

The Evolving Full Cost Economy



The Market and State

Our modern industrial economies are managed on the macro-level through a framework that is divided between the public and private sector. The large centralized systems of organization that developed during the modern era, and today manage our economies, are a combination of private businesses operating in the market and public organizations that are integrated through the nation state.

The modern socio-economic institutional framework for managing our economies is a balancing act between public and private organizations. The market system manages privately owned resources that can be defined as discrete, quantified and exchanged. While a framework of public institutions manages those resources that can not be privatized and require some form of collective coordination and ownership. In succinct terms, the state manages the whole, while the market manages the parts.

The market works as a distributed mechanism for resource allocation and distribution. In a price the market collects the information that people have about the value of something, how much it is worth and to whom it should be given, all based upon the price that people are prepared to pay for it. Given the right

conditions market mechanisms can be highly effective at aggregating information about current and future availability and allocating resources to where they are most needed.

But in order for them to be effective, there are a number of preconditions, the good must be discrete and quantifiable in some way so as to make it possible to privatize it. Within the market system, it is the private ownership of valued resources that incentives people to manage them effectively. In such a way the market can be very effective due to its capacity to harness the intelligence, incentives, and management capability of the whole population; this is one of its most advantageous characteristics. But many things can not be effectively rendered discrete, privatized and managed by the market. The public sector deals with those things that can not be divided up effectively; those things that form a natural monopoly with the government operating as that monopoly purportedly in the interests of the whole economy and society. Within a modern economy for example parks, air quality, public security, water systems, much of basic research and many other important economic activities are managed by government institutions.

With the rise of globalization this balancing mechanism between state and market has become unraveled as markets have evolved into a global form while the public institutions of the nation has not developed into an effective form of global public management.

The public system of the 19th and 20th century was relatively effective at managing national scale infrastructure, environment, and economy but has not scaled effectively to the global level. At the same time that market institutions have effectively scale to the global level, public institutions, by and large, have not been able to. The complexity of the global economy and environmental challenges of today far outstrips the institutional capabilities of industrial age centralized public institutions.

There may be many reasons for this failure to develop global governance, but one of them may be identified as the structural limitations inherent to centralized institutions, such as those that form the nation state. Unlike pure markets, governments are centralized institutions. Centralized systems are not designed to deal with complexity, they scale to a certain size and then become congested precisely because of their centralized architecture that creates bottlenecks. Up to a certain scale and complexity centralized systems

Economics today is the language of policy, if you wish to communicate anything to a policy maker with an end result in mind chose economics because that is the language that they understand... private profits have become a driver of almost every government policy around the world - *Pavan Sukhdev*

have an advantage of economies of scale enabled by batch processing. However beyond a certain scale, they lose this advantage as they have to develop ever more level in their hierarchy to deal with more nodes and subsystems, and this renders them increasingly abstract and removed, cumbersome and inert.

"Where are political communities organized to day, by and large political communities are organized at the level of the nation state, don't go looking for global governance anywhere, don't go looking for global politics anywhere" - Dani Rodrik Prof Harvard



Tragedy of the Commons

A central consequence of this institutional failure is a large scale tragedy of the commons issue which is often identified as being at the heart of the contemporary environment crisis. The tragedy of the commons is a situation within a shared resource system where individual users acting according to their own self-interest behave contrary to the common good of all users by depleting that resource through their collective action. It is often said that in this situation what is rational for the individual become irrational for the collective. The commons dilemma stands as a model for a great variety of resource problems in society today, such as water, forests, fish, nonrenewable energy sources, traffic congestion or air pollution among many others.

Throughout history, the central activity of public institutions has been to resolve these social dilemmas. Public institutions are designed to connect the actions of the individual with the consequences to the whole organization to ensure optimal and sustainable outcomes for the whole organization. One of the defining characteristics of the late 20th century within industrialized nations is institutional paralysis and various forms of failure. Public institutions, in particular, political systems, are increasingly losing the trust and support of their societies and are increasingly seen to be incapable of addressing the most pressing issues faced by their people; whether this is inequality, globalization, loss of jobs or climate change.

Today we can readily identify that on a global level our public institutions are not functioning as required. They simply have not effectively scaled beyond the national level, to meet the demands of an increasingly global economy. The result has been a tragedy of the commons on the scale of the global biosphere and an environmental crisis that sits at the heart of any attempt to achieve sustainability. Public institutions are designed to manage the negative externalities of the individuals and organizations to the whole organization, in the absence of effective public institutions to manage the global biosphere many negative externalities have created an environmental crisis; a highly unsustainable situation and a need for a new approach to managing the global commons.

What is common to many is taken least care of, for all men have greater regard for what is their own than for what they possess in common with others.

- Aristotle



The response to this crisis has been the rise of a new form of mainstream environmental awareness over the past few decades that can be identified in the rapid growth and prevalence of the term sustainability. As the environmental degradation and limitations have become ever more apparent, widespread awareness to and valuation of the natural and social resources that are being lost has risen. This valuing of the integrity of ecosystems and society that is required to maintain them in a sustainable fashion is now articulated in the terms social and natural capital. Social and natural capital represent the value inherent to the whole of an ecosystem or society which is required to maintain its overall continued productivity. As it has become depleted this latent value that was once largely taken for granted is becoming increasingly recognized and valued by society at large.

To date, markets have been a reflection of an industrial age economic model where natural resources were seen as infinite and the emphasis was on the development of an industrial base to provide for the mass of people. This logic and value system integral to an industrial stage of economic development in

captured in the concept of utility. Utility is a measurement of an economic good or service to an individual actor who is willing and able to pay for it. Utility is a single dimensional conception of value that excludes much of the secondary resources that are required to maintain the social, economic and ecological systems that enable the provisioning of the item and this is what renders the market system based on utility alone unsustainable. The central challenge of developing a self-sustaining economy is going beyond utility to develop market systems that not only operate on a logic of utility but can also define and account for the full set of resources required to sustain the system over time.

The industrial model was linear in nature, resources were seen as infinite, and it was believed we could endlessly take, make and dispose. Economies were simply about utility, what people wanted, where supply matched demand that was the value or price of somethings and we used the nation state as a top-down mechanism to constrain over consumption and negative externalities. But with the end of the industrial age has emerged a more complex reality. It has


Underlying the laws of demand and supply is the concept of utility, which represents the advantage or fulfillment a person receives from consuming a good or service. Utility, then, explains how individuals and economies aim to gain optimal satisfaction in dealing with scarcity

-Investopedia



become ever more apparent to us that societies, cultures, and ecosystems have value in themselves, in their integrity, a value that the industrial economic model failed to capture or account for. Without proper evaluation and accounting economic activity worked to systematically degrade the intrinsic value of these macro systems and ultimately render them unsustainable.

In an age before the Anthropocene when human impact on the economy was relatively small - when economy and ecosystem could be conceived of as two separate systems - a top-down conservationist approach we sufficed, an approach of regulating impacts through centralized institutions so as to conserve the environment. However, in the age of the Anthropocene this is no longer viable. The global economy and global ecosystem are now one, they have to be managed as one, with accounting for natural and social capital integrated into every aspect of the economy, not simply imposed upon it through external regulation.

A woman with short brown hair, wearing a grey cardigan over a white top, is standing in a grocery store. She is looking down at a green apple she is holding in her right hand, while her left hand holds a white plastic bag. She is surrounded by large crates of green apples. The background is a blurred view of a grocery store aisle with various products.

While traditional industrial capitalism primarily recognizes the value of money and goods as capital, Natural Capitalism extends recognition to natural capital and human capital. Problems such as pollution and social injustice may then be seen as failures to properly account for capital, rather than as inherent failures of capitalism itself - *Wikipedia*

Multidimensional Economy

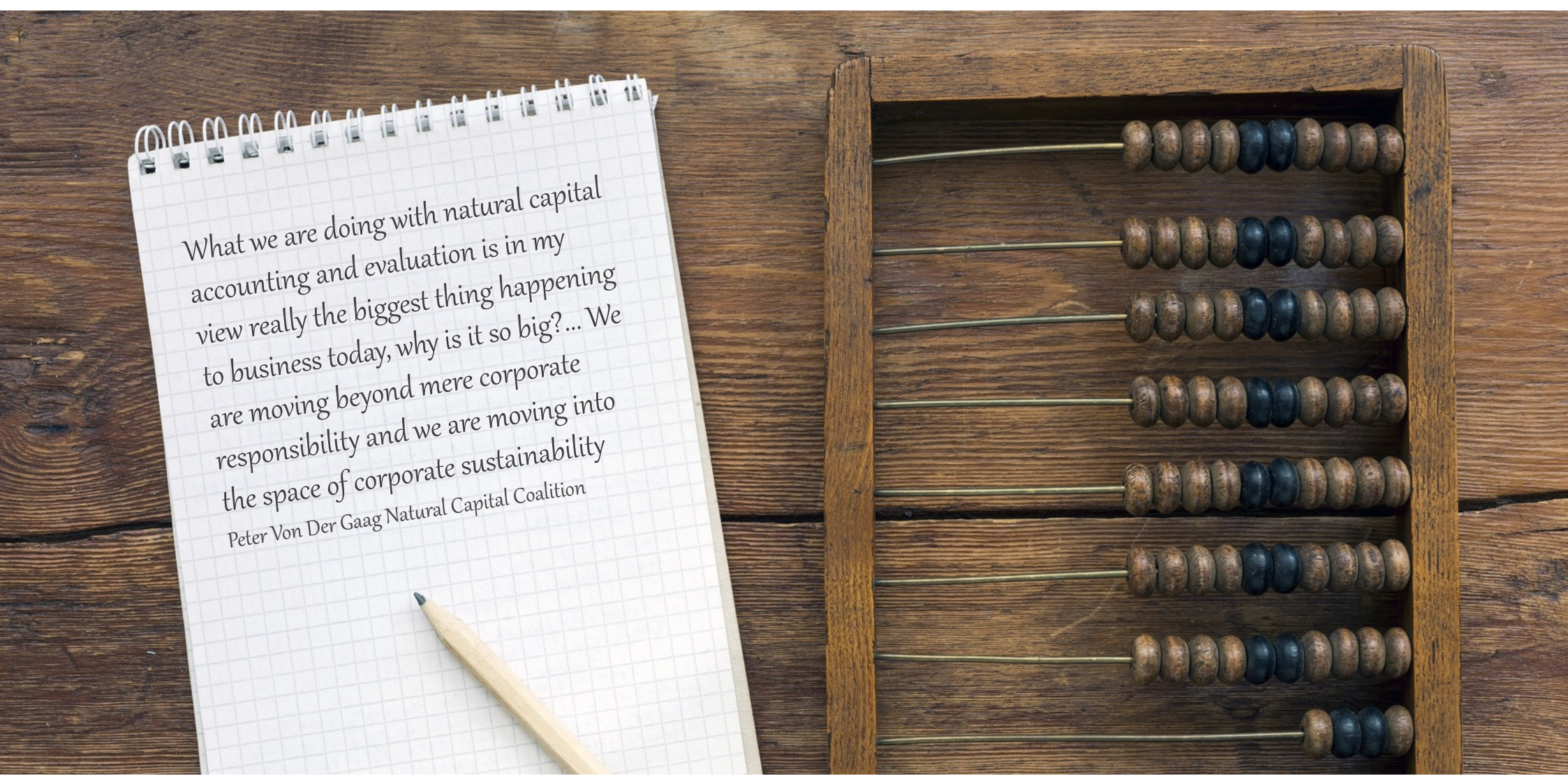
This mean that today we are challenged with building a whole new dimension to our economy; an economy that goes beyond the standard model of utility to incorporate a wider spectrum of value forms that affect the sustainability of the whole system. Instead of the single dimensional metric of financial capital we see now new forms of social capital and natural capital emerging as central parts of how our economy works, no long simply exogenous.

With new sciences, we increasingly have the knowledge required to understand the real value of these intrinsic resources that are required to maintain the whole ecosystem or whole of a functioning community. With information technology, big data and the internet of things we increasingly have the means to quantify our world like never before. We can quantify things like CO2 emissions, ocean acidity, the value of an intact mangrove swamp or the value that a business adds or subtracts from a community. When we combine these things - a new set of values on behalf of society, a new method to quantify that value, and a growing framework for exchanging it through markets - the result is the emergence of a new form of economy.

Today a new model for managing the global ecosystem is emerging one that sits at the intersection of information technology and market mechanisms. It forms a new kind of institution for connecting the actions of the individual to the value of the whole. Whether this is social ties captured in the form of social capital and social networks or managing ecosystems through natural capital accounting. Increasingly we are able to quantify not just economic utility but also intrinsic value; the value that is inherent to and required for maintaining the whole. This new approach uses information technology and the distributed capabilities of the market system, harnessing them towards the management of the commons. Whereas the traditional industrial age market system focused only on utility, this narrow conception of value is being expanded through the ideas of natural capital, social and cultural capital that are required to include the cost and value of maintaining the whole organization in a sustainable fashion. It is a management system that is being gradually built into the fabric of the global economy as an expressive of an emerging set of values that recognizes the importance of the whole organization, not just the derive parts. Whereas our industrial age

economy was an expression of a limited value system that focused only on the derivatives of the ecosystem - as measured in utility and market price - this new set of values captured in the paradigm of sustainability

creates a multidimensional form of economy where natural and social capital exist alongside traditional industrial capitalism.

A photograph of a spiral-bound notebook with a pencil and an abacus on a wooden surface. The notebook is open to a page with a grid pattern. The text on the page is written in a cursive script. The pencil is a simple wooden pencil, and the abacus is a traditional wooden abacus with multiple rows of beads. The background is a dark, textured wooden surface.

What we are doing with natural capital accounting and evaluation is in my view really the biggest thing happening to business today, why is it so big?... We are moving beyond mere corporate responsibility and we are moving into the space of corporate sustainability
Peter Von Der Gaag Natural Capital Coalition

Conclusion

This move into a full cost multidimensional economy will be a major structural transformation to our economic system as it goes from a traditional dichotomy between market and government, to an integrated but multi-dimensional model. All forms of value will be managed through distributed exchange mechanisms supported by information platforms. As the paradigm of sustainability rises, social, natural and cultural capacity will become every more of a reality and recognized as integral parts of the economy. In this process, the economy will evolve beyond the existing model into a more complex distributed and multi-dimensional form being managed through distributed value exchange protocols running on the internet.

The result of this move into a full cost economy will be an increase in the complexity of designing and managing systems due to the increased number of factors involved. Whereas previously private organizations were managed and designed according to one primary monetary metric, today the so-called triple bottom line of people, profit and planet is being increasingly adopted by enterprises as a more complex nonlinear set of metrics that developers of products and services need to be able to balance and find solutions to. The constraints of each of these parameters pulling in different directions will convert what were previously simple linear systems with one optimal profit maximization solution into more complex nonlinear challenges.

Full cost accounting is ultimately about internalizing the externalities to make the market a self-sustaining system by accounting for all fractures involved and thus working towards no longer being dependent upon centralized government regulation to support it. The development of a full cost economy is central to achieving sustainability in the age of the Anthropocene when traditional regulatory systems are rendered less effective and human economic impact on environment and society has reached a truly global scale.



A Complexity Labs Publication
Curated by Joss Colchester
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