WHEN FRUGALITY MEETS INGENUITY

At the latest "Heure H" conference, Navi Radjou presented Jugaad, a new approach to innovation that is less resource-intensive. Radjou's personality coincides perfectly with his message, which was humble, concrete, and receptive. His optimistic presentation lifted the spirits of the entrepreneurs in the room.

1%

Percentage of the American population that controls 40% of the country's wealth.

The latest report from the Intergovernmental Panel on Climate Change (IPCC) has given us an alarming reminder of the urgency of the climate change problem. Over the last decade, greenhouse gas emissions have gone up by an unprecedented 2.2% each year. In order to limit global warming to less than 2° C, the threshold beyond which large-scale catastrophes can arise, global emissions need to be reduced by at least 40% by 2050, and brought to "near zero" by the end of the century. This seems like an impossible mission. Advocates of degrowth see the chance they've been dreaming of to speak up.

But there is an option that is more realistic than degrowth: a new system for value creation that is less resource-intensive, advocated by Navi Radjou. Radjou has developed a theory for a new approach to innovation that is frugal and flexible, which he has termed "Jugaad"—a Hindi term that refers to creative and improvisational problem solving. The concept has its origins in emerging countries, where clever entrepreneurs have been able to improvise ingenious solutions under difficult conditions. From this point of view, Asia and Africa have become models to follow. Franck Riboud, CEO of Danone*, said as much in 2011: "We've assumed that rich countries would be our main source of inspiration, but from what I can see, it's the countries with high growth that should, in fact, be inspiring us."

What is Jugaad innovation? Above all, it's based on frugality—doing more with less. This seems to be obvious in India, where 600 million people earn less than a dollar per day. But is it really suited to our affluent societies? "The Western lifestyle is certainly good, but there is growing income inequality," says Radjou. "In the United States, the richest 1% of the population controls 40% of the national wealth. The majority of the population has to tighten its belt." And the outlook for the future is bleak. In his latest book, Capital in the Twenty-First Century, economist Thomas Piketty forecasts zero growth in mature economies for the remainder of the century. Households want to see their quality of life improve, but their financial means are stagnating.

"BIGGER IS BETTER?"

Up to now, the Western innovation model was anything but frugal. Last year, the top 1,000 global companies spent nearly 640 billion dollars in research and development: the equivalent of the GDP of Switzerland**. "Large companies prefer a quantitative approach to innovation, by building giant R&D centers," explains Radjou. "This 'arms race' is extremely costly and resource-intensive." To illustrate the paradigm difference between this costly model and the Jugaad approach, Radjou takes the example of the refrigerator. While Western engineers have been

ABOUT HEURE H

"Heure H" is a series of conferences organized by HEC Alumni. Various players from the business world, civic organizations and community groups present their vision, enthusiasm and questions about meeting the challenges set by the modern world. These conferences are organized by Michel Tardieu (H.66) and aim to provide the keys to better exchanges, information and reflection on society. Conference speakers also take questions from the audience to further explore the selected theme.

Navi Radjou is a French citizen of Indian heritage who lives in Silicon Valley. He is an independent consultant specialized in innovation and leadership. An alumnus of the École Centrale Paris, he has been Vice President at Forrester Research in Boston and San Francisco. He is a member of the World Economic Forum, and works with businesses and governments around the world. Last year, he won the prestigious Thinkers50 Innovation Award. He has co-authored two books: "Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth" (Jossey-Bass, 2012), with a preface by Carlos Ghosn for the French edition, and "From Smart to Wise" (Jossey-Bass, 2013).

"JUGAAD": HINDI TERM THAT REFERS TO CREATIVE AND IMPROVISATIONAL PROBLEM SOLVING. IT'S KNOWN AS "JEITINHO" IN BRAZIL, "JIEJIAN CHUANGXIN" IN CHINA, AND "KANJU" IN AFRICA.

FRUGAL INNOVATIONS FROM AROUND THE WORLD

All across the globe, entrepreneurs are displaying the "Jugaad" mentality. They come up with clever solutions to improve daily life in their communities. Here are four examples.

• In India, roads are full of potholes. Kanak Das invented a makeshift device that can be attached to a bicycle that turns impacts into energy, helping the bike ride faster.

• In the Philippines, one-third of the population lacks access to electricity. Iliac Diaz has brought a recycled plastic "solar bottle" to the market that produces light equivalent to a 50-watt bulb.

• In Sub-Saharan Africa, fewer than 1 in 4 adults have a bank account. Mobile network operator Safaricom has designed a mobile phone payment system, M-PESA, that is currently used by 16 million people in Kenya (half of whom do not have bank accounts).

• In Peru, engineers have developed a billboard that collects moisture in the air and transforms it into drinking water. It can produce 10,000 liters of water in three months.

busy designing the refrigerator of the future, capable of communicating with your cell phone to let you know when it's time to buy more milk, an Indian potter asked a much more fundamental question: what about a refrigerator that doesn't need electricity? In a country where nearly half of households don't have access to the electrical grid, there is indeed a real need for such a solution. Mansukhbhai Prajapati, who hasn't even finished high school, has invented a clay refrigerator, "Mitticool," that costs only 30 euros and can keep fruits and vegetables cool for five days. He was named as one of the seven most powerful rural entrepreneurs in India by Forbes magazine.

NOTHING TO LOSE

In Asia, Africa, and Latin America, thousands of individuals like Mansukhbhai Prajapati are revolutionizing the daily lives of their peers by improvising effective and low-cost solutions. "Jugaad" is not limited to India: the concept is known as "jeitinho" in Brazil, "jiejian chuangxin" in China, and "kanju" in Africa. In the United States, the trend is towards Do-It-Yourself (DIY), as can be seen with the success of the "Maker" movement (see boxed text below). But the roots of Jugaad might just be French. In 1962, anthropologist Claude Lévi-Strauss, in The Savage Mind, established a difference between the engineer and the tinkerer. Engineers mobilize vast resources to develop an ideal solution, while tinkerers adapt existing resources to find a good-enough solution. Radjou sees in this the portrait of the Jugaad entrepreneur. "They have empathy for the difficulties faced by those around them. They're not out to prove that they're better than anyone, or trying to become a millionaire or win a Nobel Prize. They just want to solve a problem. They're often unswayable optimists because at any rate, they have nothing to lose!"

Practitioners of frugality don't just focus on objects from daily life, but also work wonders in the world of science. In southern India, cardiac surgeon Devi Shetty founded Narayana Hrudayalaya, a "low cost" clinic that charges only $3,000 for a heart operation that costs $50,000 in the United States. There's no air conditioning in the prefabricated building, except for the operating room and the intensive care unit. The patient's relatives are trained in post-operative care and change the bandages themselves. To build and fit out a hospital, Devi Shetty needs $6 million ... one-hundredth of what it would cost in California.

600 million

Number of people in India who earn less than a dollar per day.

"WE WANT TO CREATE SYNERGIES BETWEEN THE JUGAAD MINDSET OF INDIAN ENGINEERS, THE PROJECT MANAGEMENT CAPABILITIES OF OUR FRENCH TEAMS, AND THE ADVANCED TECHNOLOGICAL EXPERTISE OF OUR JAPANESE R&D TEAMS."

CARLOS GHOSN, CEO OF THE RENAULT-NISSAN ALLIANCE.

FOR COMPANIES WITH A PRESENCE ON MULTIPLE CONTINENTS, RADJOU RECOMMENDS ESTABLISHING NORTH-SOUTH INNOVATION NETWORKS, RATHER THAN EXPORTING INNOVATIONS FROM DEVELOPED COUNTRIES TO EMERGING MARKETS.

$640 billion
Amount spent in 2013 by the top 1,000 companies in the world on research and development, the equivalent of the GDP of Switzerland.

30 euros
Cost of the clay refrigerator invented by M. Prajapati in India.

Even in space, India stands out due to the country's speed and effectiveness, as evidenced by the Mangalyaan project for a Mars-orbiting space mission. The program took eighteen months and cost $69 million, which is ten times less expensive, and three times as fast, as the American equivalent developed by NASA***. "The Indians reused many components from previous missions, and they relied heavily on computer simulations," explains Radjou.

NORTH-SOUTH INNOVATION NETWORKS

Frugal innovation is starting to be adopted by multinational corporations, who are quite intrigued by the possibility of maximizing value creation while minimizing costs. Renault is a pioneer in the area. The French automaker, which generates 40% of its revenues from entry-level vehicles, has started sending its promising senior executives to emerging countries not only to better understand how consumers act, but also to learn from their work methods. The new CMF-A architecture that the next Espace, Scenic, and Laguna models will be based on is being developed in India. Its production cost is 30% to 40% lower than that of its predecessors.

For companies with a presence on multiple continents, Radjou recommends establishing North-South innovation networks, rather than exporting innovations from developed countries to emerging markets. Carlos Ghosn has fully adopted this co-creation process. "We want to create synergies between the Jugaad mindset of Indian engineers, the project management capabilities of our French teams, and the advanced technological expertise of our Japanese R&D teams," explains the CEO of the Renault-Nissan alliance.

To emulate Jugaad entrepreneurs, large companies need to develop another essential quality: agility, meaning the ability to transform adversity into opportunity. Radjou cites an amusing example from Chinese consumer appliance manufacturer Haier. The company received many complaints from Chinese farmers whose washing machines had broken, which was hardly surprising given the fact that they were using them to wash their potatoes. Haier took inspiration from this unusual use and reconfigured the appliance accordingly. It then became a top seller across China. ●

(*) Since 2011, over half of the Danone group's sales have come from emerging markets.
(**) Source: Booz & Company. http://tinyurl.com/lxxxswh
(***) The American MAVEN project, which sent the "Curiosity" robot to Mars, took five years and cost $679 million.

THE "MAKER" MOVEMENT: WELL, JUST DO IT YOURSELF!

The first Parisian "Maker Faire" will be held on June 21 and 22. It's a friendly, playful frugal innovation contest that brings together geeks, engineers, entrepreneurs, craftsmen, and other weekend tinkerers.
This rush of optimism comes from across the Atlantic, where the formula is a real hit. Last year, almost 200,000 people attended the New York and San Francisco Maker Faires.
The Maker movement is inspiring large companies like Ford, which has transformed an old hangar in Detroit into a gigantic "playground" for its employees. "Ford's engineers can tinker there after hours, away from the judgment of their managers," says Radjou. And the results are significant: in less than a year, the number of patentable inventions increased by 50%, while R&D expenses dropped considerably. Not to mention the fact that employees have found renewed motivation and are more productive during work hours.
More info at www.makerfaireparis.com