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GOPAL SHUKLA, CIO, Hindustan Coca-Cola, empowered decision-makers with more accurate data – faster.

Coca-Cola's SECRET FORMULA

Learn how Coca-Cola India juiced up its distribution system to improve supply, monitor performance and reduce dubious claims.

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Coca-Cola's SECRET FORMULA

Coca-Cola's success in India isn't based only on a closely-guarded combination of ingredients. Here's the more-secret story of how it runs—and thrives on—its massive distribution chain.

BY KANIKA GOSWAMI

Reader ROI:

- The importance of an information network
- How getting information in time can save your company money
- How to simplify MIS generation in a varied and distributed set up

In 1977, Coke's secret formula got it into trouble with Indian government. Because the company refused to give up the formulation that went into its drink, it was asked to pack up and leave. So, when the Indian economy opened up in the early 90s, the cola that much of the world has come to associate with soft drinks, wanted in. It had 16 years of catching up to do. And it was in a hurry.

In true style, it threw plenty of money at the problem. By partnering with cricket tournaments and creating now-famous taglines like *'Life Ho To Aisi'* and *'Thanda Matlab Coca Cola'*, Coca-Cola India made sure that they were heard and seen. It also snapped up the competition including popular 'cold drink' brands like Limca, Maaza, Citra and Gold Spot.

According to a report by the Tuck School of Business, Dartmouth, the company pumped in $ 1 billion into its Indian operations between 1993 and 2003. This frenetic pace extended to the way the company created a mammoth distribution system by partnering with bottling plants all over the country to keep the market juiced up on cola.

By the turn of the century, the oversights made in those early days would start to hurt the company. In the heat of expansion, Coca-Cola signed on multiple — and standalone — bottling deals. Each plant had its own system of accounting, monitoring, and inventory. Plus, their just-get-in-there-quickly approach to planting the Coca-Cola flag in the remotest regions created a tenuous distribution chain.

At around the same time, the business was trying to muscle its way into the rural market by introducing a smaller bottle at half the price of the traditional Rs 10 bottle. The idea was to meet the competition — from lemonade, tender coconut water, *lassi* and tea — on its own turf. Simultaneously, Coca-Cola doubled the number of retail outlets in rural areas from 80,000 in 2001 to 160,000 in 2003. The two-pronged strategy paid off: per capita consumption doubled between 2001-2003 and the company increased its market penetration from 13 to 25 percent. But greater demand from more retailers made it only harder to supply the drinks, which meant that some far-flung regions only got a trickle.

The organization decided to fix the problem and brought in Project COLA (Countrywide Outbound Logistics Automation). COLA is developed around the ERP system and is designed to cover all functions including manufacturing, sales, distribution, finance and logistics.

TREACLE TRICKLE

Sluggish as treacle. That's the only way to define the flow of information from retailers around the country to manufacturing plants — which made production planning an elevated form of educated guesswork.

This is because when Coca-Cola returned to India in 1993, it set up a concentrate plant and then quickly acquired a number of bottling plants across the country, demarcating geographies to ensure that it covered as much ground as possible. At last count, Hindustan Coca Cola had over 25 bottling plants spread across the country. However, this strategy created a disagreeable byproduct: a massive gap in MIS.

Each of the plants used its own transaction system, as a result there were multiple transaction apps at work including Jaguar, SAP, Tally, Scala, DSND, Prism, DAS and MECS. The organization's MIS was spread across three solutions: Kompass, DPRS and ROSS. Individually each of these worked well, but the diversity caused a huge delay in putting together sales and distribution data.

With 26 types of systems running at 26 profit centers, data that finally found its way upstream was real old, 54 days too late. And, of little help to the sales staff. "The ground situation was a practically archaic MIS. The situation needed to be remedied. There was a basic lack of control, making it difficult to plan inventory. There were also many write-offs. We could see the software needed updating, but even then it would solve only minor problems," recalls Gopal Shukla, CIO, Hindustan Coca Cola.

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The number of days data took to travel from retailers to decision-makers at Coca-Cola.

On another front, just getting a crate of Coke to every last district in the country was a logistical nightmare. The operation depended on distribution data. Without data it would be hard to push Coca-Cola's products.

"At Coca-Cola, the process of distribution is in two parts. Coca-Cola has 25 co-owned bottling plants. And, about 15 sub-sourced and franchised plants. We have about 75 company depots and franchisees, which are our direct sales outlets. Each of these depots has between 30 to 100 routes, and each of these routes is a set of 50-100 outlets," says Shukla explaining the complexity of keeping track of lakhs of outlets. "The ERP systems move along this line, all the way from direct sales outlets to the routes that get our products to metro outlets."

Then, there were the indirect distribution outlets, the distributors who demarcated their own territories, and sold fizzy drinks to smaller towns, sub-stockists and super-stockists.

To make things worse, unlike other FMCG operations, distribution in the beverage industry isn't built on a one-way street. Because bottles are refilled, the industry has a distinctly different requirement of data entry at the sales and distribution level. Companies like Coca-Cola have to keep an inventory of bottles that return empty — and those that return full.

HARD ART OF DISTRIBUTING SOFT DRINKS

Project COLA was meant to add some fizz to the flow of information. In its first phase, it would help direct sales outlets like company depots. The second phase would cover indirect sales distributors and their routes. It aimed to build an integrated ERP solution that simplified transaction efficiencies, sales practices and provided better audit clearances. It would also work as a unified MIS platform.

The first step in creating an accurate picture was setting up a Distribution Automation System (DAS) — a transaction system that kept all sales movement accessible. A DAS system has been used in several FMCG companies in India. At Coca-Cola, it was tailored to meet specific requirements that included 'centralized masters' and

a day-end transaction summary for MIS analysis. The objectives of the software were to provide complete transparency and control to distribution operations, while adding value to certain marketing operations. DAS is still being rolled and will cover about 35 percent of the organization's distributor network by the end of this year.

DAS was integrated with Project COLA to ensure data was at people's fingertips. This data could then be put into an MIS system developed by Salient technologies for the bottling industry called Margin Minder. Shukla calls it 'God's gift to the bottling industry'.

Bottling operations at Coca-Cola are built around a profit center. A number of these centers make one regional group (there are three) says Shukla.

"The system puts a distributor database at each of these physically separate locations. A plant, a godown or a depot can have its separate ERP. After midnight, all of these offices send data to a central location, so that everybody gets an MIS report the next day. On this accumulated database, there is a data warehousing system and the Margin Minder, which has been designed uniquely for bottling operations," he says.

Each of these locations is connected by low-cost connectivity. Since each region has its own ERP system, creating an expansive network is not critical.

"It's a complete wall-to-wall implementation. It has logistics, production, etcetera, at the plant; logistic inventory at the warehouse; and sales at the depots. At the central location, we get the benefit of a single ERP system, yet we have the flexibility of not being dependent on any one. We have now consolidated all the systems into one single base," Shukla explains.

The benefits? All the goodness of a single solution including a single set of processes, rational efficiencies, controls, audit clearances. "You can retire all old applications," Shukla adds.

In addition, the organization bypasses the disadvantages of a distributed system since any transaction that affects two sites is sent on a real time basis. In effect, when a truck leaves a plant for a depot, the depot gets to know within a few seconds about its departure.

DOWNSTREAM DATA

The backbone of the system is a number of small but critical applications, most of which have been developed by Shukla's team. These apps collect information from the bottom of the distribution pyramid. Among these is a handheld device that is installed in trucks (see '*The Colour of Smart Distribution*'.)

"Low-cost handhelds are currently being used in our direct sales. These greatly benefit the productivity of the guy on the front who's actually doing the distribution for us. It also improves controls and enhances data collection. We are targeting about 40 percent of all our indirect distributors, which translates to about 400 distributors, by the end of this year."

The handhelds come with dot matrix printers for invoices and RFID sensors that identify who's taking out how much of which product. It serves to reduce settlement time from several hours to minutes. Because the software has been written to firmware, the device doesn't need a standard OS and is fairly low-cost —less than Rs 10,000 each. Currently, 250 units are being used in Hyderabad and Delhi, with about 650 more awaiting deployment.

PHOTO BY SRIVATSA SHANDILYA
IMAGING BY MM SHANITH

"The toughest part is walking into a finance manager's office, and telling him **he's no longer the day-to-day boss.** Taking away power from a man —**it is extremely difficult to sell that."**

— ***Gopal Shukla*** *CIO, Hindustan Coca-Cola*

Another application that forms a part of the solution is the Cooler Tracking System (CTS). It currently comes as a sticker on Coca-Cola refrigerators that the company provides to its stockists and is monitored by sales executives. "There are about 250,000 coolers in the market today, and our business is highly-dependent on their placement, the positioning of products inside and of course, how well it is working," says Shukla.

CTS helps keep track of the number of coolers in inventory, those that have been installed and those that are under maintenance. The application currently tracks 250 coolers. It's aim is to build more accountability in sales teams and strengthen asset control.

The ROADnet Route Optimizer forms the third leg that DAS stands on. The application runs on a mobile device with GPRS carried by business development staffers. Their job is to make rounds on fixed routes and check the availability and arrangement of Coca-Cola products. Since they keep track of what needs replenishments, they can also bunch together outlets that need restocking. This helps with dynamic route optimization and ensures that delivery trucks do not make too many unnecessary runs from the plant.

The application has already made its mark. In Hyderabad, for example, there has been a reduction in the number of routes by almost a third — from 22 to 17. Vehicle utilization, thanks to advance information, has gone up by 91 percent. The savings? Estimated at about Rs 1.20 per case — that's Rs 23.64 crore, given that Coca-Cola sold 197 million cases in 2007.

The device also helps Coca-Cola monitor sales in real time, cross-sell better and track how an outlet is performing during a sales promotion. Shukla plans to rollout ROADnet in all 9,000-plus outlets in Hyderabad, Delhi and Mumbai markets by the end of the first quarter of this year. The first pilot in Ahmedabad, Gujarat, has shown excellent results, he says.

CAN'T BEAT REAL DATA

All these devices send data to the Margin Minder. The app provides analytical reports that help not only in distribution MIS but also in manufacturing, finance and even HR.

The advantages of this application? "The unique feature of Margin Minder is its response time. It's extremely good," says Shukla, "Irrespective of the connectivity bandwidth of the client, it manages to give you a view you are looking for at a very good response time."

The RED Cube on the Margin Minder offers some of these insights. "Everything about market execution, availability, activation is tracked by RED," Shukla says "This data is given to AC Nielsen who does a survey of about a hundred thousand outlets every month. At the end of the month, we have studies that provide follow up action for different areas. RED gives us two advantages: pinpointed surveys — not just generic ones — and now a GPRS coding onto city map. It's still in a pilot stage but it allows us to track transactional data from a system as well as RED survey data, matched to every outlet," says Shukla.

The pilot has been kicked off with data collection on Motorola MC35 handhelds at over 300 large outlets in Delhi, and it is to be ramped up to 3,000 outlets countrywide over the next few months.

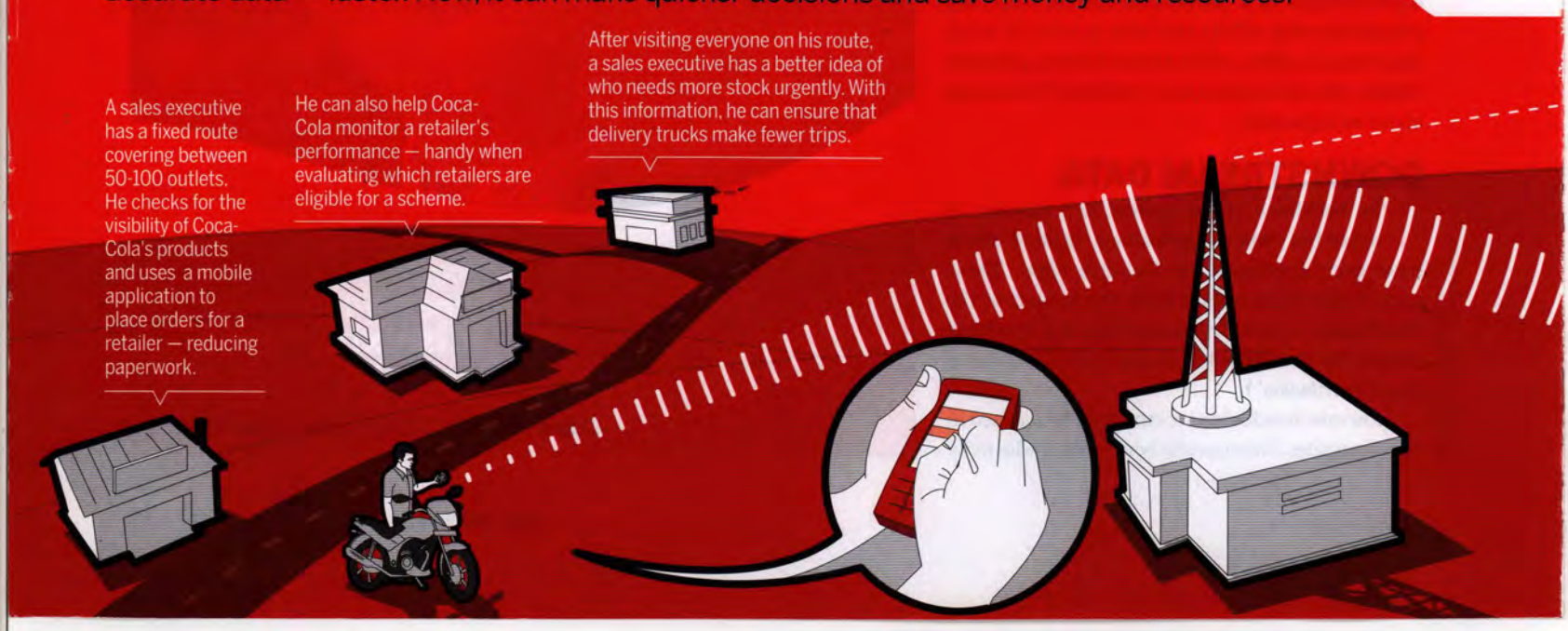
"At the end of the day we take data on a yesterday basis, put it into a staging area, clean it and make it ready for uploading into a multi-dimensional cube," says Shukla. He adds that the organization can drill down by customer, product, sales hierarchy and profit center. "In each you can see many sub-dimensions. And you can query the system with very simple key strokes."

Shukla is emphatic that the people who pose queries need not be IT-savvy and most business managers can find out their top-ten customers by volume, profitability, brand, SKU or by sales person. They can also retrieve data on profitability per brand or customers

INFOGRAPHICS BY PC ANOOP

The Color of SMART DISTRIBUTION

By introducing applications at the bottom of the distribution pyramid, Coca-Cola can get more accurate data — faster. Now, it can make quicker decisions and save money and resources.



who have only chosen to buy certain brands. "We can do trend analysis on the system, we can see how volume has moved, during a certain scheme. And how profitable a scheme has been," he says.

Incorrect distributor claims for discounts have reduced to 6,000 from 30,000, saving Coca-Cola about 1% of its revenue — **enough to pay off their IT budgets for three years.**

SHAKING THE BOTTLE WILL BUILD PRESSURE

But these benefits didn't come easy. Putting complex devices worth Rs 10,000 in the hands of mostly illiterate truck drivers is a decision that is hard to make.

Fortunately, he wasn't alone. The core team that made project COLA possible, was created with much deliberation. Headed by director of business process and a profit center head, D. Narayanan, the 75-strong team consists of people from all areas of expertise. They included core business people, a design and implementation team, a central operations team, an infrastructure team, and finally a rollout team.

"The implementers have done similar projects in other organizations and they bring best practices with them," says Shukla. Currently, about 40 rollout experts have been hired from JKtech, but as the rollout nears completion, the project will need more hands on the ground and not just ERP experts, he says. The rollout experts are also expected to train end users, hand-hold them for a few weeks and provide an additional month of onsite support.

As for the devices being operated by truckers, Shukla says he has the situation under control. In order to reduce the possibility of damage, he says that the handhelds were designed for use in the field. "They can withstand a fair amount of rough use. They are only sensitive to water and need to be kept away from rain. We provided carrying straps and water-proof bags and specially-built padded docking places in the trucks," he says.

But there were still problems with the printer, keyboard and the power-supply. "Therefore, we maintain some fast-moving spares onsite, and we back it up with an arrangement to courier the devices back to the vendor for major repairs," he says. Thanks to their low cost, he says he can afford to stock a few spare units to see users through a repair cycle.

Higher up on the distribution pyramid, the problems were less technical. COLA, he says, took the better part of two years to take effect. "We started in 2005, spent about 18 months standardizing processes," recalls Shukla. "A pilot was built and tested, then went live in February 2006 in Ahmedabad. During this time we did a lot of workshops all around the country, we had a core team of people from the business, who were building, figuring out best practices and getting buy-in from these locations."

The project's duration itself could have run them aground. "Running a project over three years is a big risk, people change, teams change, management perspectives change, business prospects change, imperatives change. You've got to be flexible, you have to keep up the momentum and that's a big task. Standard ERP implementations pose a high risk, but when they intrude into people's jobs, it becomes more difficult. Luckily, our attrition has been really low. And, our teams were highly engaged. Although, we did have a change of top management, we didn't have to worry."

Change management, he says, was the biggest challenge. To get thousands of distributors and employees to change the way they worked and to let go of some decision-making power was a huge challenge.

"The toughest part in a project like this is walking into a finance manager's office, and saying, 'till yesterday you had an excel worksheet in which you had all your customers listed. You approved every order and knew how much outstanding everyone had. But from now on, the system will do that for you. It will decide how much credibility someone has based on past sales. And, the system will decide each order. You will no longer be the day-to-day boss.' Taking away power from a man — it is extremely difficult to sell that," he says.

There were countless opportunities for pushback. "There are about a hundred such instances where automation took over the manual tasks. The change of processes is one of the toughest things to do in a project of this size. We touch between three to four thousand people. It isn't easy," Shukla adds.

He meets this challenge with a long-term change management implementation along the gradual rollout. For each rollout, change management processes start a month in advance, he says.

This persistence has paid off. Today, Project COLA is about halfway through its complete rollout. Almost 55 percent is done including the heavy layer of in-house distributors and depots, as well as the finance and HR modules. What's remaining are the modules for indirect sales outlets and distributors. There are no major changes planned for the business model and Shukla expects the indirect distribution system to get on to COLA as smoothly as the direct one did.

4 APPROACHES to Systems Integration

POINT-TO-POINT this approach involves hand-coding integration. It remains a tried-and-true method for moving data. This approach has problems. Think of a company running 100 apps, each in its own box; then picture how many lines need to be drawn to connect those boxes. When one app needs to be changed, every connection to that app must change. And development and maintenance costs can be high.

MIDDLEWARE Whether it's called object, event or session management, data translation or one of many acronyms, middleware creates a layer between applications. The applications are not connected point-to-point; they're connected to a middle layer, which receives the data, translates it, then sends it.

EAI PRODUCTS also called integration servers, describe more powerful kinds of middleware. These tools are designed to integrate the data in companies' back-office systems with their front-office apps using a single integration layer. These products come packaged with connectors that can, for example, connect ERP systems to mainframes and CRM systems.

BUSINESS PROCESS MANAGEMENT BPM is a is touted as the next generation enterprise integration software. It aims to bring the business and IS side together to figure out cross-functional business processes, which include suppliers, customers, employees and partners, then streamline and automate them.

—Todd Datz

MORE FIZZ TO THE BIZ

The changes that COLA introduced have begun to be felt upstream. "Our key benefits come from we what did as a change in process. That was the objective, and it has affected our supply chain substantially," says Shukla.

Another important benefit is that COLA enables an accurate computation of eligibility for schemes for distributors. In conventional systems, all the sales vouchers need to be collected and added up before and the eligibility of each distributor could be determined for various schemes.

"We have to validate and summarize sales data of 4,000 to 5,000 distributors — every 15 days. It was a very heavy, manual task," says Shukla. To work around this, they now have settlements every fortnight, which automatically documents the performance of each distributor and rewards them on that basis. "If ten schemes apply to a distributor, he or she gets those ten schemes with item, value and limit, printed at the end of the fortnight. The whole process is now streamlined. The system now generates settlement of claims."

The advantage? The number of distributors making incorrect claims for discounts (because accounting was a problem) has decreased from 30,000 to 6,000. Which means Coca-Cola isn't rewarding distributors unnecessarily. "Money is no longer wasted. This has generated a reduction of discounts of between 1.5 percent to 1.75 percent. With $ 700 million (Rs 2,800 crore), a reduction of 1 percent pays off our IT budgets for the next three years," he says.

Then there are other benefits. Coca-Cola used to generate about a 10 lakh invoices every year. Each of these had to be validated against orders for dispatch, a cumbersome process. Post-COLA, only the exit from, say, a plant and the entry to, say, a godown has to be validated by sending data via RFID readers. Shukla likens it to a bank statement: deposit and withdrawal slips only need to be checked at the month's end. That means savings on 10 lakh documents a year and ensuring accurate payments and records.

Predicting and beating market demand with supplies is also an important contribution — it is key to a larger market share. COLA helps hugely with that. Shukla exemplifies: "You have 3,000 distributors who need 50 active SKUs replenished every week. How do you decide who gets how much? We developed a Web-based app, which is based on last inventory, secondary sales, what was replenished, etcetera. If you get this right, you can predict demand, therefore longer-term production and how to load production."

The uniqueness of the product has added another dimension to cluttered data sheets. Managing how much credit the company could extend to distributors entailed maintaining records of the number of bottles that a distributor bought — and crucially — how many came back unsold. This complicated situation has been largely eased by COLA and collecting downstream data is much easier. The process of deciding credit is now much more transparent with much less scope for data mismanagement or data entry errors.

Among boy scouts, it's common knowledge to follow water if you want to find the fastest route down a slope. But when it's bubbles going up you want to follow, sometimes IT can do the trick. CIO

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