

THE

CAPEX PROCESS

”THE TAIL WAGS THE DOG”



weissenrieder
asset strategy & capex management





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*We have helped more than
500 mills/plants since 2004
when we more focused started
to implement our Asset Strategy
projects.”*

“We only do high NPV projects.”

“We want to maximize the value from our capex plan.”

“Only projects with short paybacks get approved.”

“Our business’/mill’s ROCE is higher than our cost of capital.”

Have you ever heard any of these comments in your company?

Then this is for you because your company keeps making value destroying capex decisions, and you do not invest where you actually will create additional cash flow.

In this white paper, we describe how companies apply their capex process, and how universities teach us to make capex decisions, lead to massive capital destruction. Almost all companies in all industries evaluate capex decisions in basically the same way.

It is tempting, as a reader, to think that your company’s capex management process avoids the traps we will discuss. CFOs, VPs of Strategy, and individuals responsible for the capex process often react like that. This is a defensive reaction and not helpful to any company, its CEO, or its owners. If you, or those responsible for these decisions, are not open to necessary changes to your capex process then someone else within your company will soon learn from our descriptive articles and solutions and bring the inevitable changes necessary to your company. Only change will lead to improvement.

Since June of 1994, we have studied how capexes affect mill performance in real life. Our work has centered mainly on the pulp and paper industry, but we have also worked in other industries and the issues we have encountered are universal to capital-intensive companies. Our customers are primarily located in North America, but also in Europe. We have helped more than 500 mills/plants since 2004 when we more focused started to implement our Asset Strategy projects.

How today’s capex process leads to massive capital destruction is easily understood when visualized the way we do here. This text will change how you, as an experienced decision maker within a capital-intensive company, view your decisions. We will give you something to think about and something you have to act upon now.

Contact us: contact@weissenrieder.com or ph +46 31 761 07 30

1. What Really Creates A Short Payback?



1.1 The everyday capex situation

For the purposes of this paper, all examples will be of mills/plants in the pulp and paper industry. However, all principles, ideas, and concerns may be applied to any capital-intensive industry. Imagine a mill/plant, See Figure 1-1 below.

Figure 1-1



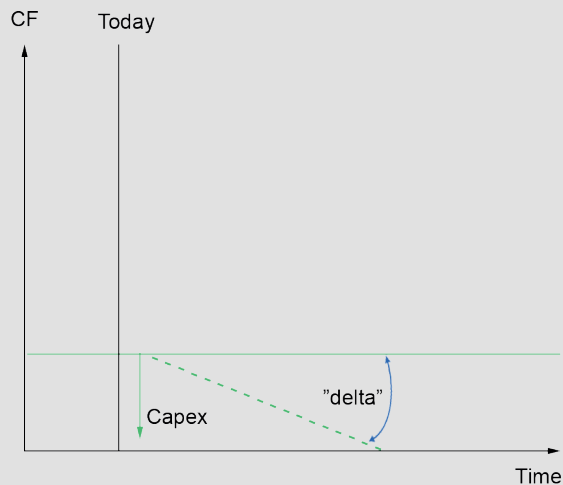
The mill, in our example, has been making money (cash flow, net after capexes) at a certain level historically (A). Here illustrated as a normalized straight line, but it is volatile in reality. We can assume the mill will continue to make money in the future at this level. Again, normalized at this specific level.

At some point, the mill is likely to come to the Head Office and say: *“Sure, we can continue to make money at this level, but to do so, we need to fix this quality issue that we have. Customers are complaining more and more often.”*



Now, look at Figure 1-2. To fix the issue the mill needs to invest in a solution, and the mill – following instructions – does the math on this situation. If they make the capex, they will continue to make money as expected (the straight full green line); if they don't, they will follow the dashed green line. The difference between these two lines is often referred to as the “delta.” The mill compares the delta to the capex amount (green down arrow) and calculates an NPV, IRR, or Payback.

Figure 1-2



We assume here that all data is correct (i.e. what the mill assumes for the future is what later comes true). Our experience is that the industry really doesn't have much of a data issue. That is not why things go wrong.

So far so good. The NPV/IRR/Payback is correctly calculated. NPV of 15 and a payback of 18 months in this case and the company is likely to go ahead with the decision. It makes sense.

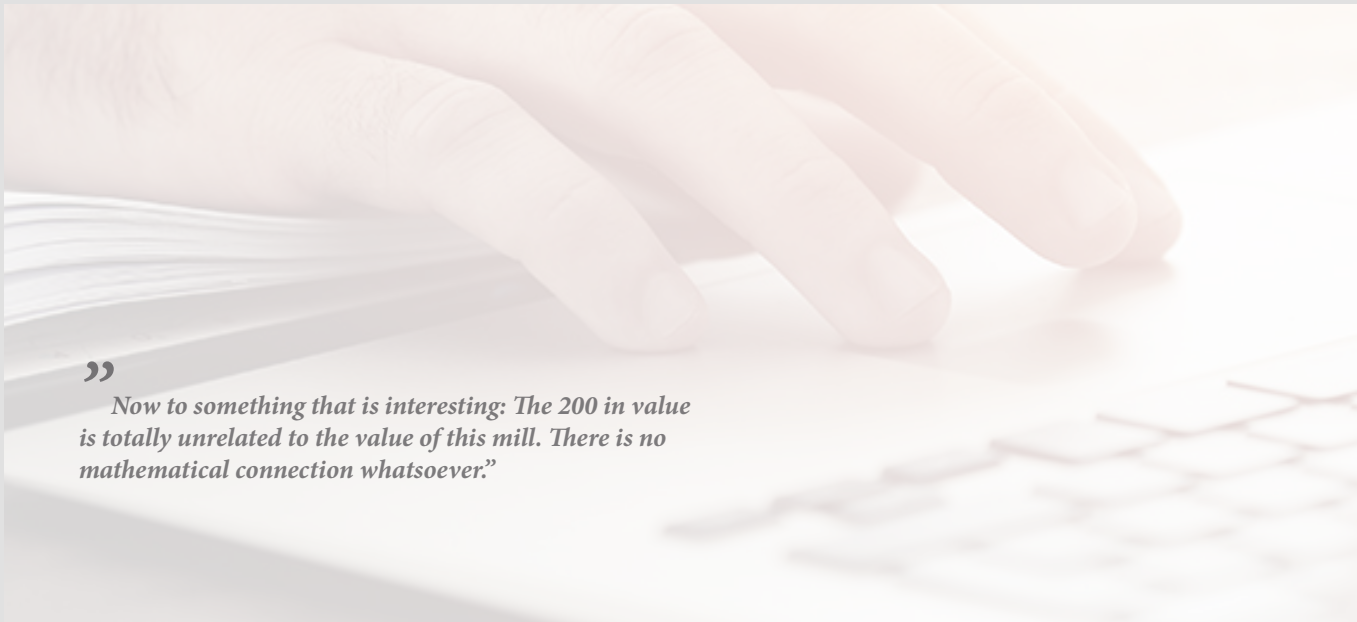
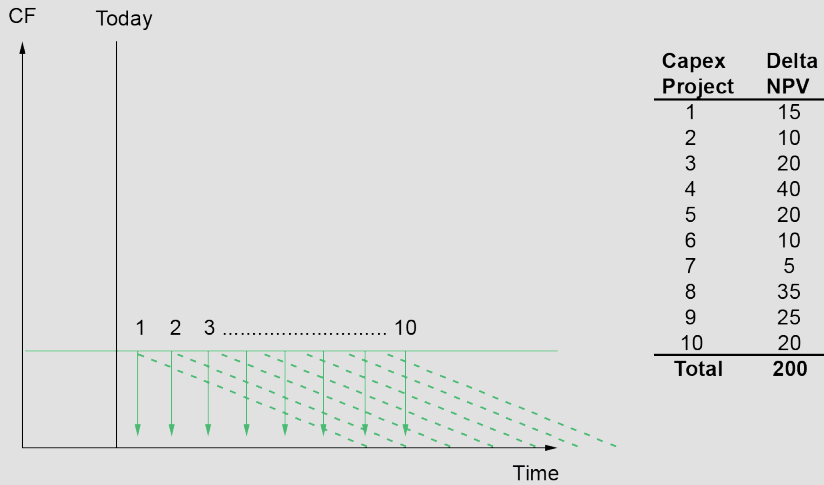
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Our experience is that the industry really doesn't have much of a data issue. That is not why things go wrong.”

Three months later, Figure 1-3, the mill again approaches the head office saying, “Sure, we will make money at this level, but to do so we need to fix this cost issue that we have.”

Again, they do the math on this new situation and come up with the benefits of project No 2. This pattern will continue month after month, year after year, with additional projects. Figure 1-3 represents the mill’s capex plan, in this case, 10 future capex projects from “Today.”

Figure 1-3

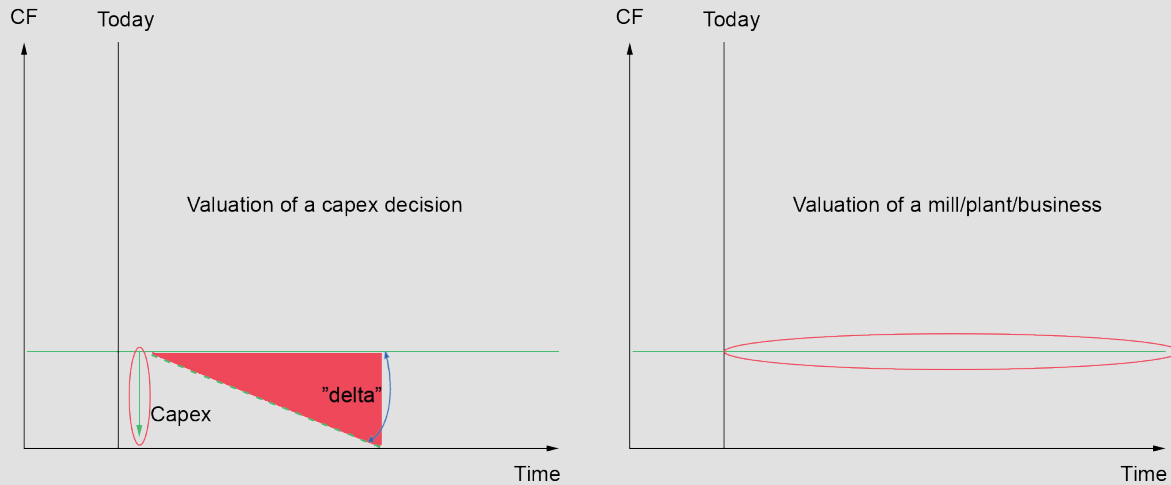


1.2 Misunderstanding the value of a capex project

The sum of all individual capex projects' NPV in the capex plan is 200. Now to something that is interesting: The 200 in value (USD/EUR/GBP/DKK/...) is totally unrelated to the value of this mill. There is no mathematical connection whatsoever.

Look at figure 1-4. Each capex project's value is determined by the delta created between the green full line and the green dashed line – here the red area – adjusted for the capex outlay.

Figure 1-4
Valuation of a capex decision vs. a valuation of a mill/plant/business



”
In about 80% of our projects, we have at least one mill that, going forward into the future, will have a zero-cash flow or less.”

How is the value of the mill determined in Figure 1-4? Take the full green line (which also takes into account the annual capex level) and discount it to today (same discount rate as for the capexes). That is more or less how most of us would do it, for instance when calculating the fair market value or when looking at an acquisition. We get an NPV of the mill but again, that is disconnected from what-ever the value of the capex plan. There is no connection. The capex plan can say whatever it says – and still be correctly calculated.

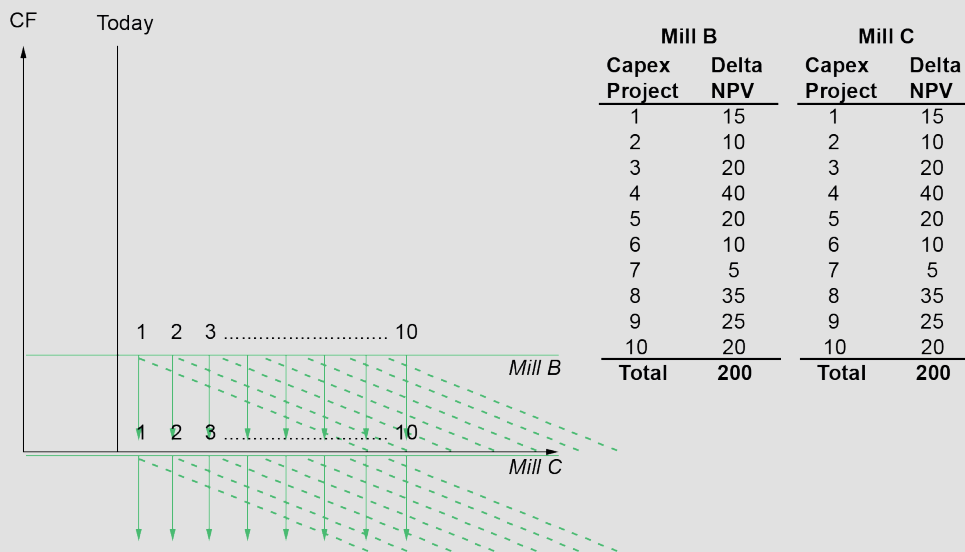
Another way of viewing the issue is to look at each project's delta (the area between the full and the dashed line). The deltas for the projects overlap each other. In other words, the company “mortgages” the value of the mill over and over again for each capex request.

”
The deltas for the projects overlap each other.”



Look at another example, Figure 1-5.

Figure 1-5



In about 80% of our projects, we have at least one mill that, going forward into the future, will have a zero-cash flow or less. Here, that mill (Mill C) is illustrated below our original Mill B that we have chosen to keep in the figure for comparison purposes.

Question: What is the Total NPV of Mill C's capex plan if Mill C has the same projects as Mill B? After thinking about it for a while, it can only be 200. So, we have a mill with a zero or negative value, but with a capex plan that – if implemented – has a value of 200. But the capex plan will not change the value of the mill, it will still have a zero or negative value.

Why is this?

Well, the NPV of a capex is not at all determined by the level of the green full line. The value of a capex is determined by how quickly the green dashed line falls (and the capex amount, and the WACC).

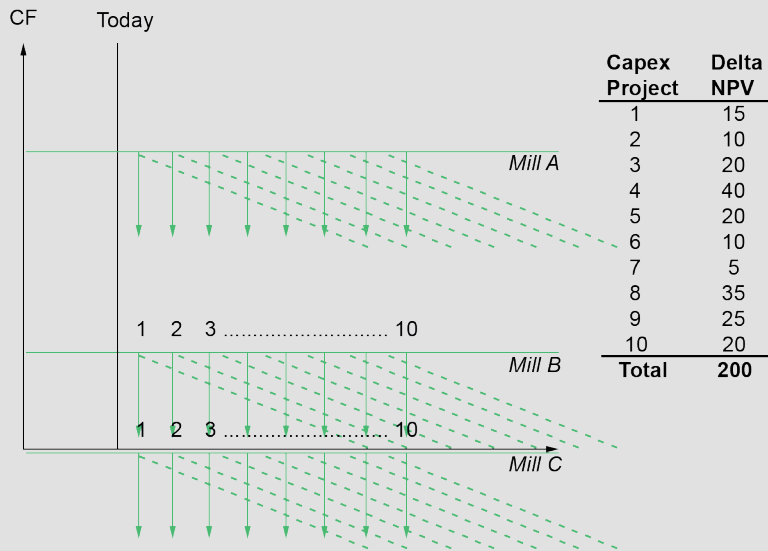
Our third mill (Mill A) is now added into Figure 1-6 (p.10).

Mill A is a high performing mill, with close to state of the art technology.

What is the value of Mill A's capex plan in this case, assuming the same projects the value will still be 200?



Figure 1-6



So, we have three mills – performing very differently – but who may present identical/similar opportunities/needs.

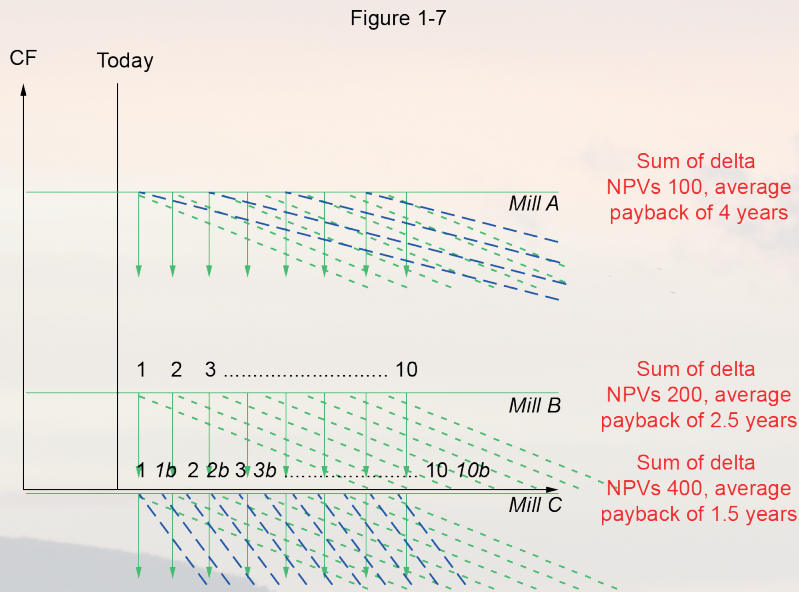
“*This is theory,*” some might say. We understand objections based on the simplification of things in the above presentation.

However, this isn’t theory. This is reality, it is just that there are other situations than the three represented here, making the capex process even more difficult to control and manage. We have seen many situations in the more than 500 mills/plants we have studied that would need their own illustration, but in order to make our point, we do not need to get more complicated than this. Some readers may be thinking, “*Our company is different, this does not happen here, we evaluate things differently.*” In our experience that is not the case; rethink. If we were face to face with you, we would answer any comment, question or concern you would have – believe us, we have heard them all over the decades, but it is difficult to cover all in this text.

1.3 Actually, reality is worse.

Getting back to our example, the next logical question is, “How does a company distribute capital between mills that perform differently?”

We claim that in reality the three capex plans for Mills A, B, and C will not have similar values. They will differ significantly and in the “wrong” direction. See Figure 1-7.



If our first mill (Mill B) has a capex plan NPV of 200, then Mill C is likely to have a capex plan value of 400 and Mill A 100. Why? Simply put, Mill C is further away from state of the art technology. In a delta calculation Mill C has more catching up to do for each questioned piece of equipment. The gap in the delta calculation will be larger creating a higher NPV/IRR or shorter payback, illustrated by Mill C’s dashed blue lines. The dashed lines will fall more quickly in Mill C, creating a larger value in the capex plan. Mill C will also have more projects. Not only projects 1-10, but 1 and 1b and 2 and 2b, and so on. The mill has more needs. The capex plan’s value, therefore, increases even more.

In contrast to Mill C, Mill A will have a smaller gap to state of the art technology. Mill A’s dashed line will fall more slowly, creating a lower NPV/IRR or longer payback. Also, Mill A will have less needs (hence fewer capex proposals), all resulting in a lower “NPV total” in the capex plan of Mill A.

Where is a company likely to invest if it has a capital restraint?

Will it chase the longer paybacks in sustainable mills or the shorter paybacks in mills that do not seem to be very sustainable? We will discuss this in detail later. For now, it is sufficient to keep this question in mind.



”
Where is a company likely to invest if it has a capital restraint? Will it chase the longer paybacks in sustainable mills or the shorter paybacks in mills that do not seem to very sustainable?”

And where is a company likely to invest if it has a “hurdle rate”, “discount rate” or “required rate of return” higher than the actual capital cost? A beloved child has many names.

Companies have a fondness for setting requirements above the capital cost (the Weighted Average Cost of Capital) in the NPV calculation (or IRR reference), because they believe they add an extra buffer, and they will get their money back quicker. It adds safety, they believe. But all that leads to is that even more capital is allocated to business units (plants, mills) with capexes having short paybacks. You’ll find those in the low B’s in Figure 1.6 (p.11). So, that behavior leads to lower company cash flow: value destruction. Their intentions are good, the result is bad. Especially since really good capexes that extends company sustainability and long term competitiveness have paybacks in the range 4-8 years – and those are excluded in the capex process.

The term “payback” is, by the way, truly misleading. It is not about that. When does one see the money return in Mill C? Never. The company keeps investing in “short payback projects”, but the mill’s cash flow is still zero or less. The money is gone. The calculated payback simply never happens – even if assumptions turn out to be true in the future.

”
Where is a company likely to invest if it has a “hurdle rate”, “discount rate” or “required rate of return” higher than the actual capital cost? A beloved child has many names.”

”
*The term “payback” is, by the way, truly misleading.
The calculated payback simply never happens - even if assumptions turn out to be true in the future.”*


So, we seem to have a situation where companies' capex plans indicate that a company should invest where they are not making much money. This is bad enough, but it gets worse. The thing is, that individual mills will not even present the capex plans to the head office that aim at maximizing the company's long term cash flow. How would they even know how to do that? They don't have the bigger picture, only the picture of their individual mill.

It gets even worse than that because the mill will not even supply the head office with the capex plan that aims at maximizing the long term cash flow from their own mill. Mills will suggest the capex plan that ensures mill sustainability, not maximized long term mill cash flow.

This can be debated, of course, but one proof is the following:

In North America and Europe at least 15% of all mills within the Pulp and Paper industry should be closed within 5 years (if maximized company cash flow is to be achieved throughout the industry). Realistically, mill managers will not come to the head office with the following message: *"We have analyzed all our options, and I, as a mill manager, can only come to the conclusion that in order to maximize cash flow you should run us for cash for 3 years and then shut us down."* Again, individual mills aim at sustainability – they are probably doing the right thing when doing so. Sorting out where and when to invest from an ongoing consolidation perspective is something that is not their responsibility, nor should it be.





”
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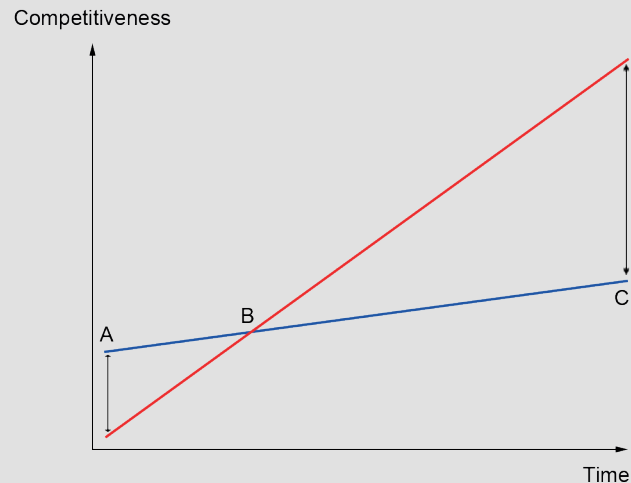
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This is bad enough, but it gets worse.”

2. The Tail Wags The Dog - How tactical decisions Run Company Strategy

2.1 Competitiveness over a lifecycle

An industry always improves, in the sense that it is always better at what it is doing today than it was 10 years ago, because of technology development (the industry doesn't, however, make *more* money due to the real price decline). We illustrate this point with the red line in Figure 2-1.

Figure 2-1



The red line is the industry average, so half of the industry's capacity is above the red line and half is below at every point in time.

”

Most mill investments will, at best, slow down the loss in relative competitiveness, not improve it.”



At some point, a company will build a new mill, either a Brownfield or a Greenfield. Or it will add a new production line in an existing mill. We illustrate that with the blue line starting at point A, where the mill is new and state of the art. It is clearly above the red line. Over time, the mill will be improved (the blue line goes up) but it can never follow industry average. At some point, it will cut across the red line and become less competitive than the industry average. Decades later, the company will come to the conclusion that it is better to shut down the mill because the gap between it and the industry average has become too large. This is a simple illustration of a life cycle of a mill.

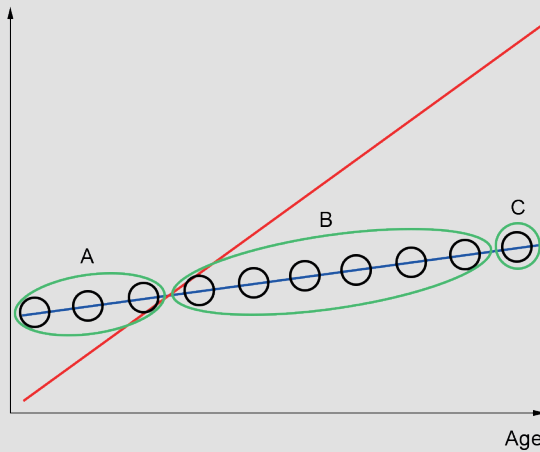
A mill will slowly travel along the blue line to the right. Most mill investments will, at best, slow down the loss in relative competitiveness, not improve it. Only a few investments will take it to the left (improve mill competitiveness), and then in almost all cases it will only be a small shift. For example, a company makes a really large replacement capex in a mill. It replaces 10% of the mill with state of the art technology (like a so-called recovery boiler in a pulp mill). The time from the decision to invest in the mill to turn key (completion of investment) is often 1-3 years. Replacing 10% of the asset base shifts the mill to the left, but 90% of the mill ages another 1-3 years in the process. The net effect for the mill from the point of decision to turn key is not very large.

2.2 How capital and other resources are allocated in a system of mills

We will use Figure 2-2 (p.17) for our discussion about allocation of capital. Let's say we run a business with 10 mills. They are all making more or less the same type of product aiming at a certain market. We assume that our portfolio of 10 mills, on average, is exactly on the industry average (i.e. we have half of our capacity in mills that perform better than the industry average, and half of our capacity in mills that perform below industry average).

Therefore, it is not unlikely that we would have three mills (making up 50% of our capacity) that are the more competitive mills, and seven that are less competitive. Let's categorize the 10 mills. We have our Category C mill, the mill we understand we will close in 1-3 years since it isn't performing well at all. We have our three close to state of the art Category A mills. Finally, we have our six Category B mills, good providers of our product mix, etc., but to different degrees less competitive.

Figure 2-2



»

Most companies spend 3-5% of their capital on the category C mills.”

How would a company within the capital-intensive industry today act in these categories with its resources? Having worked with dozens of companies within the capital-intensive industry we have an opinion on this. To understand how companies today allocate resources we ask three questions:

Question #1: *“In a normal year, how would your company invest in those 10 assets?”*

Most companies do not have relevant information to make the categorization, but let's give this a try. We exclude possible investments in Brownfields/Greenfields, we just look at those 10 assets.

If we begin with Category C, it contains the mill that we know we will not keep for very long. We would prefer to spend 0% of capexes on this mill, but we need to spend some capital in that mill for it to stay open another quarter, another year. Most companies spend 3-5% of their capital on this category of mills.

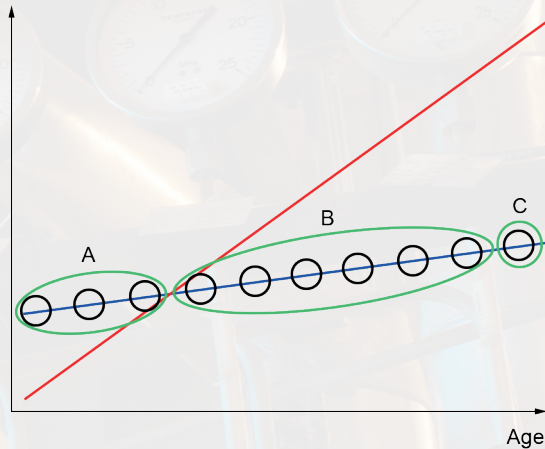
How about Category A?

That category is relatively close to state of the art technology. They “need” less capital. Additionally, the opportunities for this category are perceived to be not that many (since they already are relatively good). They have less environmental issues, fewer safety issues, etc. On the other hand, they represent 50% of the capacity – clearly the need to invest here exists. Most companies would invest 20%, sometimes up to 25% in this category.

Finally, we have Category B.

Six mills (twice as many as in Category A) with an increasing technology gap (aging assets). Often these are relatively complex mills – two or three of everything instead of one – and not always a “linear” layout. There are usually environmental and safety issues. Category B gets 75% of the capital.

Figure 2-3



	Categories		
	A	B	C
Capexes	20%	75%	5%

The percent split between the categories should not surprise anyone (Figure 2-3). Category A doesn't really need money. The desire might not be there, but some investment must be put into Category C. Category B definitely requires capital.

Some companies say they don't invest like this. A few of those companies might not, but in our experience, the vast majority of companies do invest this way. However, it is common for companies to get the categories of the mills mixed up, they think a Category B mill is a Category A mill, etc. We even came across a company who thought one of their Category A mills was a Category C mill.

Question #2: "How much of the next 10 years' cash flow do you expect to receive from each category?"

While the split of capital spent between the categories is similar between companies, the split of future cash flow between the three categories isn't, since it depends on what type of assets a company actually has.

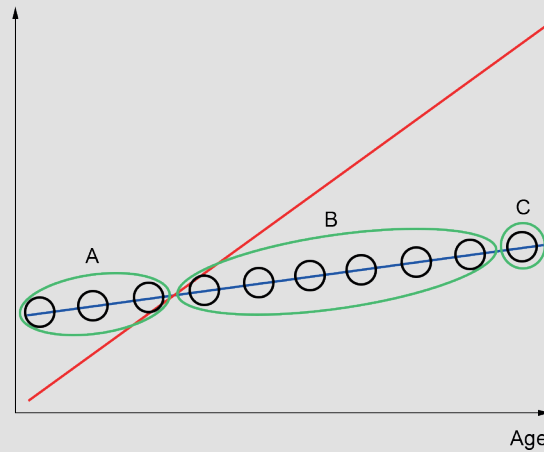
»

Category B gets 75% of the capital."

»

If lucky, Category C will generate 0% of future cash flow."

Figure 2-4



	Categories		
	A	B	C
Capexes	20%	75%	5%
Cash Flow after capexes	80%	20%	0%

» In our experience, category A generates about 80% of future total cash flow.”

If lucky, Category C will generate 0% of future cash flow.

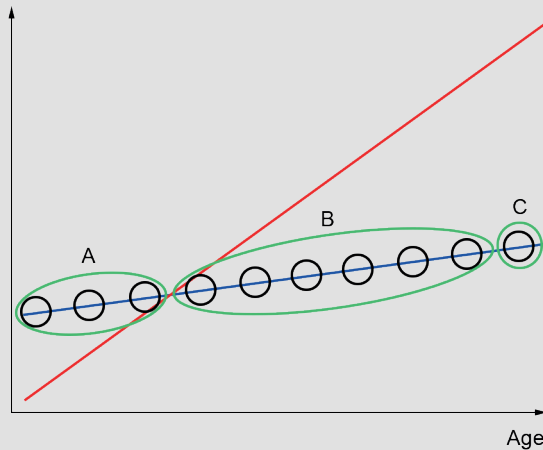
Category A's mills have a higher EBITDA and margin than Category B (and C) as well as lower capexes. So, this category will clearly provide the company with the highest cash flow (if not, they have been assigned to the wrong category. This is the common mistake, mentioned above). In our experience, Category A generates about 80% of future total cash flow. We have seen anything from 60% to 300% for Category A (please do the math on Categories B and C in the latter case).

Category B will provide an average of 20%, after capexes.

Question #3: “Pick your 100 most important/valuable resources in the company. Exclude hours spent on budgets, reports, etc. and only look at their quality time. How much of their quality time goes into each of the three categories A, B, and C?”

» In a project, we had a number of years ago, the project manager from the client's side had been a mill manager for their best Category A mill for five years. He told us that the head office hadn't contacted him even once during those years.”

Figure 2-5



	Categories		
	A	B	C
Capexes	20%	75%	5%
Cash Flow, after capexes	80%	20%	0%
Management Attention	5%	65%	30%

”
Category B and C get a whopping 95% of management attention.”

Category C gets a shocking 30%.

When considering the answer to Question 3, a company must include all the discussions/analyses/etc. on, “*Should we close or keep, should we make another investment?*” In considering this question, include the time spent trying to fix the mill, evaluating closure costs, and eventually when the mill closes. We had a client once who hesitated over a Category C mill for a long time. Once they even had one of their senior VPs on the corporate jet going to the mill to communicate its closure. When he landed, he got the message, “*We got another large order, come back home.*” This can go on for years, which is why we see such a high percentage of resources allocated to Category C mills.

Category A doesn’t need resources.

Those mills are working just fine. In a project, we had a number of years ago, the project manager from the client’s side had been a mill manager for their best Category A mill for five years. He told us that the head office hadn’t contacted him even once during those years.

”
All we can say is that if one spends his/her resources like this over time; one will eventually ruin his/her company.”

Category B gets 65% of the resources.

When we read the pink pages we often read about CEOs from the capital-intensive industry explaining the quarter's poor performance with reasons such as prices not developing the way they expected, increased costs, and shaky demand. Certainly, one can explain a quarter or two with those factors, but the capital-intensive industry often fails in delivering shareholder value year in, year out. To blame the above factors for more than a couple of quarters is like saying that one lost a sailing race due to a head wind.



This is all that is required to make a company fail, even if the intentions are the best.”

Prices not developing as expected, costs being up and demand being shaky is nature. It is a fact for all players in a capital-intensive industry. Technology development, even if slow, brings down prices compared to costs for existing assets – this is a fact. Companies invest in better technology in an attempt to avoid that.

Now, we cannot say that this table, for a certain company, in a certain year is “incorrect.” All we can say is that if one spends resources like this over time; one will weaken and eventually ruin the company.

We would say that all companies and all CEOs we have worked with for the last 23 years have had the ambition to do well. They want to do the right thing, to have the company make more money, but too many organizations fail.

There are several reasons for why many companies don't deliver expected returns or fail. Why over time they don't follow the stock market's index, as an example. Here we show you all you need to drain a company of cash flow, and even sometimes, as shocking as it sounds, run them into the ground: *All that is needed is to have the company's future somewhere (green), but spend its resources elsewhere (red). Done year in and year out, decade after decade, results in a poor performing company. Or a company in Chapter 11.*

	Categories		
	A	B	C
Capex	20%	75%	5%
Cash flow, after capexes	80%	20%	0%
Management attention	5%	65%	30%

This is all that is required to make a company fail, even if the intentions are the best. If a company has an aggressive acquisition strategy one might make things even worse (i.e. acquiring a large set of Category B mills. Acquired Category B mills usually consume more capital than the net cash flow gain from an acquisition – we have seen this countless of times.

Why do companies end up in this situation, where resources are being allocated as in above table? They want to do the right thing, but the result is poor. For every little (and large) decision they make they do their homework, and they normally fulfill the benefits they claim in the capex request. Still, the company doesn't succeed. How is this possible?

2.3 Why it goes wrong

We were engaged in answering this question in the late 90s. We came up with a long list of reasons but pared the list down to three basic reasons why companies fail.

The first two reasons are present in all companies, and they have to be there. They cause an extremely costly problem, but they are necessary.

The third reason is anything from somewhat present to very present in almost all companies. Although it doesn't have to be present at all, companies can throw it out today – there is no point whatsoever in having it involved in the capital allocation process.

Reason #1: The capex process is a bottom-up process. It has to be. The mill knows the issues and how to fix them (supported by central technology/manufacturing resources). So, the mill manager will come to the head office and say *“I have an issue, and now I know how to solve it.”* This issue could be quality, cost, safety, environmental, etc. The head office will say, *“We know. We have been discussing this now for two years.”* On paper, the capex necessary to fix the issue makes sense.

Reason #2: Delta calculations are used to evaluate the benefit of a capex project, and the projects are evaluated one by one, in isolation. Going back to what we discussed in part one, basically all companies do what the textbook says, what we have been taught to do: they calculate the payback/NPV/IRR for each capex project individually, in “isolation” (we assume all data is accurate and correct).

So, a mill manager comes to the head office saying, *“I have an issue, and now I know how to solve it. The payback is two years.”* The head office is likely to reply, *“We know. We have been discussing this for three years. The payback makes sense; it even looks a bit conservative.”* They respond this way because an individual analysis of the issue tells the company the manager's solution is an appropriate and reasonable way to proceed.

Reason #3: ROCE (or ROOC, Re, EVA, or any other P&L and balance sheet based measure) is used to prove the performance of the mill. It is bad enough that companies use these measures at the group level. Some claim that the errors in these measures are canceled out when applied on the company/group level. This is incorrect, and to use any of these measures on a mill level gives totally corrupt information (it doesn't matter how many adjustments you make in, for instance, EVA). Let us give you a relevant example:

Take the blue line from Figure 2-5 (p.20). It represents the life cycle of a mill, let's say 60 years. We lay it out as the X-axis in a graph, with the categorizations A, B and C, Figure 2-6 (p.23).

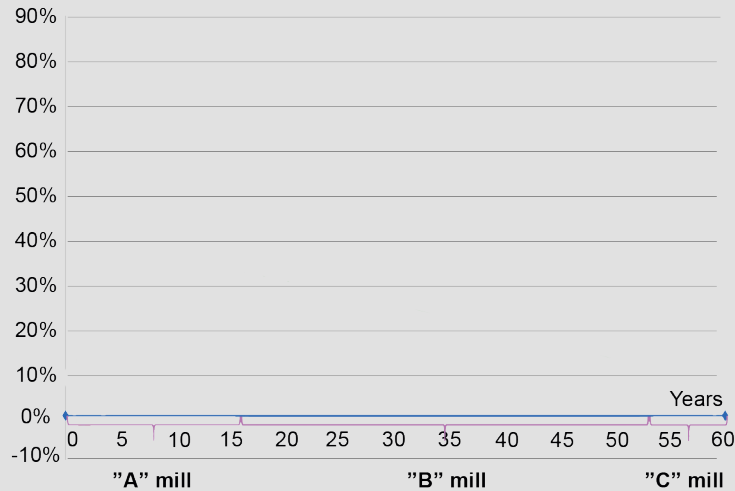
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”

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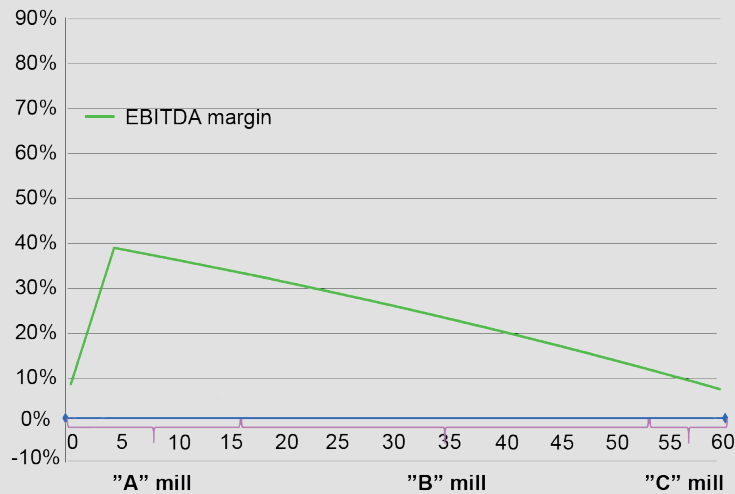
Figure 2-6



How does an EBITDA margin look for a mill over its lifecycle?

It would be very volatile, but for the purpose of our example, we can “normalize” it. Look at Figure 2-7 whose EBITDA margin development represents a mill from its Greenfield state to closure 60 years later.

Figure 2-7



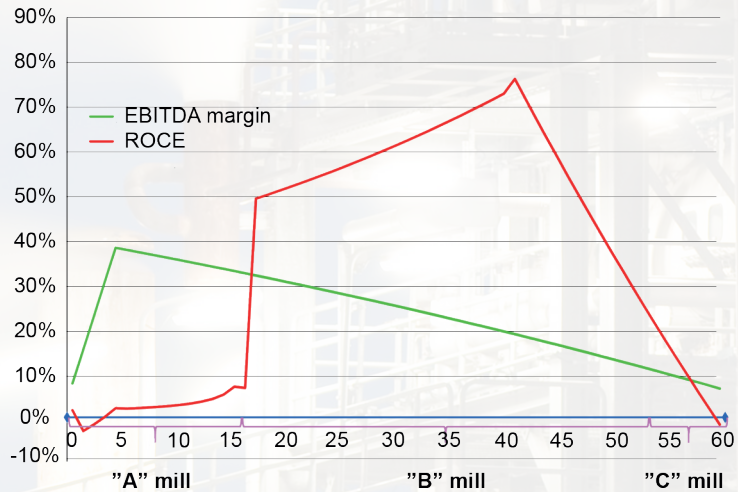
”

Why would anyone ever say no to a capex with those attributes? No red flags anywhere in sight.”

From a poor, but normal start-up, this mill is at its peak competitiveness after about 5 years. After that, the EBITDA margin will slowly but surely decline until closure. This represents lowered relative competitiveness over time. This continues to be true even if capital is spent on the mill. In fact, the mill will decline like that *because* capital is spent on it. If capital is not spent, the EBITDA margin will fall even quicker and the mill will be closed a lot earlier.

In reality, the EBITDA margin will jump up and down. One can work in a mill for 20 years without noticing the EBITDA margin trending downwards.

Figure 2-8



How will the ROCE (or ROOC, Re, EVA, or any other P&L-balance sheet based measure) look for this mill? The ROCE is simply a mathematical consequence of the development of the EBITDA margin and accounting rules for depreciation. See Figure 2-8. Look at it for a while. What does it really say about “performance” according to ROCE in our three categories?

The mill carries a lot of initial capital in the first 15 years (accounting rules), but cash flow from year five is superior to any other year after that. The EBITDA margin is at its peak. Approximately at the point when it goes from being competitive to less competitive than the industry average, the mill’s accounting based performance measures will skyrocket.

**If you are ever to take the seat as a mill manager, make sure you do this a year before the initial capex has been written off in the books. Then make sure your bonus is set on ROCE or EVA; you’ll be rich. Cash flow and EBITDA margin will be down, but you’ll be just fine.

”

Approximately at the point when it goes from being competitive to less competitive than the industry average, the mill’s accounting based performance measures skyrocket.”

So, with “Reason #3” a mill manager comes to the head office saying: “I have an issue, and now we know how to solve it. The payback is two years. And, we still contribute well to the company’s ROCE”. Why would anyone ever say no to a capex with those attributes? No red flags anywhere in sight.

ROCE does not, in any way, indicate competitiveness. Hence it should never be involved in any capital allocation discussions.

2.4 The tail wags the dog

Any business wants to think that it sets a system-wide strategy for its assets and that its capexes follow that strategy, right? Like this:

”

The capex process is a well-established and truly “powerful” process in companies.”

Asset strategy for mill system



Capex decisions for mills

However, our wide experience – and anecdotal evidence – is that it is not at all like that. The capex process is a well-established and truly “powerful” process in companies. An institution. Lots of people are involved with their respective responsibilities, rules not to be messed with, there are set structures for approvals, etc.

We claim that the capex process is so strong that it actually sets the strategy for the assets, in our example, the mills. The result of the selected capexes for a mill year in and year out determines the strategy of that mill and as a result, the whole company, (however, it does not determine the fate of a mill. Even stronger external forces determine that).

So, it is not that an asset strategy determines which capexes are chosen for a mill. Companies don’t even have well-established, uniform and thorough processes for setting the asset strategy for their system of mills, (the reader may think “but we do in our company”, especially if said reader is responsible for that process – we’ll challenge that statement any day).

”

We claim that the capex process is so strong that it actually sets the strategy for the assets, in our example, the mill.”

So, the picture actually looks like this:



”

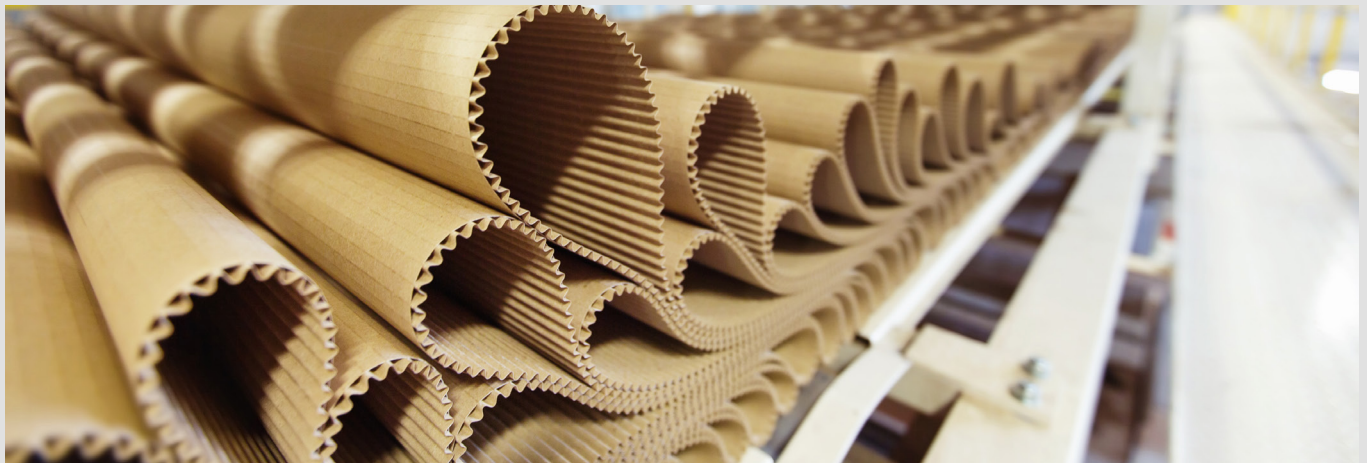
All companies have to have an Asset Strategy that governs the capex allocation.

But the way to achieve it is not at all the way one might think it should be done.”

When the capex process determines the strategy, we call this *“the tail wags the dog”*, a common term for when something is backward. Our experience is that a company loses a value of at least 30% of its capexes every year. At least. As we discussed earlier in this paper, it is tempting to think that one’s own company’s capex management process avoids these traps. Individuals responsible for the capex process often react that way (CFO’s, VPs of Strategy, etc.). If this is the reader’s reaction, then he/she is acting defensive and not helping the company (or its CEO or owners). In that case, somebody in the company, other than the reader, will soon educate themselves from our descriptive articles and solutions, and bring the inevitable changes to the company.

All companies that invest capital in fixed assets (even if they are not necessarily capital intensive) need to fix this issue. All companies have to have an Asset Strategy that governs the capex allocation.

But the way to achieve it is not at all the way one might think it should be done.





3. "The Creative Destruction" Funnel

3.1 Began the work in 1994

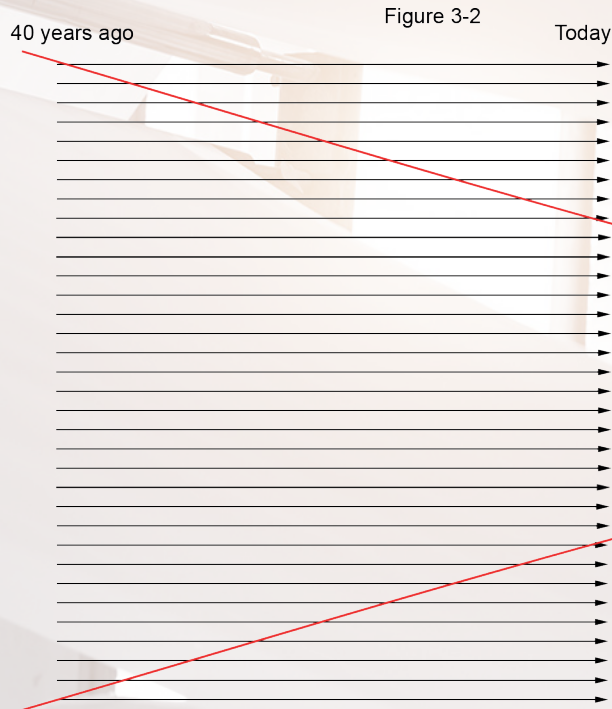
Fredrik Weissenrieder started working on what we do now, in 1994. He was finalizing his Master in Finance and Economics studies at Gothenburg School of Economics. Mr. Weissenrieder's thesis dealt with how companies should calculate their capexes, etc., but also discussed inconsistencies in his finance classes, such as why companies evaluate capexes with (for instance) IRR, but when the capex is behind them, they evaluate the business using ROCE (two totally different mathematics).

To cut a long story short, a European Pulp and Paper company called him the day before he was about to get his degree. They had read his thesis and had a project for him. The person calling said *"We have this mill. They show us capex plans who's capexes average an IRR of 40%. We don't doubt the 40% because we have been following up on capexes there for some years and they basically deliver. If they say they are going to take out 10 people they do that, cut power consumption on the PM by 3% they do that, etc. So, 'check' on the 40%. The mill has averaged an ROCE >25% over the last 15 years. It all looks fine, right? However, we want you to explain to us why the average cash flow from the mill has basically been zero over the last 15 years."*

So, Mr. Weissenrieder dug into cash flow data going back decades. It took him 4 months, but he eventually worked out what had been going on in that mill. Since then, we have been working as independent consultants within this field.

This is how it all started. While investigating the mill, Mr. Weissenrieder carried out a number of interviews. He inter-

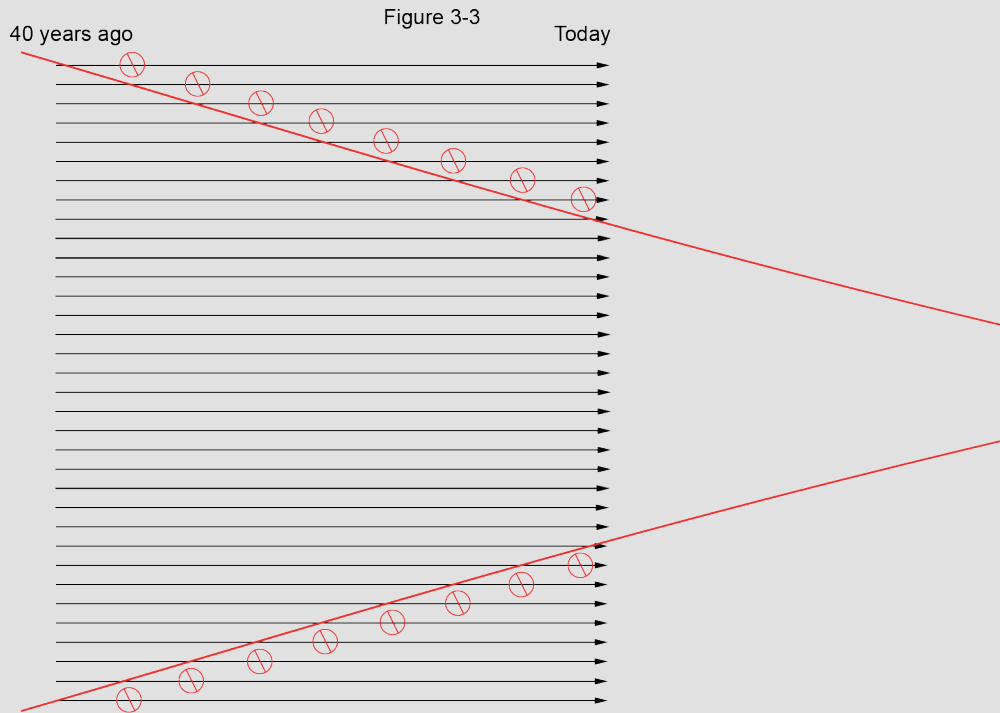
The first reason is that pulp prices are down (as a trend) in real terms every year, that is the red line going down in Figure 3-2. The second reason is that costs (for each existing mill, in relation to the pulp price) are up (the red line going up in Figure 3-2). There is a margin squeeze over time (as also illustrated in Figures 1-7 (p.34), 2-1 (p.15) and 2-7 (p.23)).



”
This is
growth; making
more out of
fewer resources.”

80 mills could not survive the margin squeeze so they were closed. See Figure 3-3 (next page).





”
It provides
the corporation
with several
consolidation
opportunities,
capital allocation
opportunities
etc.”

Is it a problem for Sweden that it shut 80 mills out of 110?

No, it is great from the nation’s point of view. This is growth; making more out of fewer resources. We should all welcome this as it provides a nation with more resources for healthcare, education, etc. This is nature. It is destructive to a country’s development if a government tries to stop this type of development because mechanisms of nature and development are taken out of play.

Is it destructive for a corporation? If the corporation has several (in this case pulp) mills?

No, it is fantastic. It provides the corporation with several consolidation opportunities, capital allocation opportunities, etc.

”
This is where
it all goes wrong.”

However, this is where it all goes wrong.

Think back to Figure 2-5 (p. 20). The mills in categories A and B are all treated as going concern mills. They are treated more or less as if they are going to live forever. Not the mill in the C category, but in the A and B categories.

What else does Figure 2-5 (p.20) say?

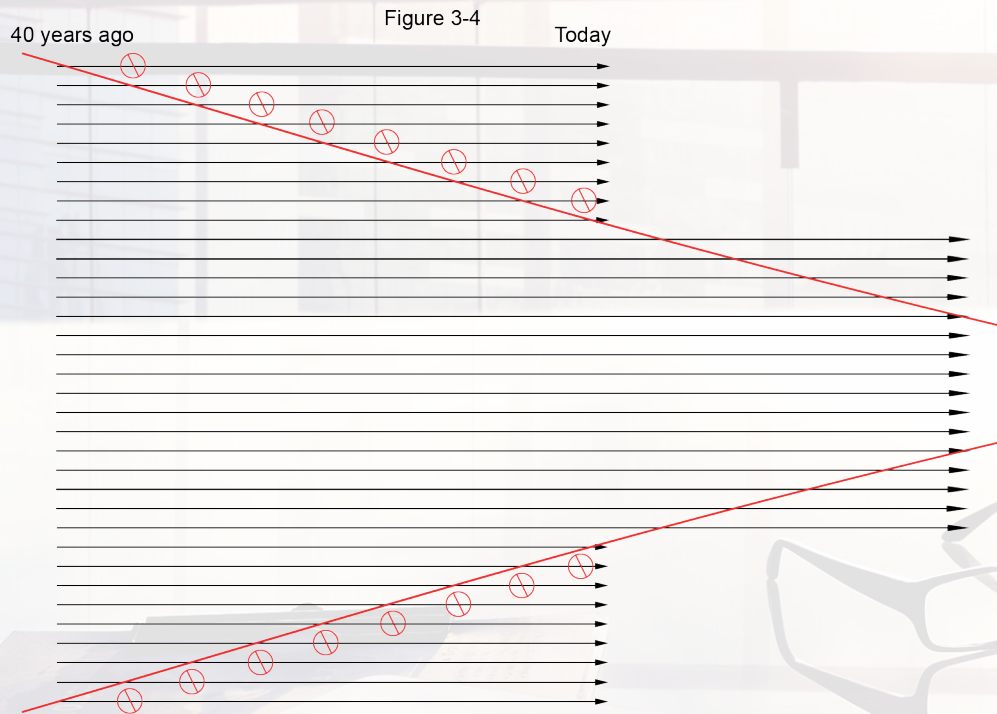
It says that 75%, or so, of the company’s resources are put into what is not sustainable in the long term. In fact, the capital-intensive industry has a reputation for investing heavily in mills two to eight years before they close – when those mills appear to be providing a reasonable ROCE/EVA/etc. with

several investment opportunities offering quick payback (in other words, a poor Category B-mill). At that point, would not many question that mill's sustainability. Several people with some years in the industry provide us with examples of that in a discussion. It feels "safe" to invest in a mill like that. Who can say they're doing the wrong thing? It looks great on paper – it has no sustainability, but that was never considered when making the decision.

Companies put 20-25% of their resources into assets that are sustainable long term. How competitive are those mills after 10 or 20 years when new, highly competitive Category A mills are built by others? What if the resources are spent on mills that will not survive when these new Category A mills are built in, for instance, South America or Asia?

The question for an individual who is part of the decision process is, how will your company deal with the future? The company certainly has a process that in the future will direct resources towards less competitive assets, assets that are "the next Category C mills". How does one create a company that allocates capital to the right assets (which may well be one or more Category B mills, but which ones, how and when?).

”
The capital-intensive industry has a reputation for investing heavily in mills two to eight years before they close.”



This paper has discussed the challenges and situations companies face when assessing a capex request. It has not provided a solution. Our experience tells us that there is no point in discussing solutions if one cannot agree on the issues/problems/challenges, therefore solutions have no part in this paper. Too many people say "these issues do not exist" or "we don't have these issues in our company".

As a reader, it is tempting to think that your own company's capex management process avoids the traps described in these articles. If this is you, then you need to rethink your position. All companies have the possibility to fix the issues that are discussed in this article. Weissenrieder & Co. have applied the solution for years – it works. Contact us for a discussion about our solution that can help you make informed decisions on how to best allocate funds and improve your company's long term cash flow.

”

*Who can say they're doing the wrong things?
It looks great on paper - it has no sustainability,
but that was never considered when making the
decision.”*

”

You need to rethink.”

Appendix 1-1

Mills/companies often assume or claim that mills will be making more money after a capex. However, **it is actually about not making less money.** Many times, we have heard people in companies talk about their capexes adding the NPVs they have been calculated, claiming that the mill will improve.

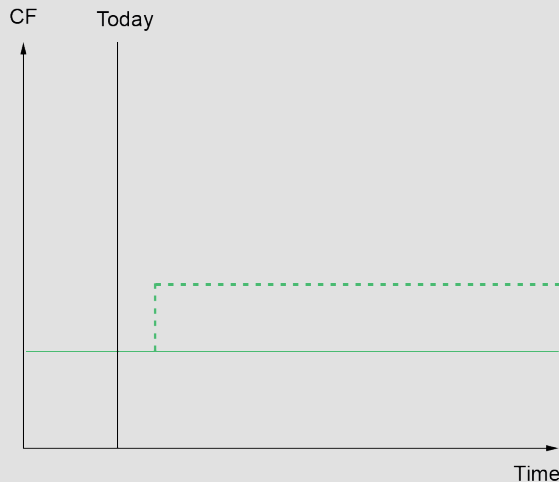
Think about it: name a mill/plant whose EBITDA margin has continuously improved over the last 10-20 years? If we examine it closely, currently operating mills with very few exceptions steadily, as a trend, have decreased their margins. That's nature. Sometimes one might experience an improvement of a mill's EBITDA margin due to and after a capex, but that will be small and short lived. It will have the character of "catching up to the level where the mill should have been," but only for a short while.

We were at a meeting in a mill about 10 years ago, and had a discussion similar to this. The controller at the mill said something that was both amusing and interesting. He said, *"If we had achieved all improvements that we have claimed in our capex requests over the last 10 years we would have an EBITDA margin of 110% and we would have only one person working here"*.

So, we claim that the capexes companies make in their mills are there to prevent the mills from losing their ability to make money. Capexes are not made to make more money. Value is not added; less value is lost, even if decisions lead to costs being cut, quality being improved, etc. All efforts are directed at trying to keep up with competition – because they develop. The industry's improvements are taken out in the price of the product to the customer.

There are two exceptions. The first is if one increases capacity. Then the mill potentially makes more money; the value of the business increases, see Figure 1-8.

Figure 1-8



”
It is
actually about
not making
less money.”

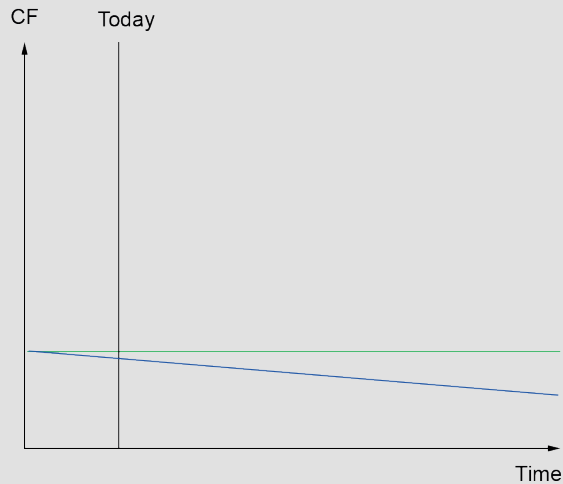
”
It will
have the
character of
”catching up
to the level
where the
mill should
have been”,
but only for a
short while.”

”
He said, *”if we had achieved all improvements that we have claimed in our capex requests over the last 10 years we would have an EBITDA margin of 110% and we would have only one person working here.”*

The second exception is if a mill can invest in an improvement that is unique for that mill. That no other (or only a selected few) can implement. Then one will have an advantage, value is added.

We have to admit to one simplification we have made. The full green line doesn't look as we have drawn it in Figure 1-9. They are not horizontal. They trend downwards, like the blue line in Figure 1-9, and all the capexes made are to prevent the line from falling even more quickly.

Figure 1-9



”

So, we claim that the capexes companies make in their mills are there to prevent the mills from losing their ability to make money.

Value is not added; less value is lost.”

About Weissenrieder & Co.

Weissenrieder & Co is an international leader in Asset Strategy and Capex Management. For more than 20 years, we have served the capital-intensive industry globally. Our unique methods and systems enable industrial companies to optimize their Asset Strategy and capital allocation in order to maximize their total cash flow.

Weissenrieder & Co has helped to establish long term asset strategies for over 500 production sites, with a total replacement cost exceeding €80.000.000.000, and a total investment value within the immediate five-year period of more than €7.000.000.000.

For more information, visit our company's website www.weissenrieder.com, or on [LinkedIn](#).

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