

# Management's sweet spot

*Quantum physics has discovered that in the space between chaos and complexity, life thrives, and that dynamic space is where your enterprise should be living.*

In today's environment business leaders have to respond to more sophisticated customer demands, new sources of competition, ever-changing and ever-more powerful technology, capricious financial markets and knee-jerk economic policies.

Some companies are really struggling because they are still following policies based on an outdated mechanical conception of how the world works.

These companies fiddle with new managerial techniques and fads, but with no integrity or deep-seated understanding as to how the 'real' world works or why they need to change, they 'flip-flop' between various tensions and apparently opposing demands.

These companies move from managerial models espousing the values of centralisation to decentralisation, from top-down control to empowerment, from short-term results to long-term 'ethical' values. Then when the results aren't as good as expected, they lurch to the other extreme. This 'either/or' thinking needs to be replaced with 'both/and' thinking. The question should be: "How can we capture the economies of scale from tight centralisation and the responsiveness of broad decentralisation?" What we really need is 10 out of 10 for both, not a trade-off between them.

I think this crazy lurching from ideal or policy to another may be the most dis-

ruptive and expensive practice of the past 20 years in New Zealand business.

However, there are some exceptions. Some companies are winning by following policies consistent with the laws of life, (which are now becoming clearer through the study of a new branch of science). By unblocking their structures and processes, freeing up their grass-roots workers, developing PALs (partnerships, alliances and linkages) more widely and providing support systems, they are able to ride the roller-coaster and maintain service and business performance – without flip-flopping.

## The sweet spot

So what are these laws of life and science that offer so much to business?

In the past 10 years scientists have found that life has a sweet spot – a spot where living systems seem to be able to have the best of both worlds, a spot which is vital to all growth and creativity in all living systems, including businesses.

Since organisations are living systems, understanding this sweet spot is vital to understanding business. With this understanding we can design organisations with integrity rather than just following a fad that is changed at the first sign of a problem. But in my experience, most business people are put off by the scientific terminology used to label these two related sciences; they call them "chaos" and "complexity".

Scientists have found that whenever

we move from one stable state to another stable state we go through a period of chaos and the laws of the science of chaos begin to apply. For example, if we heat water the system absorbs heat until at 100 degrees Celsius it suddenly changes from water (a liquid) to steam (a gas). In the transition it goes through chaos. Another example of a chaotic area is where ocean meets land, think of the proliferate and volatile life on the coast.

For business the movement from the industrial age (a stable state for over 100 years) to the information age is an especially important example which is proving both chaotic and creative.

There are two key lessons for business that come out of the study of chaos. Firstly, close to chaos things speed up enormously. Often conditions that have existed for years can be quickly and completely changed (eg, the downfall of the USSR) when chaos arises. It's why under the right circumstances organisations can go through amazing spurts of change and development. By comparison, not much happens in the stable states but close to chaos all sorts of possibilities open up.

Secondly, close to chaos, a small change at the start can make enormous changes by the end; therefore a single person or initiative at the start can be unbelievably influential on the final result. Individuals in the right place at the right time can literally change the world like Gandhi, or Martin Luther King.

Now let's look at complexity. This is the study of living systems poised between a stable state and chaos... an area (the sweet spot) which is stable enough to store information and evanescent enough to transmit it. The study of complexity shows that all living things need to be constantly off-balance because this allows them to interact with the environment in which they live literally sucking in information and energy.

It's called complexity because at this point (the sweet spot) living systems have an amazing ability to create complex structures from simple parts without any outside organisation; in other words, they 'self-organise'. It applies to all living systems, for

example, birds forming a flock, bees forming a hive, nodes forming the internet, cells forming a human body, people forming a company, transactions forming an economy. The very membrane of a living cell is poised between a solid state and a liquid state (on the edge of chaos). This is what makes life so creative; change a single protein molecule and you can produce enormous changes.

It's now clear that to be successful all living systems, including organisations, need to self organise. Attempts to control or manipulate this state will push the system away from the sweet spot, either into the steady state called "order" (which by definition is unchanging and unresponsive), or into disorder and anarchy. In experiment after experiment, the complexity scientists have found any attempts to over-control lead to a worse result. Indeed, if an organisation is in flip-flop mode (and most are) it's almost certainly because managers are treating the organisation like a mechanical system which can be controlled, restructured, downsized, reengineered, limited, or put in boxes.

One of the experiments is particularly relevant to business. You've probably seen schools of fish move like synchronised swimmers. Recently scientists working at Santa Fe University tried to replicate fish swimming in groups on a computer screen using top down control. They found that even using super computers the program became impossibly complicated beyond about 10 'fish' because the number of relationships became overwhelming. In short, the top down approach was a dismal failure.

### Three simple rules

Next they programmed three simple rules into each 'fish' and when they ran the program the 'fish' swam and circled in the most amazingly life-like patterns. The three rules programmed into each 'fish' were:


1. Keep moving,
2. Stay close to your neighbour, and
3. Don't bump into anything.

Talk about attaining complexity from simplicity! I think these rules are interesting – imagine an organisation where they were put into practice. Putting them into business language they might read:

1. Keep learning and experimenting, if it's in line with the vision... "do it",
2. Build relationships, understanding and work together,
3. Work to each other's strengths.

Scientists are now finding that all complex systems are based on a few simple rules like this built in at the local level. And these rules work to produce the most amazingly complex behaviour globally.

Managers are not stupid, however most have been working on a mistaken assumption that life is like clockwork. It turns out that businesses run better when they have a common vision, a few simple rules that everyone adheres to, strong leadership (but a different type), and trust that the world is basically self organising. The scientists say that in living systems more control leads to less order and less control leads to more order. Living systems can't be herded along a predetermined path, they seldom go in a straight line. The trick is to encourage winners and amplify positives. This can be done, partly by managing conversations, partly by looking for and boosting 'positive deviations' (things that are already working unexpectedly well), feeding them, giving them resources and visibility, and partly by providing highly respected role models, so that people start to notice the success and want to be part of it.

At present science is several years ahead of business in understanding how the world works. If science is right, most managers may be acting in a way, which is counter-productive. What's required is leadership that helps build a sense of identity, relationships, information sharing, meaning and self worth. Instead of controlling the organisation in the traditional way – which complexity says is impossible to achieve anyway – ease off the rule book, empower employees, reduce hierarchical levels within the organisation, allow people to take ownership of the business, focus on promoting values and principles and spend more time building relationships rather than reorganising. 

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