

Put your company on a healthy working capital diet

Creating lasting value with working capital management

Some people have compared working capital management with putting the company on a diet; one can achieve incredible successes in a short timeframe, but it is hard to maintain or lock them in.

The traditional approach to working capital management - delaying payables, kindly “harassing” customers or reducing inventory levels to the bare minimum – can indeed have an impressive effect on individual line items in the balance sheet quickly. But as soon as the focus of management shifts, the amount of cash trapped in receivables, inventory and payables will increase again. Because of this “yoyo-effect” some people argue that working capital management is penny wise, pound foolish and upsetting customer and supplier relationships unnecessary.

Others would argue that in the long run working capital management is a zero-sum game. They argue that any reduction in DSO or extension of DPO can only be achieved at the expense of your business partners and ultimately will be reflected in the price of goods and services exchanged.

There is no reason for such pessimism. The prime ingredients for a healthy diet on working capital are efficiency and sharing information within the organization and across the value chain. However to prioritize working capital management projects, one has to first understand the root cause of the company’s “obesity” and the mechanics behind working capital.

This article analyzes the nature of working capital. Armed with an understanding of working capital, the article will explore the kind of KPI’s that need to be introduced on working capital management in order to create lasting value for organizations.

Working Capital Management

Working capital does not have the same meaning to everybody. A corporate banker might define it in the context of its counterparty risk (net working capital as a measure what fund will become available to repay debt in a distressed situation), whereas his colleague from cash management services might define it as a form of liquidity management. A finance manager within a corporation would probably define working capital as all G/L accounts for payables, receivables and inventory.

One could define working capital management as those business processes reflected in the different components of short-term assets and liabilities. As such working capital management will focus on:

Cash Conversion Cycle

The cash conversion cycle (CCC; see figure 1) consist of the physical and financial supply chain that flow over in one another creating the cyclical movement of value. The physical supply chain stands for the flow and the value adding transformation of goods and services (=value) from suppliers to customers (figure 1; green arrow). The financial supply chain represents the cashflow from the customers to suppliers, employees and other stakeholders in the company (figure 1; orange arrow). Each organization stores value temporary at the different stages of the cash conversion cycle. The total value stored in the cash conversion cycle could be determined by the sales value times the lapse time of this cycle.

$$V_{ccc} = \frac{t * \text{Revenue} * (1 + \text{VAT}_{\text{average}})}{\text{YearBase}}$$

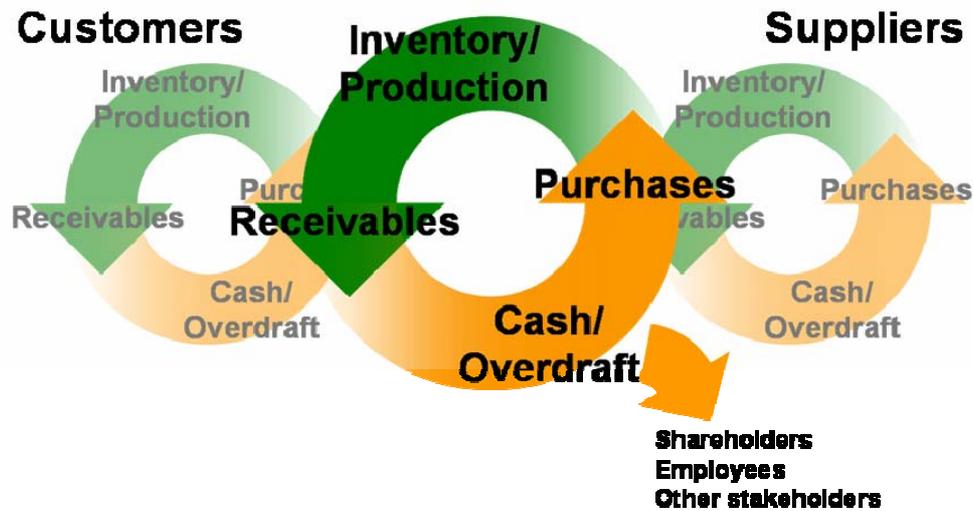


figure 1: the cash conversion cycle The velocity of the cash conversion cycle and; Cash efficiency.

V_{ccc} = total value locked in the cash conversion cycle
 t = total lapse time to complete the cash conversion cycle
 $VAT_{average}$ = average amount of VAT charge on revenue; this is a cashflow that is funded by the organization
 Year base = number of (business) days in a year; 365 or e.g. 253 days

The lapse time is determined by the credit term taken by customers, the average period inventory and cash is stored and the credit term taken from suppliers!

$$t = DSO + DIO - DPO + Days_{\text{cash-in-house}} - Days_{\text{(st) funding outstanding}}$$

t = total lapse time to complete the cash conversion cycle
 DSO = $A/R * Year\ Base / Revenue$
 DIO = $(inventory + WIP) * Year\ Base / COGS$
 DPO = $A/P * Year\ base / COGS$
 $Days\ Cash\ In-house$ = Cash & Cash Equivalent * Year base / Revenue

$$Days_{(ST) Funding Outstanding} = ST\ Liquidity \ \& \ Overdraft * Year\ base / Revenue$$

Managing the actual DSO, DPO or inventory levels impacts the value locked in the cash conversion cycle. With flat revenue growth, process improvements that would e.g. result in shortening the DSO or extending DPO will result in a permanent parallel shift upwards in liquidity equal to:

$$\Delta Liquidity = \frac{\Delta t * Revenue * (1 + VAT_{average})}{YearBase}$$

$\Delta_{Liquidity}$ = change in available cash, cash equivalents or ST borrowings
 Δt = change in total lapse time to complete the cash conversion cycle

This approach to the cash conversion cycle relates working capital management not just to its impact on the individual line items on the balance sheet, but takes into account also the profit potential of procurement and sales contracts.

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		Cash & Cash Equivalents		ST Borrowing		Gross B/S Extension		Value of 1 day CCC
		EUR * Mio	Value in Days Revenue	EUR * Mio	Value in Days Revenue	EUR * Mio	% of Total Assets	
Royal Ahold	2001	1,698	11.4	1,226	8.3	1,226	4.3%	149
	2002	1,002	5.8	2,370	13.8	1,002	4.1%	172
	2003	3,340	21.7	1,728	11.2	1,728	7.4%	154
Akzo Nobel	2001	319	8.3	2,661	66.2	319	2.5%	39
	2002	276	7.2	1,713	44.7	276	2.2%	38
	2003	243	6.8	481	13.5	243	2.0%	36
DSM	2001	1,148	52.6	482	22.1	482	5.6%	22
	2002	960	62.2	599	38.8	599	6.7%	15
	2003	1,176	70.9	382	23.0	382	4.1%	17
Heineken	2001	985	45.3	329	15.1	329	4.6%	22
	2002	559	22.6	778	31.5	559	7.2%	25
	2003	1,340	52.8	853	33.6	853	7.8%	25
KPN	2001	7,343	228.4	5,724	178.1	5,724	13.9%	32
	2002	2,657	62.3	2,360	73.1	2,360	9.4%	32
	2003	1,839	55.5	952	29.3	952	3.9%	33
Royal Dutch Shell	2001	4,495	18.1	2,688	10.8	2,688	3.6%	248
	2002	889	2.9	7,354	23.6	889	1.0%	312
	2003	930	3.2	5,253	17.9	930	1.2%	293
TPG	2001	353	11.7	548	18.2	353	4.2%	30
	2002	233	7.3	238	7.4	233	2.8%	32
	2003	469	14.5	69	2.1	69	0.9%	32

figure 2: cash (in)efficiency of some Dutch listed companies (source Bloomberg)

Cash Efficiency

As demonstrated above, a change in receivables or inventory management has a direct impact on the liquidity of the organization. Cash management has a special function within working capital management. Cash management is the financial supply chain's equivalent of inventory management. The difference is that unlike the inventory manager, the cash manager has a choice to maintain long and short positions. Long positions have a very low return, while short positions can be very costly. More often than not however, cash managers will maintain long and short positions at the same time sometimes resulting in a considerable extension to the balance sheet.

The direct cost of simultaneous long and short cash positions is the interest spread on the net extension (calculated as the difference between the cash deposit rate and either the rate used for calculating the internal cost of capital or e.g. the funding rate of the organization).

There is however an additional, indirect cost to cash inefficiency. The balance sheet extension

has a negative impact on key financial ratio's like EBT, interest coverage, asset turnover and e.g. debt-equity ratio. As such it (indirectly) impacts the value of the company and its debt capacity.

Figure 2 provides some practical examples of the actual impact of cash inefficiency. This figure provides an overview of the actual amount of cash and short-term borrowings / overdraft that some Dutch listed companies reported for the end of their financial year 2001-2003 (columns 1 and 3). These amounts are also expressed in days revenue equivalent (columns 2 and 4; year base 365). Column 6 expresses the balance sheet extension as a percentage of the total assets reported for the end of the reporting period. Figure 2 does not include the total debt position of the companies.

Figure 2 highlights for instance that Royal Ahold reported for the end of 2003 EUR 3.3Billion in Cash and Cash Equivalents. This value is the equivalent of 3 weeks in net revenue. If Royal Ahold would have been able to use that EUR 3.3Billion liquidity to repay short-term and long-term debt, the company would shorten its 2003

year end balance sheet with more than 14% and its interest bearing debt outstanding with almost 40%!

Of course, it will be hard for any company to net 100% of the cash inefficiency. Seasonality, cash management practices and e.g. the services offered by / purchased from cash management banks all influence the daily volatility in cash balances and would explain to some extent the gross position in cash maintained at year end. Management decisions on maintaining cash for tactical or strategic reasons might also explain significant gross cash positions. However the gross position in cash and funding, especially when it is maintained for a number of consecutive quarters, would also function as an indicator for inefficient working capital and cash management.

The maximum opportunity loss of cash inefficiency is equal to the direct cost of the balancesheet extension. In case of Royal Ahold one could conservatively estimate the annualized opportunity loss due to cash inefficiency as EUR 26.8Million This is 125 basis points spread times the average balance in cash and cash equivalent. 125 basis points is the current yield for Royal Ahold bonds over a risk free yield. During 2003 this spread was on average considerably higher.

Process Efficiency

The key to lasting success in working capital management is improving the processes behind the lines that make up the short end of the balance sheet. Working capital management priorities do not necessarily have to target the reported value in a balance sheet line item. For example a project to raise invoices immediately at fulfilment rather than once every two weeks does not change the reported DSO. It shortens the cash conversion cycle with about a week and brings the cashflow one week forward! By the same token would the introduction of a fully automated web-based order system not change the credit term taken by customers, but might reduce the error rate and the time required to complete the sales documentation. The result would be:

faster completion of the cash conversion cycle;
increased likelihood of payment at due date and;
lower sales handling cost.

Another important, but less discussed category of process improvement is the measures

promoting business linearity. Business linearity aims at reducing the volatility in cashflow and workload. The obvious benefit is that a less volatile flow of business reduces the pockets of idle capacity in operations. At the same time it makes cash management less sensitive to timing errors (and thus reduce the effort and stress creating the cash forecast) while unlocking the liquidity maintained as a buffer for the mismatch between cash in- and outflow.

A sample project aimed at business linearity would be the introduction of a payment factory allowing an organization to switch from weekly to daily payment cycles. By switching to daily payment cycles organizations will benefit from two effects that unlock cash from working capital. Firstly a less volatile daily cash outflow will reduce the volatility in daily closing balances. This effect allows organizations to take out up to the difference between the minimum and average cash balance prior to the project. Secondly a daily payment run allows organizations to pay invoices more consistent to the due date. On average this will delay payments with up to 2 or 3 days resulting in a parallel shift of the average closing balance equivalent to up to 2 or 3 days worth of purchases (including VAT). Postponing disbursements unlocks cash permanently up to the difference between the average and maximum daily closing balance.

The objective of working capital management

The objective of working capital management would be to lock value and cash in the short term end of the balance sheet only to the extent that it creates (additional) value for the organization. In this definition management would look for an optimum, rather than a minimum value trapped in working capital.

For instance if the minimum service levels require a stock level of at least 100 items type A, pushing the inventory even temporarily down to 80 might jeopardize an organization's credibility in the long run. On the other hand it might be worthwhile to entertain an extension of the standard credit term with 30 days if this would allow negotiating a contract 1.5% above comparable sales.

The value trapped in working capital is rather a function of revenue and profit potential than a function of the on-balance sheet number for

inventory, receivables and payables. A company that completes the cash conversion cycle in 10 days less than its competitor will create more value and will be in a better position to stay competitive. Toyota, Dell and Walmart have all demonstrated this principal applied on the physical supply chain side very successful.

KPI's for daily working capital management

Armed with an understanding of the mechanics and objectives of working capital management, we are now able to explore suitable KPI's. The KPI's for the financial supply chain side of the cash conversion cycle could be mirror images of the KPI's already applied at the physical supply chain side.

As we have seen, process efficiency is key to speeding up cashflow and reducing daily cashflow volatility. Traditional balance sheet linked KPI's like DSO are less suitable for setting target on the financial supply chain side.

Firstly, working capital management is a daily rather than a periodical routine. One of the drawbacks of balance sheet linked KPI's is that they are more difficult to track on a daily basis.

Secondly, as we have seen above, some drivers locking in value on the cash conversion cycle are not fully or not properly reflected in traditional balance sheet ratio's. The lapse time between fulfilment and invoice for instance has an impact on the actual due date of a cash inflow resulting from goods or services delivered. A 2-days delay in issuing an invoice extends the cash conversion cycle, delays the revenue booking with 2 days. Although this delay has an impact on the asset turnover and cashflow, it is not reflected in the DSO!

KPI's better suitable for the financial supply chain side of working capital management will be:

- target length for the total cash conversion cycle;
- target throughput times for certain key stages in operational processes (order to cash, purchase to pay, cash management);
- maximum deviation between due date and actual settlement of invoices;
- reduced volatility in daily available liquidity and;
- maximum error / repair rates for orders and invoices

In addition to these specific KPI's on working capital management processes, organizations will have to link particular initiatives to the overall

financial objectives. For instance an efficient cash management could not only be rewarded for the reduction in volatility in daily balances, but also on its effect on e.g. asset turnover and net interest.

Conclusion

A healthy working capital workout combined with a low-cash diet can help putting your company in a better shape. Setting the cash conversion cycle at the right pace while creating greater awareness of time value of money improves the profitability and key financial ratios. Working capital management is certainly not a zero-sum game at the expense of your business partners. Improving order handling and payment processing, for example, or promoting business linearity will drive value by reducing your (average) working capital needs without harming your business relationships.



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