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FINANCIAL SUPPLY CHAIN MANAGEMENT

Dr. Mohamed Baymout, Assistant Professor, OPIM Department,
College of Business, Effat University, E-mail : mbaymout@effatuniversity.edu.sa
Jeddah, Kingdom of Saudi Arabia

Abstract - Financial supply chain management consists of the holistic and comprehensive activities of planning and controlling all the financial processes both within a company and with the external parties. In contrast to physical supply chain, financial supply chain focuses on the flow of cash and other related financial transaction rather than the flow of physical goods. There are parallels in physical supply chain, information supply chain and financial supply chain. From the moment a purchase order is created, the information need to be transferred to the next parties. After the physical goods were received from suppliers, payment will be sent. The whole purchasing process consists of all three supply chains; effectively managing the supply chains can increase efficiency and accuracy. The traditional financial supply chain consists of many paper based document and paper forms, especially when international trade happens. Paper based purchase orders, invoices, checks and letter of credits are heavily involved; human mistakes and error inputs are common; as a result, there is decrease the efficiency of the company's working capital management. The current financial supply chain management aims at eliminating the paper based documents, and improving the integrity of parties being involved, such as financial institutions, logistics, and suppliers. The two main cycles involve in the financial supply chain management are P2P (Purchase-to-pay) and O2C (order-to-cash). These two sets of processes and the relationship between them create the company's working capital requirement. Treasurer should manage and integrate both cycles seamlessly in order to maximize the cash on hand during the operating cycle. Integrating ERP system with financial supply chain management helps the information flows to internal parties and external parties easily, and improves the integrity and quality of the financial information being transmitted. In this report, a case study using SAP ERP system in managing financial supply chain will be discussed in detail.

Index Terms— Supply Chain Management (SCM), Financial Supply Chain Management (FSCM), Purchase to Pay (P2P), Order to Cash (O2C), Enterprise Resources Planning (ERP).

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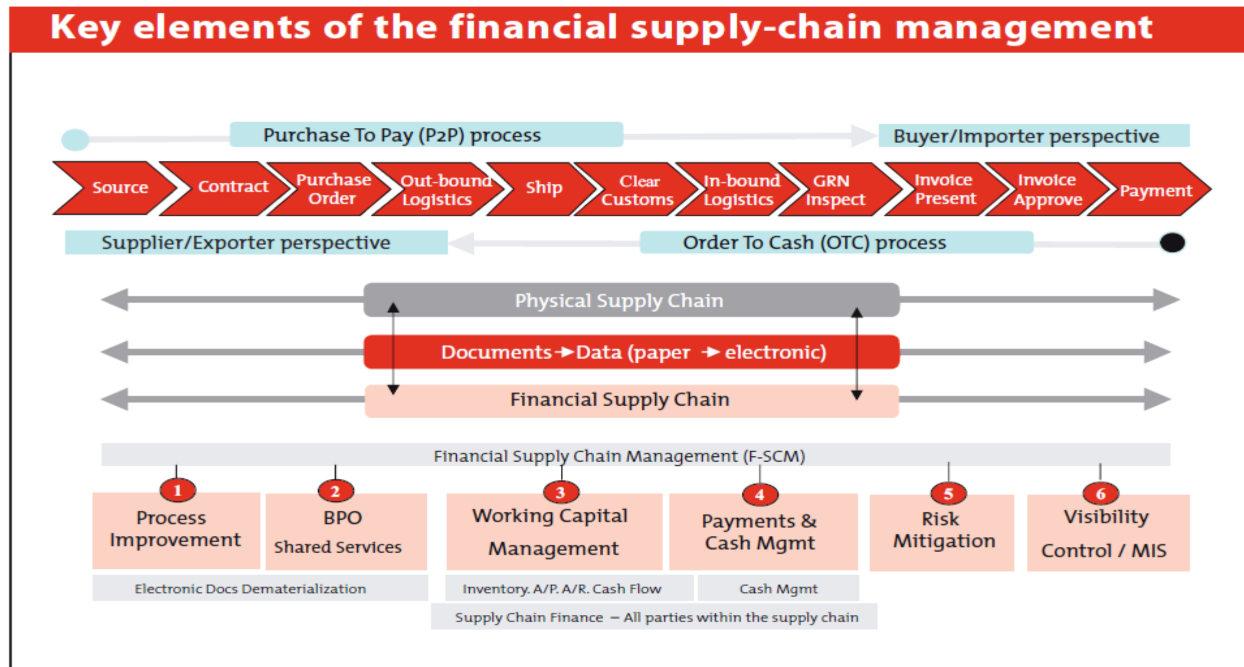
1.0 INTRODUCTION TO FINANCIAL SUPPLY CHAIN MANAGEMENT

1.1 Financial Supply Chain Management Defined

Before we start describing the concept of financial supply chain management, we have to understand the concept of supply chain management. Traditionally, SCM is used to monitor the move of the physical goods in both directions: purchase to pay (P2P) for the buyer or order to cash (O2C) for the supplier. SCM is now widely used in most organizations due to its competitive advantage in decreasing the cost of the goods and improving customer service. SCM involves different functions that have different priorities. For example, supply-chain teams focus on reducing the total cost of fulfillment whereas the buyer focuses on the unit price reduction. Therefore, the organizations start shifting to the FSCM.

According to Euro money Publications plc, "FSCM is a set of cross-functional disciplines that manage key processes around risk, working capital and information. The emphasis is on end-to-end process flows" (Fallon, Sergeant, & Ensor, The 2007 guide to Financial Supply-Chain Management P.9, 2007). They also describe FSCM as "the management of the cash flowing between parties within the supply chain, whether in the form of a payment or short-term finance."



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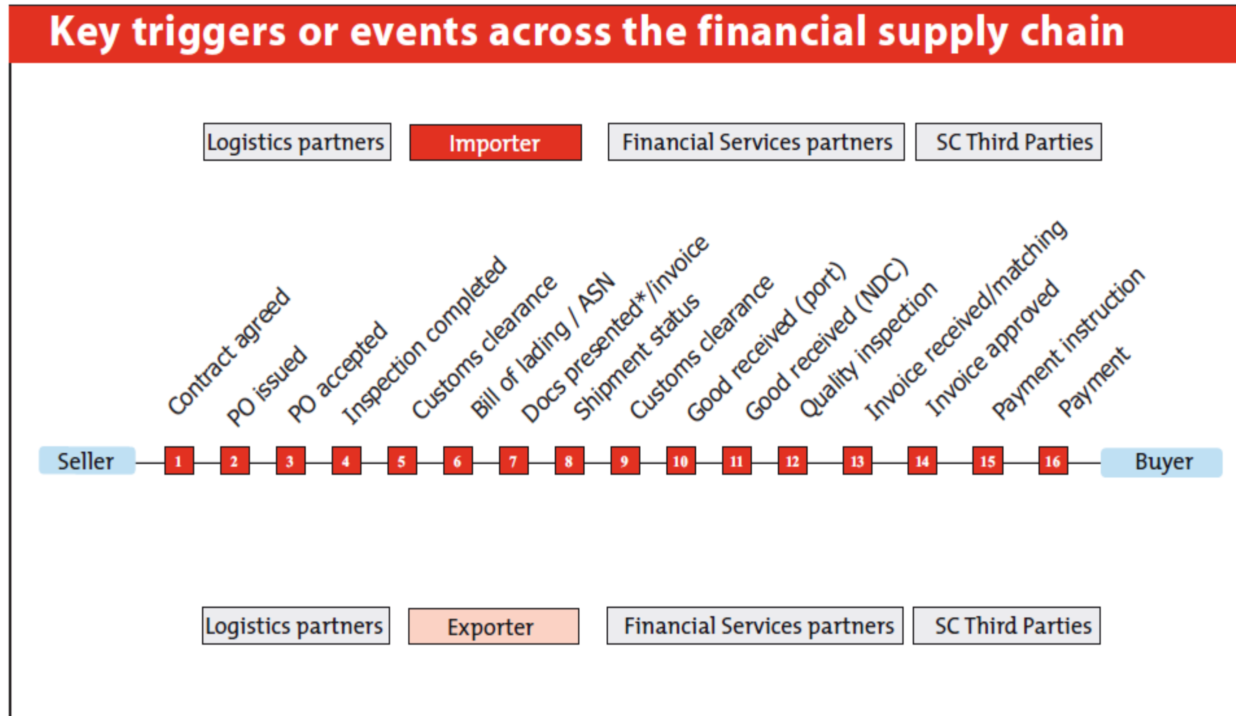
It is important for each company to setup a cross-functional team to work together to exploit the right opportunity to improve their performance.

1.2 Importance of Financial Supply Chain Management

The cost of finance, insurance and transactions usually account for approximately 5% of the cost of the unit price. Therefore, the organizations have to improve their managing of the end-to-end financial supply chain.

There are two reasons that create receptive climate for FSCM in organizations. The first reason is the improved network technology that leads to improved visibility through the physical supply chain. The other reason is the deep understanding of the end-to-end processes and the cooperation inside and outside the organization. The real challenge for finance, treasury and banks is to convince businesses that improvements in financial supply-chain processes will result in a lower cost of goods sold, higher productivity and better management information (Fallon, Sergeant, & Ensor, The 2007 guide to Financial Supply-Chain Management P.11, 2007).



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2.0 TRADITIONAL FINANCIAL SUPPLY CHAIN MANAGEMENT

For decades, organizations have been depending on paper-based processes for international trades, which may lead to human mistakes. Organizations have depended on risk management instruments such as letters of credit and collections. In the paper-based method, for example to manage accounts payable in the supply chain, the following process typically occurs:

- The inventory system automatically notifies the buyer to place an order, or, after querying the inventory system, the buyer determines that an order needs to be created
- The buyer enters data onto the screen of a purchasing system to create the PO, prints and mails it
- After several days, the vendor receives the PO and manually enters it into the sales order system
- The vendor prints an invoice and encloses it with the shipment and/or sends it separately by mail
- The buyer manually enters the invoice into the Accounts Payable system
- The exchange of paper documents can add a week to the process. If there are errors caused by manual data entry, the time can be greatly increased.

3.0 CURRENT FINANCIAL SUPPLY CHAIN MANAGEMENT

Many organizations are using technology to improve their processes. Now there is tendency towards reducing the use of papers and shifting to electronic data and documents. The networked technology has a great effect on the way the companies manage their international trades and supply chain. It also allows the treasurer to effectively manage the risk and the financial flows.

- EDI technology allows transactions between different system and data format

to automatically complete the accounts payable and accounts receivable processes.

- System monitors the working capital/cash flow inside the supply chain in real time.

4.0 FSCM ELEMENT – WORKING CAPITAL MANAGEMENT

There are two main concepts of working capital management: Gross and Net. Gross working capital means the total assets a company has such as cash, checking and savings account balances, accounts receivable, short-term investments, inventory and marketable securities. Net working capital, as known as working capital, means the difference between current assets and current liabilities. So working capital management is defined as "the management of current assets and the entire current liabilities, as also a portion of long-term or deferred liabilities, which go to meet the financial requirements of working capital" and "Working capital management is the part that sits between the purchase-to-pay and order-to- cash cycles" (Kristofik, Kok, & Vries, FINANCIAL SUPPLY CHAIN MANAGEMENT – CHALLENGES AND OBSTACLES P.134).

Working capital management aims to keep the company able to continue its businesses and operations, to meet the obligations of the firm, and to satisfy short-term debt without excessive expenses.

Companies will benefit from managing cash flows wherever they are required. In other words, a company will have trouble paying back creditors in the short term, or even will go bankrupt in a long term run, if its current assets are less than current liabilities. On the other hand, having too much working capital is not always a good thing for the operations of a company , because it may means that the company has an excess of inventory or that managers don't know how to invest their cash properly.

Four primary aspects of working capital management are cash management, inventory management, debtors management and short term financing.

- Cash management
  It refers to a wide range of finance that includes assessing market liquidity, cash flow, and investments. What companies try to do is to reduce cash holding costs, on the other hand to meet expenses every day.
- Inventory management
  It is related to overseeing and controlling of the ordering, storage and use of components that a company will use in the production of the items it will sell as well as the overseeing and controlling of quantities of finished products for sale. Successful inventory management allows for uninterrupted production but avoid inventory glut and shortage.
- Debtors management
  Debtor's management is to minimize the loss of risk due to bad debts. One of the most important debtor's management elements is credit policy that guides management the methods about controlling debtors and balancing liberal and strict credit. So it's vital to identify some appropriate credit policies for a company such as credit terms attracting customers.
- Short-term financing
  Short-term financing is one of the most important parts of working capital management. By identifying the appropriate source of finance, organizations are able to receive financing

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to optimize cash flow and investment to support company's strategies

4.1 Financing (Supply Chain Financing)

The Aberdeen Group defines Supply Chain Financing as: "A combination of trade financing provided by a financial institution, a third-party vendor, or a corporation itself and a technology platform that unites trading partners and financial institutions electronically and provides the financing triggers based on the occurrence of one or several supply chain events." (Kristofik, Kok, & Vries, FINANCIAL SUPPLY CHAIN MANAGEMENT – CHALLENGES AND OBSTACLES p.135)

The goal of supply chain finance is to enhance financial efficiency of the supply chain, thus to reduce working capital to a optimistic level through factroing or reverse factoring products. Some supply chain finance products have been provided by banks for awhile. There is a traditional form of supply chain finance "Asset-Based Financing", known as "Factoring", which means supplier can get 70-85% of the accounts receivables amount in advance from a third the factor based on selling his invoices. Moreover, another supply chain finance variant is called "Reverse Factoring". It's a kind of buyer-led financing instead of suppliers-led financing. As to the main difference between these two financing means is the guarantee object. In the factoring process, financial insititutions concentrate on one supplier and many buyers, while they focuse on buyer when they offer financial servies,

The benefits across the supply chain are huge. In the perspective of buyers, lower prices and greater cash flexibility due to longer payment terms; in other words, buyers can get extension of the Days Payables Outstanding (DPO). In the mean time, supply chain finance enables sellers to receive financing with lower rate from bank depending on the high credit rating of buyers, which will result in lowering the Days Sales Outsanding (DSO).

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Benefits across the supply chain as follows (CGI Group Inc., 2007):

BUYER	SELLER	BANK
• Reduce the cost of goods purchased	• Reduce the cost of capital through improved Days Sales Outstanding (DSO) and lower finance costs	• Build stronger, collaborative relationships with customers
• Reduce working capital requirements through improved Days Payable Outstanding (DPO)	• Generate flexible, predictable cash flow	• Enhance customer retention
• Enjoy a more stable supply base	• Gain access to low-cost finance rates	• Increase bottom line by supporting customers' entire supply chain from end-to-end
• Improve relationships with sellers	• Acquire more secure source of Working Capital	• Increase reach of Trade Finance organization
• Improve visibility across the financial supply chain	• Gain visibility into the payment process	• Expand profile of Trade Finance organization

4.2 Funds Management

Funds management, as a very important component in SAP ERP solutions, also plays a vital role in financial supply chain management, especially in working capital management. It provides all the functions for reproducing budget structure.

What's more, funds management is aimed to budget all revenues and expenditures, monitor funds movements in the future, and to prevent overspend.

5.0 CHALLENGES OF FINANCIAL SUPPLY CHAIN MANAGEMENT

Many companies want to manage their financial supply chain effectively, however, implementing a system and managing the external parties are often difficult and lead to many problems. Companies want to make the collaboration smoother in the financial supply chain by automating the business processes between departments and external parties like suppliers. But, this automatic process requires all parties to integrate into one electronic system to keep track with the invoices and payments. Therefore, if one of the external parties is still using the paper based invoicing, the financial supply chain cannot be efficiently managed. The cost will be higher for the companies, because they need to handle both the electronic system and paper based system. Moreover, with the use of paper processing, the payment can often cause huge delays, therefore, worsen the business relationship between parties.

Effectively manage the working capital allow company to achieve higher current ratio and better cash management. Treasurers need to make sure that the companies should always meet the minimum liquidity level in order to ensure daily operations. Supply Chain Financing is the common

method used by the companies. However, to optimise the process of supply chain financing, banks would need to involve in the process. Banks need to check the credit of the companies in order to provide financing on the assets. Thus, banks need to evaluate the risk of the companies by looking at the financial positions. Many SMEs do not have structured financial statements, so it is costly for companies to prepare audited financial statements for banks.

6.0 BUSINESS CASE - SAP FINANCIAL SUPPLY CHAIN MANAGEMENT

SAP Financial Supply Chain Management (FSCM) helps streamline and automate the whole financial process. It integrates with other SAP components such as Finance (cost and fund management), Logistics (Sales and distribution, production planning and material management), and BI (reporting and analysis).

6.1 P2P Cycle – Accounts Payable

In SAP system, the purchase-to-pay (P2P) cycle (also named as material management) deals with the accounts payable of an organization. During the P2P cycle, the Organization selects, receives and pays for the raw materials, semi-finished or finished products, or services in order to accomplish its business operations (Kristofik, Kok, & Vries, FINANCIAL SUPPLY CHAIN MANAGEMENT – CHALLENGES AND OBSTACLES P.136, 2012).

From Purchaser side, the first step in P2P process is to create purchase requisition. From financial perspective, accounting assignment must be filled, such as GL Account, Cost Center, Fund, etc. Fund or Cost Center or Both deal with working capital or cash flow. At this step, from budgeting perspective, system is able to check out if there is enough Fund to pay what to purchase. After approval, purchase requisition can be converted to a legal purchase order (PO) with the same financial data. Also, payment term will be agreed in the PO. Once get the shipment, goods receipt (GR) will be created. Before an account payable occurs, there is a process called three-way match. It means that finance has to make sure that PO, GR and customer's invoice are the same. Once confirmed, an incoming invoice will be created to record an accounts payable. Finally, finance pays what agreed on payment term.

During the P2P process, the following elements are under consideration:

- Days Payables Outstanding (DPO) is used to measure the average number of days

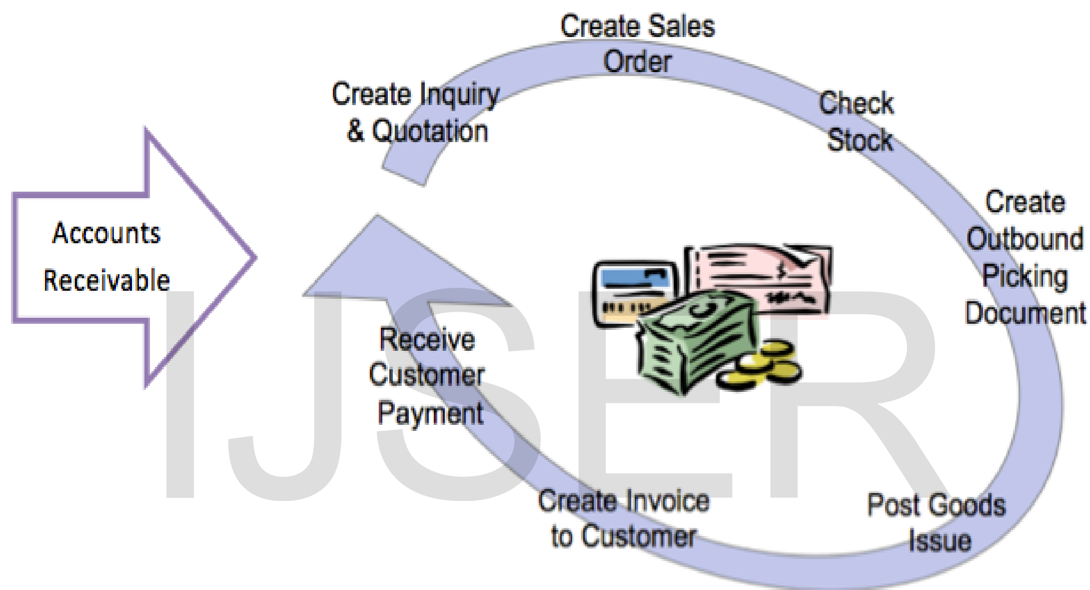
taken by an organization to pay its creditors in a given period
- Balance between short/over of inventory

- Strategically managing payments to ensure that the organization is able to take advantage of early payment

6.2 O2C Cycle – Accounts Receivable

In SAP system, the order-to-cash (O2C) cycle (also named as sales and distribution) deals with the accounts receivable of an organization. During the O2C cycle, from a supplier's perspective, O2C begins when a quote is prepared for a customer and ends when payment has been received and reconciled with the appropriate invoice (Kristofik, Kok, & Vries, FINANCIAL SUPPLY CHAIN MANAGEMENT – CHALLENGES AND OBSTACLES P.137, 2012).

From supplier side, financial recode will be based on sales order, goods issue to customer, and invoice to customer to confirm accounts receivable.



During the O2C process, the following elements are under consideration:

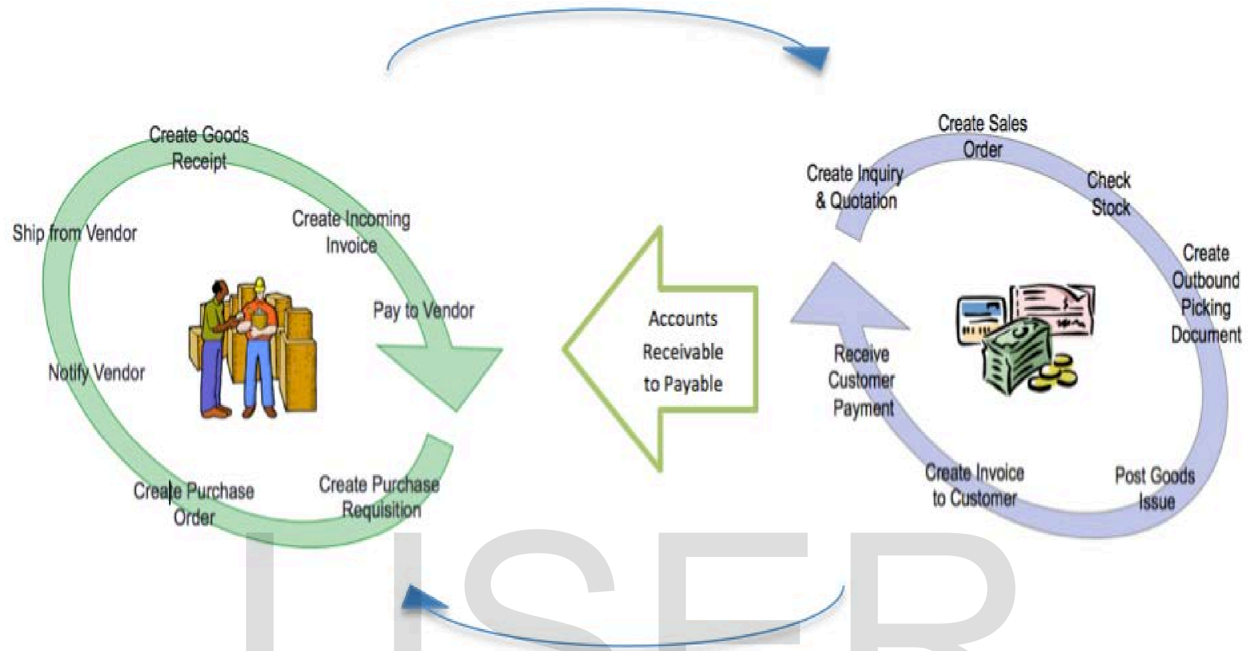
- Day Sales Outstanding (DSO) is used to measure the average number of days taken by an organization to collect payment from completed sale in a given period
- Prioritising collections is more valuable than payments, because receivables are sometimes the largest or second largest asset on balance sheets
- An organization usually does not know beforehand which receivables will become uncollectible, so receivables need to be shown at net value
- If sales is decreasing, DSO would tend to fall even if there is no change such as with seasonal sales. Finance should avoid to be misled

6.3 Streamline FSCM by Integration of Account Payable and Receivable

SAP FSCM integration helps streamline the O2C and P2P processes. It results faster cash collections, lowers operating costs, enhances cash flow predictability, and increases automation and standardization.

6.3.1 Idea Model of Accounts Payable and Receivable

The idea model is that the collections of an organization can cover payment in any given period. For example, a retail store sells its products and collects money from customers, and then uses the money to order products from suppliers and sells to customers again. The working capital sits between P2P and O2C cycle.



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6.3.2 Collections and Dispute Management to Streamline the Idea Model

Collections and Dispute Management mainly focuses on increasing the cash flow in the accounts receivable area thereby increasing the working capital. Because customer payments are highly unstable and volatile in nature that it makes it difficult to predict receivables, the Collections and Dispute Management system helps to (SAP):

- Reduce DSO
- Resolve customer disputes quickly
- Gain insight into Customer Disputes
- Track and follow up receivables
- Increase payment on time
- Increase working capital
- Retain valuable customers

Some of the most important features of SAP Collections and Dispute Management	
Collections Management	*Dispute Management*
• Improving collection success rates by proactively identifying, prioritizing and targeting the most	• Controlling and streamlining dispute case processes

critical past due accounts • Minimizing collections workload and resource cost • Monitoring collections	• Centralizing component for handling dispute cases • Integrating to financial and logistical processes • Detecting quality issues, controlling workload, and tracking dispute cases

6.4 Streamline FSCM by Fund Management for Public Sector

In many organizations, for example public sector, revenue collection is centralized. Any department expenses will be fund driven in SAP system. That means if funds is not available, for example, the purchase will not happen because at the purchase requisition and purchase order stages, the validation for fund will be automatically checked by system; if funds is available, P2P process will help streamline the FSCM.

7.0 CONCLUSION

The paper defines FSCM as to manage key processes around risk, working capital and information between parties within the supply chain. Traditionally, FSCM is paper-based and managed in different functional departments. Currently, due to advanced networking and EDI technologies, FSCM breaks the functional silos by crossing different functional departments to complete end-to-end business processes in real time.

To manage supply chain financially, the most important element is working capital that including cash management, inventory management, debtors management and short term financing. In public sector, from cash flow perspective, the funds management must be in place for any transactions.

Finally, as "working capital management is the part that sits between the P2P and O2C cycles", SAP case analysis provides detail explanation of how FSCM is working in an ERP system. P2P represents accounts payable, and O2C represents accounts receivable that has mainly been dealt by Collections and Dispute Management.

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