How Ecommerce companies can master cash conversion cycles to stay profitable and grow faster

INTRODUCTION

As ecommerce companies scale, they face fundamental challenges maintaining complete control over their cash flow. Full control and utilization of cash flow is multifaceted, but a major component that can benefit businesses is the **Cash Conversion Cycle (CCC)**. Understanding and knowing how to effectively manage your Cash Conversion Cycle can differentiate healthy, fast-growing companies from the rest.

What is the Cash Conversion Cycle (CCC) and why is it an important metric?

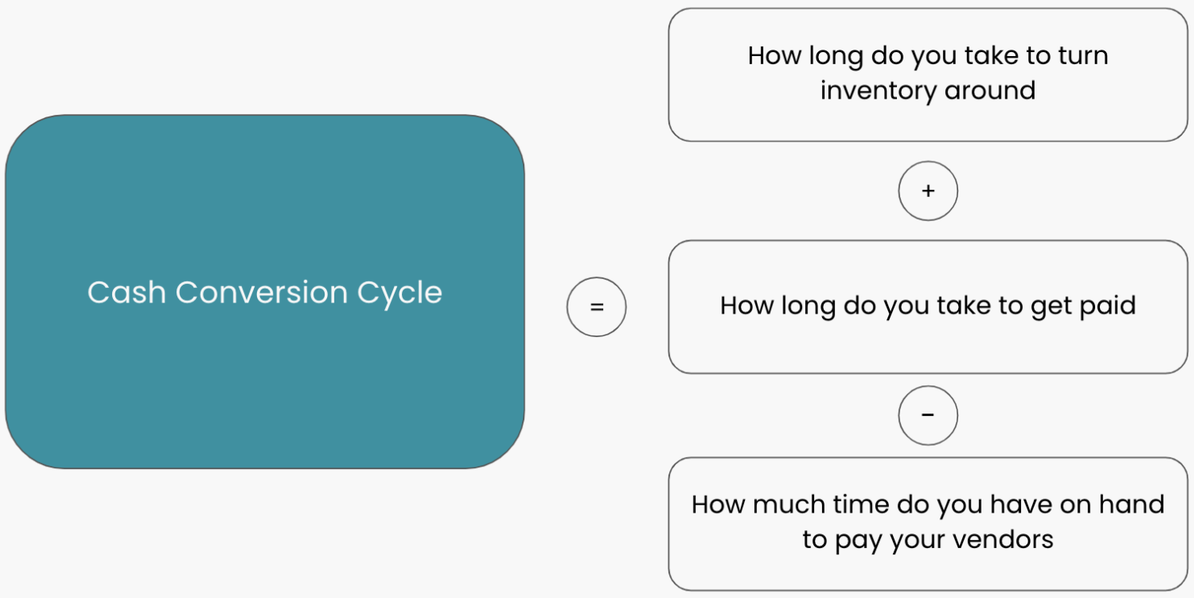
The Cash Conversion Cycle represents how many days a business needs to convert invested cash back into capital. It is a single metric representing the three key facets that can indicate the overall health of your business.

The three facets are:

1) How long you take to turn inventory around (the shorter the better)

2) How much time it takes you to get paid (the faster the better)

3) How much time you have on hand to pay your vendors (more time is better)



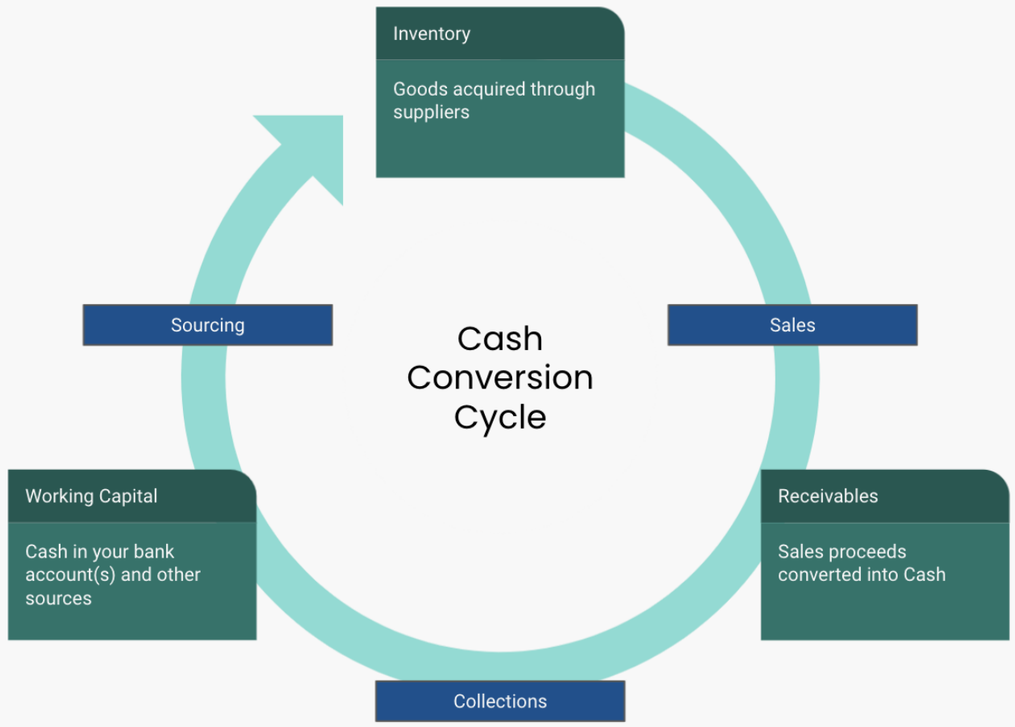
Typically CCC for ecommerce companies can average between 70-100 days. This means it takes 70-100 days to convert invested cash back into capital in their bank accounts. A higher cash conversion cycle indicates that it takes longer to close the loop between sourcing goods and getting paid for them. Thus, the higher your CCC metric, the longer your business needs to complete a full run and finance itself. Since your cash is locked in a longer cycle, there is less capital to invest in growth.

Outstanding ecommerce businesses, such as **Amazon.com**, have negative cash conversion cycles, which means their business takes in cash from customers before they need to pay their vendors. This can help companies fuel hyper growth since they do not need to keep injecting capital at every step.

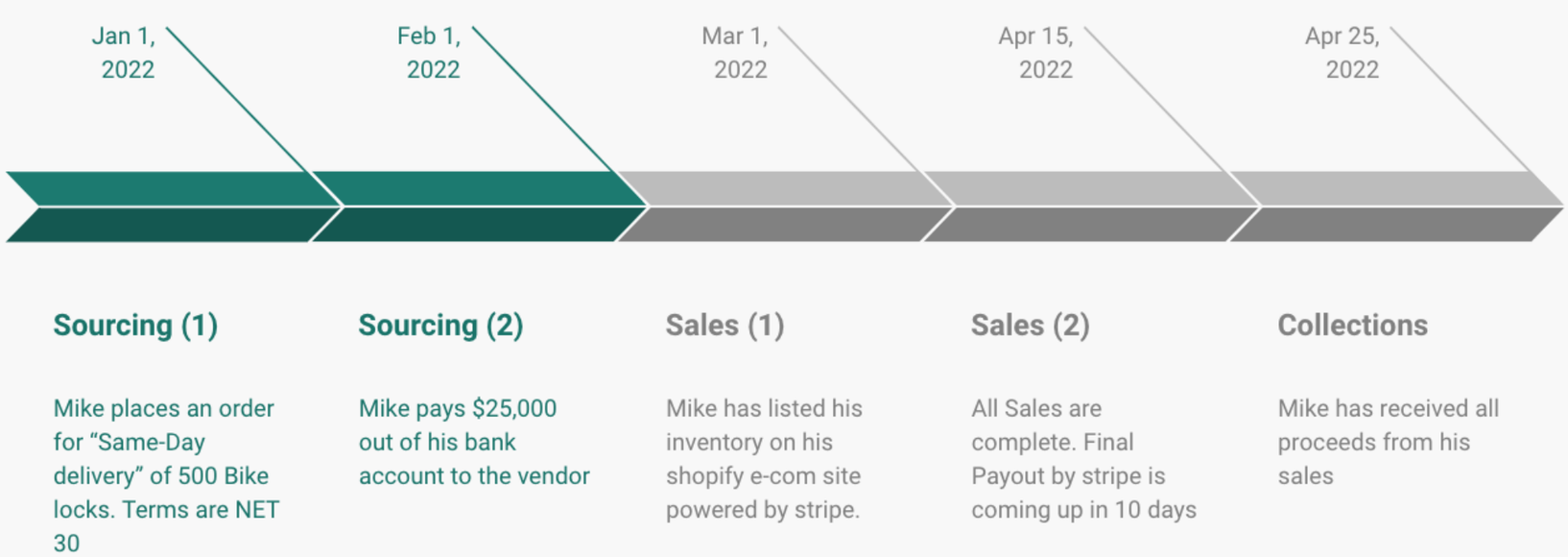
Let's develop a deeper understanding of cash conversion cycles

Here is a simple view of an ecommerce business. Let's focus on three key processes:

- **Sourcing**: Cash is converted into inventory
- **Selling**: Inventory is converted into receivables
- **Collecting**: Receivables are converted into cash



Let's imagine a recently launched ecommerce company, Mike's Bikes, going through this cycle.

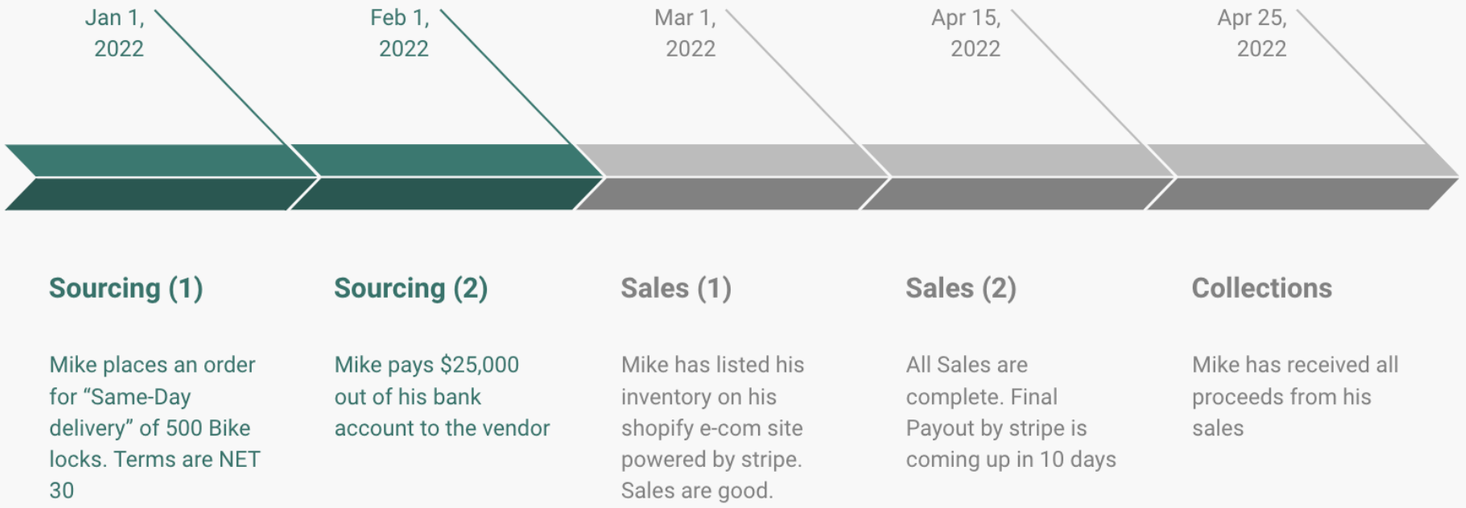


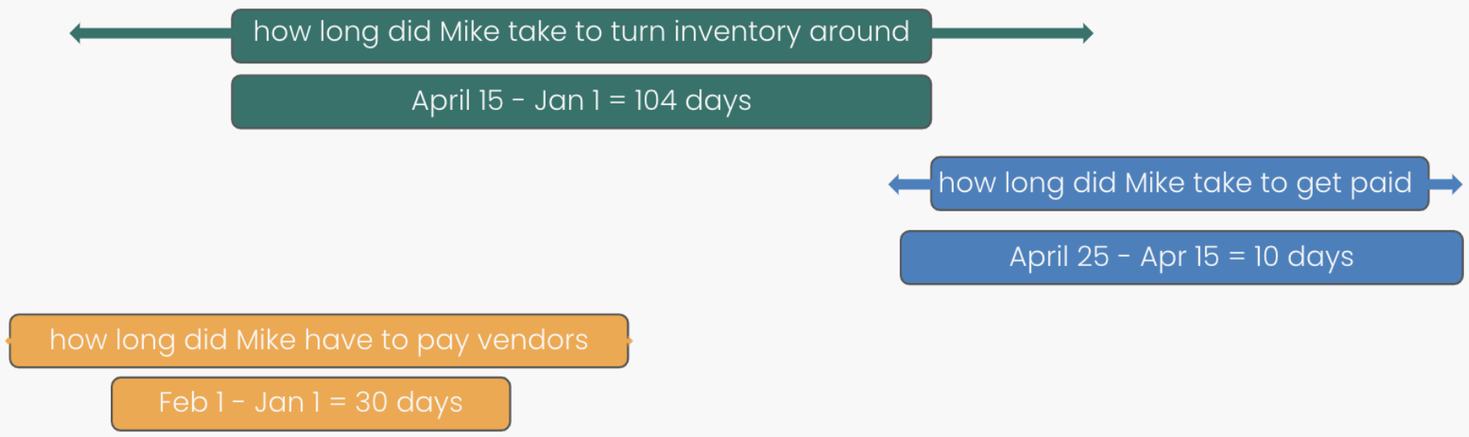
Timeline - a *cycle* in Mike's bike store

If we look at the above cycle, we can roughly calculate the three key parameters that make the CCC metric:

1. **Days Inventory Outstanding (DIO):** How long it takes Mike to turn inventory around.
2. **Days Sales Outstanding (DSO):** How long it takes Mike to get paid.
3. **Days Payables Outstanding (DPO):** How long it takes Mike to pay his vendors.

Note: this is a rough calculation, the actual calculations involve averaging these cycles and require formulas that we will discuss shortly.

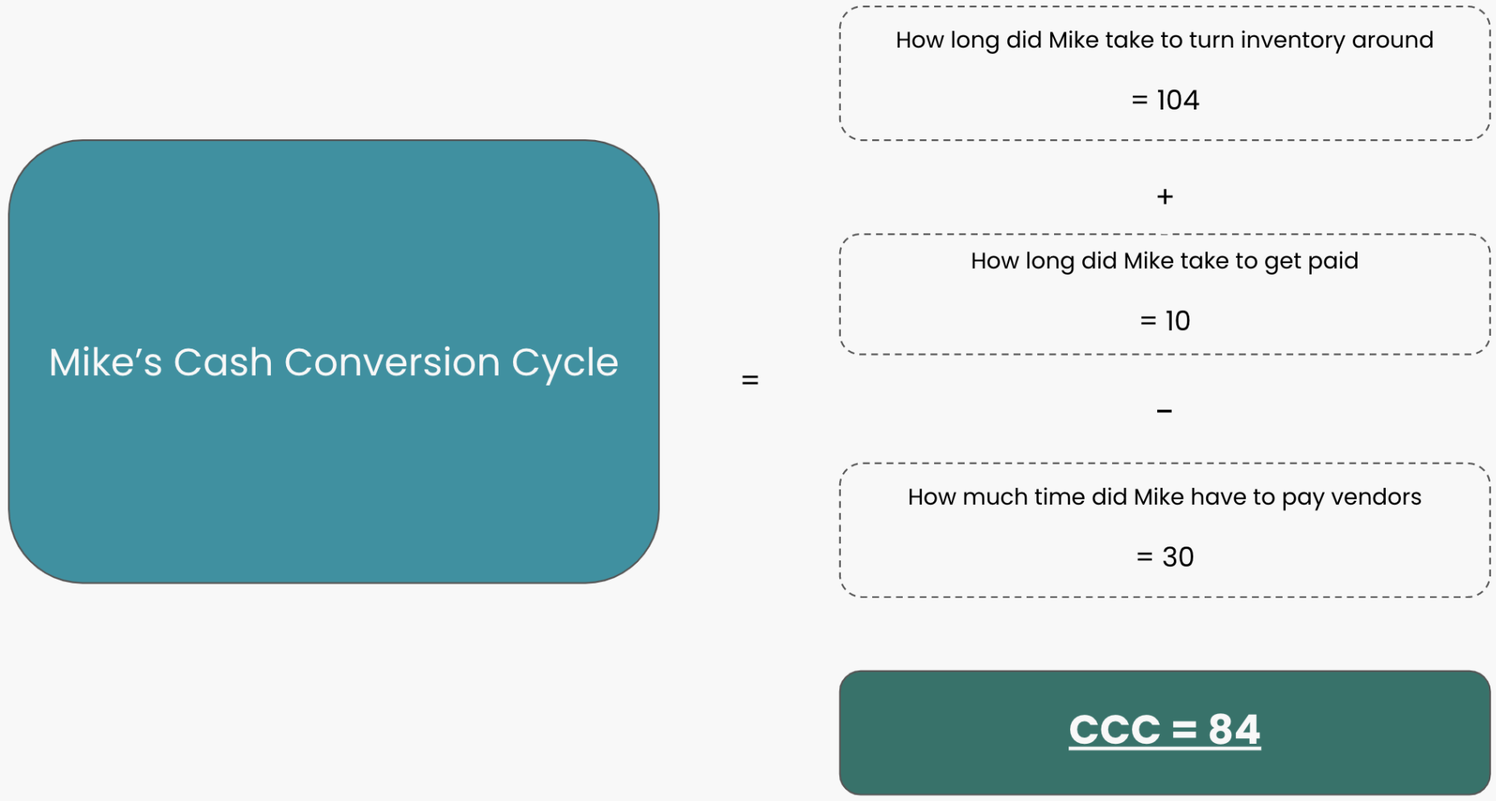




Looking at the above timeline we can calculate:

> **How long did Mike take to turn inventory around (DIO) = 104 days**
>
> **How long did Mike take to get paid (DSO) = 10 days**
>
> **How long did Mike have to pay their vendors (DPO) = 30 days**

Finally, looking back on our CCC metric definition, we can calculate Mike's CCC as:



Mike's CCC is 84 days

CCC = 104 + 10 – 30 = 84

Formal Calculation of a CCC in Action

We used the above example as a rough calculation, but in doing so, we made a few assumptions in the above model to drive home the concept. Some of the assumptions included Mike selling all inventory at once on April 15, as well as Mike receiving all payments at once on April 25. Thus, our calculations were very simplistic.

In a practical sense however, Mike is not going to sell all his inventory in one single day. He will probably end up selling some on January 2, some throughout February and some in March and finally the last units are sold on April 15. Likewise, his payouts will start trickling in after his first sale in January. When we calculate CCC for a business, we thus have to consider averages instead of absolute dates. Some inventory gets turned around in one day, some takes a few more, etc. so the "Real DIO" is different and we need to find it by doing a calculation across a season (for example a full year). We similarly will rely on average DSO and DPO to reach a formal computation of the CCC.

Let's understand DIO, DSO and DPO in more detail and take a look at a formal calculation of a CCC in action.

Days Inventory Outstanding (DIO)

Days Inventory Outstanding (DIO) measures the average number of days that a business keeps its inventory before they are able to sell it. The “average” is key since we compute DIO across a whole season to get a more “real” picture of a business’s ability to turn inventory over. Some periods could be good, others could be bad, thus the average will give us a generally clear picture of how fast inventory moves.

As discussed, a low DIOs indicates that cash is tied up for shorter time frames. Longer DIOs are risky since inventory can become obsolete. Restaurants and food manufacturing companies need shorter DIOs since food expires quickly. On the other hand, car part manufacturers can afford a higher DIO because inventory does not get outdated.

Let’s use the fictional company Alice’s Trucks as an example. In this instance we’re assuming the following parameters in Alice’s Trucks report from 2021:

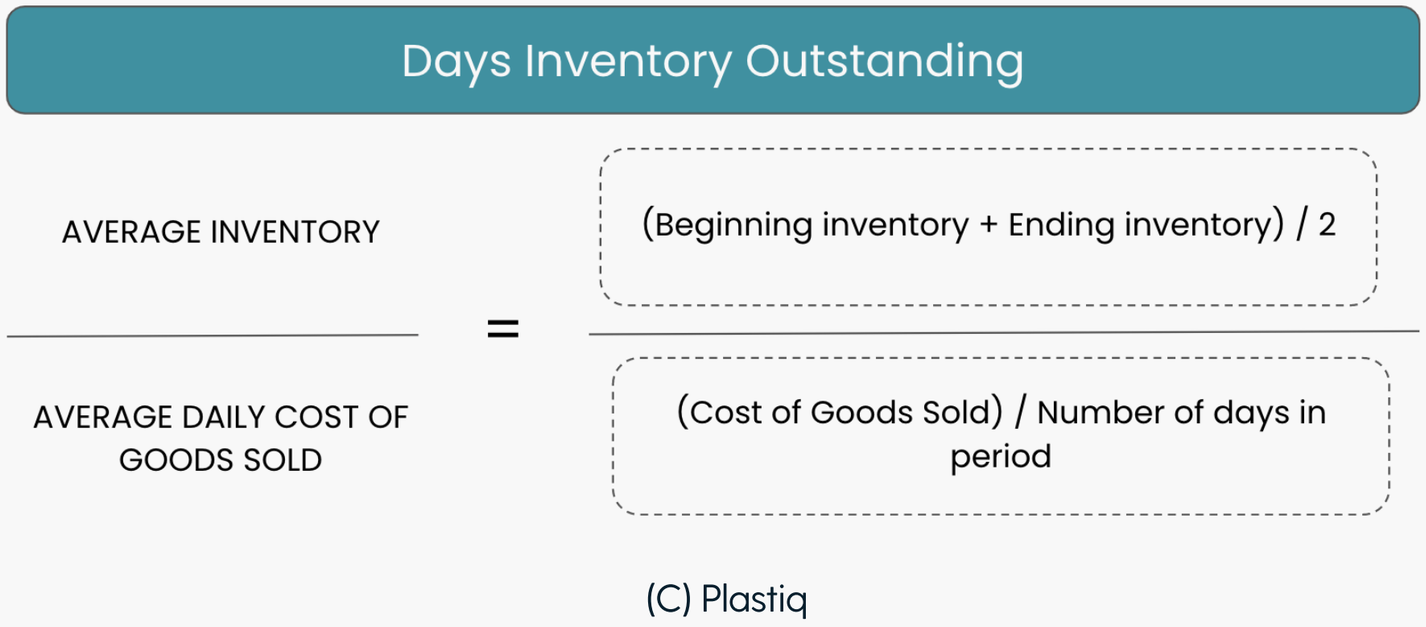
Alice’s Trucks 2021 Report	
Inventory - Start of the Season 2021	**$20,000**
Inventory - End of the Season 2021	**$18,000**
Cost of Goods Sold - 2021	**$190,000**

- Alice’s COGS throughout 2021 was $190,000. On a daily basis, Alice is able to thus move COGS of $190,000 / 365 = $521.
- Alice’s starting inventory was worth $20,000 and ending inventory was $18,000. On an average, Alice’s daily inventory can assumed to be ($20,000 + $18,000) / 2 = $19,000
- Finally, we need to find out how long it takes for Alice to turn daily inventory over
    - We know the average daily inventory is **$19,000**.
    - We know the average daily COGS is **$521**.
    - Thus, **to sell a day’s inventory it would take Alice $19,000 / 521 = 37 Days**

This is how a DIO is calculated.

The official formula is:

DIO = [(Beginning inventory + Ending inventory) / 2] / (COGS)



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Days Sales Outstanding (DSO)

The Days Sales Outstanding (DSO) metric represents how many days a business takes to collect cash payments for sales to their customers.

Typically, shorter DSO values are better as they indicate a business that is able to convert sales into cash faster. Thus, receivables remain outstanding for a lesser duration on the balance sheet before collection. Faster cash collections imply more working capital and free up cash flows that could be used in different aspects of the business.

Let's see some more parameters in Alice's Trucks report from 2021:

Alice's Trucks 2021 Report	
Inventory - Start of the Season 2021	**$20,000**
Inventory - End of the Season 2021	**$18,000**
Accounts Receivable - Start of Season 2021	**$26,000**
Accounts Receivable - End of Season 2021	**$28,000**
Cost of Goods Sold - 2021	**$525,000**
Revenue from Credit Sales - 2021	**$650,000**

We've added Accounts Receivable, which represents the amount of cash owed to Alice's Trucks at the start and end of 2021. As an example, these receivables are from clients who have secured goods from Alice with longer net terms and/or on credit (non-cash).

For simplicity, let's consider all of Alice's sales are credit only, thus the revenue is coming from credit sales rather than any cash deals.

- The average daily account receivable for Alice's Trucks is ($26,000 + $28,000)/2 = **$27,000**
- The average credit sale revenue on a daily basis is $650,000 / 365 = **$1,781**
- For Alice to convert the daily receivable balance into cash it will take $27,000 / $1,438 = **15 days**
- Thus, **DSO for Alice in 2021 is 15 days**

Days Sales Outstanding

$$\frac{\text{AVERAGE Accounts Receivable}}{\text{AVERAGE DAILY CREDIT SALES}} = \frac{\text{(Beginning A/R + Ending A/R) / 2}}{\text{(Credit Sales) / Number of days in period}}$$

And so we have our full DSO formula:

DSO = [(Beginning A/R + Ending A/R) / 2] / (Credit Sales * 365)

Days Payables Outstanding (DPO)

Days Payables Outstanding (DPO) represents how many days a business takes to pay back their suppliers or vendors.

Typically, a higher DPO value is better, as it indicates a business is able to hold on to cash much longer giving them the ability to invest that cash in other areas. Companies with good vendor partnerships can delay making payments and therefore keep their DPO high to increase their working capital.

However, in some cases a high DPO can put a business in poor health. This is the case when the high DPO value is due to poor cash flow and an inability to pay vendors on time.

Let's review some more parameters in Alice's Trucks report from 2021:

Alice's Trucks 2021 Report	
Inventory - Start of the Season 2021	$20,000
Inventory - End of the Season 2021	$18,000
Accounts Receivable - Start of Season 2021	$26,000
Accounts Receivable - End of Season 2021	$28,000
Cost of Goods Sold - 2021	$525,000
Accounts Payable - Start of Season 2021	$52,000
Ending Accounts Payable - End of Season 2021	$74,000

We've added the Accounts Payable rows—representing the amount Alice's Trucks owes to their partners at the start and end of 2021. These payables could be for goods Alice's Trucks has purchased on net terms.

- The average daily account payable for Alice is ($52,000 + $74,000)/2 = **$63,000**
- The average cogs on a daily basis is $525,000 / 365 = **$1,438**
- For Alice to close the daily payables it will take $63,000 / $1,438 = **44 days**
- Thus, **DPO for Alice in 2021 is 44 Days**

Days Payables Outstanding

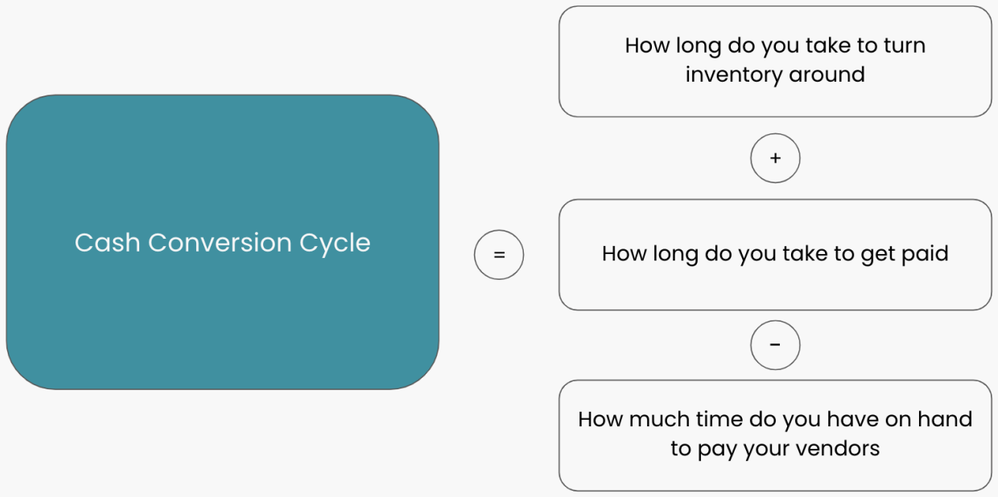
$$\frac{\text{AVERAGE Accounts Payables}}{\text{AVERAGE DAILY COST OF GOODS SOLD}} = \frac{\text{(Beginning A/P + Ending A/P) / 2}}{\text{Cost of Goods Sold / Number of days in period}}$$

And so we have our full DPO formula:

DPO = [(Beginning A/P + Ending A/P) / 2] / (Cost of Goods Sold * 365)

Putting it all together to find a business's cash conversion cycle

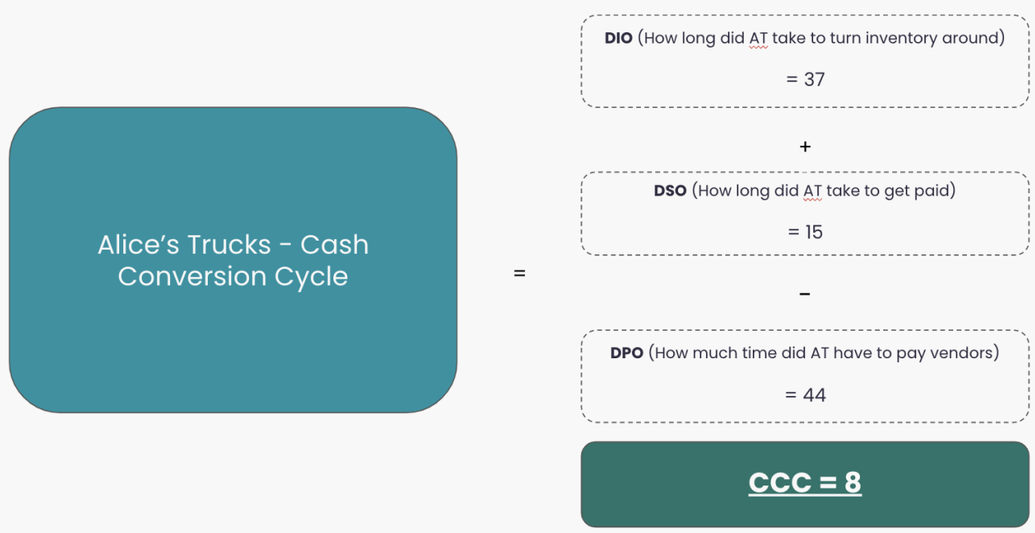
Now that we've defined the components of the CCC and how to calculate them correctly, let's go back to our original explanation of the cash conversion cycle:



For Alice's Trucks (AT), we have already computed the three building blocks in the previous section:

> **How long did AT take to turn inventory around (DIO) = 37**
>
> **How long did AT take to get paid (DSO) = 15**
>
> **How long did AT have to pay their vendors (DPO) = 44**

With those values we can calculate the CCC for Alice's Trucks:



The calculated CCC for Alice's Trucks is 8 days. Not bad, Alice.

What should my CCC value be?

As a business you should always aspire to lower your Cash Conversion Cycle metric. Balancing your working capital is key and you need to fund the right rhythm between your business's financial benefits and building healthy relationships with buyers and suppliers.

However you can benchmark your current CCC metric with your industry peers or with similar sized businesses in neighboring industries.

Industry benchmarks indicate a range of CCC benchmarks. For example, a 2019 JP Morgan report auditing CCC across the S&P 1500 arrived at a benchmark value of 65.5 for the year 2018. In 2020, The American Productivity & Quality Center studied supply chain-related businesses and calculated the median CCC to be around 52. It's also worth taking a look at outstanding performers that have negative Cash Conversion Cycles - such as CPG giants like Procter & Gamble, PepsiCo, and Danone.

Summary

With Plastiq, retailers and wholesalers are able to shorten the cash conversion cycle by funding inventory, advertising and freight costs with business credit cards. This allows them the ability to extend expense payback up to 60 days. Plastiq facilitates supplier payments by credit card while sending payments however the vendor prefers–ACH, wire or paper check. As a result, big expenses can be delayed closer to the time inventory sells, enabling a healthier cash flow.

Visit **Plastiq.com** to learn more

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https://stock.us/stock/us/PG/ratios/operation
https://www.jpmorgan.com/content/dam/jpm/treasury-services/documents/jpmc-working-capital-index-2019.pdf

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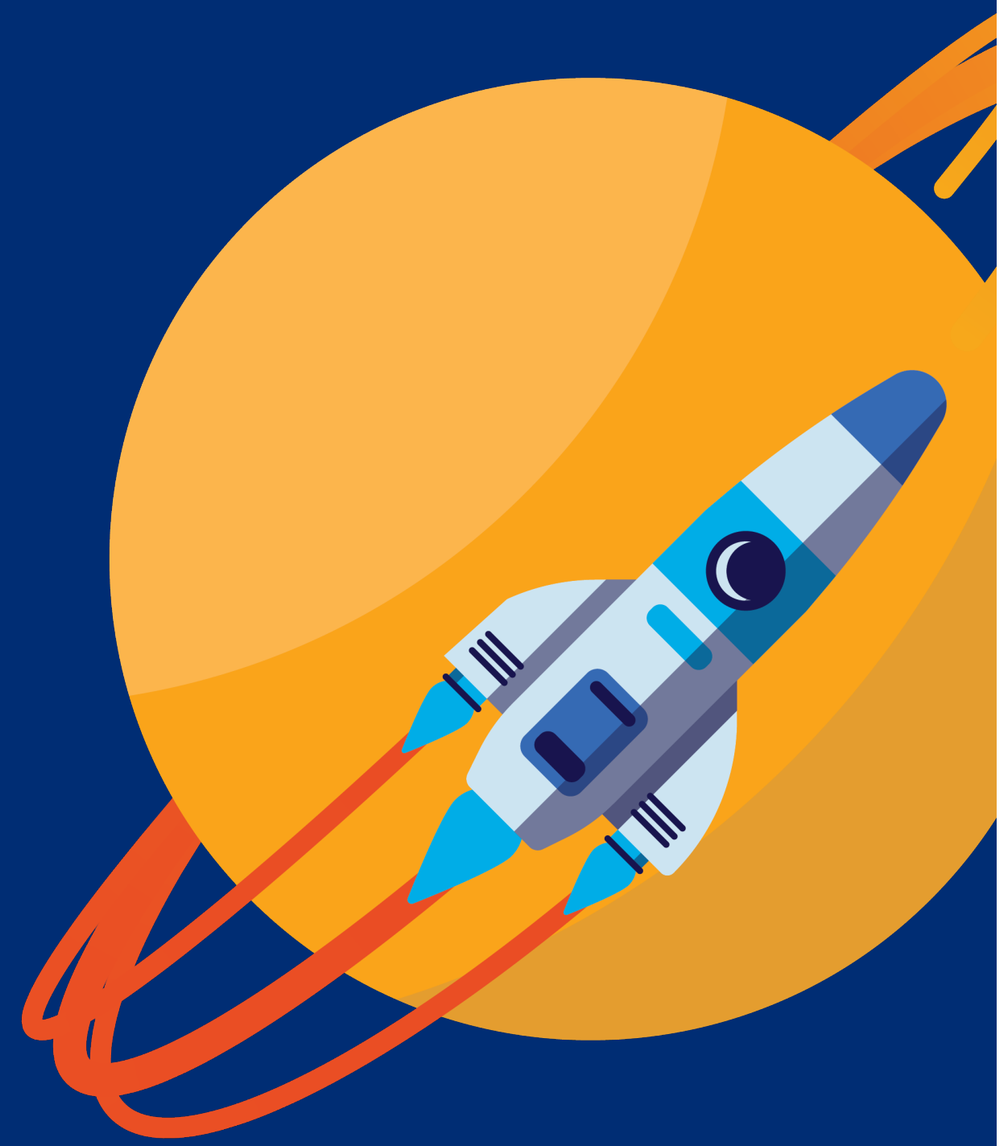

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