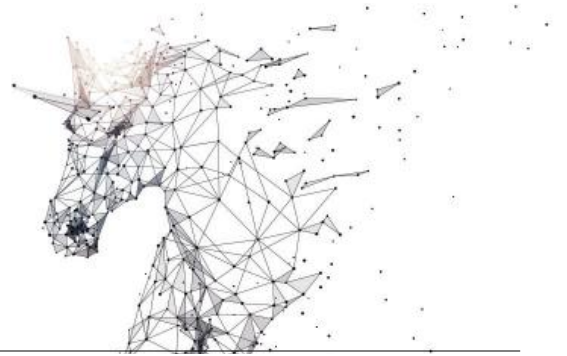


DECODING

EARTH : RESOURCE MANAGEMENT: NATURALLY AND INEVITABLY DISRUPTIVE



THE COMBINATION OF HEAVIER DEMAND AND SCARCER RESOURCES IS PUSHING MANY INDUSTRIES INTO REINVENTING THEMSELVES TECHNOLOGICALLY. THEIR DETERMINATION TO REDUCE THIS SHORTFALL HAS LED TO CHANGES THAT IN SOME FIELDS ARE BECOMING SECULAR IN NATURE.

Whether climatic, environmental, or agricultural, the major shifts of recent decades have been driven by the same phenomenon – population growth. The world’s population was 1 billion at the start of the 19th century. It is now 5 billion more and is expected to reach 10 billion by 2050. This exponential growth is now bringing to light the equation of resources that will accompany it. *“Narrowing the structural deficit between needs and reserves is fundamental and vital for humanity”,* according to Wesley Lebeau, manager of the CPR Invest – Global Disruptive Opportunities fund. *“It has naturally taken shape in recent years as a major theme with intrinsically disruptive features and has been a rallying point for research and innovation.”*

This has been most clear in the shift in the energy sector with the boom in renewable energies. But, unlike traditional industries, it is multifaceted. *“Within our Global Disruptive Opportunities fund, the “Earth” theme encompasses a universe of various sectors, including renewable energies, shale oil and gas, precision agriculture, smart grids, and energy efficiency and storage”,* says Estelle Ménard, deputy head of thematic equities at CPR AM. Each field, in its own way, offers a

unique form of disruption in how it addresses the issue of resources.

For example, recent developments in agriculture are pointing to an in-depth transformation in the coming years. Since the *“green revolution”* began in the 1960s, farming development has consisted in boosting yields by enhancing hybrid or organic seeds. *“In the coming years it will be based on juxtaposing several specialties to optimise fertilisation, planting and irrigation”,* Lebeau says. *“These sources of leverage will be called upon in synchronised fashion to enhance farming productivity.”* Some current avenues of development are increasing the depth of weather data and using biotechnologies to make grains 15% to 20% bigger. *“One day, autonomous tractors will farm fields that have been geo-located, mapped and classified by GPS”,* Lebeau says. *“Like drones, this technological development will help mitigate the potential labour shortage that could be caused by the ageing of the farming population and will bring qualitative improvements through precision agriculture”.*

But for several years now, the focus has been on energy resources. Optimising energy resources depends on several factors, such as the use of renewable energies. *“With its 90,000 terawatts, the sun delivers humanity’s annual consumption needs in an hour and a half”,* says Van Vu Ngoc, an analyst at Amundi. Photovoltaic research is focusing on boosting the yields of the raw material, i.e., silicon. *“Seven years ago eight grams*

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were needed to produce one watt. Now only five are”, Van Vu Ngoc says. A company like Trina Solar has shrunk its cost structure by 16% annually. This steady reduction has brought the price per kilowatt-hour to about 10 cents – or even 3 cents in place like the United Arab Emirates – a cost that is more or less comparable to natural gas. But sector disruption is also being driven by progress in fossil fuels. *“Horizontal or directional drilling and fracking for shale oil and gas have disrupted the traditional energy market and had a real impact on oil prices”*, Ménard says.

The basic problem in energy remains storage. *“The issue is being revisited”*, says Wesley Lebeau. *“It is no longer so much a question of storage capacities as an increasingly decentralised network architecture. The solution will probably require individual production and storage.”* This channel of development is drawing serious interest from companies like Tesla and Panasonic. Pending a tangible revolution in this field, efforts in recent years have been in implementing smart grids. The boom in smart grids has been one response to new standards in managing resources in the urban environment. *“In concrete terms, the goal is to take environmental challenges into account in new buildings and to better optimise their consumption”*, according to Lebeau. *“In a way, the smart grid is now laying out the contours of tomorrow’s cities in the area of safety, air conditioning, water and lighting.”* The sector has given rise to companies like Brown Equity, which, after initially specialising in LED lightbulbs, has expanded into platforms for managing building energy consumption. Another company is Badger Meter, which specialises in water monitoring systems, an area of special importance, given that 50% of reserves worldwide are currently wasted.

Management of natural resources is now an essential human development challenge. Based on

the principle that innovative solutions are necessary in this field, companies have begun a process of disruption that in many sectors is still just getting started. *“Industry has been quick to catch on to this theme in both the regulatory restrictions imposed on it and in the economic benefits it create”*, Lebeau says. In addition to innovation, human behaviour will have to evolve in this direction, and initiatives will have to be supported, including strong policy actions such as the Paris Agreement, in order to effectively meet environmental challenges.



CPR INVEST - GLOBAL DISRUPTIVE OPPORTUNITIES - RISK PROFIL*

Risk of capital loss : yes | Equity and market risk : yes | Counterparty risk : yes | Fixed Income Rate & Credit risk : yes | Currency risk : yes | Risk Scale according to KID** : 6/7 | Investment horizon : 5 years

Past performances are not a reliable indicator of future performance.

* This information must be supplemented by the prospectus available on the site cpr-am.com or on request from CPR AM. ** The KID (Key Investor Document) involves several essential information and must be delivered before subscription.

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