

BOOK REVIEW

LEAPFROGGING TO POLE-VAULTING CREATING THE MAGIC OF RADICAL YET SUSTAINABLE TRANSFORMATION

Authors: Raghunath Mashelkar and Ravi Pandit; **Year of Publication:** 2018;
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For writing this book, released earlier this year, the authors derive their motivation from the complex, contradictory and pertinent problems facing the world today which they have categorized as relating to the three Es of energy, environment and employment.

The authors point out that:

“We use energy that is environmentally harmful, finite in supply and dangerously concentrated in the hands of a few. On the demand side our energy requirements are shooting up, especially because of the rising standard of living in the developing world.”

And bad for environment too. Our energy requirements have conventionally been satisfied through extraction of fossil fuels, which releases harmful by-products into the atmosphere and water resources. Breathable air faces extinction due to release of microscopic particles from the use of fossil fuels in factories, vehicles and power plants.

Usable water is facing extinction too, both due to inefficient and irresponsible use and owing to the pollution of existing resources from the excessive use of chemical pesticides and fertilizers running off into the water streams through our cropping systems, harming aquatic life. And plastics are estimated to outnumber fish in the

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oceans by 2050! Talking of fish, “the current rate of species extinction is a thousand times higher than it would have been in the absence of human activity.” WE DIE IF THEY DIE.¹

Essentially, all these problems are interconnected. While we may be sitting on 'a ticking environmental time bomb', this interconnectedness should be looked at as an opportunity to offer comprehensive solutions instead of isolated band-aid remedies, that have actually got us where we are today.

Coming to the third E – employment, these days, we see a contradiction – while millions all over the world have lifted themselves above poverty, the millennials in the developed world are earning less than their parents, face a weaker labour market and higher college debts, with rising housing and health costs accounting for bleak pension prospects. Making matters worse for them, they face job loss due to automation. Acemoglu and Restrepo (2019) discuss two competing effects of automation on the demand for labour – the *displacement effect*² and the *productivity effect*³. Automation also brings about a *reinstatement effect*⁴ – where new jobs better suited for humans are created. They find that “in 1987-2017, the growth in the demand for labour slowed owing to the slowdown in productivity growth, a significantly larger displacement effect and a much smaller reinstatement effect as compared to 1947-1987 when the displacement effects of automation were largely offset by other, coincident developments that generated new tasks for labour”. Mashelkar and Pandit refer to another study in the reviewed book that confirms this '*great decoupling*'- rising productivity of capital and falling employment since 2000 - on account of technology.⁵

¹ <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

² capital assumes tasks previously performed by humans- **reduces the demand for labour**.

³ automation increases productivity and creates new tasks better suited for humans to execute- **increases demand for labour**. Mashelkar and Pandit discuss the example of the same bank tellers in US banks having moved from dispensing money to managing customer relations after the arrival of ATMs and their numbers have only doubled.

⁴ The arrival of internet generated jobs for search engine optimizers , web designers etc.

⁵ Brynjolfsson E. and McAfee A., *The Second Machine Age: Work, Progress and Prosperity in a Time of Brilliant Technologies*, New York: W.W Norton and Company, 2016.

“What's true of developed countries will be true of developing countries as they are on their path to development unless we do things drastically differently”.

These problems are complex and therefore, the authors stress on a holistic understanding of them, so that comprehensive, complete solutions can be offered rather than run-of-the-mill ad-hoc solutions which have brought us so far. The solutions not only have to be radical, in that they lead to a break from the past, but also sustainable, in that they take care of all the stakeholders involved; only winners, no losers. The focus has to be on aspirations for a better future, not on ensuring mere survival. The latter has been likened to a leap of a frog taken in reaction to a perceived threat, while the former requires us to 'pole-vault' to better possibilities, the size of the pole corresponding to the extent of aspirations. Hence, the title of the book.

Through their discussion on alternative forms of energy, the authors illustrate the need for a 360-degree view of the problems we face today.

“As an alternative to petrol and diesel,, we are using CNG and bio-CNG,But... electricity is becoming the new but pollution free oil. The move towards Electric Vehicles is extremely relevant,, But how can we say that the EVs do not harm the environment if the electricity they use is generated by burning coal or oil?The energy and power requirements of a car make lithium-ion batteries the current choice to store energy. However, current lithium batteries are expensive and take a long time to charge unless one compromises on the life of the battery..... the materials that lithium-ion batteries use – lithium and cobalt... are rare, and available in only a few countries. One of the problems with current global energy supply is that fossil fuels are controlled by a few countries, making most of the rest of the world hostage to the oil-producing countries. We suspect that...lithium and cobalt will be the new oil. Next, Cobalt production in the Democratic Republic of Congo is famous for its illegal mining, and child labour is a major humanitarian concern too.”

A holistic understanding like this of the problem only can lead to a holistic solution. The authors then explore the need to develop the Fuel Cell EVs, that run on hydrogen.

“Hydrogen generated from natural gas is a well-known process. However, you need natural gas for this purpose, which, unfortunately, is generally available through the fossil fuel route. This would have the same demerits as oil. Making hydrogen from water is the next option.”

Moving on, the radical yet sustainable solutions proposed have to find themselves in a certain social, technological, economic and political framework conducive to their working. These aspects have been referred to as the levers for transformation. Credit should go to the authors for highlighting the political economy considerations when discussing the importance of policies that facilitate these solutions. For example, when the established structure tends to benefit some people more than others, based on their power, wealth and other such deemed superiority, solutions are hard to implement. More specifically, when the scale is tipped in favour of vested interests maintaining the status quo, against clean energy, environment friendly production and dignified, gainful employment for human beings, our hopes of achieving better outcomes for all receive a blow.

But there is one instance where the authors' understanding of the role of the state and the public sector is apparently simplistic, and another when it seems self-contradictory. To begin with, the authors believe that

“when it comes to our three global challenges of energy, environment and employment, we need to convert every solution into a commercially viable business for it to have impact.”

The purpose here is not to contest this claim. But at one point, the book says that as a rule of thumb, the government should have minimum interference in the market, while on the other hand, the authors ponder over public procurement as a key to achieving scale to prevent good private innovations from falling. Is it that any 'interference' beyond procurement is above 'minimum'? The authors fail to reconcile these two seemingly contesting claims. In another instance, they accuse the public sector of distorting competition and leading to inefficient allocation of natural resources with their deep pockets, calling for the privatization of PSUs. Behind such simplistic, sweeping

statements is firstly an ignorance of the role PSUs have played in India⁶ and secondly the flawed assumption that the public and private sector are necessarily in competition in all situations. This assumption implies that the private sector would naturally occupy the space vacated by the public sector (Bhaduri, 2005). The solutions to the inefficiencies of the public sector have to be approached differently.

Nevertheless, the book is definitely worth reading since it is a first attempt in itself to comprehensively talk about the problems facing the world today. The authors have done careful and insightful work in chalking out a framework to achieve long-lasting solutions. They have rigorously identified and listed examples from all over the world, across industries and communities to illustrate the working of this framework. The content is illuminating and reaffirms our hope that 'humanity is more responsible than irresponsible'.

REFERENCES

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⁶ working counter-cyclically to steady the growth of the economy, developing technology when the private sector was busy researching on advertising, not squeezing wages to generate higher profits, promoting development in backward areas by providing cross subsidies on goods and services needed by the poor, providing cheap infrastructure that 'crowded in' private sector investment (Kumar, 2015)