

# The Internet (and the Nature) of Things

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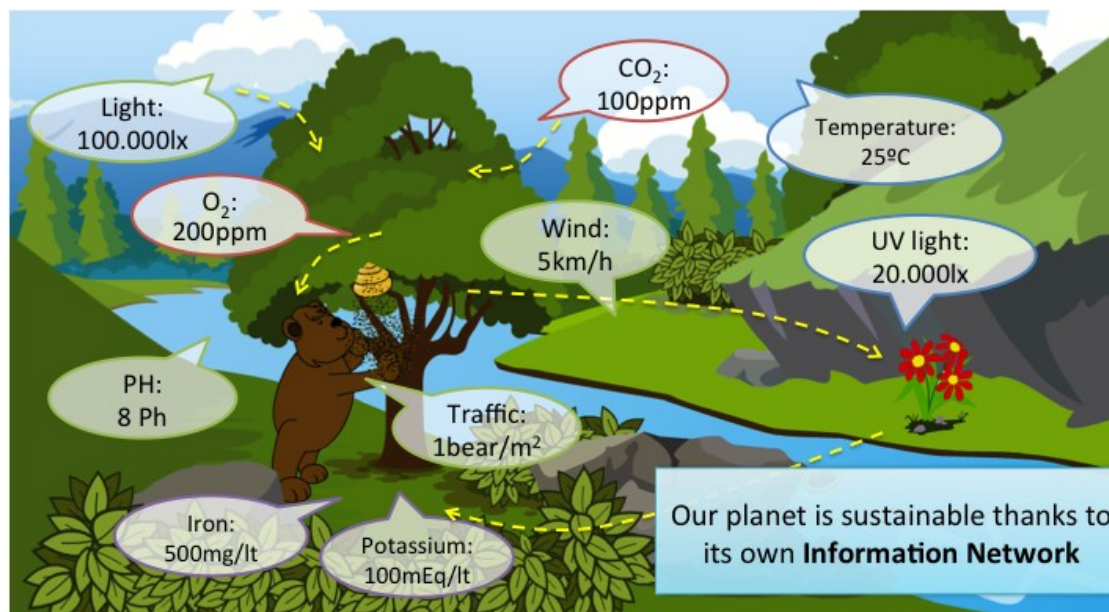
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In the quest for a [more optimistic analogy for the Internet of Things](#), I suggest we take a look at nature itself. Our living world has been around for millions of years, a good reason to trust its efficiency and sustainability mechanisms. What can we learn from it?

Natural eco-systems are in fact good examples of communities that share information among their members in order to work properly. This can be analyzed from two different but complimentary perspectives: first at the individual entity level, where every element of the system shares and captures information to perform a given process, and second, at the macro level, where the cyclical nature of those processes helps keeping the balance of the system.

## 1. The Natural Information Network

An eco-system is a collection of living organisms (e.g. animals) that interact with "things" (e.g. plants, soil, trees) through a series of natural processes (e.g. photosynthesis or pollination) using scarce resources (e.g. water, oxygen, sunlight). Plants, for instance, use sunlight to turn CO<sub>2</sub> into oxygen, which is crucial for animals to live. They are able to do so because of their ability to sense their environment, growing towards the sun, absorbing the right nutrients and even communicating with other plants in order to prevent over-crowding or pests. Similarly, the process of pollination, which enables plant reproduction, occurs when flowers expose themselves through colors and scents, allowing bees to use their ultraviolet and odor sensors to detect their pollen and carry it around. These mechanisms work so well that even the slightest obstacle in the information-sharing process can threaten the whole community; studies have shown that smog and pollution are hindering bees' ability to "augment reality", making it harder to find pollen and fulfill their role in nature.



Nature is wise and full of this kind of examples, but it wouldn't be so without its built-in sensors. Ecosystems are sustainable because all of their components exchange information in forms of energy, which can be regarded as a *natural information network* that ensures an almost perfect orchestration between beings, processes and things.

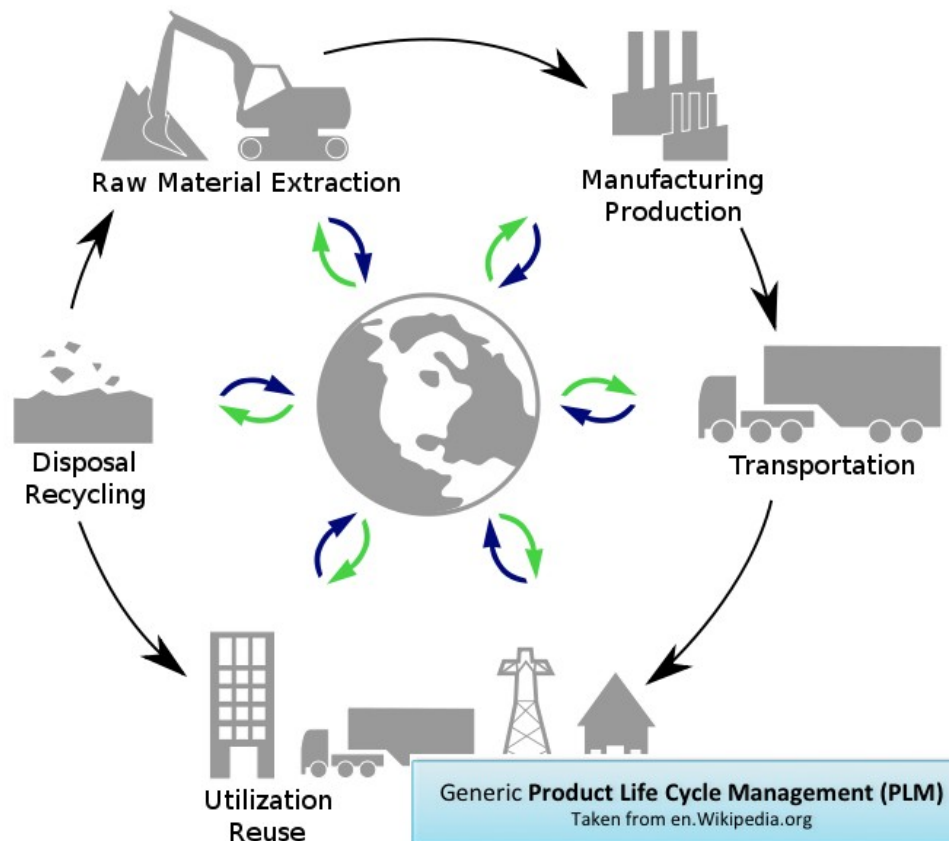
The same way, the Internet of Things is about better orchestrating people, processes and things. Our whole society could undergo a transformation if more information from our environment were used to better run every day processes, so much in industrial as in everyday scenarios.

## 2. Going in circles to keep the balance

A second viewpoint for this analogy is the fact that those natural processes are linked together in a cyclical way. This balance has kept our planet alive for millions of years and has only been threatened by modern civilization because of our consumption patterns [1]. We buy, use and dispose things that will

never be reused. Furthermore most of those things are equipped with features that remain unused during the product life cycle, meaning that, although some value was created at a point of the production chain (e.g. an innovation in its design), it was destroyed by the end-user who didn't perceive it. This is extremely inefficient.

The Internet of Things is supporting a fundamental change in how our economy works because it enables a trend called *"Everything as a Service"*. Cloud technologies and the proliferation of tiny sensors will allow companies to have a detailed traceability of a product during its entire lifecycle, being able to offer it on subscription basis, receiving real-time feedback about its usage, knowing exactly what customers like about it, and finally, taking responsible care of its disposal or recycling. This can help our planet make a better use of its scarce resources and find a better balance to keep it rolling for another million years.



These are my thoughts about a "City of Trust" where every entity fulfills a specific role within an ecosystem, "exploiting its talents and realizing its dreams", being that ultimate dream the system's sustainability. With the Internet of Things we are giving back our planet its natural ability to capture information from its "things" and use it to keep a balance, after all, we are also part of nature.

[1] See Circular Economy initiative by <http://www.ellenmacarthurfoundation.org/> and their video at: <http://www.youtube.com/watch?v=zCRKvDyyHml>