Real Value IT's White Paper

Theory And Practice Of Choice In Demand Fulfillment For Revenue Maximization

Revenue Management

Revenue Management is concerned with the demand management decisions and the methodology & systems required to make these decisions. These can be sales decisions (we are making decisions on where and when to sell, whom to sell and at what price) or demand management decisions (we are estimating demand and its characteristics and using price and capacity control to manage demand) (Talluri 2005). Though RM is formally practiced in industries like airlines, car rentals and hotels, RM tactics are useful to all industries. The extent of usefulness may vary from one industry to the other and depends on several factors. Revenue Management being an emerging discipline in other industries, the application software is yet to gain a foothold.

This is also due to "the strong association of RM with airlines and a certain myopia it has created inside the field. Many industries are potential candidates for adoption of RM as almost all businesses must deal with demand variability, uncertainty and customer heterogeneity." (Talluri 2005)

Revenue Operations – is the typical title under which RM is evolving in the industry

Application of RM techniques to maximize revenue from the already materialized demand gives rise to a few additional non-routine operations in the enterprise. Revenue Operations are those non-routine operations performed regardless of which organization subdivision: manufacturing, sales, customer service, the shipping etc. performs those operations and regardless of what label is affixed to these operations.

Lately there is a growing interest to have an exclusive sub-division entrusted with the responsibility to perform those non-routine operations or a group of people vested with the authority to coordinate the execution of those non-routine operative functions in some enterprises and in certain industries to maximize the revenue for an operating period. This trend is indicative of the future demand for Revenue Management application software.

Operations-Centric Revenue Management- a new breed of RM

For decades, "the Operations" in enterprises got socially conditioned to believe that the cost minimization is the only means within their reach to profitability and assumed all responsibility for maximization of revenues as "the sales" function only. A few enterprises, having run their course in the cost minimization path are now slowly beginning to realize the potential of Operations-Centric Revenue Management to profitability and the role "the Operations" can play to contribute to revenue maximization .

We, at **Real Value IT** view OCRM as a collection of techniques employed to maximize the realization of revenue from the already materialized demand. Unlike the conventional RM, OCRM does not rely on Pricing or Forecasting as the levers for revenue maximization. OCRM only uses capacity, segmentation and choice in demand-fulfillment as levers for revenue maximization in operational period.

OCRM utilizes a set of mathematical algorithms to determine the most appropriate operational recourse decisions in manufacturing, procurement, sales and distribution operational processes. Capacity in an operating cycle relative to opportunities available is evaluated to be selective of the opportunities in a peak period to maximize the revenue. Spill or loss of revenue usually occurs when there is an overflow of demand in an operating period. Spill is both minimized and / or controlled through the use of Operations-Centric Revenue Management.

Operations-Centric Revenue Management divides the order to cash cycle into certain sub-cycles. Each sub-cycle can have both system operations (e.g. allocation of short supply item inventory) and/or physical operations (E.g. assembly, picking, packing, transportation etc.) to be performed to realize the sale from the materialized demand in the operating period. Varied types of organizational resources are required to perform those operations.

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[1] Operating cycle is to be understood as the time period dynamically determined for batching before allowing production or service station to process.

[2] The word "bidder" has been used in figurative sense to refer to a demand element with a potential for generating certain revenue for the enterprise.

These operations do not require any special coordination mechanisms or recourse decisions in the off-peak periods. In the peak periods (e.g. End of quarter, seasonal spike etc.), these demand elements compete with one another for those resource units. These need to bid for those varied type of enterprise resource units in the currency called "revenue". OCRM can be viewed as a set of tools to conduct that bid on a regular basis to let the lowest bidders lose and the highest bidders win the operational revenue game. The end result is the increased revenues for the operating period for the enterprise.

Identifiable Peak Periods and Challenge with the No-Predetermined Start Time:

Challenge, however, is to determine the right time for beginning that bid process (neither so early that we may lose "yet to arrive" higher value bidder nor too late that "already arrived valuable bidder" leaves the auction). Real Value IT's OCRM is built upon the SAP ECC collective processing capabilities, it incorporates the revenue as the leading metric for operational level decisions and uses a set of mathematical algorithms to determine the optimal solution (a set of recourse actions and decisions). OCRM has been built upon theoretical foundations of conventional RM and with the practical insights the co-founder of Real Value IT gained as an SAP Consulting practitioner in Order to Cash space for a decade and half.

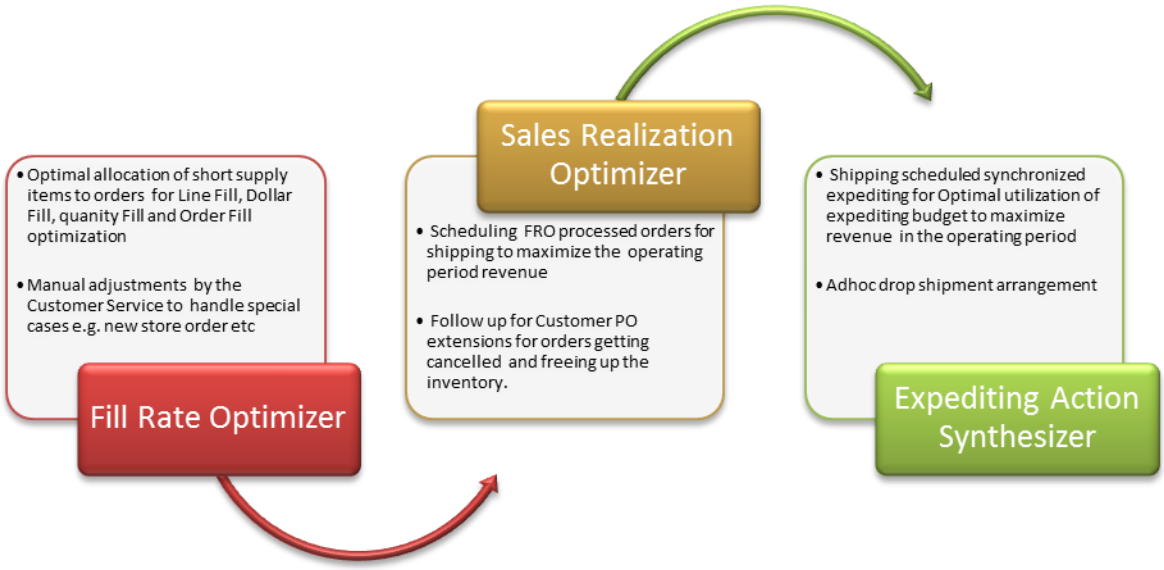
OCRM - A Three Stage Game (Retailers' Consumer Package Goods Supplier Example)

Companies, consumers and customers of products and services independently place orders at times and with quantities which correspond to their individual demand. Within the agreed delivery times producers, suppliers and service providers consolidate, separate and schedule the incoming orders and execute them at optimal times. The output rates of many production and service stations vary randomly. Unpredictable disturbances and breakdowns too cause stochastic fluctuations of lead times. The uncorrelated behavior of customers and companies and the deviations between ordered and produced quantities cause random processes within the whole economy (Churchman C.W 1957). OCRM is a mechanism to ensure that the rational decision making is called into play in the enterprise even in these circumstances. This is a means to conceive of an operational game plan to reduce the loss of revenue we would otherwise have to incur.

Central to the "Theory of Constraints" (Goldratt 1992) is the notion that a revenue generation system must face one or more constraints – limitations on its throughput capacity. If constraints did not exist, throughput could increase without limit, which we observe is not the case. A constraint is any factor that limits the throughput. The constraint may be physical (an element of productive capacity or some limitations of materials), external (lack of sufficient demand) or policy based (managerially imposed, such as single shift operation). (Huefner 2011)

The Revenue Management being an applied discipline, the application software for it needs to be polymorphic in order to be effective in different type of industries: Manufacturing, distribution and services. Three main components of OCRM developed for distribution industry with their key functionalities are shown in the schematics below. These components work in unison to create a domino effect in revenue maximization for the operating period.

Examples for Course and Recourse actions & decisions in the schematics below:



OCRM uses a two-pronged "Course" and "Recourse" approach to overcome the obstacles arising out of stochastic fluctuations of order, data and material flows for realizing the

total revenues from the materialized demand. Course is the process of continuing the routine operations to be performed ignoring the identified peak or operating fiscal period etc. Re-course is the process of determining the set of special actions, operations and revenue optimization processes to be invoked to do the best the production and service stations collectively can, under the given circumstances in the identified peak / operating period under consideration. The end result is far better revenue realization than what we can otherwise achieve through routine operations.

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Huefner, Ronald J. Revenue Management - A path to increased profits. New York: Business Expert Press, 2011.

Talluri, K., and van Ryzin, G. The Theory and Practice of Revenue Management. New York: Springer Science + Business Media, Inc, 2005.

About the Authors

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About Real Value IT.LLC

Real Value IT is driving innovation by expanding on conventional Revenue Management and promoting the adoption of Operations-Centric Revenue Management in manufacturing, distribution and service industries. OCRM as technology solution integrates with SAP ECC both at process and technical levels.

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