

# The power of the periphery

## The Zermatt Summit and why groundbreaking innovation starts away from the center

In the past 200 years, humanity has embarked on a journey that undermines the very foundation of life on Earth. The dinosaurs were wiped out by an asteroid coming from outer space. Humanity is capable of destroying its own future without such outside 'support'. And, yet, while destruction and degradation are happening everywhere, nature is responding. In fact, if humanity would be wiped out today and a galactic visitor would arrive here 1,000 years from now, he would find surprisingly little of the damage that humans created.

When you visit an oil refinery and take a sample of the polluted soil at the edges of the refinery complex, you will find the organisms that are already cleaning up the pollution. The army of these bacteria is too small today to cleanse the environment while the pollution at the center of the refinery continues. However, left alone for a few centuries or less, they will do the job and our visitor from outer space will have trouble figuring out whatever happened there. There is an important message in this process: the necessary innovation doesn't happen at the center where the pollution is visible for everyone, it happens at the periphery where, initially, few people notice the change.

Every year, presidents and corporate leaders from around the world get together at the World Economic Forum in Davos. They share a traditional liberal agenda of business and the market economy. The innovation presented in Davos is mostly focused on preserving and strengthening existing interests. Davos is like a refinery that keeps producing the same gasoline.

In response, in 2010, Christopher Wasserman convened the first Zermatt Summit. In Wasserman's vision there is a need to promote and support a role for business to serve society and the common good. Wasserman could have contacted the organizers in Davos to jointly host a new breakout session at the annual forum. Some people would have attended this new meeting but the innovation would have mostly passed the thousands of people focused on 'business as usual'. Instead, Wasserman chose a new venue for his initiative: Zermatt.

That was a conscious choice. Zermatt is harder to get to. It lies at the end of a long valley and can only be reached by train. There are fewer big hotels. In fact, the largest conference



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room in the town holds 150 people making sure that any event benefits from an intimate setting. In other words: Zermatt lies at the periphery where innovation can mature – like the bacteria working at the edge of the refinery – until it is ready to change the world.

The 2019 edition of the Zermatt Summit brought many examples of ‘peripheral innovation’. The participants of the conference witnessed the signing of a letter of intent between Taiwanese stone paper manufacturer Lung Meng and Moroccan phosphate mining company OCP. Stone paper is made from crunched stone (calcium carbonate) waste with 20 percent plastic (polyethylene). Stone paper can be endlessly recycled because unlike regular paper there are no fibers that get too short after a handful of recycling processes. This paper requires no trees and no water. A stone paper plant of 200,000 tons saves 180,000 tons of CO<sub>2</sub> per year. Compared to a regular paper plant of the same size a stone paper plant requires 50 percent of the investment. The operating expenses of stone paper factory are 50 percent lower as well because the manufacturing requires about half the energy.

In other words: stone paper is a disruptive innovation. That means that it threatens major vested interests. The world consumes 400 million tons of paper a year. It makes sense that this Taiwanese innovation finds its way to China where, by now, four stone paper factories have been built. China has few trees, little water and a lot of people with big paper consumption. But stone paper is not so welcome in Europe or the Americas where the major paper giants of the world are established. However, Morocco...? Morocco has no paper industry. And it does have a lot of stone waste from phosphates mining. When it comes to stone paper, Morocco lies at the periphery.

German entrepreneur Stephan Wrage worked many years on a better way to harvest wind energy. Wind energy is clean, renewable, and gets cheaper and cheaper. Nonetheless, building one large wind turbine requires 900 tons of steel, 2,500 tons of concrete and 45 tons of plastic. Moreover: there is more wind at higher altitudes. That is why Wrage began to develop ‘skysails’, kites – made from light materials – that can harvest wind energy at up to an altitude of 2–600 meters. Wrage and his team had to overcome big challenges. They succeeded combining the ancient kite technology with two other antique inventions: the yoyo and the cuckoo’s clock. Using the yoyo system, the kite is pulled intermittently using artificial intelligence to most efficiently benefit from the conditions. This mechanical force is subsequently transformed into the modulated power of a cuckoo’s clock. This modulation is critical to make sure that the turbine that generates electricity is fed evenly despite wildly volatile wind conditions. Typical wind turbines are automatically turned off in stormy conditions to prevent that the propeller spins out of control. The combined technologies of the yoyo and the cuckoo’s clock enable the consistent use of the kite in all wind conditions. Artificial intelligence is also used to make sure that the kite stays in the permitted range and does not interfere with surrounding



objects. The robot of the kite responds to the transponders of aircraft and automatically adjusts the kite to stay out of the range of the approaching plane.

The innovation of Skysails is compelling and, again, disruptive. However, wind turbine manufacturers are giant companies with massive interests. So where are the first Skysails going up? In the islands of the Maldives that don't have enough space for solar panels and where the soil structure is too fragile for heavy turbines. Another island, Mauritius, will be next. The success of Skysails is slowly building from the periphery where the power of the wind is the same, but the power of vested interests is much less.

Swiss software entrepreneur and passionate sailor, Marco Simeoni, started Race for Water as an initiative to clean up the plastic pollution in the oceans. He developed the first business model to add value to plastic waste. Race for Water plans to pay informal trash collectors in poor developing countries to collect discarded plastic. Race for Water designed a small factory that turns plastic waste into electricity that can be locally sold. It is a profitable business model. The factory can be shipped in containers to anywhere in the world. That means that poor people anywhere in the world are going to be able to make money solving one of the biggest challenges of the world. Incidentally, 80 percent of the plastic pollution that ends up in the oceans comes exactly from these poor communities where organized trash collection does not exist. Politicians, entrepreneurs and activists in advanced nations meet at conferences to discuss the plastic challenge. At the same time, in the periphery, in pacific islands and poor communities in Asia a practical solution is being implemented.

We love coffee. We love the caffeine kick of the drink. Few people realize that the coffee plant produces caffeine as a defense to insects and pests. Caffeine acts as a natural pesticide that paralyzes and kills many insects feeding upon the coffee plant. Caffeine also impacts the central nervous system of humans. It acts as a stimulant, having the effect of warding off drowsiness and restoring alertness. That's why caffeine-free coffee serves a huge market. Taking the caffeine out of coffee, however, is a nasty and not very healthy process. What about naturally caffeine free coffee? In Madagascar, an island with a unique ecosystem, coffee plants never encountered the same threats as coffee growing in other places on the planet. That's why in Madagascar several dozen varieties of caffeine free coffee have evolved over time. Madagascar lies at the periphery. Naturally caffeine free coffee is a product from the periphery.

Twenty years ago El Hierro, part of the Canary Islands off the coast of Spain was an island in search of a future. El Hierro had decided not to follow the example of Tenerife and Lanzarote, in the same islands group, which had embraced cheap mass-tourism from Europe on a big scale. But El Hierro had not developed an alternative development route and, as result, the population had dropped from 30,000 to 5,000. Businesses were closing, 300-year old buildings were collapsing and even traditional activities as fishing, farming a local breed of goats, and cultivating grapes faced rapid decline.



At that point, a group of citizens decided to come together and envision a new future for El Hierro. Many ideas and proposals were brought forward and it quickly became clear that a tiny island in the Atlantic Ocean would not be able to compete in a world economy driven by globalization. Under the leadership of Javier Morales an exploration of alternative futures for El Hierro started with a reframing of the challenge that the island was facing. No longer was the question how El Hierro could compete in a global economy – it could not –, rather the question became: can you add value to what you have?

The citizens of El Hierro began rediscovering the arts of fishing, making goat milk and yoghurt and wine like their ancestors had done. For example: today, El Hierro ranchers get about Euro 2.65 per liter for their goat milk converted to cheese and yoghurt. That is ten (!) times more than the subsidized tariff paid for milk by the European Union. The star product is fresh yoghurt with organic banana and pineapple that is sold locally and on the adjoining islands. They succeeded in restoring the fish stocks around the island through establishing exclusive “no fishing-brooding only” zones. The decision was also made to discontinue all net fishing and only use lines that allowed to check every caught fish—and release the mature females again. The logic was simple: a two-pound female fish has perhaps 5,000 eggs, a 20-pound female can have one million eggs, and a grandma of 20 years could produce each season a staggering 10 to 20 million eggs. Of course, not all eggs hatch, but the logic of an exponential increase of fertility is powerful. The catch was to focus on the small and bigger males and leave the moms and grandmothers free to repopulate.

From the restoring of ancient economic activities, El Hierro moved on to tackle the challenge of energy provided by imported fuel. European Union experts came to determine that the island needed a budget of Euro 82 million to achieve 100 percent renewable energy for the few thousand inhabitants. However, El Hierro achieved the goal with a combination of wind- and hydro power without any EU subsidies or loans. The fish, goat, meat and wine trades had restored local purchasing power and made it possible to finance local investments. El Hierro took off when it began responding to local needs with whatever was locally available. With a different vision and different design, economies can escape the ‘controls’ of globalization and be transformed into resilient, self-sustaining communities where monies circulate rapidly. El Hierro may be a small island, in the periphery, but nothing that was done cannot be replicated on a bigger scale in other places. It is a matter of choice and vision and a commitment to social capital and resilience with whatever is locally available.

As the participants at this year’s Zermatt Summit learned, the stories of stone paper, skysails, caffeine-free coffee, turning plastic waste into energy and the economic and social transformation of El Hierro are all stories about fulfilling and responding to local needs with whatever is locally available. There were many more examples in Zermatt. German startup Bonaverde offers a machine to roast, grind and brew green coffee beans



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into the freshest coffee at home. The revolutionary system makes it possible to directly buy the beans from the farmer who gets a much higher price for his harvest. Swiss chocolate company Choba Choba designed a similar direct relationship between consumers and cacao farmers. And another Swiss startup, HiLyte, developed a very simple and cheap battery to provide light to off the grid homes in the faraway developing world where a new generation now gets a chance to read and learn in the evening.

In the world of technology, a business incubator helps startup companies to develop by providing services such as management training or office space. In the same way, the Zermatt Summit is becoming a place where groundbreaking initiatives find the support and resources they need. It is a place in the periphery where 'peripheral innovation' can shine and grow. But make no mistake, like the undercurrent that guides the waves, the power of the periphery drives the future. When you come to the Zermatt Summit next time, remember the pollution-cleaning bacteria at the edge of the refinery.



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