely we could design a structure that could give an individual human being; Autonomy, Mastery and Purpose and eliminate the need for double management?

Surely this would outperform any traditional business structure and we could conquer the universe?

Unfortunately it was not to be that simple; just because the virtual company structure was designed around getting the best out of a human being in no way predicted its success. By way of another analogy, I remember getting a brand new set of golf clubs from my mother and father, I had it in my head that with these ‘mighty weapons’ I could slay any opponent. Reality was to be harsh on me; as my father, with only a half set of clubs that were far beyond their prime, took me to task; not one hole did I win. So I learnt that the Magic was not in the clubs but was instead in my father and that lesson has stuck with me. The only way I have found to achieve my goals (in their infinite complexity) is to work with great people using great structures. These people do not have to be the same as me, in fact, it is often a benefit if they are very different, but what, in my humble opinion, is in common with all great people is they are prepared to think for themselves, do for themselves and accept the responsibility for the Outcome (good or bad!). I have always found it difficult to work with people who are wedded to a process or dogma (usually created by another); I often find that they are prepared, all too easily, to give themselves up to process because the journey of understanding requires pain and effort. But what they often fail to see is that is this very pain and effort that gives them their growth and feeling of self-esteem; and it is this that makes them great to work with.

35 About Us

The journey to the fractal had been tough on both of us; it had been a real rollercoaster ride. Looking back it seems worthwhile as the outcome from our endeavours has been an exciting
A & proven new way of working that is designed to get the best out of human beings. The growth involved has been absolutely immense; if anyone said to me, at the start of the journey, that I would produce my own model of a human being, combining the 2nd law of thermodynamics, existential philosophy, the work of Charles Darwin and many other pieces of academic work then I would have accused them of “losing the plot”; but this is exactly where I ended up. In effect I had morphed into Julian’s role and the irony is, that Julian has morphed into mine. He has produced an exciting new business model for another business, the model contains a lot of what we had learned in the journey to the fractal and is fantastic piece of work. The great news for both of us is that we have both widened our skillset and are no longer dependant on each other. Independence is truly a great feeling and allows for a richer and deeper relationship.

Andrew Holm
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