Product marketers and managers are often asked to compare the price of a perpetually licensed product vs. a software-as-a-service (SaaS) based (consumption-based) license. To make the comparison, it’s essential that marketers know how to determine the value of each licensing model and understand their idiosyncrasies. This post demonstrates how to determine the value of a perpetually licensed product.

Product marketers and managers are often asked to compare the price of a perpetually licensed product vs. a software-as-a-service (SaaS) based (consumption-based) license. To make the comparison, it’s essential that marketers know how to determine the value of each licensing model and understand their idiosyncrasies. This post demonstrates how to determine the value of a perpetually licensed product.

A perpetual license gives the holder the right to use the software forever. Enterprise software is usually purchased along with maintenance, which provides updates to the software for a period of time. When analyzing a perpetual model, I recommend estimating the lifetime of the product’s use as the depreciation window, say three years. The cash flow of a three-year perpetual license of $5,000 plus 20 percent/year maintenance is as follows: Year 1, $5,000 plus $1,000; Year 2, $1,000; and Year 3, $1,000, for a total of $8,000. (Maintenance is paid at the beginning of each year.)

The present value calculation considers the cost of capital and the sum of discounted future cash flows in today’s dollars to produce an indicator of the license’s total value over time. Even when interest rates are low, you still have the opportunity cost of not using the funds for a different project, so you need to set a discount rate. Your finance department can help you determine the discount rate for your organization. Let’s use 10 percent for this example. Applying Microsoft Excel’s present value formula, the perpetually licensed product with discounted cash flows for the maintenance payments would have a present value of $7,735.

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The value-to-revenue ratio is one of the measures of a company's financial performance, especially relative to other companies in the same industry. Also called enterprise value-to-revenue ratio, this calculation relates the amount of a company's annual revenue to its total value including assets and debts. Generally, a lower ratio means that the company is creating a good return on every dollar invested. The inverse of this ratio is the return-on-investment ratio.

1. Calculate the company's enterprise value. Find the number of outstanding shares on the company's income statement and multiply them by the current stock share price. This is called the market capitalization. Next, add all debts from the balance sheet, both long and short term, to the market capitalization. Finally, subtract the value of the current cash and cash equivalents found on the balance sheet, from the total of equity plus debt. The resultant amount is what someone would have to pay to purchase the company outright.

2. Locate the revenue earnings for the company on the income statement.

3. Divide the enterprise value by the amount of revenue to get the value to revenue ratio.

What Is the Cash Conversion Cycle (CCC)?

The cash conversion cycle (CCC) is a metric that expresses the time (measured in days) that it takes for a company to convert its investments in inventory and other resources into cash flows from sales. Also called the net operating cycle or simply cash cycle, CCC attempts to measure how long each net input dollar is tied up in the production and sales process before it gets converted into cash received.

This metric takes into account how much time the company needs to sell its inventory, how much time it takes to collect receivables, and how much time it has to pay its bills.

The CCC is one of several quantitative measures that help evaluate the efficiency of a company’s operations and management. A trend of decreasing or steady CCC values over multiple periods is a good sign, while rising ones should lead to more investigation and analysis based on other factors. One should bear in mind that CCC applies only to select sectors dependent on inventory management and related operations.

Key Takeaways

The cash conversion cycle (CCC) is a metric that expresses the length of time (in days) that it takes for a company to convert its investments in inventory and other resources into cash flows from sales.

This metric takes into account the time needed for the company to sell its inventory, the time required for the company to collect receivables, and the time that the company is allowed to pay its bills without incurring any penalties.

CCC will differ by industry sector based on the nature of business operations.

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The Cash Conversion Cycle

The Formula for the Cash Conversion Cycle (CCC)

Since CCC involves calculating the net aggregate time involved across the above three stages of the cash conversion life cycle, the mathematical formula for CCC is represented as:

CCC=DIO+DSO−DPO where:DIO=Days of inventory outstanding(also known as days sales of inventory)DSO=Days sales outstandingDPO=Days payables outstanding​CCC=DIO+DSO−DPOwhere:DIO=Days of inventory outstanding(also known as days sales of inventory)DSO=Days sales outstandingDPO=Days payables outstanding​

DIO and DSO are associated with the company’s cash inflows, while DPO is linked to cash outflow. Hence, DPO is the only negative figure in the calculation. Another way to look at the formula construction is that DIO and DSO are linked to inventory and accounts receivable, respectively, which are considered as short-term assets and are taken as positive. DPO is linked to accounts payable, which is a liability and thus taken as negative.

Calculating the Cash Conversion Cycle

A company’s cash conversion cycle broadly moves through three distinct stages. To calculate CCC, you need several items from the financial statements:

Revenue and cost of goods sold (COGS) from the income statement

Inventory at the beginning and end of the time period

Accounts receivable (AR) at the beginning and end of the time period

Accounts payable (AP) at the beginning and end of the time period

The number of days in the period (e.g., year = 365 days, quarter = 90)

The first stage focuses on the existing inventory level and represents how long it will take for the business to sell its inventory. This figure is calculated by using the days inventory outstanding (DIO). A lower value of DIO is preferred, as it indicates that the company is making sales rapidly, implying better turnover for the business.

DIO, also known as DSI (days sales of inventory), is calculated based on the cost of goods sold (COGS), which represents the cost of acquiring or manufacturing the products that a company sells during a period.

DSI=Avg. InventoryCOGS×365 Dayswhere:Avg. Inventory=12×(BI+EI)BI=Beginning inventoryEI=Ending inventory​DSI=COGS

Avg. Inventory​×365 Dayswhere:Avg. Inventory=2

1​×(BI+EI)BI=Beginning inventoryEI=Ending inventory​

The second stage focuses on the current sales and represents how long it takes to collect the cash generated from the sales. This figure is calculated by using the days sales outstanding (DSO), which divides average accounts receivable by revenue per day. A lower value is preferred for DSO, which indicates that the company is able to collect capital in a short time, in turn enhancing its cash position.

DSO=Avg. Accounts ReceivableRevenue Per Daywhere:Avg. Accounts Receivable=12×(BAR+EAR)BAR=Beginning AREAR=Ending AR​DSO=Revenue Per Day

Avg. Accounts Receivable​where:Avg. Accounts Receivable=2

1​×(BAR+EAR)BAR=Beginning AREAR=Ending AR​

The third stage focuses on the current outstanding payable for the business. It takes into account the amount of money that the company owes its current suppliers for the inventory and goods it purchased, and it represents the time span in which the company must pay off those obligations. This figure is calculated by using the days payable outstanding (DPO), which considers accounts payable. A higher DPO value is preferred. By maximizing this number, the company holds onto cash longer, thus increasing its investment potential.

DPO=Avg. Accounts PayableCOGS Per Daywhere:Avg. Accounts Payable=12×(BAP+EAP)BAP=Beginning APEAP=Ending APCOGS=Cost of Goods Sold​DPO=COGS Per Day

Avg. Accounts Payable​where:Avg. Accounts Payable=2

1​×(BAP+EAP)BAP=Beginning APEAP=Ending APCOGS=Cost of Goods Sold​

All of the above-mentioned figures are available as standard items in the financial statements filed by a publicly listed company as a part of its annual and quarterly reporting. The number of days in the corresponding period is taken as 365 for a year and 90 for a quarter.

What the Cash Conversion Cycle Can Tell You

Boosting sales of inventory for profit is the primary way for a business to make more earnings. But how does one sell more stuff? If cash is easily available at regular intervals, then one can churn out more sales for profits, as frequent availability of capital leads to more products to make and sell. A company can acquire inventory on credit, which results in accounts payable (AP).

A company can also sell products on credit, which results in accounts receivable (AR). Therefore, cash isn’t a factor until the company pays the accounts payable and collects the accounts receivable. Timing is thus an important aspect of cash management.

CCC traces the life cycle of cash used for business activity. It follows the cash as it’s first converted into inventory and accounts payable, then into expenses for product or service development, through to sales and accounts receivable, and then back into cash in hand. Essentially, CCC represents how fast a company can convert the invested cash from start (investment) to end (returns). The lower the CCC, the better.

Inventory management, sales realization, and payables are the three key ingredients of business. If any of these goes for a toss—say, inventory mismanagement, sales constraints, or payables increasing in number, value, or frequency—then the business is set to suffer. Beyond the monetary value involved, CCC accounts for the time involved in these processes that provides another view of the company’s operating efficiency.

In addition to other financial measures, the CCC value indicates how efficiently a company’s management is using the short-term assets and liabilities to generate and redeploy the cash and gives a peek into the company’s financial health with respect to cash management. The figure also helps assess the liquidity risk linked to a company’s operations.

Special Considerations

If a business has hit all the right notes and is efficiently serving the needs of the market and its customers, it will have a lower CCC value.

CCC may not provide meaningful inferences as a stand-alone number for a given period. Analysts use it to track a business over multiple time periods and to compare the company to its competitors. Tracking a company’s CCC over multiple quarters will show if it is improving, maintaining, or worsening its operational efficiency.

While comparing competing businesses, investors may look at a combination of factors to select the best fit. If two companies have similar values for return on equity (ROE) and return on assets (ROA), it may be worth investing in the company that has the lowest CCC value. It indicates that the company is able to generate similar returns more quickly.

CCC is also used internally by the company’s management to adjust their methods of credit purchase payments or cash collections from debtors.

Example of How to Use the Cash Conversion Cycle

CCC has a selective application to different industrial sectors based on the nature of business operations. The measure has a great significance for retailers like Walmart Inc. (WMT), Target Corp. (TGT), and Costco Wholesale Corp. (COST), which are involved in buying and managing inventories and selling them to customers. All such businesses may have a high positive value of CCC.

However, CCC does not apply to companies that don’t have needs for inventory management. Software companies that offer computer programs through licensing, for instance, can realize sales (and profits) without the need to manage stockpiles. Similarly, insurance or brokerage companies don’t buy items wholesale for retail, so CCC doesn’t apply to them.

Businesses can have negative CCCs, like online retailers eBay Inc. (EBAY) and Amazon.com Inc. (AMZN). Often, online retailers receive funds in their accounts for sales of goods that actually belong to and are served by third-party sellers who use the online platform. However, these companies don’t pay the sellers immediately after the sale but may follow a monthly or threshold-based payment cycle. This mechanism allows these companies to hold onto the cash for a longer period of time, so they often end up with a negative CCC. Additionally, if the goods are directly supplied by the third-party seller to the customer, the online retailer never holds any inventory in house.

A Harvard Business blog post attributes the negative CCC as a key factor in Amazon’s survival of the dot-com bubble of 2000.1 Operating with a negative CCC became a source of cash for the company, instead of being a cost for it.

What does the cash conversion cycle measure?

The cash conversion cycle (CCC) is one of several measures of management effectiveness. It measures how fast a company can convert cash on hand into even more cash on hand. The CCC does this by following the cash, or the capital investment, as it is first converted into inventory and accounts payable (AP), through sales and accounts receivable (AR), and then back into cash. Generally, the lower the number for the CCC, the better it is for the company.

What is the cash conversion cycle formula?

Cash Conversion Cycle = Days Inventory Outstanding + Days Sales Outstanding - Days Payables Outstanding

What does the cash conversion cycle say about a company’s management?

When a company—or its management—takes an extended period of time to collect outstanding accounts receivable, has too much inventory on hand, or pays its expenses too quickly, it lengthens the CCC. A longer CCC means that it takes a longer time to generate cash, which can mean insolvency for small companies.

When a company collects outstanding payments quickly, correctly forecasts inventory needs, or pays its bills slowly, it shortens the CCC. A shorter CCC means that the company is healthier. Additional money can then be used to make additional purchases or pay down outstanding debt.

When a manager has to pay its suppliers quickly, it’s known as a pull on liquidity, which is bad for the company. When a manager cannot collect payments quickly enough, it’s known as a drag on liquidity, which is also bad for the company.

How does inventory turnover affect the cash conversion cycle?

A higher, or quicker, inventory turnover decreases the cash conversion cycle. Thus, a better inventory turnover is a positive for the CCC and a company’s overall efficiency.