

Productivity Through Interdependence: Heeding the Lessons of Nature

By Wayne Visser

In our modern economies and businesses, unlimited growth is constantly striven for, institutionalised, almost idolised. We hold it up as the measure of success. Yet, by doing this, we could be sowing the seeds of our own destruction. We know this because in nature, unlimited physical growth is almost nowhere to be seen.

When it does occur, we call it cancer, or imminent species collapse, or ecosystem decline. Also, we are already seeing many of the signs of exceeding what environmental scientist Donella Meadows called 'the limits to growth'.

Growth in Nature

In his visionary book on the evolution of life (*The Awakening Earth*), scientist and business author Peter Russell makes the critical observation that, while exponential growth does frequently occur in nature, it always levels off into an S-shaped curve as soon as a harmonious and life-supporting situation has been reached. What actually happens is that quantitative growth is always superseded by qualitative growth after a healthy infrastructure has been established. Our own human growth patterns are testimony to this. US ecological economist Herman Daly extends this principle to the economy, suggesting that a distinction needs to be made between traditional economic growth (typically measured by Gross National Product), and holistic development.

According to Daly, 'growth' means a quantitative increase in the scale of the physical dimensions of the economy, while 'development' means the qualitative improvement in the structure, design and composition of the physical stocks of wealth that results from greater knowledge, both of technique and of purpose.

A growing economy is getting bigger; a developing economy is getting better. In a business context, impetus for this change has already been provided by MIT Professor Peter Senge's concept of a 'learning organisation' and World Business Academy fellows Willis Harman and John Hormann's notion of Creative Work, in which "employment exists primarily for self development, and is only secondarily concerned with the production of goods and services."

Practically, this shift away from blind growth will only occur as companies begin to value, measure and integrate qualitative dimensions into their strategic planning, operations and public reporting processes. Two excellent tools for achieving this are the Balanced Scorecard and Social Auditing.

Productivity in Nature

Another common misconception about Nature is the dominance of competition in its processes - the so-called 'survival of the fittest' adage. In fact, in nature, competition is the exception and cooperation and symbiotic relationships are the rule. The principle incorrectly ascribed to Darwin could more appropriately read 'survival of the species best adapted or integrated within their dynamic environment'. Size, strength or physical agility are seldom the best survival qualities (remember the dinosaurs?).

Among the unsung prophets of the 20th century who first described the dynamic complexity of Nature in these terms was former South African Prime Minister, Jan Smuts. His Theory of Holism was the precursor to modern day Living Systems Theory, which Fritjof Capra has subsequently applied to the economy and Peter Senge has applied to business organisations. According to their observations, the key to productivity is synergy - creating the cooperative relationships which together produce more efficient and effective outcomes for the good of the whole.

Allied to this is an often overlooked aspect of productivity, namely the role of creativity, which Smuts also dealt with in some detail. Creativity in nature occurs due to the overlapping 'fields' of existing wholes (or units), which in turn provides the impetus for innovation and evolution.

In a business context, we see this principle applied in the use of cross-disciplinary think-tanks, matrix organisation structures and 'free-roaming employees' (such as in the innovative Brazilian company Semco). We also see the emergence of trans-disciplinary studies such as ecological economics and human ecology. These are not always the most efficient options, but they are the most productive.

Which leads onto the next point - efficiency in nature. We notice that while efficiency at lower levels is sometimes poor (for example, diffuse solar energy), this is more often than not a requirement in order to optimise efficiency at a higher level. Always, it is the healthy functioning of the greater whole which gets priority. How often are we sacrificing the efficiency of our greater systems (society, the environment) in the name of the efficiency of the corporation or the economy?

We also observe that Nature does not maximise efficiency; nor does it maximise any other variable. What it does do is optimise variables, in the context of the healthy functioning of the whole system. In instances where one variable is maximised, the natural system becomes rigid and eventually collapses. Business leaders and economists would do well to heed this lesson.

By creating expectations and pressures around maximising profits, or productivity, or economic growth, business and the economy inevitably creates systemic malfunctioning in other areas. These may be the unfulfilled fundamental human needs of its employees, social disintegration, or environmental destruction. Our economic institutions need to re-evaluate their ultimate meaning and role in society and then focus on optimising the variables within their influence towards realising this purpose.

Design in Nature

It is becoming increasingly clear that business and the economy need to redesign their processes to bring them back within the sustainability capacity of Nature, and to learn from Nature's designs as models for productivity. For this to occur, an understanding of the simplified dynamics of Nature is a necessary starting point. US ecologist and business consultant Paul Hawken distils the process into three fundamental principles that govern nature: waste equals food, nature runs off of current solar income, and nature depends on diversity. In the past, we have chosen to ignore all three of these in our economic activities. Yet the tools for bringing about changes in line with these principles are now available. Most common is the so-called 'life-cycle assessment' or 'cradle to grave' approach in which corporate responsibility is taken for the entire production-sales-disposal process. Dr Karl-Henrick Robert, who pioneered The Natural Step methodology which is currently sweeping the international corporate community, refers to this as 'cyclic technology'. He believes there are only two alternatives: Either we choose to close material cycles in society with high heads and in pride, or we do it crawling on our knees later. But we will still have to do it.

In a more positive frame, futurist Hazel Henderson points out that this process of learning has already begun with the development of leading edge technologies which do nothing more than attempt to mimic the genius of Nature's designs. Examples of these include: artificial intelligence technologies, biotechnologies, energy technologies, and light wave technologies (phototronics).

Concluding thought

The last hundred years or so has witnessed an arrogant conqueror-like attitude by humans towards Nature, especially in business and economics circles. We have been blind to the generous miracle of nature's life-sustaining 'services' (recently estimated to be in excess of three times the world Gross National Product). And we have been deaf to the bountiful school of lessons which Nature has collected over billions of years - lessons in survival, in evolution, in quality of life. The time has come to shake off our mechanical, militaristic thinking of yesterday, in favour of the natural, organic wisdom of tomorrow. This new way of knowing will have to be at the roots of our future economic system, if it is to flourish, to blossom and to bear fruit which everyone can enjoy.

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