Summary of book Natural Capitalism

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(A modern perspective to redesign economy)

Natural Capitalism

Key observations/ excerpts / notes from the book Natural Capitalism – Creating the next industrial revolution by Paul Hawken, Amory Lovins, L. Hunter Lovins.

There are armfuls of books describing how technology is revolutionizing our lives. We, in Natural Capitalism, are trying to describe how our lives and life itself will revolutionize all technologies.

Chapter 1- The Next Industrial Revolution

The traditional definition of Capital is accumulated wealth in the form of investments, factories, and equipment. Actually an economy needs four types of capital to function properly-

- human capital, in the form of labor and intelligence, culture, and organization
- financial capital, consisting of cash, investments, and monetary instruments
- manufactured capital, including infrastructure, machines, tools, and factories
- natural capital, made up of resources, living systems, and ecosystem services

Capitalism, as predicted, is a financially profitable, nonsustainable aberration in human development. What might be called "industrial capitalism" does not fully confirm to its own accounting principles. it neglects to assign *any value* to the largest stocks of capital it employs- **the natural resources and living systems, as well as the social and cultural systems that are the basis of human capital.**

> Anything we can't live without and can't replace at any price could be said to have an infinite value.

Just as technology cannot replace the planet's life support systems, so, too, are machines unable to provide a substitute for human intelligence, knowledge, wisdom, organizational abilities, and culture.

What if our economy were organized not around the lifeless abstractions of neoclassical economics and accountancy but around the biological realities of nature? What if Generally Accepted Accounting Practice booked natural and human capital not as a free amenity in putative inexhaustible supply but as a finite and integrally valuable factor of production? – *THIS IS NEXT INDUSTRIAL REVOLUTION!*

The waste and the noise are **signs of inefficiency**, and they represent **money being thrown away.** (The city and freeway traffic, the airplanes, the garbage trucks outside urban windows)

Hundreds of billions of dollars of taxpayers' money are annually diverted to promote inefficient and unproductive material and energy use. (Example- subsidies to mining, oil, coal, fishing, and forest industries, agricultural practices that degrade soil fertility and use wasteful amounts of water and chemicals. These subsidies are vestigial, some dating back to eighteenth century, when European powers provided entrepreneurs with incentives to find and exploit colonial resources – CASE OF BRITISH RULE IN INDIA?)

Chapter 2- Reinventing the wheels: Hypercars and Neighborhoods

The largest industry in the world- automotive transportation – the most destructive one- in terms of human, animal life, air, sound, soil pollution etc. (globally car accidents are the fifth-and soon will be the third largest cause of death.) If this industry can change, every industry can.

Ultra light- hyper cars –economics of ultra-lighting- carbon, fiber

MOST PEOPLE BELIEVE THE ALTERNATIVE TO CARS IS BETTER TRANSIT-IN TRUTH, IT'S BETTER NEIGHBORHOODS. THAT IS THE KEY TO MAKING CAR AN ACCESSORY OF LIFE RATHER THAN ITS CENTRAL ORGANIZING PRINCIPLE.

It further talks about small neighborhoods –centralized developed towns- give an opportunity to walk…

Chapter3- Waste Not

Wastage-recycling

Interesting and sensible idea- instead of everybody buying /owning commodities, why not use the services of the commodity on rental basis. For example- instead of "buying" washing machines, I subscribe to the "washing services" of the machine on rent. An agency will hold the ownership which will take care of maintenance etc. this will ensure quality of the machines, save lot of wastage.

Social wounds cannot be salved nor the environment "saved" as long as people cling to the outdated assumption of classical industrialism that the *summum bonum* of commercial enterprise is to use more natural capital and fewer people.

Lost wealth-
By current economic definitions- most industrial, environmental and social waste is counted as gross domestic product right alongside TVs, bananas, cars, and Barbie dolls. The definition of economic growth includes all expenditures, regardless of whether society benefits or loses. Growth includes crime, emergency room charges, prison maintenance, dump fees, environmental cleanups, the cost of lung diseases, oil spills, cancer treatments, divorce, shelters for battered women, every throwaway object along every highway, and liquor sold to the homeless.

GDP is simply a gross measure of market activity, of money changing hands. It makes no distinction whatsoever between the desirable and undesirable, or cost or gain.

"THE RESULT IS ILLUSORY GAINS IN INCOME AND PERMANENT LOSSES IN WEALTH"

Chapter4- making the world

Green/ organic buildings are superior to ordinary structures as a result of the same sort of design integration that makes hyper cars better than ordinary cars.

Chapter5- building blocks

new urbanism- integrating housing and other land use within walking distance in compact communities- may soon combine with changing demographics, more flexible zoning, and fast- changing real estate attitudes to introduce further innovations. For example, clustering houses around mini-greens preserves privacy but offers shared pocket parks and gardens and fosters neighborliness. This in turn could make time-sharing of major capital items more attractive. Share equipment, tandem with the usual reforms from product longetivity, design for takeback and remanufacturing, and minimum-materials design and manufacturing could greatly decrease the net flow of materials through the household.

Chapter 6- tunneling through the cost barrier

Singaporean engineer Eng Lock Lee – his designs are typically about 3 to 10 times more efficient, deliver better services, and cost less to build. The trick is all in how he thinks. He wrings out friction and waste of every kind, downstream to upstream, end to end. Space, money, metal, energy, time, and words he uses just the right amount of every resource, in the right place and time and manner. **Every input and result is measured**, nothing is guessed.

Chapter 8 - capital gains

Everybody in the world, whether rich or poor, acts on price information every day. Taxes make something expensive to buy, subsidies make things cheaper to buy.

A practical step in moving toward radical resource productivity would be to shift taxes away from labor and income, and toward pollution, waste, carbon fuels, and resource exploitation, all of which are presently subsidized.

Economist Robert Ayres writes-

> I believe many of the problems with slow economic growth, growing inequity, unemployment, and environmental degradation, in the western world could be solved, in principle, by restructuring the tax system.

The fundamental cause of underemployment is that the labor has become too productive, mostly as a result of substituting machines and energy from human labor. The underlying basic idea of the change would be to reduce the tax burden on labor, so as to reduce its market price-relative to capital and resources-and thus encourage more employment of labor vis-à-vis capital and especially fossil fuels and other resources. If there is any implication of neo-classical economics that seems to be beyond challenge it is that shifting the relative prices of factors of production (i.e. labor, caital resources) will eventually induce the economy to substitute the cheaper factor (labor) for the more expensive one (resources). For the same reason, I want to increase the tax burden on activities that damage the social or natural environment, so as to discourage such activities and reduce the resulting damage.

PEOPLE NOW KNOW THE PRICE OF EVERYTHING BUT THE TRUE COST OF NOTHING.

Price is what the person pays. Cost is what society pays, here, now, elsewhere, and into the future. For example- a pesticide may sell for thirty-five dollars a gallon, but what does it cost society as it makes its way into wells, rivers, and bloodstreams? Just because markets do not address value, goodness, justice, and morals does not mean that such concerns can be safely ignored.

Linear must go; cyclical must replace it. That's nature's way. In nature, there is no waste; one organism's waste is another's food. For our industrial process, so dependent on petro-chemical, man-made raw materials, this means technical "food" to be reincarnated by recycling into the product's next life cycle. Of course, the recycling operations will have to be driven by solar energy too.