

Jugaad, An Introduction

By Musafir

Jugaad is an ancient Indian management technique which signifies attaining any objective with the available resources at hand. The practitioners of *Jugaad* use the combination of present knowledge and innovation in utilizing whatever resources may be at hand without asking or waiting for additional resources. The resources can consist of any of the 5Ms. The 5 Ms stand for manpower, material, money, machine and mind. Mind is an important resource since *jugaad* requires dissecting and learning the system very quickly. According to a famous adage, when Nikita Khrushchev visited India, he was amazed to see India functioning despite the wide-spread chaos and poverty. He allegedly quipped, "Though I am a communist and an atheist, I have started believing in God after realizing that a chaotic country like India can truly function."



A family of six commuting on a scooter

India managed to exist and function long before Nikita Khrushchev's visit to the land of mystique. I have seen the miracles of *jugaad* with my own eyes. Even the poor in India living on an income of a dollar a day do arrange decent marriages for their daughters and manage to give them gold jewelry as marriage gifts. They just believe in getting things done.

Once the transmission of my father's car broke in a remote village of India. Not knowing what to do, my father went to a local blacksmith for help. The blacksmith (not a car mechanic) dismantled the transmission and found a broken gear inside. He took a piece of scrap metal and crafted a gear for the transmission. Lo and behold! We were on our way within three to four hours. The total cost of repair was close to three dollars.

The practitioners of *Jugaad* are often called *jugaadis* or *jugarists*. These *jugaadis* can perform any kind of job everything from arranging for a driver's license (without ever driving a car), getting a permit to do business, and obtaining gas cylinders for cooking meals, to solving production problems on the factory floor. The *jugaadis* never say 'No.'

They just get the work done. *Jugaad*, a Hindi colloquial word is a science, art, tradition and philosophy in itself. The term *jugaad* can also mean alternative arrangement, a quick fix through the use of an unconventional but innovative method.



Constraint is a state of mind

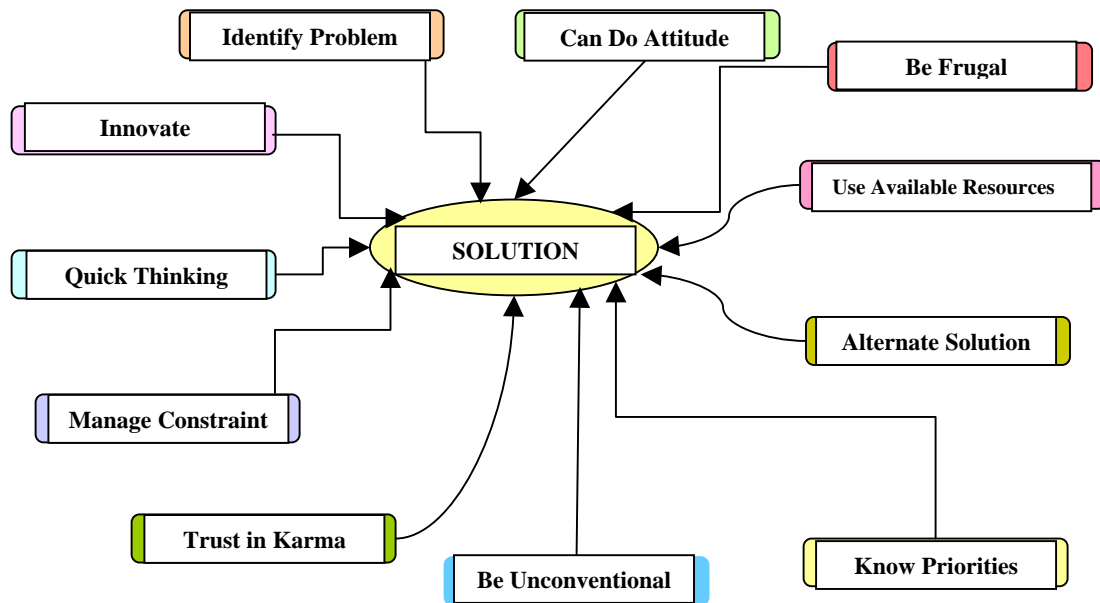
Dabbawalas of Mumbai and Six-Sigma

The operation of the Dabbawallas (carriers of lunch boxes) of Mumbai is an amazing example of *jugaad*. It is a 120-year old logistical system that entails collecting 175,000 hot lunch boxes (*tiffin*) from homes from every corner of sprawling Mumbai and delivering those *tiffins* to the right persons before their lunch time and returning those lunch boxes to their individual homes before the customer arrives home in the evening.

According to a *Forbes* 1998 article, one mistake for every eight million deliveries is the norm. How do they achieve virtual six-sigma quality with zero documentation? For one, the system limits the routing and sorting to a few central points. Secondly, a simple color code determines not only *tiffin* routing but *tiffin* prioritizing as lunches transfer from train to bicycle to foot.



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A dubbawala delivering meals on a bike/An elephant hauling goods for just-in-time delivery

Jugaad Models

Jugaad is a mixture of tradition, culture and attitude which can be adopted for solving nonlinear problems where the outcome of the problem is not inherently predictable. *Jugaad* can also be used in lieu of the 'Chaos Theory' to determine the behavior of certain nonlinear dynamical systems such as war against hidden enemies as in terrorism or adjusting to unpredictable energy supplies or global warming. Unlike any constraint-based scientific model which uses conditional statements of 'if and then,' *jugaad* starts with the attitude that a solution will be found by aligning behind any constraint and by using problem-solving innovation. *Jugaad* has mostly been used in India for survival, but *jugaad* can also be used more strategically by anticipating a problem before it surfaces by finding new constraints earlier in the game and by making the improvisational solution to avoid the problem altogether.

Jugaad and the rise of India

The combination of the western style analytical thinking and *jugaad* is proving very beneficial to India. An in-depth study of *the present rise of India reveals the above points. Here are some examples:*

1. Can do attitude: Recently Tata Motors (part of Tata Industries) set a goal to produce and sell cars under \$3,000. The car will be on the road sometime in 2008 and is being touted as the second Model T. The giants like General Motors (GM) and Toyota could not achieve this feat despite their massive resources and more than a century of experience (especially in case of GM). While the rest of the world was busy in product enhancement and product placement, the Tatas simply decided to put 4 wheels, an engine, and a transmission together to serve the immediate needs of tens of millions of people eager to give up their bikes and own an automobile.

2. Best use of the available resources: Most Indians do not waste anything. Old newspapers are sold and used as paper bags. Soda bottles and cans are used to store spices and even cow dung is used as fuel to cook dinner. According to Yasheng Huang of MIT and Tarun Khanna of Harvard, "Just 2 years ago, India was put down as a second grade economy in comparison to China because of China's massive investment in manufacturing facilities. In June 2005, India's GDP grew at a rate of 8.1%. More impressively, India achieved this result with just half of China's level of domestic investment in new factories and equipment, and only 10 percent of

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China's foreign direct investment. In 2003 and 2004 China was investing close to 50 percent of its GDP in domestic plant and equipment – roughly equivalent to India's entire GDP."

3. Trust in 'karma': Trust is fundamental to the Indian business system. There is a saying in the business circle of India, "The world functions on trust." Recently many world class companies have emerged from India. To mention a few, they are Infosys in software, Ranbaxy in pharmaceuticals, and Bharat Forgings in automobile components. This did not happen by accident. Infosys was founded by seven entrepreneurs with few political connections who nevertheless managed, without significant hard assets, to obtain capital from Indian banks and the stock market in the early 1990s. I don't know any other country where the major banks will lend money to unproven entrepreneurs just on trust.

4. Be Frugal, but spend wisely: Unlike China and other ASEAN countries, India did not believe in building world-class infrastructure. As developing countries, if they invest more in infrastructure, they invest less in other things. Typically, basic education, especially in rural areas, falls victim to massive investment projects, which produce tangible and immediate results. China made a costly mistake in the 1990s: it created many world-class facilities, but badly under-invested in education. Chinese researchers reveal that a staggering percentage of rural children could not finish secondary education. India, meanwhile, has quietly but persistently improved its educational provisions, especially in the rural areas. For sustainable economic development, the quality and quantity of human capital will matter far more than those of physical capital. India seems to have the right policy priorities and if China does not invest in rural education soon, it may lose its true competitive edge over India – a well-educated and skilled work-force that drives manufacturing success.



Joy Ride on a jugaad

5. Use of innovation and independent thinking: Now, let me describe the real jugaad to you. Jugaad is also a kind of vehicle made by villagers in India. Most probably, the wider meaning of jugaad is derived from this vehicle also called jugaad. This is how the vehicle called jugaad is made in Indian villages: The body of this vehicle is acquired free of cost or almost free by cutting down a tree. The tree is partitioned into a few planks and that makes the platform of the vehicle. A discarded engine from any junkyard is mounted in the front. The engine is connected to one of the water pumps that was supplied free of cost for irrigation by the government. The whole system is integrated to a jeep gearbox (found in plenty

in Indian junkyards called *kabada*). To get the wheels anything will do, even wooden bull-cart wheels. For the gas tank an old drum or metal is used which also doubles up as the driver seat. The vehicle is thus ready to ride.

In essence, much of India runs on *jugaad*. In India you do not necessarily go to a specialist for any work done. If you want your watch fixed or converted into a Rolex, just try to find a jugaadi. Chances are that an orphan boy, a beggar or a juggler will walk up to you and will get the job done. If you have a skin problem, you do not have to go to a dermatologist -- just try to find a jugaadi. Someone will make a compound using herb and mud and your rash will be gone. Jugaad may sound comical, but it is time for the rest of the world to adopt the philosophy of jugaad, especially, if we do not want to be left behind holding the bag while someone is going to get things done by hook or by crook.

Movement Conservatism. With time under the Bush years there has been a return to economic inequality not seen since the 1920s.

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Book Review: The Conscience of a Liberal

Krugman cites Movement Conservatism as a primary culprit in upsetting the balance of power between the rich and the poor. In effect, Movement Conservatism has reversed much of the progress of the New Deal and has attempted to take America back to even before the Progressive Era with recent efforts to reverse the estate tax. Movement Conservatism, according to Krugman, gained footing by appealing to white backlash over desegregation, scaring Americans about the perils of communism, and aligning itself with big business. One way it has gained the support of businesses is by breaking up unions in America. From 1960 to 1999 Krugman shows that the percentage of unionized wage and salary workers fell from 30.4% to 13.5% while in Canada it remained steady at 32% during the same timeframe.

The last few chapters are the best because they provide a framework for why Americans should be liberal and how liberals can enact their agenda. Rather than merely relying on empty talking points, Krugman provides detail about how a national health care program would work. He argues that although taxes would increase under such a system, Americans would also save money by not paying so much in premiums. To counter objections that the government could not administer such a system effectively, he cites Medicare as an example of a government administered health program that Americans love.

I found the book highly informative and well written. It even changed some of my opinions about social security reform and tax policy. However, the book would have been better if Krugman had been more balanced. While he uses Massachusetts as an example of a state where every person can have health insurance, he fails to mention that the man behind that accomplishment was Republican presidential candidate Mitt Romney. By contrast, he does mention leading Democratic candidates John Edwards and Barack Obama when touting their health care plans, which have not even been enacted. Krugman cites various special interest groups as culpable in hijacking the Republican agenda and moving it to the extreme right. However, he does not concede the impact that extreme groups, such as MoveOn and Drug Policy Alliance, have had on the Democrats. Some of these concessions would have made his other arguments appear even more credible and compelling.

–Reviewed by Rishi Shrivastava