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Complexity and Strategic Management

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KEY PRINCIPLES

The notion that the world is complex and uncertain and potentially fast-changing is much more readily acceptable as a statement of the obvious than it might have been thirty years ago when complexity science was born. This emerging worldview sits in contradistinction to the view of the world as predictable, linear, measurable and controllable, indeed *mechanical*; it is the so-called mechanical worldview which underpins many traditional approaches to strategy development and general management theory (see Mintzberg (2002) for an overview).

The complexity worldview presents a new, integrated picture of the behaviour of organisations, market places, economies and political infrastructures; these are indeed complex systems as we will explain below. Some of these behaviours are recognised in other theories and other empirical work. Complexity theory is unique in deriving these concepts through the lens of a coherent, self-consistent scientific perspective whilst nevertheless applying it to everyday, practical problems.

These key principles can be summarised here:

- **There is more than one possible future**
 - This is a very profound point. We are willing to accept the future may be too complicated to know, but the notion that the way the future may evolve is, generally, **unknowable in principle** fundamentally changes our notion of reality as being something that is unfixed and emergent. The future does not yet exist; it is created and not merely discovered.
- **Tipping**
 - Organisations, economies or other complex systems may **tip** into new forms with radically new characteristics; some of these characteristics may not previously have existed. Such tipping may be triggered by small, seemingly unimportant events or changes and the new state may be different in kind from the old

- **Need for interconnectivity**
 - Complexity theory is systemic in perspective. It asserts that organisations which allow diversity and encourage interconnectivity are more able to respond to changing environments than those which are too controlled and too finely-honed around a single purpose. Indeed it demonstrates that change and creativity can **only** occur if there is diversity
- **Variation as a pre-requisite for novelty**
 - Change, evolution and innovation result from events that happen **locally** – through non-average interactions and events at particular points in time and space; the nature of these local events are not predictable from the ‘average’ general situation. Again, the fundamental importance of local variation is a very profound insight. Allowing this so-called microdiversity is an essential pre-requisite for change (even if the change is, ultimately, global) and local variation should not be unintentionally eradicated through too great a focus on standardisation, efficiency, and a search for repeatability and control
- **Unfixed, emergent, self-organising, co-evolving**
 - We are working all the time with the idea of systems that are interacting, nested, evolving, fuzzy and overlapping; nothing, not boundaries, nor characteristics, nor communities, nor connecting forces, nor constituent elements, are fixed. It is this spatial and temporal complexity that we are at pains to embrace as it contains the potential for change. Indeed the characteristics develop essentially bottom up not top down. Any attempt at global imposition will be treated by the system as merely an intervention, but whether it leads to the intended outcome is another matter; unintended consequences is a central theme
- **Both-and**
 - Embracing the message of complexity does not infer chaos and helplessness. The conclusion is **both** to create clear intentions and actions based on the best data available **and** yet recognise that plans may not lead where intended and chance ideas and impulses we unintentionally make on the environment may work beyond our wildest dreams. Strategy development and strategy implementation become much more entwined as we see what works and build on successes. It suggests portfolios are generally preferable to too great a reliance on one theme (see Allen, Boulton et al (2005), Boulton and Allen (2004)); we need **both** to exploit cash cows whilst they exist **and** to invest in potential new stars. We need constantly to scan the environment in the broadest sense for

PREVIEW VERSION

potential changes and constantly to interact with the organisation at its deepest levels to see what is really happening, for good or ill.

Before getting immersed in the technical details of complexity theory, we introduce two short case studies. The first, text messaging, is the story of an unintended strategy that was 'pulled' by consumers, grew massively in value over a few short years and radically changed communication processes; not a story easily explained through an analyse-plan-do-review model. The second describes how a small organisation can influence larger structures whilst both keeping to a core mission and yet being opportunistic. Both should be read with complexity theory in mind.