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The number of B2B customer using digital self-service channels is soaring, and many clearly prefer online interactions. Take e-commerce: our research shows that 60% of B2B customers find remote sales at least as effective as traditional sales, and 62% prefer to reorder products online. But only 13% of industrial OEMs say that they are able to offer digital solutions with their current capabilities, and only 10% offer online, automatic self-service tools for placing reorders.

As companies build an e-commerce platform, their channel strategy must reflect their overall goals and industry environment. Do they want to reach customers in a particular segment? Improve penetration for existing customers? Generate better leads?

Regardless of the chosen focus, the channel strategy must provide benefits and reduce risks for all parties involved: internal stakeholders, end customers and distributors. To help industrial companies strike the right balance, we explored seven strategic questions related to product offerings, customer targeting, partner benefits, online pricing, channel conflicts, change management and essential capabilities.

Industrial companies tend to have extensive product portfolios, with offerings spanning many categories and often numbering in the thousands; it would not be feasible to sell all of them through digital channels. As they select their online offerings, companies should keep their general strategic goals in mind.

*From "Hot Industrial Companies Can Put eCommerce at the Heart of Their Growth Strategy"*

# Make Hay, Not Pollution



Gurdeep Singh

Burning kharif crop residue across northern India has been a matter of concern for some time now. A 2019 study (bit.ly/3pVwtuq) indicates that India loses about \$1.5 billion (€1,190 crore) annually due to adverse health effects on account of open burning. About 750 million tonnes (MT) of biomass is produced annually in India, of which 280 MT is surplus. Nearly half the agro waste is used as animal fodder and energy source in rural India. However, surplus biomass derived from the rice variety grown in Punjab and Haryana has inherently higher silica content and is, therefore, not used as animal fodder. Most of it is burnt in open fields, majorly contributing to the surge in PM (particulate matter) 2.5 in post-harvest northern India.

NTPC devised the Blue Sky initiative to tackle this menace. High silica biomass was co-fired as a supplementary fuel with coal. 100 tonnes of the biomass pellets were tested first in September 2017 at the Dadri power station. Protocols established the robustness of co-firing with up to 10% bio pellets in existing coal-based power stations.

The successful trial refined safe-firing practices, and assessed impacts on plant equipment and related efficiency. It led to India's first commercial scale firing at Dadri. More than 60,000 tonnes of agro pellets have been co-fired in 14 NTPC plants to date. This has avoided farm fires in over 30,000 acres and is more economical and efficient than dedicated biomass plants. NTPC has subsequently trained several power-generating companies on biomass co-firing.

The availability of adequate quantity of biomass that can be co-fired was a challenge. While raw agro waste is available aplenty, it has to be processed for use in power plants. Only a handful

of manufacturers could process as per process needs at the time of Blue Sky's launch. NTPC fostered vendors and startups for biomass management through an extensive demand-based programme. Tenders were designed to facilitate startups with lower entry barriers, no performance guarantees and adequate time to instal the manufacturing facility on receiving the order. This proactive inclusive process attracted over 100 vendors.

An institutional arrangement that encourages farmers and traders to deliver residues was conspicuous by its absence. An open offer was made by NTPC to these stakeholders to register and supply agro residues at any of its power stations at a pre-defined rate. NTPC also raised awareness about avoiding stubble burning.

Biomass co-firing can account for integrating renewable energy in coal-based power plants. It can also become carbon neutral with appropriate harvesting, processing and transportation management. Unlike solar and wind, biomass firing does not require backup conventional capacity installation to meet increasing peak demand. It can help schedule as per load demand, and eliminate indirect costs due to the variability of solar and wind-based renewables. Biomass co-firing can also potentially provide an additional source of income to farmers.

Blue Sky inspired systemic enablers at the sector level. The Union power ministry issued an advisory to all coal-based power producers to start 5-10% biomass

co-firing in their plants, backed by a supporting policy. The Central Electricity Regulatory Commission (CERC) included a regulatory framework for biomass co-firing in its draft regulation 2019-21. Biomass-based power is being considered for meeting non-solar renewable purchase obligation.

Apart from sustaining the supply of the residue, the price of processed biofuel has to be rationalised. The former is constrained by seasonal harvest practices, the latter through price volatility. Significant working capital is needed to produce torrefied — heated in the absence of oxygen at 200-300°C — biomass pellets, which can create robust supply chains and large-scale rural employment.

This reformed biomass has low moisture content, high grindability, lower volatile content and higher calorific value. It can, therefore, be milled in existing coal-handling systems without any modification. Co-firing ratios can also be high due to the properties of torrefied material. Its gross calorific value is comparable to bituminous coal, and the power generation potential of biomass burnt in open field is 56,000-60,000 MW of round-the-clock renewable power if all of it is used to co-fire coal-based power plants.

Punjab and Haryana reportedly have surplus biomass of about 22 million metric tonnes per annum (MMTTPA) and 11 MMTPA, while coal consumption of these states is 11 and 9 MMTPA, respectively. Torrefaction of surplus biomass in these states could help replace 80% of coal. This has huge transport-related cost savings, in addition to the benefits of using renewable power. This can be logically extended across India, with the potential to reduce dependence on coal imports too.

The power ministry's National Biomass Mission is aligned with these benefits. Along with NTPC's efforts, this will complement India's efforts to secure 50% energy from non-fossil sources by 2030.



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Opportunity knocks

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