RISK AND CASH FLOW MANAGEMENT

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INTRODUCTION

International business opens up a world of opportunities for your company. But it can also bring more complex operational risks, greater requirements for capital and a need to manage your cash flow and operating risks more vigilantly.

Fortunately, there are numerous practical techniques that exporters can use to deal with these problems. This Guide examines many of these solutions in the context of small to medium-sized companies with annual revenues of up to $25 million,[1] who may be new to international trade and who wish to protect their cash flow and reduce the business risks in their supply chains.

This Guide is based on a workshop and webinar conducted by EDC's Trade Advisory Services' Group (TAS). As part of its advisory services activities, this group focuses on understanding the evolving business practices that can be used in global supply chains to lower business risks, accelerate cash flow and employ technology to create efficient, integrated trading relationships. It is staffed by former financial, operations and supply chain managers with diverse management experience in small and medium-sized enterprises.

[1] All currency figures are in Canadian dollars unless stated otherwise.

CHAPTER 1: **RISK AND CASH FLOW**

When you move into international business, you have to think about risks that either don't exist, or exist to a lesser degree, in the domestic market. This is especially important in the area of cash flow and the impacts that operational decisions can have on it.

For the most part, cash flow in international trade is much like cash flow in domestic business, but it is subject to additional challenges such as currency risk, longer payment terms that increase working capital requirements, and unfamiliar payment instruments. It thus needs closer attention to risk mitigation than is usually necessary at home.

WHAT IS CASH FLOW?

Cash flow refers to the movement of cash into or out of a business, measured over a specific period of time. Examining cash flow can help us understand a business's overall financial strength and resilience in two major ways:

- It can help analyze the company's *liquidity*, which is the amount of cash it has on hand to meet its immediate obligations.
- It can be used to evaluate the *quality of the income* generated. This is very important for judging the real-life viability of your company. If you are making a profit, but you are not converting this into free cash, then your firm is at risk of failure even though it is profitable. This may seem counterintuitive, but it is a fact that a profitable company may go under because it does not have enough cash on hand to pay its immediate bills.

Free cash flow is a special type of cash flow. It is the amount of cash that remains after a company has paid all its expenses and its periodic debt instalments, and has put cash into any investments.

There are many online information sources about cash flow, such as Understanding Cash Flow, Managing Cash Flow in Uncertain Economic Times and Small Business Owners: How to Effectively Manage Cash Flow.

CASH FLOW RISKS IN INTERNATIONAL BUSINESS

Every stage of the business flow takes longer in international trade. As a result, all the risks described below may be intensified by timing problems, such as slow payment by a customer at exactly the time you have to pay a supplier. These timing mismatches can create lengthy periods of low or nonexistent cash flow, and you must have access to sufficient working capital to cover your obligations during this time. If you do not, you may find yourself in serious financial trouble.

PAYMENT RISK

Payment risk can be a threat in the international market and often stems from lack of knowledge about a foreign buyer's creditworthiness. To mitigate this risk, a company must know what its trading partners are doing, whether they are meeting their obligations, when payments will be received and when it must meet its own financial obligations. Often this will come down to the mechanics of doing business in a foreign market, such as how to get paid.

CONTRACT PENALTIES

Late delivery penalties (sometime referred to as liquidated damages) are common in global trade, and if you miss your delivery window it can cost you a substantial sum. In capital goods manufacturing, for example, these penalties are typically 1% per week, and can be applied not only to the late delivery of goods but also that of other elements such as key documents. This can wipe out your profit on a deal, so it is very important to understand the contractual provisions for late delivery and similar events, and the effects they can have on your cash flow if things go wrong.

PERFORMANCE RISK

This can arise from an inadequate knowledge of foreign suppliers, which makes them difficult to manage. Obtaining goods or materials from low-cost countries, or manufacturing goods in them, may also be riskier for your cash flow than expected. Inflexible logistics and the costs of inventory and transport in these markets may cause problems, and you may need longer lead times to deal with these additional risks. As a result, your cash may go out earlier and be tied up for longer periods, further restricting cash flow.

Other supplier performance risks include late delivery and poor quality. These may also affect cash flow: late delivery, for example, can lead to contract penalties, while poor quality can require expensive rebuilding during production, or unexpected warranty claims later on. Because of such problems, some companies have found it more cost effective to bring offshore production and sourcing closer to home (an approach called "reshoring") in order to reduce performance, quality and delivery risks.

FOREIGN EXCHANGE RISK

Foreign exchange (F/X) risk can arise when your cash flow is denominated in more than one currency and can lead to substantial losses (or gains) due to currency fluctuations. Many Canadian firms engaged in international trade don't bother to protect themselves from F/X losses, but the repercussions can be severe if you fail to take this precaution. The section "Effects of hedging" in Chapter 2 explains in more detail how these losses can occur.

TRADE COMPLIANCE RISK

Trade compliance involves paying close attention to the customs and regulatory requirements of your target market. This is important at all phases of the transaction flow since compliance requirements exist throughout the process. Noncompliance can cause significant problems ranging from delayed deliveries to fines and even criminal charges.

POLITICAL RISK

This is present in numerous foreign markets, mostly in emerging markets, and includes issues such as expropriation, non-payment by a foreign government, non-convertibility or non-transferability of currency and political violence. This is an area where strategic thinking can do a good deal to reduce the overall risk to your cash flow.

A BRIEF CASH FLOW GLOSSARY

This section examines some of the common terms used in relation to cash flow: cash to cash cycle, days sales outstanding, days inventory outstanding, days payables outstanding, and cash conversion cycle. To give them a real-world context, they are illustrated using figures from the financial statements of a hypothetical company, BEDM Systems Ltd. (see Figure 1).

Figure 1: **BEDM Systems financial statements**

Balance Sheet	
31 December 20XX	(all amounts in '000s)
Assets	
Current Assets	
Cash	116
Accounts Receivable	1,256
Inventory	754
Prepaid Expenses	17
	2,143
Property and Equipment, net	1,827
Total Assets	**3,970**
Liabilities	
Current Liabilities	
Accounts Payable	671
Accrued Liabilities	584
Income Taxes Payable	126
Instalments long-term debt	150
	1,531
Long-term Debt	850
Total Liabilities	2,381
Equity	
Capital stock	100
Retained earnings	1,489
	1,589
Equity	**3,970**

Figure 1 (continued): **BEDM Systems financial statements**

Income Statement	
Year ended 31 December 20XX	(all amounts in '000s)
Revenue	**8,101**
Costs of sales	5,833
Gross Profit	**2,268**
Selling and Adminstrative Expenses	1,628
Earnings before income taxes	640
Income Taxes	126
Net Earnings	**514**

CASH TO CASH CYCLE

Also called the cash conversion period, this is the average elapsed time between payment to a vendor for materials or services and the receipt of payment from a customer for shipments.

DAYS SALES OUTSTANDING (DSO)

DSO is the average number of days that a company takes to collect an account receivable after a sale has been made. One way of calculating this, on an annual basis, is to divide the accounts receivable at year-end by the total credit sales for the year and multiply by 365[1]. Using BEDM's figures, we have:

$1,256K / $8,101K x 365 = 57 days DSO

A low DSO means that a company needs fewer days to collect its accounts receivable. A high DSO means that it takes longer to collect payment.

DAYS INVENTORY OUTSTANDING (DIO)

DIO indicates the number of days, on average, that a company takes to turn inventory into sales on an annual basis. This is calculated as the total inventory value at year end divided by the cost of goods sold for the year, multiplied by 365. Using BEDM's figures, we have:

$754K / $5,833K x 365 = 47 days DIO

In most cases, a lower DIO is preferable to a high one since it means that the firm has less money tied up in inventory. That said, inventory must always be maintained at a level sufficient to meet client demand, or you will lose sales.

DAYS PAYABLES OUTSTANDING (DPO)

DPO measures how long a company takes to pay its creditors. For an annual DPO, this is calculated as accounts payable at year-end divided by cost of goods sold for the year, multiplied by 365. Using BEDM's figures, we have:

$671K / $5,833K x 365 = 42 days DPO

[1] All of these numbers can be calculated at any time in the year, however the number of days used as multiplier must reflect the period in question (i.e. if one was to use quarterly sales, the A/R would not change, but the multiplier would be 91 days and not 365 days_/

For a buyer in need of credit to fund operations, a high DPO is generally better than a low one, assuming you will be able to pay your creditors at the stipulated time, and that your creditors are willing to extend credit to you for this longer period. For most Canadian companies, 45 days is quite common, but firms with cash will pay more quickly to obtain early payment discounts that may be available.

CASH CONVERSION CYCLE (CCC)

Also called the cash conversion period, this is a measure of the number of days each input dollar is tied up in the production, sales and collection processes, before it is converted into cash through collection. It includes the time needed to produce and sell inventory and the time to collect receivables, and the time the company can take to pay its bills without incurring penalties. The CCC is calculated using the three terms immediately above, as follows:

CCC = DSO + DIO - DPO

The CCC is the number of days of working capital that a company must have available at any given time to remain financially solvent and sustain operations[2]. The cash conversion cycle is a vitally important measure because it reveals the gap between selling something, procuring raw materials, transforming them and then being paid for the finished goods and services. To be viable, a company must be able to finance this gap with cash from its equity or loans from third parties.

In the case of BEDM, the DSO is 57 days, the DIO is 49 days and the DPO is 42 days. Applying the formula, BEDM's CCC works out to 62 days. This means that BEDM must have capital on hand to fund 62 days of operations to remain solvent. Figure 2 illustrates the BEDM CCC situation.

Figure 2: **The BEDM cash conversion cycle**

[2] Working capital is defined as the difference between a company's current assets and current liabilities. It measures short-term solvency, which is the company's ability to finance current operations and meet obligations as they fall due. It is expressed as a ratio or a dollar amount. When companies do not possess sufficient equity to finance the difference between the current assets and liabilities they must seek outside capital in the form of loans.

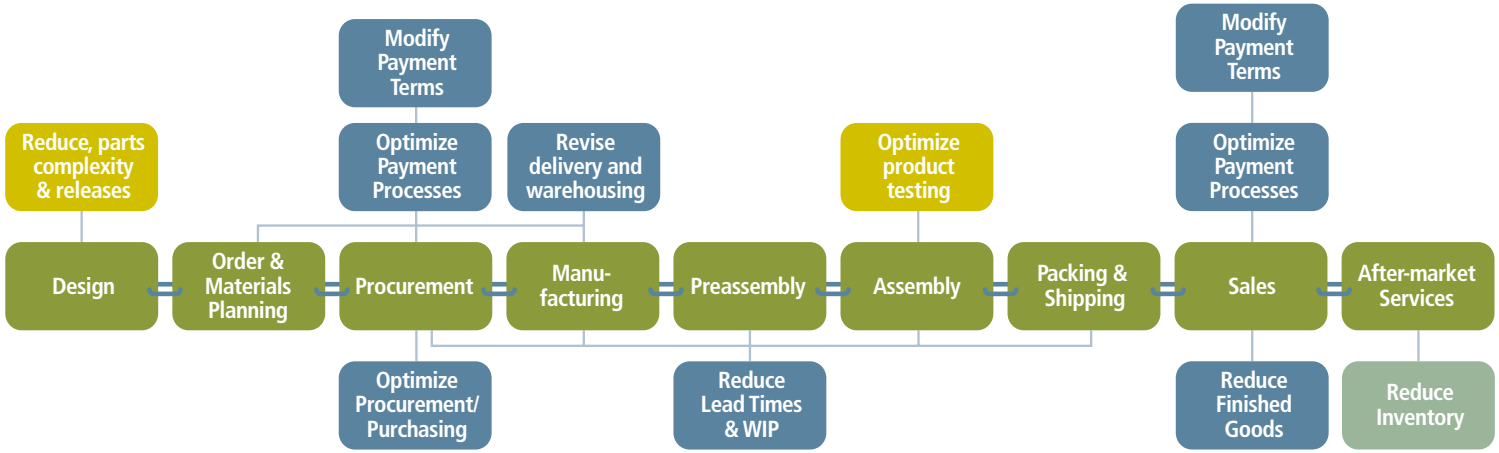
THE EFFECTS OF INTERNATIONAL TRADE ON WORKING CAPITAL

Various factors will affect the DSO, DIO and DPO when engaging in foreign trade. This in turn affects the CCC (the number of days of working capital required).

- **DSO factors:** Larger buyers are increasingly seeking 60-day, 90-day and even longer payment terms. Terms of 180 days are not uncommon in certain markets. DSOs are increasing as a consequence, thereby increasing the CCC and the capital needed to finance operations.
- **DIO factors:** Longer global supply chains require additional safety stock to mitigate inventory disruptions. Suppliers are absorbing buyer inventory needs, and deliver on a just-in-time basis or provide vendor-managed inventory. As a result, companies are being asked to hold more inventory for their clients. This increases DIO, the CCC and the capital needed to finance operations.
- **DPO factors:** Foreign suppliers have tighter terms due to limited trade credit. They demand 30% to 50% down payments on ordering and 100% payment on shipment. This limits supplier credit, reducing DPO increasing the CCC and requiring that buyers find other forms of credit to meet the operating financing needs of the firm.
- **CCC factors:** For most companies, global trade increases the need for working capital financing to fund their investments in receivables and inventory, and to compensate for reduced amounts of credit from foreign suppliers. This means that firms must be able to finance a very long cash conversion cycle if they are to be successful in international trade.

These factors are now pushing many Canadian buyers and suppliers to cooperate in order to speed up cash flow and eliminate costs from the supply chain. The blue shaded boxes in Figure 3 show the stages where a company may optimize its processes to increase cash flow and optimize its working capital requirements.

Figure 3: **Optimizing cash flow and working capital**



The stages indicated by the blue shaded boxes include:

OPTIMIZING PROCUREMENT AND PURCHASING

You can:

- centralize procurement to generate more volume discounts and reduce the number of suppliers, but work more closely with them to eliminate cost and risk for both parties;
- work more closely with suppliers to share data and improve your planning of deliveries and inventory levels; and
- work more closely with your finance group to make sure that procurement and finance personnel share the same business objectives for costs, cash flow and working capital management (i.e. how to manage collections, inventory and obtain supplier credit).

MODIFYING PAYMENT TERMS

You can:

- negotiate longer payment terms with your suppliers to align better with the payment behaviour of your customers, although this may require higher prices or other concessions on your part;
- take early payment discounts to reduce cost of goods sold; and
- become more stringent about collections and granting credit.

ENHANCING INVOICE APPROVAL PROCESSES

Investing in technology to automate electronic invoicing and approval processes can allow you to take discounts and make payment dates more transparent to your suppliers. This also applies on the client side, using online invoicing and payments to gain greater visibility and predictability in payment receipt.

REDUCING INVENTORY

Reducing inventory is the most commonly cited desire for both CFOs and supply chain groups. By optimizing manufacturing, warehousing, and shipping and receiving processes, a company can usually lower its inventory needs. This approach often requires developing close relationships with both clients and suppliers.

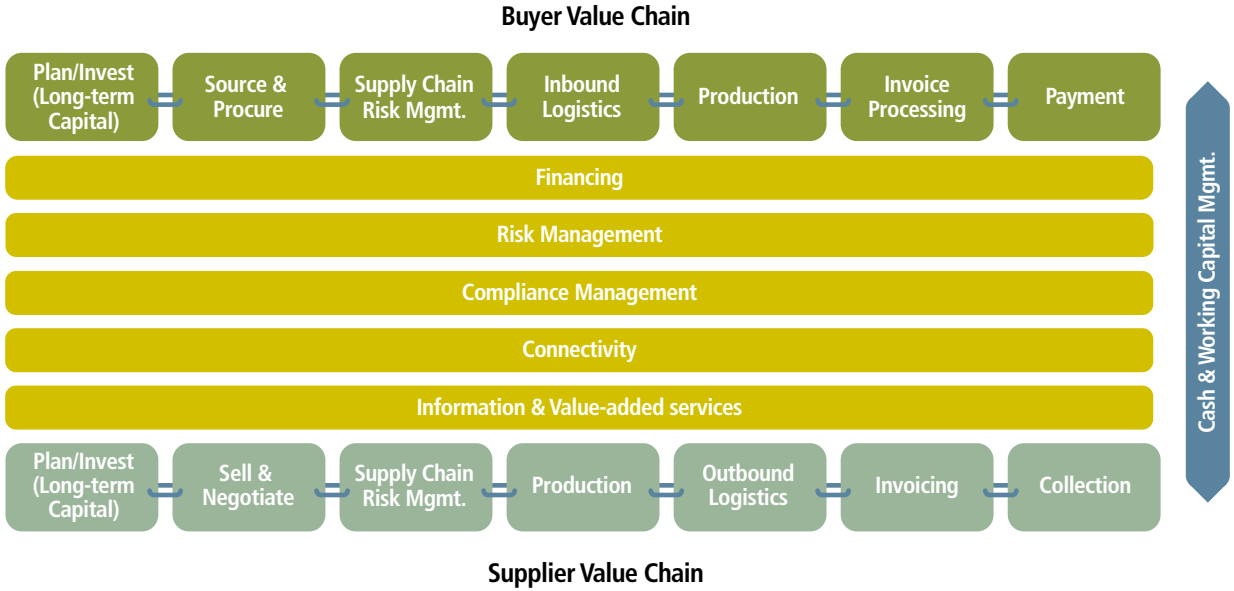
CASH FLOW, WORKING CAPITAL AND THE SUPPLY CHAIN

The notion of supply chains lies at the heart of global trade. When conducting business, buyers and suppliers interact through interdependent, value-creating activities such as selling and buying, shipping and receiving, and paying and collecting payment.

The supply chain can actually be seen as a pair of parallel value chains. These are cross-linked by various processes, such as financing and risk management, which govern the flow of cash and working capital. Taken together, these elements make up the overall supply chain model. Figure 4 provides a schematic of this model, which depicts the interactions of buyers and suppliers and how they are integrated within these chains.

The need to optimize cash flow and minimize investment in working capital affects many of the decisions that companies make when executing supply chain transactions. Some of these decisions occur at the procurement stage and the logistics stage, and are designed to optimize inventory levels and lengthen payment terms for the buyer. This, however, is diametrically opposed to the supplier's wish to minimize outstanding accounts receivable through shorter payment terms. This tension creates an acute need for financing services that will allow both buyers and suppliers to meet their objectives.

Figure 4: **The supply chain model**

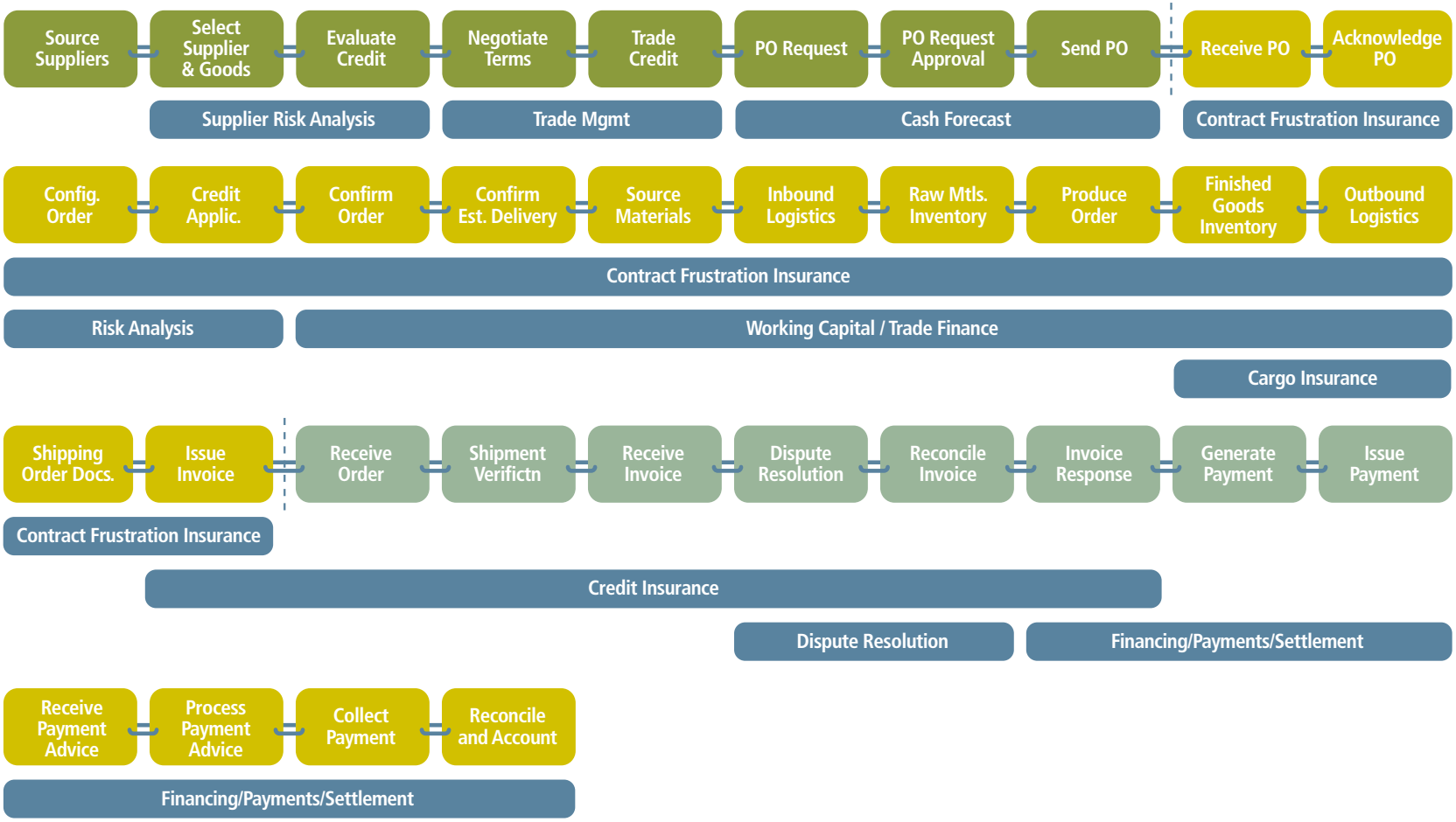


Finally, there is a set of key integrating and optimizing elements needed in supply chain activities. These include financing, risk management, compliance, connectivity (that is, information technology for exchanging data), and information and trade development services. Such elements can provide companies with ways to facilitate transactions while reducing risk and enhancing cash flow and working capital.

THE TRANSACTION FLOW AND ITS DECISION POINTS

Figure 5 provides a picture of a typical transaction flow and the types of decisions inherent in it.

Figure 5: **Decisions affecting cash flow in the overall transaction flow**



Looking at the overall transaction flow for a sale can help you identify the decisions that will affect your cash flow. These decisions will be influenced by factors such as:

- supplier risk analysis to ensure solvency and capability;
- trade management practices, including setting payment terms and payment mechanisms such as letters of credit or open account; establishing delivery requirements using Incoterms; and establishing the contractual responsibilities of each party;
- updating cash flow forecasts when orders are received and conducting analyses to understand worst-case scenarios;
- insurance needs, such as credit, marine cargo and liability insurance;
- provisions for dispute resolution, such as the establishment of jurisdictions and legal mechanisms;
- financing, including buyer financing and working capital financing; and
- payment and settlement, using information technology to accelerate invoice approval and payment.

CASE STUDY: BEDM SYSTEMS

It may be easier to grasp some of these concepts if we examine the hypothetical company referred to earlier. BEDM manufactures custom-engineered materials handling systems and has annual revenues of around $8.1 million[3]. It also has a $750,000 line of credit to cover its operating needs.

Its major current contract is with a buyer in the EU, and the contract value is €1.5 million ($2.4 million). Delivery is required nine months after the receipt of the order. BEDM's Japanese robot supplier needs a 25% advance payment and a letter of credit (L/C) for the balance before starting work on a US$360,000 robotic manipulator.

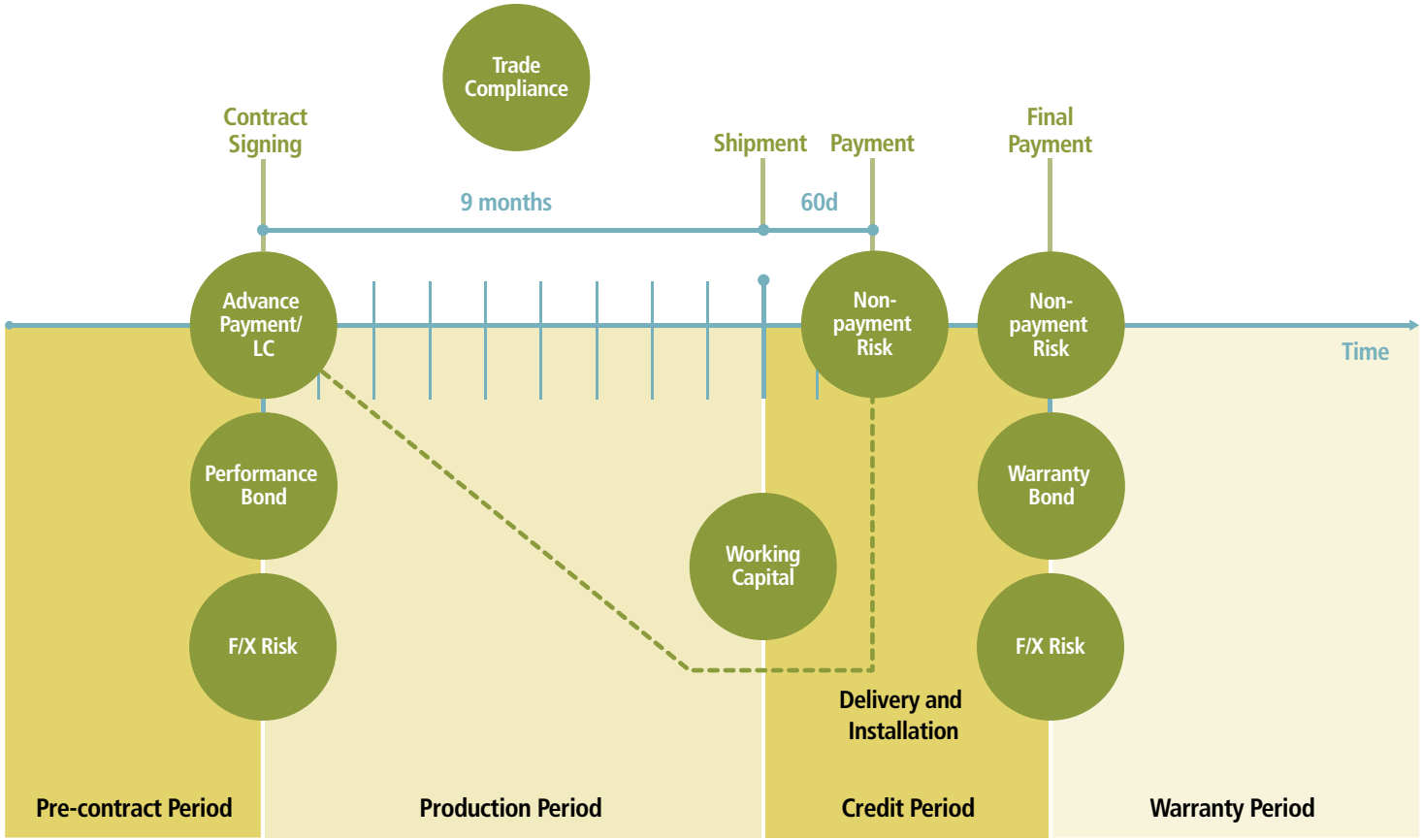
The payment terms with the EU customer are:

- 10% on issuance of the purchase order and the delivery of a 10% performance bond by BEDM to the buyer;
- 80% 60 days after shipment; and
- 10% when the system is commissioned and a two year, 5% warranty bond is issued by the BEDM to the buyer.

[3] All currency figures are in Canadian dollars unless stated otherwise.

A model of the transaction flow for this contract is shown in Figure 6, with the green-shaded circles representing various critical stages of the overall process.

Figure 6: **The transaction flow**



In more detail, the stages are as follows

- The advance payment circle represents both the 10% up-front payment by BEDM's EU buyer and BEDM's advance payment to the Japanese supplier for the manipulator. The former has a positive effect on cash flow ($240K) and the latter a negative one ($90k).
- The performance bond circle represents the bond that BEDM must provide at the contracting stage to guarantee its performance for the EU client. BEDM must provide the bond issuer with 100% of the bond value ($240K) as security, either in cash or as part of the company's operating line. In either case, this security represents capital that is frozen for the term of the bond, which is the length of time until it is replaced with the warranty bond. It has a negative effect on BEDM's ability to fund its operations.
- The F/X risk circle represents the risk of foreign exchange fluctuations, which exists at various points in the transaction flow but can be mitigated by strategies such as hedging. Depending on currency shifts, its overall effect on cash flow may be positive or negative. Risk appears when a price is fixed at contract signing, and applies to both the contract with the EU buyer who is paying in Euros and with the Japanese supplier who is being paid in US dollars, while BEDM incurs most of its costs in Canadian dollars.
- The trade compliance circle represents BEDM's need, during the production period, to ensure that its product will meet Canadian export requirements (such as export permits) and EU import regulations and standards. Noncompliance can have significant effects, such as delayed deliveries due to goods being detained in customs. In more serious situations it may lead to fines, penalties and criminal charges.
- The working capital circle appears during the period in which BEDM is designing and manufacturing the system and paying employees and suppliers. All of this work in process must be financed by the company's equity or through debt from third parties.

  In the case of BEDM, the payment terms of the contract are such that it receives only a small portion (10%) of the contract price initially, and then must fund all the manufacturing costs until 60 days after shipment, at which point it receives the next payment of 80%. The sum of these costs over the nine-month manufacturing period is a significant cash outflow and commitment of working capital. Moreover, BEDM only has a $750,000 line of credit and will need nearly $1.4 million to fund the work in progress.

This requires what is known as a "line of credit bulge," which is a temporary increase in the line of credit limit to accommodate additional borrowing needs. To obtain this, BEDM must apply to its bank to increase its limit for a specific period so it can cover the costs of completing the project. However, most financial institutions are reluctant to finance work in progress in this way, and require some kind of special security for doing so. This kind of security can be provided by EDC under its **Export Guarantee Program**.

- Non-payment risk represents the possibility that the buyer will not pay or that the contract is cancelled. This, obviously, has a completely negative effect on cash flow and working capital. You can use various forms of insurance, as discussed in Chapters 3 and 4, to protect yourself from these risks.
- The warranty bond circle represents the bond that BEDM must provide on final delivery of its goods, as a guarantee that it will meet any warranty claims. As with the performance bond, BEDM must provide the bond issuer with 100% of the bond value as security, either in cash or as part of the company's operating line. In either case, this security represents working capital that is frozen for the two-year term of the warranty.

CHAPTER 2: **THE PRE-CONTRACT PERIOD**

If you intend to bid on a large contract, it is a good idea to assemble a team from your sales, engineering, production, procurement and finance groups to review the key aspects of the contract. The review should ensure that all risk and cash flow events are well understood and addressed in the bid proposal and/or in your operational plans.

Another good practice is to analyze your cash flow projections for the project, first in isolation from your other projects and then in the context of your overall business. This will help you make sure that sufficient resources are available. Scenario modelling can also help you understand the best-case and worst-case situations for the project. Ideally, you should have a positive cash curve – that is, you collect payments before you spend money – but if this is not going to happen, you should know about it in advance. Your bank will appreciate this kind of forethought, since it shows you have carefully analyzed your funding needs.

One area that needs close attention during the pre-contract period is the creditworthiness of the buyer. You should always conduct due diligence on your buyer to ensure that the company can pay you.

REDUCING CONTRACTUAL RISKS

If you do submit the winning bid, you must meticulously review and understand the contract before you sign it. Scrutinize the wording for potential risks such as harsh late delivery penalties, onerous indemnity clauses, or clauses related to transfer of intellectual property to the buyer. If at all possible, strike out such conditions or renegotiate them. Also look for additional costs such as insurance requirements, performance guarantees, warranties and delivery conditions.

It is likely that many of the clauses in the contract will use Incoterms, which are formal terms that specify certain exporter and importer responsibilities in international trade transactions. Incoterms are widely used because they are globally accepted and can remove or reduce many of the uncertainties associated with international business. They define meaning in the following areas:

- **Costs:** Who is responsible for the expenses associated with a shipment at any specific time during transit, such as export packing costs, the main transport costs and any customs duties?
- **Control:** Who owns the shipment at any specific time during transit?
- **Liability:** Who is responsible for the shipment at any specific time during transit?

A new set of Incoterms, Incoterms 2010, went into effect on January 1, 2011. More information about them is available from the Incoterms website.

REDUCING THE RISK OF INPUT COST FLUCTUATIONS

Unfortunately, input costs have a way of fluctuating after you have submitted your bid and have thus committed yourself to a price for executing the contract. If these fluctuations aren't in your favour (and assuming you win the contract), both your profit margins and cash flow may suffer as a result of higher-than-expected input costs. These are often the result of unfavourable F/X conditions.

There are several things you can do to reduce these risks, such as:

- buying inventory in advance to lock in costs (after you have secured the contract, preferably);
- negotiating annual supply agreements at fixed prices;
- negotiating escalation clauses in the contract for key inputs, which can often be done by offering a discount if the price of the key input declines;
- using input cost hedging to match the currency of your inputs to the currency in which you will be paid; and
- using tender exchange rate indemnity (TERI) to insure against F/X risks during the tendering period.

The next section examines the management of F/X risks in more detail.

MANAGING FOREIGN EXCHANGE RISK

F/X risk occurs throughout the transaction flow, as soon as the price is fixed (see Figure 6 above), usually because of mismatches among the currencies of your buyer contracts, your supplier contracts and your operating expenses. F/X management helps you deal with this risk by ensuring that, at some point in the future, you will receive a known quantity of Canadian dollars in exchange for a sum in another currency. Managing F/X risk is referred to as hedging, and there are several major hedging strategies:

NATURAL HEDGES

You buy inputs from your suppliers and sell to your buyers in the same currency.

FORWARD CONTRACTS

A forward contract specifies the price and quantity of an asset to be delivered in the future. In the F/X context, it is a commitment to buy or sell a currency at a set exchange rate in future. Forward contracts are not standardized and are not traded on organized exchanges. Example: you agree to sell US$104,500 at C$1.02 in 60 days for C$106,590. You must deliver the currency when the 60 days have elapsed. One of the attractive features of the forward contract is that all costs are included in the forward rate that you negotiate. Therefore, there is no immediate out-of-pocket cost to you, since you pay for it all when you sell the US$104,500.

Note that these contracts frequently require you to post collateral with your financial institution, a necessity that reduces your working capital for funding production. If you are in this position, you might consider EDC's Foreign Exchange Facility Guarantee, which replaces the usual demand for collateral by the financial institution when you purchase F/X contracts.

OPTIONS

An option gives you the right, but not the obligation, to buy or sell a set amount of a specific currency at a certain exchange rate on or before the expiration date. You can exercise the option (or not) at your discretion. Example: you have an option to sell US$104,500 at C$1.02 by 21 December 2011. If the spot rate is $1.10 on 21 December, however, you would not exercise the option, because simply selling the U.S. dollars on the spot would provide you with more Canadian dollars than the option would.

This is an attractive feature in a volatile currency market, or when the timing of receipt is uncertain. However, options require that you buy them when you enter into the option contract. This means you must tie up cash in purchasing the option, which can potentially absorb tens of thousands of dollars if the option amount is in the millions. This can be a significant cash commitment that you may or may not be able to make.

FUTURES

A futures contract specifies a standard volume of a particular currency to be exchanged for another currency on a specific settlement date. If, for example, you will receive €1,000,000 on December 1, and the per-euro exchange rate implied by your futures contract is US$1.55, you are guaranteed this exchange rate regardless of exchange rate fluctuations in the meantime. Futures are tradable on exchanges.

EFFECTS OF HEDGING

Successful hedging can have a profound effect on a firm's bottom line, as illustrated by the case of BEDM's €1.5 million ($2.4 million) EU contract. At the time the company submitted its proposal, the exchange rate was $1.616 per euro, which gave a projected gross profit of $778,000. On receipt of the order 90 days later, the rate had climbed to 1.7037, which was very positive for BEDM, since this translated into a potential gross profit of $905,550.

Consider a scenario in which the company assumes that the exchange rate will remain in its favour, and so does not use hedging. By the time the final invoice is paid a year later, the exchange rate has fallen to $1.4868 per euro, well below the rate when the order was received. In this case, instead of its original estimated gross profit of $778,000, BEDM would make only $644,000 as a result of this F/X volatility – a drop of more than 17%.

In a scenario where BEDM hedged using forward contracts for the second and third payments, the story could be quite different, since using forward contracts would not only have ensured that firm realize the initially projected $778,000 gross profit, but the forward contracts obtained would have provided a gross profit of $818,550 as the rates would have been higher than the rate used when initially providing the proposal to the client (note, however, that the forward rates were lower than the actual exchange rate on the date the contract was awarded). The hedge would have served its purpose of protecting the initially projected gross profit of $778,000 and, owing to a little luck, that profit would have been 5% higher.

Despite these possibilities, the purpose of hedging is not to make more money by speculating on the relative movements of currencies. Rather, it is intended to create certainty in your cash flows and, therefore, in your expected profits. Given that it can be hard to ensure that you will get paid when you expect it, hedging is a way to remove the risk of currency market fluctuations while you wait for your money.

Firms adopt numerous hedging strategies, from hedging all orders to hedging only a percentage of them. Each business will have unique factors that require a customized approach to hedging, such as the consistency of its cash inflow, its relative risk tolerance and the strength of its relationship with its financial institution.

PERFORMANCE BONDS

Providing a performance bond is necessary for doing business in many overseas markets, especially when you are new to the buyer. Buyers often will not even discuss a contract unless they feel you can provide a bond that guarantees your performance.

A performance bond often takes the form of a standby letter of credit, which is a guarantee of payment issued by a bank on behalf of a seller. This letter of credit is used as the payment of last resort should the seller fail to fulfill its contractual commitments to the buyer.

Obtaining performance bonds can have a major impact on your capital to fund operations, since your issuer – normally your bank – will want 100% security for each dollar of bonding it issues. You can provide this either as cash, on a dollar-for-dollar basis, or from security pledged from your line of credit. In both cases, issuing the bond reduces the assets you can use for funding your business operations. In the case of BEDM, the company had to provide a performance bond equal to 10% of the €1.5 million ($2.4 million) total contract value. This reduced the company's capital for funding operating expenses by $240K, since these assets were tied up in securing the bond for the bank.

Such bonding demands can make it financially impossible to take on certain projects, unless you can obtain the bond using alternative sources of security. EDC offers a solution to this problem in the form of an **Account Performance Security Guarantee**, which can provide a guarantee to replace the security that would normally be demanded by the financial institution issuing your bond.

Performance bonds are payable on the demand of your buyer, who is the beneficiary of the bond. If the buyer decides that you have not met the contract conditions, he/she can "call the bond," and demand that the financial institution pay out the value of the bond. When this happens, the financial institution does not judge the validity of the claim or whether you are actually at fault – it simply pays out the bond and takes your collateral in restitution.

If you have not, in fact, violated the contract terms, this is known as a "wrongful call," but it may be very difficult to get your cash back even when you prove you were not at fault. Wrongful call insurance will protect you by covering your losses on a wrongful call, or on a call resulting from events outside your control. EDC's **Performance Security Insurance** can be used for this purpose.

EDC'S BONDING SOLUTIONS

EDC offers a variety of bonding and guarantee solutions for the requirements of international trade. These include the following:

- An Account Performance Security Guarantee gives your financial institution a guarantee in lieu of collateral in the event of a call on a contractual guarantee they issued on your behalf.
- Surety Bond Insurance gives your surety company a guarantee in lieu of collateral in the event of a call on a contractual guarantee they issued on your behalf.
- A Foreign Exchange Facility Guarantee gives your financial institution a guarantee in lieu of collateral so you can buy a foreign exchange contract to protect against currency fluctuations.

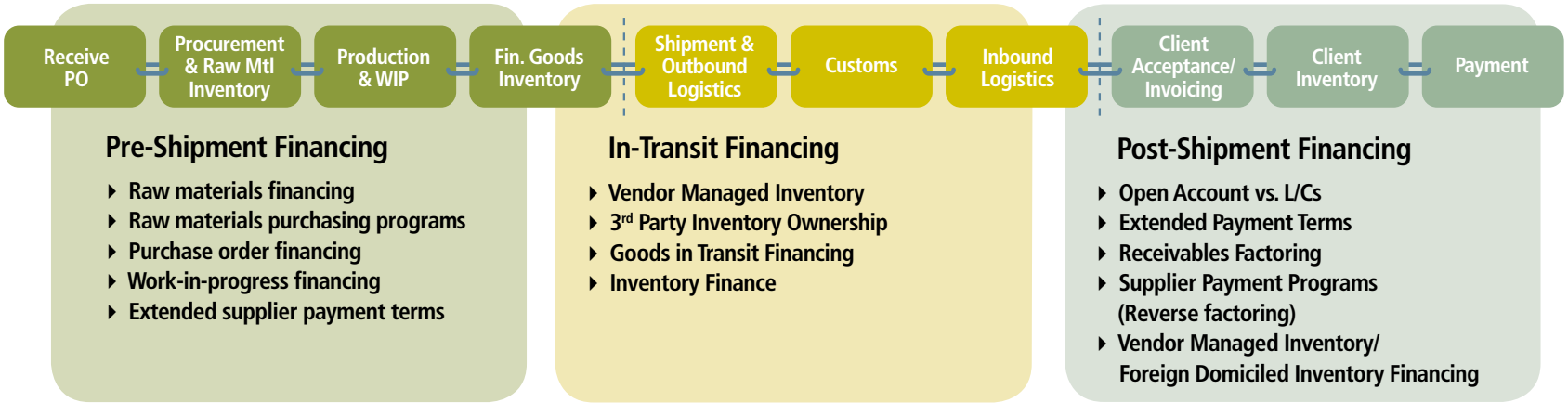
CHAPTER 3: **THE PRODUCTION PERIOD**

There are numerous ways to improve cash flow during the production period. Good planning and forecasting, together with supply chain financing strategies, can help you work with your customers, suppliers and financial institutions to avoid cash and capital shortfalls. Optimizing your processes to focus on adding value and eliminating wasted time and resources is also a good strategy. Just-in-time delivery and vendor-managed inventory can help reduce your inventory levels and their associated costs (conversely, they can adversely affect your costs if you are asked to provide them for your customers).

SUPPLY CHAIN FINANCING

Supply chain financing solutions focus on optimizing cash flow and capital, and can be used from the time the purchase order is received until payment is made, typically after the buyer has received the goods. Figure 7 shows the various financial solutions and their uses along the supply chain.

Figure 7: **Supply chain financing solutions**



There are three broad types of financing solutions you can use along the supply chain to help you accelerate cash flow and reduce your cash flow risks:

PRE-SHIPMENT SOLUTIONS

- **Margined line of credit:** A bank will normally provide a company with a line of credit, the amount of credit being determined by a margining formula related to a company's accounts receivables (A/R) and inventory. Each borrower has a unique formula that is negotiated with its lender, based on the borrower's funding needs. A common formula is 75% of A/R less than 90 days and 50% of inventory, limited by a cap. These percentages might be higher for large multinationals or governments, and lower for foreign clients.
- **Buying on Open account:** In the present context, it means that your supplier delivers your inputs on receipt of your purchase order, but does not require payment until after you receive the goods (30–90 days afterward is typical). Essentially, it is credit granted to a buyer (you) by the seller (your supplier). Note that you can also sell on open account.
- **Extended supplier payment terms:** A supplier may be willing to negotiate a longer credit term than the usual 30 days. This will depend on factors such as your past and present business relationship, your perceived creditworthiness and whether providing a longer term will help the supplier secure your continued business.
- **Work-in-progress financing:** If you cannot finance the production of an order entirely from your own cash reserves, some form of work-in-progress financing may be what you need. For example, you can seek progress payments from your customer, or obtain third-party guarantees so you can secure additional credit from your financial institution. EDC provides such guarantees through its Export Guarantee Program.

  Another alternative is to obtain asset-based financing, which can provide working capital through customized loans secured by your accounts receivable, inventory and fixed assets. Several Canadian banks offer this type of solution.
- **Raw materials financing and purchasing programs:** These can help you obtain your inputs with less strain on your cash flow. Often arranged with the buyer, these programs seek to access the buyer's more favourable pricing, or even its sourcing capabilities, to lower the cost of production by having the buyer purchase and supply key inputs.
- **Purchase order financing:** Using a purchase order as security, the financing institution pays you to produce and ship the goods. This can also be used as a means of financing your raw materials inputs. Once payment is collected from the buyer, the institution is reimbursed. This is a relatively rare approach and tends to be used when there is a strong relationship between buyer and seller.

IN-TRANSIT SOLUTIONS

- **Inventory financing:** These are asset-based loans secured by the value of your inventory.
- **Goods-in-transit financing:** These are asset-based loans secured by the value of your goods in transit.
- **Vendor-managed inventory (VMI):** Your supplier takes responsibility for maintaining an agreed inventory of the inputs you need in your facility. When your inventory drops below this level, the supplier automatically replenishes the goods but does not invoice you for them until they have been used. This reduces your likelihood of input shortages, and reduces your inventory and its associated overhead. Most important, it has a positive impact on cash flow because you do not pay for the inputs until you have used them. VMI can also be domiciled abroad, instead of in Canada.
- **Third-party inventory ownership:** This variation of VMI uses a third-party provider to maintain the required level of inventory.

POST-SHIPMENT SOLUTIONS

Post-shipment solutions include buyer payment methods such as open account and L/Cs, and cash flow acceleration strategies such as receivables discounting, factoring and supplier payment programs. These more properly belong to the credit period and will be discussed at length in Chapter 4.

CONTRACT CANCELLATION RISK

Contract cancellation and buyer insolvency during the production period are risks that will vary according to the market and the customer. In the case of BEDM, the company will be carrying a large work-in-progress expense due to the payment terms of its contract with its EU customer. BEDM should, consequently, make sure that it is protected from cancellation both in the contract language and by cancellation insurance. The contract language should stipulate that BEDM will be paid for all work completed and in progress up to the date of cancellation, plus any associated cancelation costs.

If cancellation is a probable risk, you should consider an insurance policy, such as EDC's Contract Frustration Insurance, that will offer the necessary protection.

MANAGING SUPPLIER RISK

Managing suppliers and their requirements is a crucial element in speeding cash flow and minimizing risk. There are several areas to consider:

- Be aware of the risks associated with overseas suppliers. The three major ones are:
  - *Quality:* does this supplier consistently provide high-quality inputs?
  - *Reliability:* does this supplier deliver the right inputs on time and in the quantities ordered?
  - *Solvency:* does this supplier have the financial resources to provide the volume of inputs you need and also weather financial downturns?

- Advance payment requirements will put pressure on your company's line of credit and cash reserves. If, for example, your supplier demands an irrevocable letter of credit (IL/C) as the advance payment, you will have to furnish collateral to your financial institution to cover the IL/C's value.

  Sometimes a supplier will waive the advance payment and grant open account terms in return for a standby letter of credit. This is more likely to happen if you will be giving the supplier a substantial amount of ongoing business over the year. If, for example, you expect to order $400,000 in goods from a supplier during the next 12 months, you could offer a $100,000 standby L/C – representing your typical credit position – instead of providing upfront payments.

  You still need to post collateral for the standby L/C, but the L/C will not actually be used to pay for the goods, as is the case with L/Cs. This is why it is called a *standby* L/C – it is there only to ensure that the supplier will get paid if you can't meet your obligations. Using a standby L/C in this way frees up your cash by eliminating advance payments to the supplier, and also protects you if your supplier fails to deliver. Third parties, such as **Atradius** and EDC, can also provide solutions that insure you against non-delivery by a supplier.

  In the case of BEDM, the Japanese robotics supplier required an advance payment of 25%. It also required an L/C for the balance, which required BEDM to provide 20% of the L/C's value, or $62,000. Together, these commitments reduced the company's cash by $165,000.

- Cash flow can be constricted as a result of problems such as delays in customer payment or back charges. The latter are costs that you charge back to your suppliers to fix errors that were their responsibility, or costs your customers charge to you to fix problems that they believe are your responsibility.
- If a particular input is vital to filling a customer's order, try to obtain a performance guarantee or bond to provide supply security.
- Keep in mind the total landed cost of your inputs. This includes the costs of purchase, transportation, inventory, insurance, warranties, customs levies, taxes and duties. Many companies are seduced by the low unit costs of goods produced in countries like China and India, but fail to account for the ancillary charges, supplier inflexibility and long lead times that can dramatically increase the landed cost of these goods.
- You can investigate the use of e-sourcing or e-procurement to acquire your inputs. If so, resources such as **Globalspec**, **MFG.com**, **Global Sources**, **Alibaba** and **Ariba** may be useful.

Ongoing supplier management is essential. Keep in close touch with your suppliers and use best practices, such as the following, to manage them:

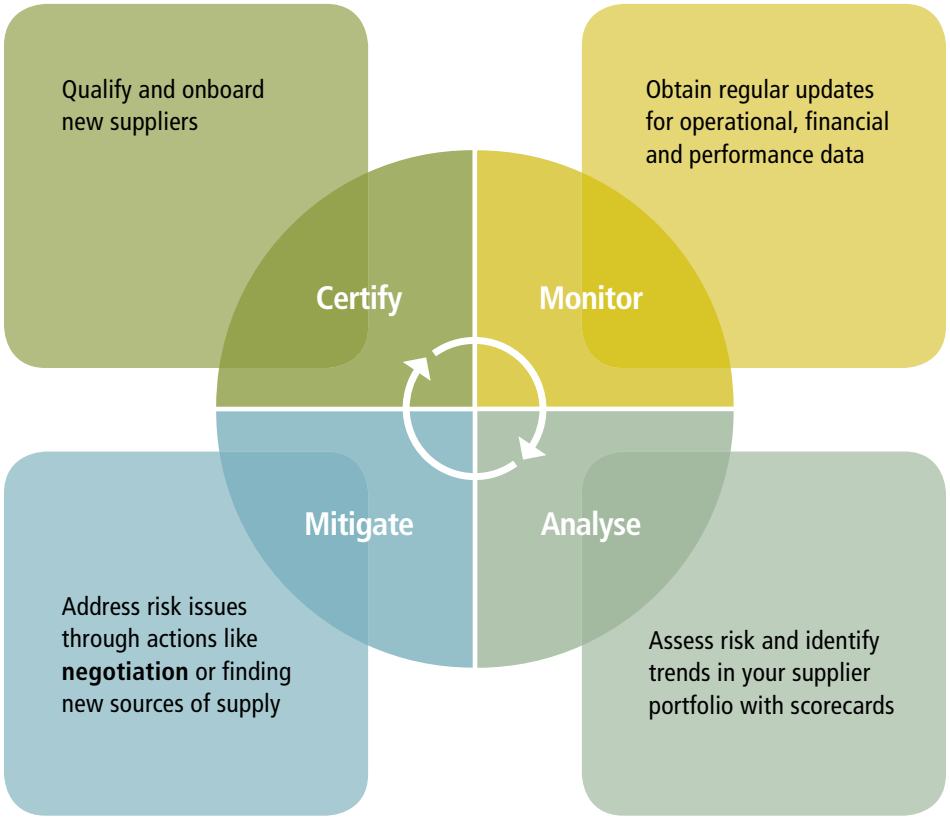
- Set up and use a vendor management process to qualify and manage ongoing relationships.
- Maintain supplier scorecards and audit your suppliers.
- Use a quality management system and measure the cost of poor quality – is it really cost-effective to buy the cheapest available inputs?
- Develop cost recovery practices, such as collection of back charges.
- Integrate your operations with those of your suppliers to better share risk and data.

Figure 8, from Dun & Bradstreet, represents a strategy for supplier performance management.

This model shows the four major supplier management activities:

- **Certify:** qualify new suppliers and bring them on board
- **Monitor:** obtain regular updates of supplier operational, financial and performance data
- **Analyze:** use scorecards to assess risk and identify trends in your supplier portfolio
- **Mitigate:** deal with risk through measures such as negotiation or finding new suppliers

Figure 8: **Supplier performance management**



TRADE AND CUSTOMS COMPLIANCE

Paying close attention to the compliance and regulatory requirements of your target market is important at all phases of the transaction flow. Compliance requirement exist throughout it, from the import of raw materials to the export of the finished goods and their passage through customs at the buyer's port of entry.

Failing to comply can expose you to fines or other penalties. If, for example, your shipment gets tied up in customs because it doesn't meet standards in some way, you will face problems such as scheduling delays, late delivery penalties and warehousing costs. In a worst-case scenario, you may have used inputs that are not certified for the target market, and your goods will not be allowed to enter the country at all. Being fully compliant can substantially reduce such catastrophic risks to your cash flow and, of course, your reputation.

BASIC CUSTOMS COMPLIANCE

The cornerstones of customs compliance are as follows:

- The *tariff classification* is determined by the nature of the product.
- The *rules of origin* determine where the product is deemed to have been made. Under NAFTA rules, for example, the origin of a Canadian-made product may be affected by how much non-Canadian content is incorporated into in it.
- The *worth of the product* is calculated according to customs valuation, which may differ from the selling price.
- The *number of items* in the shipment is determined by the basis of measurement used for your type of goods.

Be sure you clearly understand all these requirements as they apply to your target market and your particular products, and follow them very carefully. If you bring in outside help to deal with compliance issues, they should be familiar with both your industry and the market into which you are selling. Customs brokers are often among the best third-party sources of assistance in this area, so use them to your best advantage. In most countries, only authorized brokers can bring imports through customs, so you will be dealing with them in any case. It is also a good idea to have the broker's performance audited from time to time.

In addition, if some of your inputs will be imported, find out whether they comply with Canadian import regulations well before you order them. If they don't, you may find yourself scrambling to locate a new supplier.

REDUCING CUSTOMS DUTIES AND TAXES

The customs valuation is used in conjunction with the tariff classification (and sometimes with the origin of the product) to determine the amount of import duties to be paid, if any. If you obtain some of your inputs from abroad, there may be ways to reduce or eliminate the customs duties applied to them, and possibly the GST/HST as well. For example:

- The Duty Deferral Program is administered by the Canada Border Services Agency (CBSA). If you qualify for the program, the CBSA can waive, postpone or refund duties and taxes you would otherwise have to pay on goods you import.
- The Export Distribution Centre Program is administered by the Canada Revenue Agency (CRA) and is intended to benefit businesses that import goods and/or acquire goods in Canada, process them to add limited value and then export them.
- The Exporters of Processing Services Program is also administered by the CRA. It relieves participants of the obligation to pay GST/HST on imports of goods belonging to non-resident customers, provided that these goods are imported for processing, distribution or storage, and are subsequently exported.

CANADIAN COMPLIANCE REQUIREMENTS

Some products are deemed to be controlled or restricted goods and require export permits *before* they can be sent out of Canada. Be sure to check into this well before you ship your products. Some goods cannot be sent to some countries at all.

The Canadian government agency responsible for regulations of this type is the Trade Controls and Technical Barriers Bureau, formerly the Export and Import Controls Bureau. The bureau's website provides a variety of resources, including lists of controlled and restricted goods.

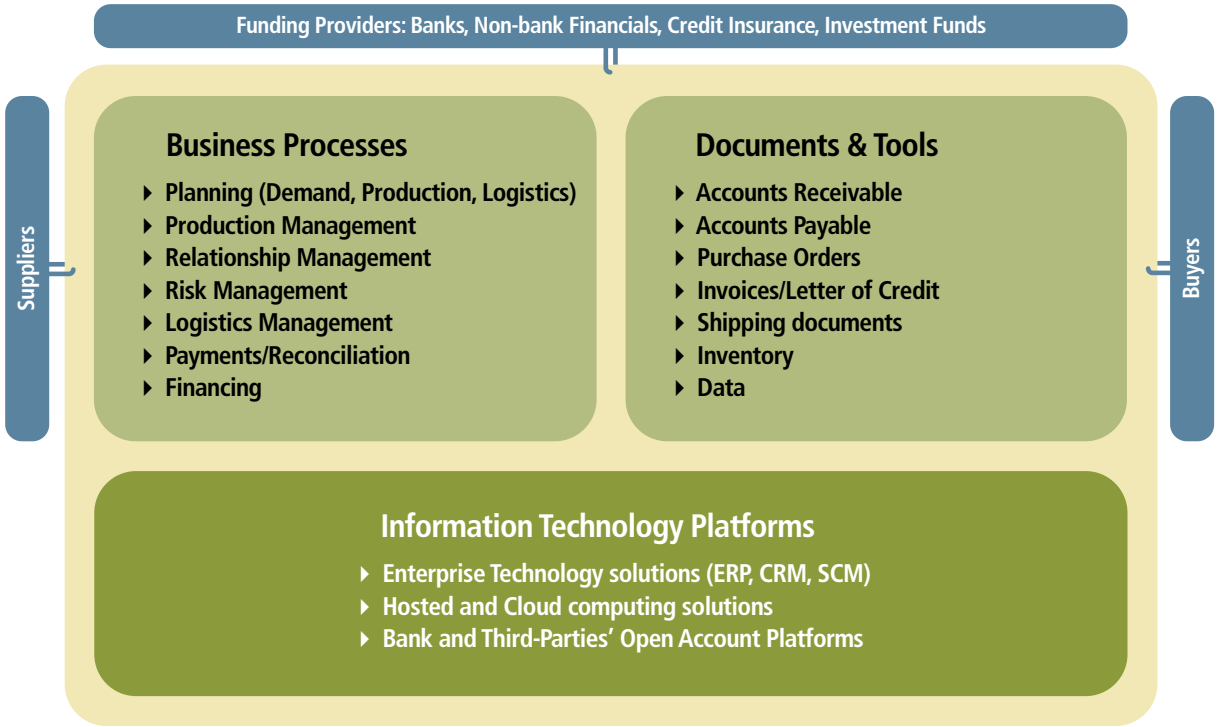
You may also be able to eliminate duties and tariffs by taking advantage of foreign free trade zones (FTZs) and the various free trade agreements (FTAs) that have been negotiated between Canada and other countries. By building partnerships with suppliers in countries where Canada has FTAs, or by manufacturing in overseas FTZs and using effective logistics, you can produce your goods and ship them directly to your customers while minimizing taxes, levies and often transportation costs.

THE ROLE OF INFORMATION TECHNOLOGY

Information technology (IT) is an important tool for lowering cash flow risk. When properly implemented, it can provide a clear picture of all the events taking place along your supply chain. Figure 9 outlines the documents, processes and tools that various forms of IT can offer.

Ideally, the IT system would collect all the pertinent information from multiple points along the chain to provide data on your orders, inventory, shipments and supply chain financing processes. This could help you identify and deal with slowdowns and choke points in your cash flow. There are numerous technology platforms that can provide such views, including open account platforms, enterprise resource planning (ERP) applications and electronic invoice presentment and payment (EIPP) providers.

Figure 9: **IT as a supply chain environment**



More and more large buyers are automating their interactions with their suppliers to reduce administration costs and increase their control over supply chain events. This can benefit suppliers by providing them with better visibility into purchase order and payment status. However, it can also require you to invest in business process and information technologies so you can connect to your buyers' systems and integrate them with your own billing and accounting processes.

CHAPTER 4:
THE CREDIT PERIOD AND THE WARRANTY PERIOD

In the overall transaction flow, the credit period follows the production period and covers the time between shipping the finished goods and receiving the buyer's payment for them. During this period, your cash flow will be affected by the method your buyer uses to pay you, and by your use of post-shipment financing tools such as receivables discounting, factoring and supplier payment programs.

PAYMENT METHODS

Several factors will influence the way in which you get paid and how long it will take to receive payment. This in turn will affect your cash flow, so you need to consider:

- your pre-shipment and pre-delivery cash expenditure and exposure;
- the relative credit risks and financing strengths of you and your buyer;
- the potential of the business relationship;
- your market strategy and objectives;
- your opportunities for obtaining trade financing and the conditions attached to such credits;
- F/X trends; and
- the methods of payment and terms of credit offered by your competitors.

There is a broad range of payment methods, each of which will have various advantages and disadvantages for the parties to the transaction. The major options are the following:

CASH IN ADVANCE

For you, this is the fastest and most secure form of payment. Your buyer, however, must finance the purchase from its own resources, and if it has to borrow the cash to do so, it may be penalized by the high local interest rates. The buyer also has no guarantee that the goods will be delivered as promised. For the buyer, consequently, cash in advance is the least desirable method of payment.

LETTERS OF CREDIT

L/Cs provide security to both the importer and exporter because they rely on banks to receive and check shipping documents, and to guarantee payment. An L/C can allow the costs of financing a transaction to be borne by either the exporter or importer. Both sight and term payment provisions can be arranged. Note that an L/C is a payment against documents and is completely independent of the actual delivery of physical goods.

Letters of credit can be *confirmed* or *unconfirmed*. For example, a Canadian bank can confirm an L/C issued by a foreign bank, thus guaranteeing that the Canadian bank will pay the exporter even if the foreign bank doesn't. This kind of L/C is obviously much better for you than the unconfirmed one.

L/Cs can also be *irrevocable*. This means they cannot be cancelled or amended without your approval. The most secure form of L/C is one that is both confirmed and irrevocable.

OPEN ACCOUNT

You, the seller, agree to ship the goods to your buyer, who will pay for them within 30 to 90 days of either shipment or receipt. This is ideal for your buyer, since it receives the goods before it has to pay for them. For the same reason, it is also the riskiest form of payment for you because it is unsecured. A willingness to be paid on this basis can help secure a sale, but be very sure that the buyer's credit is good before you agree to these terms.

OPEN ACCOUNT WITH RECEIVABLES INSURANCE

This could also be called "secured open account." In this form of payment, a financial institution provides you with accounts receivable insurance (ARI) so that you will get your money even if your buyer fails to pay. At the same time, because the financial institution secures your payment, you can offer your customer all the benefits of open-account payment with minimal risk to your bottom line. This form of payment is an excellent option for both buyer and seller. EDC specializes in ARI and can provide it in various forms to suit your needs.

DOCUMENTARY COLLECTIONS

With documentary collections, your Canadian bank sends shipping documents to a correspondent bank in your buyer's market. When the goods arrive at customs, the correspondent bank presents the documents to the buyer, who then pays before actually receiving the goods. This is known as *documents against payment* (D/P). It is very secure for you, and your customer does not have to pay until the goods arrive at customs, so there is no worry about non-delivery. This form of payment is also inexpensive compared to an L/C.

An alternative is *documents against acceptance* (D/A). In this arrangement, the buyer can pay within 30, 60 or 90 days of the documents being presented by the bank. This is good for the buyer, who is being provided with credit for up to 90 days at your expense. It is risky for you, however, because your buyer receives the goods before paying for them.

POST-SHIPMENT FINANCING

There are several ways to accelerate your cash flow during the credit period, even before the customer has paid you. They include post-shipment financing solutions such as the following:

RECEIVABLES DISCOUNTING

Your bank agrees to purchase an export receivable from you and provide you with immediate funds on a discounted basis. This is, essentially, an advance of funds against export receivables. It is done on a recourse basis, which means that you will have to reimburse the bank if the buyer fails to pay you.

FACTORING

This involves the outright purchase of your export receivables by a factoring house, at a discount. Unlike receivables discounting, it is on a non-recourse basis. The factoring house accepts the risk of non-payment and you do not have to reimburse the factor if the buyer fails to pay. Cost of capital in this case is determined by the supplier's credit risk.

SUPPLIER PAYMENT PROGRAMS (REVERSE FACTORING)

In these programs, buyers can extend their payables – for example, by increasing payment terms to 90 days – in order to optimize working capital. They work with their financing partners to allow suppliers to be paid on **approved** invoices at any time after approval, and before the invoices come due. This is done through the discounting of the invoices at preferred discount rates, based on the better credit risk profile of the buyer. Large buyers can often offer very attractive discount rates for small suppliers due to their strong credit.

RISK MITIGATION

The major risks during this period stem from commercial causes such as buyer insolvency and political causes such as expropriation. In both cases the result can be a failure to pay.

Accounts Receivable Insurance (ARI) is the usual instrument for dealing with non-payment risks, and ARI premiums are directly tied to the risk of a transaction. ARI policies will cover most of the seller's losses if the buyer fails to pay, and having ARI may make it easier for a company to obtain various types of financing from its bank. That said, the bank may not accept foreign accounts receivable (A/R) as collateral at the same rate as domestic A/R, which can limit credit availability and, consequently, cash flow. As well, overdue accounts are also removed from the A/R pool, which again reduces available credit limits.

Political Risk Insurance (PRI) is less necessary than ARI in most markets, but in some situations it may give comfort to a company's bank so that additional credit can be made available.

EDC provides both types of insurance.

THE WARRANTY PERIOD

A contract will often require you to provide a warranty bond before your buyer makes the final payment. These bonds protect your buyer from loss if the goods or services you've provided don't meet your warranty obligations after you've completed the contract. In the case of BEDM, the company had to provide a two-year warranty bond equal to 5% of the €1.5 million ($2.43 million) total contract value. This reduced the company's capital available to fund operations by $121,500 over a period of two years.

Depending on your product, the warranties and their associated bonds may have to remain in force for a long time after the contract ends, so it is important to obtain bonding without tying up collateral for extended periods. EDC's Performance Security Guarantee works in this case as well.

CONCLUSION

Maintaining cash flow and adequate working capital levels are an ongoing concern for any company. The difficulties of doing so are aggravated in international trade, however, by the higher overall risk levels compared to domestic business activity, and the extended payment terms characteristic of overseas transactions. These risks can have a significant effect on a firm's cash position, especially if it tries to deal with them entirely from its own resources.

Some of the working capital and cash flow issues that BEDM incurred in its deal with the EU buyer are a case in point, as shown in Table 1. The firm had to make advance payments and post collateral of $904,000 to satisfy the requirements of the contract and mitigate the associated risks.

Table 1: **Impacts on cash flow: BEDM Systems**

Item	Notional Risk	Effect on Cash
F/X Risk - Forwards		
Buyer (90% of €1500K ~ C$2200K)	15%	C$330K
Supplier (75% of US$270K ~ C$310K)	15%	C$47K
Foreign Supplier		
Advance payment (25% of US$360K ~ C$103K)	100%	C$103K
L/C (75% of US$360K ~ C$310K)	20%	C$62K
Bonding		
Performance bond (10% of €1500K for 9 months)	100%	C$240K
Warranty bond (5% of €1500K for 2 years)	100%	C$120K

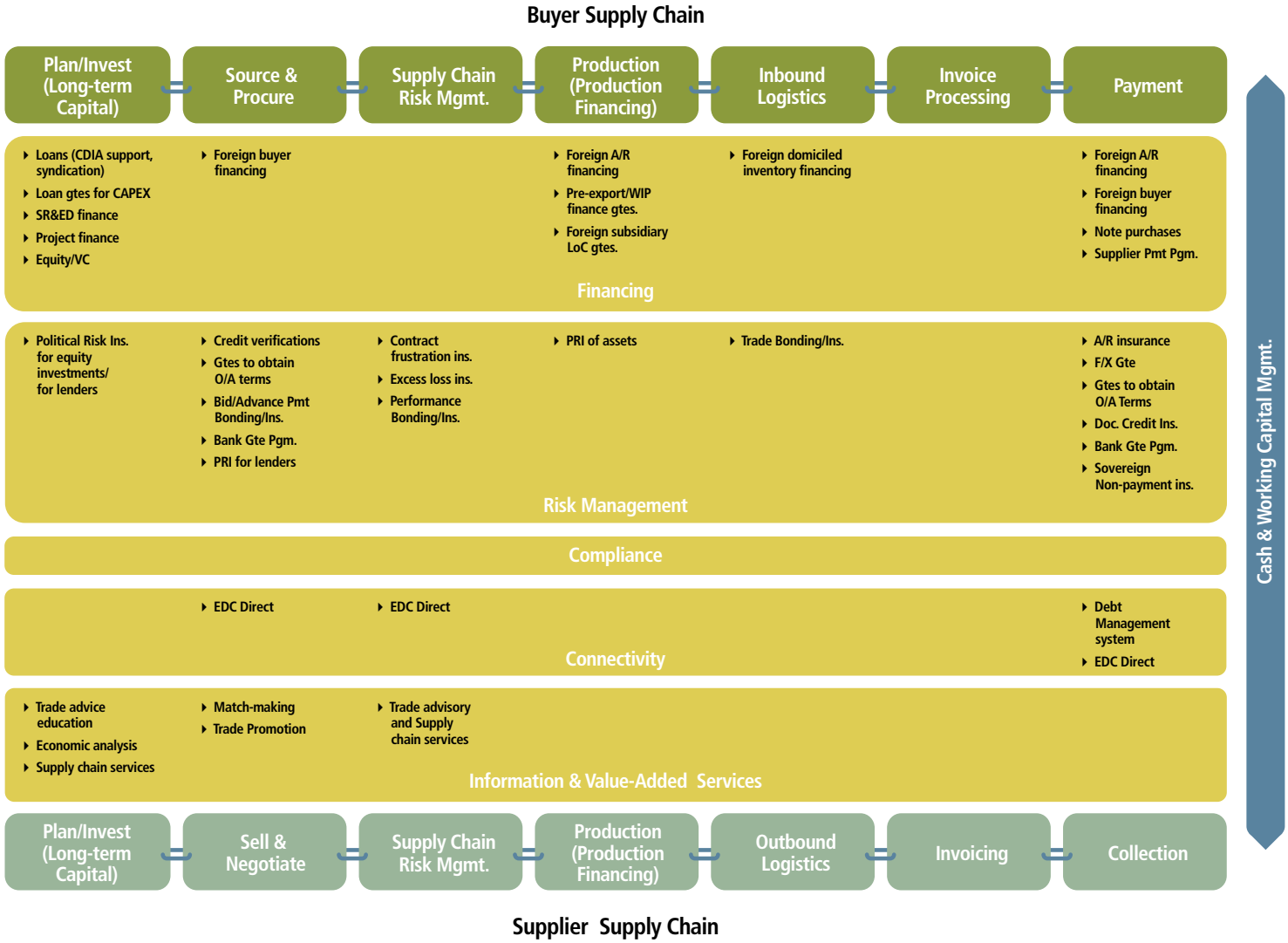
Fortunately, there are numerous tools that companies can use throughout the transaction flow to manage cash flow and working capital while reducing the risks to both. These include:

- long-term capital planning and investment solutions such as loans, loan guarantees, project finance, equity and venture capital, economic analysis and trade advisory and supply chain services;
- sourcing and procurement solutions such as foreign buyer financing, credit verifications, bid/advance payment bonding and bank guarantee programs;
- supply chain risk management solutions such as performance bonding and contract frustration insurance;
- production financing solutions such as foreign A/R financing, work-in-progress financing and foreign subsidiary line of credit guarantees;
- political risk insurance of assets;
- inbound logistics solutions such as foreign-domiciled inventory financing and trade bonding and insurance; and
- payment solutions such as foreign A/R financing, foreign buyer financing, note purchases, supplier payment program support, ARI, F/X guarantees, guarantees to obtain open account terms and EDC debt management systems.

Figure 10 shows how such tools can be applied along the length of the supply chain.

EDC itself can provide many solutions for managing and protecting cash flow and working capital. For more information, please visit the EDC web site.

Figure 10: **Supply chain financing tools**



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