THE FINANCIAL SUPPLY CHAIN MANAGEMENT: A RESPONSE TO THE NEW ECONOMY – CRISIS AND RECESSION ECONOMY

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Abstract: Supply chain- all the organizations and processes which refer to products and services from the view of buying organization. Typically covers everything related to raw materials and ingredients to consume. Supply chain management includes planning and the management of all activities engaged in supply and procurement, also conversion of all the logistics management activities. The ensemble of organizations, processes and informational activities, of products and financial funds is targeted to meet the satisfaction of the final consumer which is the determinant actor. Performance management is a continuous and evolutionary process in which personal skills and organizational parameters are improved over a period of time and its purpose increases individual and organizational effectiveness. Globalization and the intensity of competition for both large and small organizations has created an environment where there is relentless pressure to reduce the cost of sales and improve customer service. Financial Supply Chain Management (FSCM) is the management of the cash flowing between parties within the supply chain, whether in the form of a payment or short-term finance. The focus is on the average cost of working capital or finance for the total supply chain and working out how to reduce finance costs across the entire chain. One approach to FSCM is to calculate all finance-related costs embedded within the end-to-end supply chain and determine how best to reduce them without redistributing risk to the weaker members. Reengineering of the Supply Chain became in stages: reorganization of key processes, analysis of work processes, and amelioration of processes.

Keywords: financial supply chain, performance management, reengineering, key process, working capital, finance cost

1. Introduction

It appears that everywhere in the world where we meet leaders of the business and political world, practically everybody feels that this age is different [1].

As supply chain managers develop new models and adapt existing ones, they must remain open to new thinking and make the effort to innovate around supply chain processes. Some emerging models demand a lot of work on the part of the supply chain manager, given that they diverge radically from traditional thinking.

Red oceans represent all existing business sectors and they are well known to all the companies that operate in them. Boundaries between sectors are well defined and accepted by competing organizations, and all parties know the rules of competition. In such an environment companies try to overcome competitors to acquire a bigger portion of the existing demand, and, because those markets are becoming increasingly crowded, the potential for growth and profit is continuously shrinking. Products rapidly become
commoditized, and fierce competition turns the ocean red with the blood of competing enterprises.  

*Blue ocean strategy* challenges companies to break out of the red ocean of bloody competition by creating uncontested market space that makes the competition irrelevant. Instead of dividing up existing – and often shrinking – demand and benchmarking competitors, blue ocean strategy is about growing demand and breaking away from the competition [2].

Value innovation is a new way of thinking about and executing new strategy that results in the creation of a blue ocean and a break from the competition [3]. Importantly, value innovation defies one of the most commonly accepted dogmas of competition-based strategy: the value-cost trade-off. It is conventionally believed that companies can either create greater value to customers at a higher cost or create reasonable value at a lower cost. Here strategy is seen as making a choice between differentiation and low cost. In contrast, those that seek to create blue oceans pursue differentiation and low cost simultaneously [2].

When the world is flat, the company both can and must take advantage of the best producers at the lowest prices anywhere they can be found. If you don’t, your competitors will. So global supply chains – that draw parts and products from every corner of the world – have become essential for both retailers and manufacturers [4].

Supply-chaining is a method of collaborating horizontally – among suppliers, retailers, and customers – to create value. Supply-chaining is both enabled by the flattening of the world and a hugely important flattener itself, because the more these supply chains grow and proliferate, the more they force the adoption of common standards between companies (so that every link of every supply chain can interface with the next), the more they eliminate points of friction at borders, the more the efficiencies of one company get adopted by the others, and the more they encourage global collaboration [5].

Supply Chain Management (SCM) as defined by the Council of Supply Chain Management Professionals (CSCMP): “Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. It also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the logistics management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance and information technology.” [6].

In the 90s, the initially adversarial working way, “win lose”, was replaced with “working together” [7].

Efficient Consumer Response (ECR) is a strategic initiative, working to overcome traditional barriers between trading partners, thus eliminating internal barriers that result in costs and time that add little or no value to consumers. It is focused on the application of leading edge management methods and available technologies to reduce costs and response times, while increasing the quality of products and the service that are provided to consumers [8].

In Europe, the ECR Executive Board has defined the mission of ECR to be: “Working Together to Fulfill Consumer Wishes Better, and Faster and at Less Cost”[9]

Integrated Suppliers focuses on the upstream supply chain, the relationship between manufacturer and supplier [10].

In establishing upstream key concepts, it was necessary to work with a generic process model that could be used to illustrate the supply chain. Another level was the taking
in account the 3PL (Third Part Logistics) with the philosophy Working Three-Gather (Supply Chain Management for Efficient Consumer Response is also for suppliers of ingredients, raw materials and packaging) [11].

The models of collaborative management in supply chain have been improved after 2000 with reverse logistics. The reverse logistics concept is a modern concept used in industrial waste management. By realization of logistics processes in waste management it is it is organized in better way and allows for receiving materials which are going back again to the forward logistics processes as an input [12].

Given the current crisis and recession (chaoticism) it is necessary to rethinking the collaborative management directed only on satisfying the participants on the chain, the end customer, in terms of information flows that support the transfer of logistics from raw material to final product for the shopper, by taking into account the financial flows of these actors (financial organizations: banks, factoring financial institutions, insurance companies, etc.) and introducing in a new model the financial players and the approach of financial supply chain management - Working All-Together (WAT) (figure 1.).

![Diagram of the financial supply chain](image)

**Figure 1. Working All Together (WAT) for Supply Chain Excellence**

2. Financial Supply Chain Management (FSCM)

2.1. Overview

Despite the crisis of the past two years, the industry has continued to innovate in financial supply chain management to enhance value for trading counterparties and improve efficiency.

Banks recognise that the tightening of credit globally represents both a short-term challenge and a medium term business opportunity. Although the majority of cross-border open account trade is conducted corporate-to-corporate, evidence suggests that a significant percentage will migrate to a bank-assisted model over the coming years. Corporates and in some countries regulators have voiced their demand for banks to provide greater innovation through bank-intermediated supply chain solutions [13].

There are different definitions of the term financial supply chain, which appeared for the first time in 2000 and 2001. According to the research company Killen & Associates (2001), the financial supply chain “parallels the physical or materials supply chain and represents all transaction activities related to the flow of cash from the customer’s initial order through reconciliation and payment to the seller.” The Aberdeen Group, a research company, calls the financial supply chain “a range of B-to-B trade-related intra- and inter-company financial
transaction-based functions and processes begin before buyers and suppliers establish contact and proceed beyond the settlement process.” The two definitions emphasize different topics. Killen’s focuses on the parallelism between the physical and the financial supply chain, and it stresses a section of the cash flow cycle that. The Aberdeen Group’s definition focuses on the collaborative nature of financial supply chain management and reveals that the financial value chain isn’t limited to the inner walls of a company but includes communication and cooperation with business partners [14.].

We appreciate the definition that includes three aspects is the following: Financial supply chain management (FSCM) is the holistic and comprehensive planning and controlling of all financial processes which are relevant within a company and for communication with other enterprises [14.].

The financial supply chain is different from the physical supply chain because it deals with the flow of cash instead of goods.

The order-to-cash process includes, from the perspective of a supplier (or creditor), the following business process steps: 1. Creditworthiness check; 2. Invoice creation; 3. Cash forecast; 4. Financing of working capital; 5. Processing of dispute cases; 6. Cash collection; 7. Settlement and payment; 8. Account reconciliation.

From the perspective of a customer (or debtor), the purchase-to-pay process consists of the following business processes: 1. Procurement; 2. Cash forecast; 3. Financing of working capital; 4. Receipt of invoices; 5. Resolution of discrepancies or exceptions; 6. Invoice approval; 7. Settlement and payment; 8. Account reconciliation [14.].

2.2. Cash Flow Cycle of Financial Supply Chain Management

There are various key performance indicators that are relevant for measurement in financial supply chain management. One key metric is the cash flow cycle, which defines the period from delivery by suppliers until the cash collection of receivables from customers (figure 1). It is the time period required for the company to receive the invested funds back in the form of cash. The cash flow cycle can be divided into the operating cycle—which is the time period between delivery by suppliers and the actual cash collection of receivables, and the cash flow cycle—which is the time period between the cash payment for inventory and the cash collection of receivables. The longer the cash flow cycle, the greater is the working capital requirement of a company, which means that a reduction of the cash flow cycle will immediately free up liquidity.

![Figure 2. The cash flow cycle of FSCM [14.]](image-url)
Within the cash flow cycle we can differentiate the following parameters, which are delimited in Figure 2: [14.]

- **Days in inventory**: This is the length of time between the delivery of the goods and the invoice from the supplier, and the sale of the goods and the invoice to the customer. It describes the average number of days the goods of a company remain in inventory before being sold. This metric is the focus for all activities around classical supply chain management (inbound logistics and inventory management).

- **Days in payables**: This is the length of time between delivery of the goods and the invoice from the supplier, and the actual payment for the inventory. This figure describes the average time it takes to pay a supplier. The parameter considers the outstanding receivables of a company, and is an important metric for debtors concentrating on their efforts to optimize the purchase-to-pay cycle.

- **Days sales outstanding (DSO)**: This is the length of time between the sale of the goods and the invoice to the customer, and the actual payment date of the customer. This metric measures the average number of days companies need to collect revenue after a sale has been made. A high DSO number means that an enterprise is selling to its customers on credit and taking longer to collect money.

- **Days in receivables**: This is the length of time between the sale of the goods and the invoice to the indicates the average time, in days, that receivables are outstanding. Days in receivables can also be called best possible DSO, since the company would collect all receivables before the due date.

Within the cash flow cycle there is potential to reduce both days in inventory and days sales outstanding. Days in payables can be reduced but should be monitored carefully to avoid putting supplies at risk. Days in receivables can be reduced by optimizing cash collection. Another important indicator for an efficient financial supply chain management is working capital, which is a balance sheet metric and part of the liquid assets. Working capital is calculated as current assets less current liabilities, and is a measure of the liquid reserve and short-term solvency of an enterprise, available to satisfy contingencies and uncertainties. One of the key objectives of financial supply chain management is to optimize the working capital by reducing, for instance, outstanding receivables [14.].

As FSCM is a rather new approach in logistics/SC and only recently recognized in literature, no common definition of FSCM exists, which represents the interface between finance and logistics.

### 2.3. Institutional Perspective. Fourth-Party-Logistics-Providers

Traditionally suppliers are important actors in the SC. The suppliers’ goods and services are integrated in the production process of another corporation, the industrial enterprise or commercial enterprise. Industrial enterprise produce material goods, which they further sell to commercial enterprises. The commercial enterprise buys goods on own name and at own account and sell them unmodified to the customers. The transport between these actors can be conducted by a logistics provider. As traditional tasks of logistics providers, transport of goods and inventory management are named [15.].

In the FSC (Financial SC) the circle of actors is expanded by financial service providers, banks and investors (4PL – information providers and finance providers). Financial service providers are especially leasing corporations and insurances, which offer financial services, forward contracts for commercial papers and underwriting. Moreover M&A-service agencies and rating agencies, although providing solely information and advice services, are part of financial service providers in the FSC. Banks are major banks, virtual banks, state
banks, investment banks and savings banks. Venture capital enterprises, public-law lenders, institutional investors, private investors and funds are among the investors. A special form of capital appropriation, indeed the exclusive allocation of equity capital is the corporate objective of Venture capital enterprises.

The Financial Supply Chain is organized into two subprocesses: Financial Trade Enablement and Financial Trade Settlement.

**Financial Trade Enablement** - the first part of the subprocess deals with business initiation, with four activities: qualification, finance, pricing, hedging

**Financial Trade Settlement** - the second part of the subprocess deals with handling the business, with four activities: invoicing, auditing, claim, payment.

Value proposition of Financial Chain Management: based on the above identified optimization potentials and solutions, the following conclusion concerning the value proposition of FCM can be drawn: automation, standardization and integration in the FC are the key elements for improving the FC performance. This reduces DSO, releases working capital tied up in the chain, improves cash own and shortens the CTC cycle (Cash-to-Cash).

### 2.4. Working Capital Management

**Working Capital Management and Commercial Lending**

Working capital management in a multinational enterprise requires managing current assets (cash balances, accounts receivable, and inventory) and current liabilities (accounts payable and short-term debt) when faced with political, foreign exchange, tax, and liquidity constraints.

The overall goal is to reduce funds tied up in working capital while simultaneously providing sufficient funding and liquidity for the conduct of global business. Working capital management should enhance return on assets and return on equity and should also improve efficiency ratios and other performance measures.

The operating cycle of a business generates funding needs, cash inflows and outflows (the cash conversion cycle) and foreign exchange rate and credit risks. The funding needs generated by the operating cycle of the firm constitute working capital.

The cash conversion cycle, a subcomponent of the operating cycle (working capital cycle), is that period of time extending between cash outflow for purchased inputs and materials and cash inflow from cash settlement. This is decomposed into five different periods (each with business, accounting, and potential cash flow implications): Quotation period, Input sourcing period, Inventory period, Accounts payable period, Accounts receivable period.

These components make up net working capital (NWC):

\[
NWC = (A/R + \text{inventory}) - (A/P)
\] (1)

Net Working Capital (NWC) is the net investment required of the firm to support on-going sales. NWC components typically grow as the firm buys inputs, produces product, and sells finished goods (NWC is not the same Current assets and Current liabilities).

**Financing Working Capital**

All firms need to finance working capital. The normal sources of funds for financing short-term working capital are accounts payable to suppliers and loans against bank credit lines.

In all cases, permanent working capital requirements, as opposed to seasonal needs, are at least partially financed with long-term debt and equity. Some companies have found
that their financial resources and needs are either too large or too sophisticated for the financial services available in many locations where they operate. One solution to this has been the establishment of an in-house or internal bank within the firm.

2.5. Essential Indicators of FSCM

1. Days Inventory Outstanding: Inventory/(total revenue/365) - DIO: *Year-end inventory plus LIFO reserve, divided by one day of average revenue.* A decrease is an improvement, an increase a deterioration.

2. Days Payables Outstanding: AP/(total revenue/365) - DPO: *Year-end trade payables divided by one day of average revenue.* An increase in DPO is an improvement, a decrease a deterioration. For purposes of the survey, payables exclude accrued expenses.

3. Days Sales Outstanding: AR/(total revenue/365) - DSO: *Year-end trade receivables net of allowance for doubtful accounts, plus financial receivables, divided by one day of average revenue.* A decrease in DSO represents an improvement, an increase a deterioration.

4. Days Working Capital: (AR + inventory - AP)/(total revenue/365) - DWC: *Year-end net working capital (trade receivables plus inventory, minus AP) divided by one day of average revenue.* The lower the number of days is, the better. The percentage change is marked N/M (not meaningful) if DWC moved from a positive to a negative number or vice versa [17.].

3. Factoring and Reverse Factoring vs. Commercial Credit

Factoring classic and normal financial collaboration between supplier-manufacturer-retailer is made by commercial credit. Factoring is a new comprehensive finance business including commerce financing, credit survey, receivables administration and credit risk guarantee. It refers to a finance business in which the seller sells his receivables to the factor who will press for the receivables. We can divide the factoring business into domestic factoring and international factoring according to whether the supplier and the buyer being in the same country or territory. In international factoring, the domestic factor asks the factor in the corresponding country to convey the credit of the buyer and give according to the order between the exporter and overseas buyer through international factoring organization. The domestic factor buys the receivables of the seller, and granting financing to the seller in advance in his bound, and then press for the receivables. As the domestic enterprise credit system has not been built, it would be difficult to develop domestic factoring business, and the thesis will discuss the international factoring business with the supplier in China for example and the buyer abroad [19.].
1. Financing from Cash in advance. This means companies may collect cash in advance from the buyers to create a short term cash inflow/financing. This method is based on the companies’ commercial credits. Funding cost is lower. Usually it’s adopted in the long production cycle, higher selling price, highly demanded products. For instance, real estate developer often requires the resident/buyer to pay a certain percentage of the total selling amount in advance, so as to borrow money from the buyers to partially release the funding pressure. But this method is seldom applied by SMEs on the supply chain.

2. Logistical warehousing financing. This means companies pledge the inventories or the products in transit to the financial institutions to generate financing. At present, logistical warehousing financing could be divided into two categories. One is vertical credit-authorizing model. Commercial banks analyze the logistic companies business performances and grant credit facilities to those logistic companies. Logistic companies have to be responsible for the credit administration and risk control. Under this model, commercial banks may reduce their credit operating costs and transfer out the credit risks. The other one is inventories financing model. Commercial banks cooperate with logistic companies and jointly provide inventories financing to the companies. The banks must provide special service platform and management account to inventories financing, as well the credit risk evaluating abilities. Logistic companies provide logistical and information support to companies.

3. Account receivables financing. This means to obtain financing from financial institutions against account receivables, including two methods: a) Pledge the account receivables. That is the Borrower pledges the account receivables to the bank to get financing in advance, and repay the bank once it receives the payments; b) Factoring. That is packing the account receivables to commercial banks or factoring agents to get financing and the borrower, meanwhile, give up the reimbursement rights.

While it seems firms generally adhere to industry norms, there is evidence they vary credit terms from customer to customer [18.].

The win-win approach

The win-win approach in particular has received much attention at recent finance and academic conferences. Going beyond the simple adaptation of payment terms, finance professionals have combined financial insights with electronic payment platforms and thus created reverse factoring solutions. As the name reveals, reverse factoring solutions are based on factoring – a transaction in which suppliers sell receivables to factors for immediate cash [20.] Because the receivables are sold rather than pledged, traditional factoring is different from borrowing – there are no liabilities on the suppliers’ balance sheet.
Typically, suppliers sell receivables from more than one buyer. Thus, factors have to evaluate buyer portfolios before entering an agreement. This has made factoring an expensive source of finance in emerging markets. A lack of historic credit information or credit bureau, as well as fraud and weak legal environments, has meant high operating costs. Reverse factoring, however, is different in three important aspects [20]. First, since the technique is buyer-centric, factors do not have to evaluate heterogeneous buyer portfolios and can charge lower fees. Second, since these buyers are usually investment grade companies, factors carry less risk and can charge lower interest rates. Third, as the buyers participate, factors obtain better information and can release funds earlier. As a process, reverse factoring is slightly more complicated than traditional factoring. Bank X’s process, for example, involves seven steps. First, the buyer sends a purchase order to the supplier and notifies Bank X. Second, the supplier delivers and presents documents to Bank X. Third, Bank X checks the documents and notifies the buyer. Fourth, the buyer approves or rejects. Fifth, Bank X notifies the supplier of the buyer’s acceptance. Sixth, if the supplier requests early payment, Bank X credits the supplier’s account. Finally, when the invoice is due, Bank X debits the buyer’s account (figure 6).

![Figure 5. Going into reverse][1]

4. Good Practices in Romania and Community acquires

The Directive 2000/35/EC was transposed by the Government Emergency Ordinance regarding measures to combat late payment obligations resulting from the execution of commercial contracts, adopted in 24 October 2007. The directive adopted by UE in 24 January 2011, replacing the Directive 2000/35/EC mentions that, if the payment due date or time is not set in the contract, the creditor is entitled to charge the interest on late payments after 30 calendar days from the date of invoice or an equivalent request for payment. As a general rule for businesses, the payment deadline specified in the contract should not exceed 60 days. According to the document, in case of public organizations or public institutions that provide medical services, for payment terms can be extended by 60 days. The Directive also provides compensation for recovery costs, represented by a fixed amount of 40 Euros, the creditor is entitled to obtain from the debtor as the minimum compensation, without being necessary a notice.
4.1. The commercial relationship

The commercial relationships between economic agents open the possibility of a mutual credit relationships, also called commercial credit, that can appear when selling the merchandise, as the delay of payment or when buying the raw materials and necessary materials for producing the goods.

A mutual transfer of resources takes place and the commercial credit covers an important part of cash flow in the economy.

When closing a commercial contract, the parts can negotiate, aside from other conditions, the payment term. It is as important as the other commercial conditions.

In the daily practice, the seller accepts, maybe more easily, the solicitation for extending the payment term made by the buyer. It is a very commune practice when negotiating with the big commercial chains. For contracts with fixed object or limited to a single commercial operation, increasing of the period for payment may be accepted by the seller, the commercial implications being minimal.

The situation is completely different in the case of long term commercial contracts. Here, any additional slip may have long term negative effects for the producer.

We have met many situations where the seller or his representative accepted more easily the request of the retailer for the extension of the payment term. There have been situations where this point has been the first one from the list to be accepted, without any attempt to negotiate.

For the moment or during the year, the effects of the extension are not noticeable. In time, they can be damaging for the seller. To deal with an increasing term each year, he will have to search for additional funding sources or to operate on reducing the production costs.

On the other side, for the reseller, the increase of the payment term can be a strong source for refunding.

The advantages for the retailer: Wining an image in front of his clients offering fresh products always; The increase of the products rotation speed; Reducing the stocks in the store; Reducing or maybe even eliminating the lost.

The advantages for the seller: The repartition of production capacities on the whole duration of the day. In this way it is eliminated the augmentation of work time in the morning. In addition you can use production capacities thus released to serve new customers; Largest rotation of its products; Reduce or eliminate returns; Financial savings.

5. Summary

Given the attractive benefits and clear key success factors, we recommend executives take a closer look at reverse factoring. It may not solve all liquidity issues that companies face when credit is tight. But it seems a sustainable approach to reducing working capital in the long run [20.]. So how should companies get started? We suggest three steps:

- Clarify organizational responsibilities. Determine who sets and who monitors payments and decide how much these activities should be centralized;
- Define the strategy. Decide between the single and the portfolio approach and, as the case may be, detail each strategy (How many payment terms? Which negotiation priorities? Which tools?);
- Run a pilot. Select a country/region and subsidiary, mobilize a team, and measure the improvement (What’s the baseline? Which performance metrics?).

In crisis situations it is recommended to rescheduling of invoice payment and an alliance between the two organizations. It is more difficult for an organization to sell the credit
to a recovering firm. Also, recovering the debts can be easily made by negotiating. The measures against firms with debts also consider the cash flow of the company requesting the payment and the one of the paying company. The way the rescheduling is made depends on the invoice value and how much the paying company represents from the business of the other company. If the company in debt is an important client, buying 15-20% from the products, it is more necessary to rescheduling the payment [21.].

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