

# Introduction of “Integrated Supply Chain Management” for Manufacturing and logistic domain

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**Abstract-** Supply chain professionals are always evaluating possible inefficiencies and shortcomings of their supply networks to improve their ability to deliver to the customer. This is especially true in today's fast-paced, highly competitive environment where supply chain performance can provide manufacturers with a necessary edge. Some of the demand of “Current Market of logistic and services” are : 1] Value-added and Technology related services 2] Existence of Visibility 3] Minimal Cost-Control effect 4] ) Forecast of Risk free trading and last but not the least 5] Technology Specific Demand.

Our research paper has discussed how the “Integrated Supply Chain Management” has become one key which can be able to fulfill all the need of the current as well as the clients. By using its “Focusing”, Visibility, “Strategic Planning”, “Distribution of Knowledge Module” etc the solution become more robust and dynamic and can map all requirements.

## I. INTRODUCTION

In today's rapid world, the need of automated system is raising according to human requirement. People in this competitive world wants to manage a every things in an automated way to enhance and increase the “Capability of Record Processing”, “Searching of Required Item”, “Making reports on the selected item”, “ Querying the selected or particular item or items features”. Today's Logistic, Healthcare, Retail, Manufacturing, Food processing, Consumer Product are also trying to automate almost all the process, leaving a sort of option of “Human Interactions”. These “Human Interactions” requires for -- 1]“Providing Input”, 2]“Error Reduction or Cross Checking”, 3]“Placing Data/Information Form one “Environment of Application or Solution Package” to other unsupported “Solution Package” . 4] Configuration of “Certain Application”, “Server”, “Solution Package” or “Connection in between two separate “Solution Space”. These much of interaction also may raise “Time Issue” at the time of processing orders or transactions.

## II. CURRENT MARKET TREND OF “INTEGRATED SUPPLY CHAIN MANAGEMENT”

The worldwide market for supply chain management (SCM) software is expected to grow by 8.5% per year for the next five years, according to a study by ARC Advisory Group. The market was \$5.5 billion in 2005, and ARC predicts it will reach \$8.3 billion in 2010.

According to Gartner, spending on SCM software reached \$6 billion in 2007, increasing an eye-popping 17.6% over 2006. As was the case in 2005 and 2006, SAP remains the market leader with 22.4% market share, but Oracle and JDA Software have made significant gains as well. Market consolidation continues with 25 acquisitions and mergers reported for 2007, but certain best-of-breed vendors who continually deliver customer value in their applications remain as market participants, or market entrants.

The report reveals the following scenarios for all market giant of SCM:

1. SAP's SCM revenues grew by almost 32% in 2007 according to Gartner.
2. Oracle and JDA on the other hand present a different scenario in their 26% and 67% respective market growth rates.

In 2008, SAP now holds 22.4% of the supply chain management (SCM) market, totaling \$1.3 billion in revenue, up from 20% last year. Oracle holds 16%, totaling \$955 million in revenue, up from 15% last year

The companies have added couple of new attribute to their new solution space. The most important attribute is introduction of “Integrated Supply Chain Management System”.

The “Integrated Supply Chain Management System” provides “Service Provider” to incorporate with emerging markets and the growing availability of Software as a Service (SaaS). Companies are moving off spreadsheets, and SaaS is making SCM accessible to companies that otherwise couldn't afford it, Gartner says. Companies can also approach SCM by adopting modules specific to their needs.

“Integrated Supply Chain Management” incorporated another more important feature that all customer was seeking for during past one decade. All the logistic and mainly “Retail” organizations were wanting to

1] Track the data related with all phases and with external entities in a single repository and has the ability to provide a suitable secure interface.

2] No only that , the other main requirement was to integrated the data and “Positional Information” of goods to be store and accessible in system.

### III. WHY CUSTOMER LIKE “INTEGRATED SUPPLY CHAIN MANAGEMENT”

The “Integrated SCM” include the enhancements for tracking shelf life data related to consumer products, contract manufacturing for the high tech industry, and campaign planning for chemical and processing industries. They also added transportation management that addresses shipper and complex carrier requirements.

The focus has been on increasing network visibility and improved collaboration and planning across the business network. This collaboration across end to end business processes that span traditional company, department and software boundaries are now being demanded by customers.

The other new feature that made “Integrated Supply Chain Management” more likeable solution for the customer are as follows:-

- **Closer collaboration with business partners to improve visibility**
  - Enhanced capabilities for outsourced manufacturing in SNC to improve supply network inventory and work order collaboration.
  - Functionality for supplier collaboration enables suppliers to create Web-based invoices, leading to quicker response times for improved product turnaround.
  - Enhanced replenishment collaboration (vendor-managed inventory) with new and broader capabilities and a unique menu approach displayable in various levels of detail, depending on the supplier’s needs.
- **Maximized workforce planning to increase productivity**
  - Enhanced labor management functionality to maximize the productivity of the warehouse workforce with out-of-the-box reporting, designed for direct and indirect labor.
- **Enhanced planning to improve efficiency**
  - Enhancements to advanced planning and optimization, mainly in supply network planning as well as production planning and detailed scheduling to help businesses create new innovative planning scenarios that optimize capacity utilization and help ensure timely delivery.
  - New features such as capacity reservations help shorten delivery times to strategic customers.
- **Integrate enterprise service-oriented architecture (enterprise SOA) with “Integrated SCM:** Integrate the functionalities of SOA with the new release will be delivered as services, enabling customers to deploy and adapt solutions specifically to their individual business needs. Customers will be able to, for example, deploy functionalities such as supply network collaboration and extended warehouse management without installing and deploying the complete SCM solution. This delivery

approach will enable rapid deployment and faster return on investment.

- **Increased customer satisfaction** – It offers a common information framework that supports communication and collaboration, Integrated SCM enables you to better adapt to and meet customer demands.
- **Compliance with regulatory requirements** – Organization can track and monitor compliance in areas such as environment, health, and safety with “Integrated SCM”.
- **Improved cash flow** – Information transparency and real-time business intelligence can lead to shorter cash-to-cash cycle times. Reduced inventory levels and increased inventory turns across the network can lower overall costs.
- **Higher margins** – With Integrated SCM, company can lower operational expenses with more timely planning for procurement, manufacturing, and transportation. Better order, product, and execution tracking can lead to improvements in performance and quality – and lower costs. Organization can also improve margins through better coordination with business partners.
- **Greater synchronization with business priorities** – Tight connections with trading partners keep supply chain aligned with current business strategies and priorities, improving your organization's overall performance and achievement of goals.

### IV. A CURRENT “SURVEY” ON INTEGRATED SUPPLY CHAIN MANAGEMENT

- A survey involving 259 manufacturing firms from various industries in the United States and Europe identified the following supply chain initiatives that organizations intended to implement over the next two years: The following table is describing the investment plan of organization in “Integrated Supply Chain Management”:

Area	Percentage
Demand planning and forecasting improvements System	18
Customer service improvement System	23
Network optimization and management	14
Transportation optimization and management	7
Warehouse Facility Management	9
Order processing System	12
Strategic System	13
Consolidation of facilities management	4

Current Survey on Customer Likings on “Integrated Supply Chain Management”:

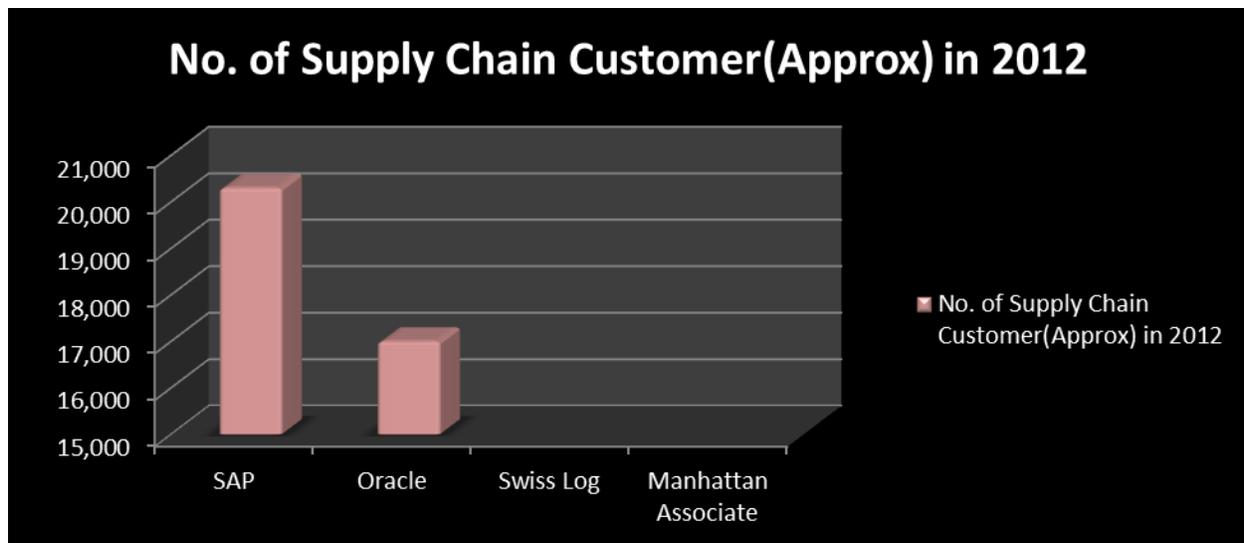
Integrated “Supply Chain Management” has occupied all most a major revenue sectors for the logistic and in retail industries. There is a growing number of customer who believes on the integration of supply chain management with the other modules called “ERP”, ”Ware house management”, ”Labor Management”, ”Transport Management” etc.

The total number of customer those who are involved of using “Supply Chain Management” are about more than a lack. Among them now approximately 40,000 of customer directly related with the services of either “Integrated Supply Chain Management” or at least using most of the modules of “Integrated Supply Chain Management”. Among them some of the names are *BMW, Colgate-Palmolive, Hindustan Unilever,*

*Novelis Switzerland, Robert Bosch, Sentipharm, Siemens Power Generation* etc. Table below is providing the number of customer of “Integrated Supply Chain Management” have:

Solution Provider	No. of Supply Chain Customer(Approx) in 2009	No. of Supply Chain Customer(Approx) in 2009
<b>SAP</b>	14,500	20,300
<b>Oracle</b>	10,000	17,000
<b>Swiss Log</b>	3000	No Data available
<b>Manhattan Associate</b>	5000	No Data available

**Number of customer for each “Integrated Supply Chain Solution” provider. Below in chart**

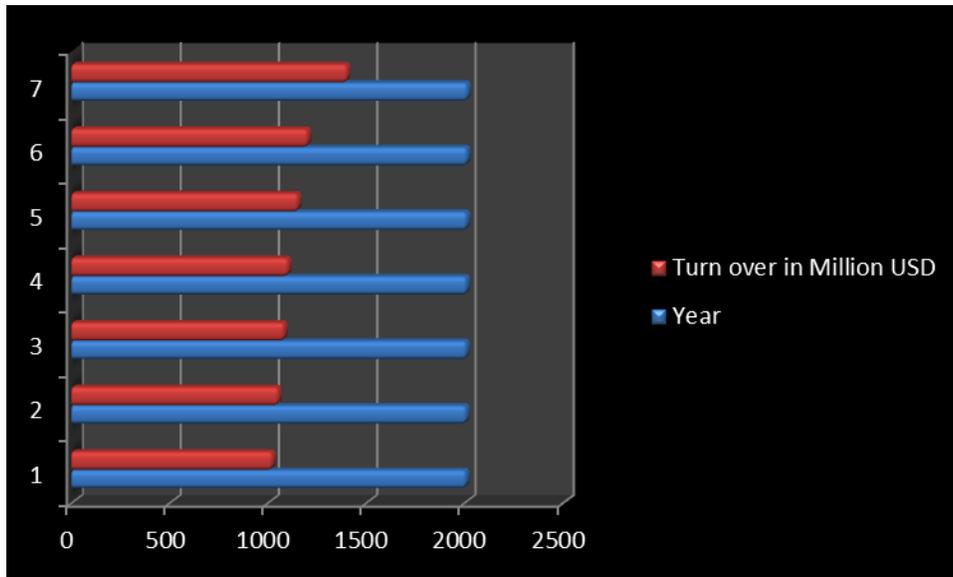


#### V. INTEGRATED SUPPLY CHAIN MARKET IN EUROPE

The “Integrated Supply Chain Market” has brought a big revolution in customer centric environment. It is giving customer a bunch of solution in a affordable price. Even it is also offering customer all the option to choose the required module for the solution. The “Integrated Supply Chain Concept” first born in

Europe and spread across the world. It has a environment independent functional ability to work on any platform. The following table shows the revenue has earned by “Integrated Supply Chain Solution provider in 2005-2009 in Europe. The revenue in 2010 was around 1200 million USD which is around 3% from 2009. In 2012, this revenue is expected to be 1400 million USD around.

Year	Turn over in Million USD
<b>2005</b>	1020
<b>2006</b>	1050
<b>2007</b>	1080
<b>2008</b>	1100
<b>2009</b>	1150
<b>2010</b>	1200
<b>2012</b>	1400



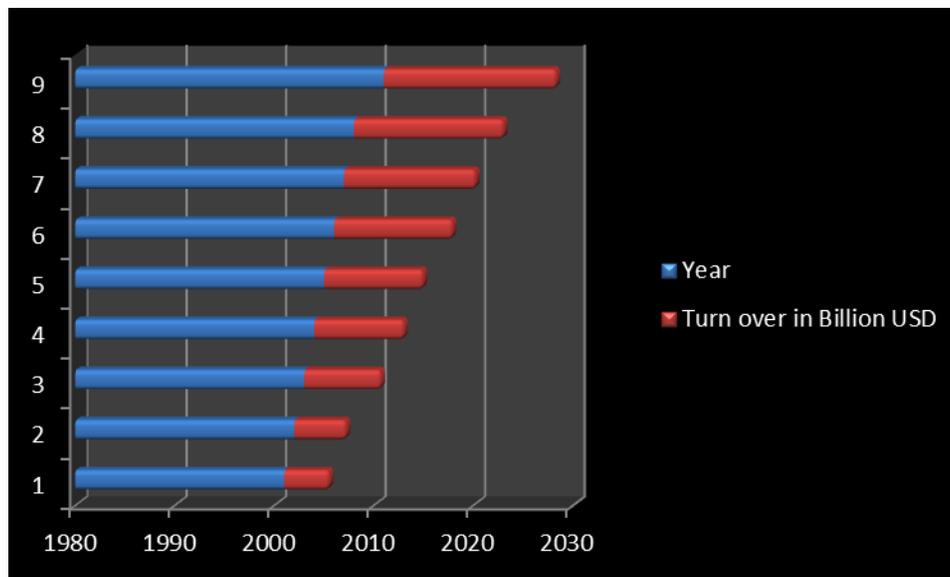
**Table and graph above represent the revenue earned by “Integrated Supply Chain Solution provider in world in 2001-2011**

**VI. INTEGRATED SUPPLY CHAIN MARKET IN ALL OVER THE WORLD**

The “Supply Chain Market” in world was 4.5 billion USD as per growth, which increased about 5.2 billion USD about 0.23% The growth up to 2006 was 7.7, 9, 9.93, 11.87 billion

USD respectively. The growth rate was nearly vary from 0.3-0.85%. But in late 2006 the concept of “Integrated Supply Chain Management” has evolved and the growth rate jump from 13 to 15 billion USD ; growth jump 1.5%. Where in 2011, the growth rate become bit slow and came to 17.3 billion USD rated 3.8%.

Year	Turn over in Billion USD
2001	4.5
2002	5.2
2003	7.7
2004	9
2005	9.93
2006	11.87
2007	13.2
2008	15
2011	17.3



**VII. RESEARCH METHODOLOGY**

We have work with the sales team in major IT providers in India. Here we come to know why IT industries are interested to implement “Integrated Supply Chain Management” to face the global changes in service providing areas and compete with other firms. How the IT/ITES industries are mapping them with the

changing happening through “Integrated Supply Chain Management”.

During this period we also came to know what process are use to ““Integrate the Supply Chain Management” and what tools are being used. What are the phases of “Integrated Supply Chain Management, How it can be implemented in a project etc.

Here we come to know what are the new phases that most of the organizations are implementing depending on either capability, verticals or economical condition. How a company is

measuring the require changes after implementation of “Integrated Supply Chain Management”? What are the advantages of “Integrated Supply Chain Management”? How the new technology and approach will help to implement “Integrated Supply Chain Management” in Business.

## VIII. CONCLUSION

Future supply chains are likely to be more dynamic in nature, and consist of collaborative value networks in which productivity and efficiency are constantly maximized. Purchasing firms need to ensure that costs and risks are equitably shared across the supply chain. Risk management has become a strategic imperative – particularly for manufacturers operating global supply chains.

The main goal of this research is to make understand people how the “Integrated Supply Chain Management System” used to work and why customer like it to integrated with their entire company based solution. Here are some focuses on “Integrated /supply Chain Management”.

The first liking of the customer is its “Risk Reduction” wings which can take input from any of the data repositories in a system with making interface with any kind of application, irrespective of Web or Console or stand alone applications etc.

Second most liking of customer its “Strategic Advantage Providing Module” and “Planning & Forecasting Module” which helps us to implement a strategic partnership with client and vendor. Helps to make a full utilized plan module along with forecasting system. The “Decision Making System” plays here a big role.

The third and fore most important feature all the modules are integrated and able to incorporate with any other solutions hence it is more cost effective and “Client Centric Solution Oriented”.

Advancements in IT have significantly improved SCM but there continues to be enormous potential for further development. The business world most likely shifting from “Traditional Supply Chain management” to “Value Added Supply Chain Management” and the day is not so far where the “Integrated Supply Chain Management” will replace the “Traditional Supply Chain Management” with more scope and enhanced solution and with “Value added Services.

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## X. LITERATURE REVIEW

Dr Parimalendu Bandyopadhyaya, Joydeep Chowdhury examined various aspects of the currently running “Supply Chain Management” system for the logistic and manufacturing companies. The outcome of the research is this re currently running system needs to be integrated with other “Line of Business” system to capture the changing aspects of organization, market and demand & supply. It can leads to easy monitoring to for higher management of current market scenarios and stock. It not only provide better solutions towards the growth and better manage of item stock, but also helps to manage the “Back office from font proceeding units” in short “the store can be manageable from remote”. The other valuable point is the system not only provides the better analytical result for today but provides the future aspects of organization and helps management to make decision according to that.

## REFERENCES

- [1] Pålsson, H., & Johansson, O. (2009). Supply chain integration obtained through uniquely labelled goods: A survey of Swedish manufacturing industries *International Journal of Physical Distribution & Logistics Management*, 39 (1), 28-46 DOI: [10.1108/09600030910929174](https://doi.org/10.1108/09600030910929174)
- [2] Christopher, M., & Lee, H. (2004). Mitigating supply chain risk through improved confidence *International Journal of Physical Distribution & Logistics Management*, 34 (5), 388-396 DOI: [10.1108/09600030410545436](https://doi.org/10.1108/09600030410545436)
- [3] Hanafi, J., Kara, S., & Kaebernick, H. (2008). Reverse logistics strategies for end-of-life products *The International Journal of Logistics Management*, 19 (3), 367-388 DOI: [10.1108/09574090810919206](https://doi.org/10.1108/09574090810919206)
- [4] Masson, R., Iosif, L., MacKerron, G., & Fernie, J. (2007). Managing complexity in agile global fashion industry supply chains *The International Journal of Logistics Management*, 18 (2), 238-254 DOI: [10.1108/09574090710816959](https://doi.org/10.1108/09574090710816959)
- [5] Cho, J., Ozment, J., & Sink, H. (2008). Logistics capability, logistics outsourcing and firm performance in an e-commerce market *International Journal of Physical Distribution & Logistics Management*, 38 (5), 336-359 DOI: [10.1108/09600030810882825](https://doi.org/10.1108/09600030810882825)
- [6] Spekman, R., & Il, P. (2006). RFID: from concept to implementation *International Journal of Physical Distribution & Logistics Management*, 36 (10), 736-754 DOI: [10.1108/09600030610714571](https://doi.org/10.1108/09600030610714571)

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