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Distribution Management System: Driving Demand Visibility in the Consumer Packaged Goods Industry

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In today's competitive business environment, consumer packaged goods (CPG) companies are under increasing pressure to achieve significant growth in revenue, margins and market share. Coupled with the increasing competition is the change in behavior of consumers, whose needs are not static and change with time and space. To succeed, these customer needs have to be addressed in view of their propensities and desires. Not satisfying customers' needs will lead to loss of sale, revenue and market share.

This Solution Spotlight looks at the role of distribution management systems (DMS) in the CPG industry and how companies can benefit from implementing DMS to help them connect seamlessly to their end users for demand visibility. Specifically, the paper examines closely the implementation of a DMS solution by Mindtree for a global CPG company to improve its business in the emerging markets of ASEAN.

The Desire for Demand Visibility in a Customer-Centric World

Customers nowadays demand and expect instant gratification. This expectation, whether from an in-store purchase or online purchase, is the same wherever the consumer is situated. The growth of social networks facilitate the instantaneous spread of information and recommendations for products, leading to "spikes" and variations in demand, which CPG companies need to be able to manage in order to stay competitive in an increasingly volatile business environment.

Emerging Economies – Growth Areas for Consumer Packaged Goods Companies

This customer expectation is now becoming prevalent across emerging economies. A growing middle class with high aspirational values is seen as an obvious pocket of growth for CPG companies. However, for the growth to be profitable, several challenges need to be overcome. These challenges include volatility of raw material costs and unpredictability of their supply chain. There is also diversity in terms of people's choices for products in each country and sometimes even within a country, with little brand loyalty. CPG companies need to therefore understand local flavors and preferences and incumbent competitors in each segment.

Focus for Brand-Oriented Value Chains

Figure 1 illustrates the four value chains IDC Manufacturing Insights articulates for the overall industry. As explained in the IDC research report "Business Strategy: Fulfillment Excellence in Consumer-Facing Manufacturing Supply Chains", for CPG companies which fall under brand-oriented value chains (BOVC), fulfillment excellence is tied to the notion of empowered consumers and the increasingly unpredictable nature of the demand signal. While cost cutting is necessary, investment in critical business capabilities that lead to better decision making for quickly responding to timely demand signals is equally or even more important. Among all IT applications where investments are planned by the BOVC firms, Sales & Operations Planning (S&OP) leads other areas by a wide margin. CPG firms typically invest in a distribution management system fitting into S&OP for better sales turnover by increasing visibility in the supply chain and for effective management of the supply chain until the last mile.
Role of Distribution Management Systems in the Consumer Packaged Goods Industry

Distribution management systems help in conveying the pulse of the consumers and their touch points from across the field to a company's headquarters and planning teams to effectively plan and implement the supply chain. DMS comprehensively manages up to the last mile in the distribution of products from the factory to the end users. It is deployed by multi-echelon supply chain organizations which require planning and control of the delivery of their products with various players involved until the end consumer.

Case Study: Implementation of Distribution Management System for a Global Consumer Packaged Goods Company

Mindtree's client, a large multinational consumer goods manufacturer, approached their CPG team for a DMS implementation project. The scope was to implement for exclusive distributors who sold only the CPG company's products. The program was aimed primarily at the developing economy – countries in Asia/Pacific divided into seven clusters. Thailand with approximately 50 distributors was selected for piloting. The plan was to pilot the solution for one distributor first, observe the results and implement for a few more distributors before extending to the entire country and eventually to the region. The following sections talk about the project implemented by Mindtree, the details of the implementation, challenges faced and the lessons learnt.

Business Needs

Mindtree's client was looking at improving its business in the ASEAN region, specifically in the Philippines, Thailand, Vietnam and Indonesia. While cities within these countries are developed, the business environment changes very rapidly as one moves away from the main hubs – there is less infrastructure, leading to challenges across the supply chain. The company's products include a wide range from food and beverage to personal care and home care products. Products reach the consumers through a diverse network of distributors, wholesalers, retailers and outlets. In order to operate efficiently, an application to effectively manage the entire distribution process was required.

Specifically, the high level business objectives are as follows:

- Increase sales turnover by 7–9%
- Exceed the already planned country growth
- Tighter control over promotions, pricing
- Improved management of sales targets
- Improved accuracy in product master data
- A single sales platform, providing a collaboration platform for field sales with recommendations, control and higher visibility on the secondary sales data
- Visibility across the entire supply chain, including remote areas
SAP was available as the core ERP at the start of the project. But the modules required for
distribution management and enabling of mobility were not implemented. There was no process
rationalization across countries in the ASEAN region. Each country had its own policies and a
standardization of process was required before implementing any automation.

**Partner Selection Criteria**

SAP was already selected as the core platform. The next step was to shortlist vendors from the
original six that participated in the RFP (request for proposal) process for a systems integrator. At
this stage, a detailed proposal had to be presented. The criteria for the implementation partner
selection included the solution methodology, credentials from prior clients, technology exposure,
domain knowledge and cost of implementation. Mindtree had prior experience in emerging
regions for DMS implementation. Utilizing this experience allowed Mindtree to look at expanding
into distribution management in different industries, geographies and segments. This type of a
project was new since it was an implementation across several countries with diverse business
processes, languages and cultures.

**Project Targets**

The following are the benefits that were targeted by means of the DMS implementation at the
start of the project, translated from the high level business benefits:

- Effective order fulfillment process – 98% achievement in case fills
- High field presence – 97% of bills through mobility/field
- Greater turnover driven by improved product availability, promotion compliance, perfect store
  execution and higher drive for article assortment
- Sales force automation – faster sales execution and efficiency with effective device usability,
  remote outlet tracking which in turn contributed to higher number of calls, price visibility
- 30% increase in lines per productive call and targets for lines in each call met
- A robust base framework, with standardized processes now available for mass roll-out and
targeted countries in roadmap

**Implementation of the Project**

Thailand was selected for piloting the DMS platform with an eight to nine-month project timeline,
beginning with just one distributor and then rolling out to other distributors. This pilot is now
complete and the coverage of remaining distributors in Thailand is in progress. Improvement
metrics post-implementation are being gathered. The following sections detail the various aspects
of the project implementation, as depicted in Figure 2 below.

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**Figure 2**

Multiple Tracks and Release Planning

![Diagram showing multiple tracks and release planning]

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Source: IDC Manufacturing Insights, 2014
**SAP-IS Retail Implementation**

The Retail Information System (RIS) enables goods movements to be planned, monitored and tracked throughout the whole supply chain. Key modules implemented include master data, materials management, sales and distribution, finance, promotions management and business intelligence (BI) reports.

Prior to implementation, the CPG company’s IT team and Mindtree consultants conducted an eight-week process harmonization workshop with representatives from all countries. In the workshop, business processes of all countries were discussed and evaluated to arrive at a common set of processes. This process harmonization then led to a core platform which would be implemented across all countries. The core platform constitutes approximately 80% of the overall solution, with the remaining being country-specific implementation.

The key challenge was to harmonize different business processes across countries. This was achieved through detailed business process workshops involving representatives from all the countries and elaborate business blueprinting phase. System performance was foreseen to be a critical issue and the project team took initiatives proactively to replicate the expected system load and perform rigorous performance testing. The findings of the testing were then utilized to derive optimal system sizing and performance tuning.

SAP IS Retail platform for DMS was real-time integrated with software as a service (SaaS) mobility platform. For reduced infrastructure costs, a private secure cloud was set up in collaboration with the cloud partner. The mobility platform supported Android and Windows mobile devices and provided real-time location tracking, stock visibility and orders status. Data analytics was provided as part of the platform. It was predominantly implemented to provide recommendations on van stock load based on historical sales. Figure 3 shows the overall architecture implemented and the various modules that integrate with each other – core ERP which is SAP and retail, mobility and business intelligence modules on top of it.

Change management was a serious challenge. This was managed with support from the business team and Mindtree. The distributors to whom the DMS system was to be rolled out to were involved from the beginning all through the implementation cycle. This resulted in acceptance of the solution.

Around 70–80% of the implementation is the same across countries. But due to local regulations, statutory requirements, language and currency requirements, 20–30% of local customization needs to be done for each country.

**Mobility Implementation**

The business need behind the mobility implementation was to empower the sales team on the field with data intelligence, for example, to suggest stock keeping unit (SKU) level order quantities for a retail outlet, execute promotions, new product launches, shelf availability at the distributor end and diversification, and for flow back of order placement, feedback from the field/competitors, and eventually for seamless collaboration between field and backend teams.

The following performance metrics were defined to measure the impact of the mobility implementation:

- **CCFOT** (customer cases filled on time) – opportunity to improve on-time, first-time-right order fulfillment of customer orders from 90% levels
- **Bill throughput** – opportunity to increase lines per order from approximately 10 per order to higher levels on each productive call. A productive call is one in which a salesperson’s visit to a retailer results in a successful order
- **Sales value** – growth in month-over-month sales value over and beyond the levels noticed before mobility implementation
- **Assortments** – choosing the right mix of related products
The mobility application is integrated with SAP IS Retail. The mobility product is a standard product with basic modules and 70% of out-of-the-box functionality. 30% of customization for country specific requirements is implemented.

**Software Lifecycle Development Cycle/Project Management Methodology Used**

Mindtree used SAP’s ASAP methodology (Accelerated SAP) which consists of five phases in a waterfall model. SAP IS Retail and mobility are two key tracks where implementation happens, including integrations between them and with other applications such as core SAP. Functional definition, the entire development cycle starting from design to development, testing and roll-out, considered under piloting and eventual roll-out are three major islands of activities. Program management to ensure project milestones, timelines, cost and effort, continuous improvement to remove inefficiencies in the software lifecycle development cycle (SDLC) process, change management and country-level specifics are other tracks that happen in parallel.

**Overcoming Challenges**

The DMS implementation was not without challenges. These include:

- Country-specific configurations along with global configurations. This challenge could not be overcome completely. Around 80% of the business logic was common across countries; however, the rest had to be configured specific to each country based on factors such as currency, exchange rates, regulations, market specific promotions and the legal system.
- Handling data intelligence load on light weight devices during multi-distributor onboarding.
- Concurrent synchronization of the diverse device portfolio of salesmen. The mobile applications have to be compliant with each of the device/OS combinations in the field with a plan in place to percolate any changes and updates to the applications across the user base.

**Change Management**

Scope creep was a challenge and to address this, a team was set up to ensure standardized processes were used across countries. Once this team approved a change, a Change Management Board consisting of wider stakeholders looked at other perspectives such as cost and timelines and approved it. Once approved, a formal change request was raised to start impact analysis, design, implementation and testing.
**Project Team Ramp-Up**

SAP provided partnership for the first three to four months to start implementation. Mindtree started with a skeletal team and gradually ramped up to include a fully functional PMO (project management office) along with implementation and testing teams. At the end of 18 months, Mindtree was managing implementation independently. In terms of end user training, Mindtree provided training in English while the business took care of local languages.

**Looking Ahead: Lessons Learnt from the Pilot**

Mindtree has rolled out the pilot for a few distributors in Thailand. The benefits are being measured and analyzed at the time of this case study. Based on successful validation, the solution will be gradually customized and rolled out across Thailand and more countries. The lessons learnt from implementation across one country are immense and can be leveraged for the next country. Learning points range from change management at the people level, understanding business processes and field level activities to technology related lessons learnt. These areas for improvement are relayed by the project team to the PMO for the next roll-out.

**Process Standardization**

Rolling out the solution for one country presented a set of unique challenges around adoption of technology and the new process. As the implementation scales up, different types of challenges can be anticipated. Approximately 20% of local requirements were customized out of the global solution. Hence, the ripple effect of changes in one country across previously rolled out countries can grow exponentially. Change management would become difficult to handle. The amount of effort put in for training of teams whenever there is a change, quality efforts for regression testing and management of the list of changes is an area the project team should be prepared to handle.

**Moving Up the Maturity Curve**

For moving up the maturity curve in the SAP and mobility implementation, it is recommended that Mindtree use a benchmarking model to assess the current level of maturity and to fix a target in that model that is challenging, feasible, well defined and time bound. Knowledge management can be used to document best practices and lessons learnt to work toward gradual reduction of effort after every roll-out. There should be a declining trend of overall effort for implementation and roll-out going forward. Continuous improvement projects should be motivated to find and eradicate inefficiencies in the business and IT processes. Reusability of business processes, applications, codes and documents should also be encouraged and recognized.

**Conclusion**

IT platforms such as DMS coupled with mobility for last mile connectivity provide CPG firms with an opportunity to leverage them, improve supply chain visibility and thereby have a positive impact on the top line and bottom line. Enterprises which identify this opportunity early and implement it the right way would have a significant advantage. The implementation should include long-term visibility for it to fit into the business model and processes including the IT landscape with well-designed architecture for scalability, maintainability and seamless integration with other applications in the enterprise.

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