

lock-in-2024-dr-alan-barnard

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So just a brief introduction for myself. My name is Alan Barnard, I'm CEO of COVID research labs, and I had the incredible privilege of working with Dr. Li Goldratt, who is the creator of theory of constraints. For almost 30 years, you left me, you sadly passed away in 2011. And the last words that He spoke to me, inspire and haunt me every single day. He said to me, Do not dare stand in my shadow stand on my shoulders. What I want to share with you in this brief time today is essentially two things. I'll give you a brief introduction about what is Theory of Constraints, in that it solves one problem, which is how the heck do you find the one thing in your business to focus on at any point in time? How do you differentiate between the many, many, many things that you can change and improve, and a few things that you should do to achieve the goal. So that's the one part. The second part is four main decision mistakes that you can make when it comes to any scarce resource. So in the first part, I'll share what is theory of constraints? And specifically, what is the constraint? And how do you find out what's that one thing? And then the second part, I'll look at, okay, if this is your constraint, then how can you waste it? Right? How do you squeeze the most out of what you already have? make sense to everybody so far? Absolutely. So let's start with what is Theory of Constraints. Kurt Lewin, famous psychologist said, you know, there's nothing as practical as a good theory. So what is the good theory? Why was it called Theory of Constraints? As a common common question I get why they call it a theory, I need something practical well, is nothing as practical as a good theory, a theory is simply a good explanation of why something is important and useful. So if you use a theory of evolution, what you should expect is that somebody is going to define to what the heck is evolution. And second to explain to you why it's important to be useful. So when it comes to theory of constraints, first of all, what is a constraint? It has a very specific definition. In theory of constraints, it's, it's quite different to the normal way that we use constraint in general language, we use constraint problem, obstacle, issue all interchangeable, in theory of constraints, constraints has a very, very specific meaning to it. So when you think about a system that you're managing, think about your your business, and you had to describe the system to me, the first thing I would need to know about it is what is the goal? The agree, the system is not a system without a goal. So the goal Once you've defined that very clearly, what do you want to achieve by waiting for who? Who's that dream customer, like we talked about? Once you've dictated that, that basically requires a couple of things that requires what is the work that you're going to do to achieve the goal. So what product do you provide? what service do you provide, but it also tells you what resources you need to achieve that goal, not just what resources but how much of each. So if you have a goal of 10, that will dictate what resources and how much and if you increase that goal to 20, suddenly the amount of resources increases. A constraint is anything that you don't have enough of, to achieve the goal. It's a resource that you don't have enough of to achieve the goal. It's not a problem. It's not an issue. It's not an obstacle. It's a resource that you don't have enough of to achieve the goal. Make

sense of out everybody? So now the question is, what's the resources that you need to achieve the goal? And how can you leverage it to find that one thing to focus on at any point in time? So say you've defined a goal for yourself? It's very clear. And of course, it's always a journey, right? It's some kind of, I want to get to from where I am here, I'm gonna get to some point in time. And each of these are milestones that tell me Okay, so I've got my overall vision. I want to make this amount of impact, or I want to earn this amount of income over this time. So I've got my first milestone the first question for yourself should be if I want to make this type of impact or income. Do you have enough market demand For the product or service that you've got to offer to make that impact or income. But is there enough market demand? That's the first resource that you need? If you say, No, guess what's the one thing? That's a try to figure out a way of creating enough demand, like the word Sanjay often uses is, how do I get more customers to pay more, buy more, buy more frequently? How much more enough to achieve the goal? Right, so I know what products and services are provided. So I can do the calculations. If the income I want to make as a million dollars, I know what my selling price is, I can work backwards and calculate how much I need to sell. If I can sell it at a higher price, I need to sell less, if I can sell more and more frequently and solves right. So that's the first thing there is that step, sort of step zero, which is if I asked you, what is your what is your goal? Do you have a clear goal? Is it clear amongst your team? What is that goal that we striving for this quarter this year? And you say? No, then that is the one thing. Make sense? Let's define the goal as clearly as possible and communicated to everybody that needs to know. Because I need to figure out how can I contribute? Right? How many resources do I need in my department to achieve that so that I don't become the constraint or a bottleneck? So the finding and communicating a clear goal is absolutely critical. If you haven't done that done, that is the one thing. If you've already done that, then the next question is Do I have enough market demand? If not, how do I get more? What if you now say okay, I can see or ready have enough market demand? What is the next constraint is do you have enough capacity to deliver reliably and profitably do that market demand? If you say no, or you have major concerns, then that is the one thing to focus on this make sure you have enough capacity to achieve that goal. Now in the second part, I'm going to give you a couple of case studies, two main case studies, one was was the biggest mining company in the world. And one is with at that time, they were the biggest tech company in the world, the first one was valued at about a quarter of a trillion dollars at the time, the second one half a trillion dollars at the time. So I want to show you how these concepts, even though they are profoundly simple, can be applied to any size of business. And at any level in the business. They can imagine for specific department, that department has a specific goal to support the vision that you've created for the company. And they will have a constraint. So the manager can apply the same questions Is the goal clear for them as a department, I need to get my reliability up to 95%. Or I need to get my lead time from eight weeks down to four weeks to support the overall competitive strategy. So it's always at any level any size, right? So do you have a clear goal? If not, that's the one thing, do you have enough market demand? If not, that's the one thing to generate? How do I get more capacity? And I'm going to cover that in step two, because the mistake that we make is, if you don't have enough, people ask for more, right? But are you properly utilizing what you have right now, I'm going to show you how big that gap is often before you elevate the constraint go and get more first exploit what you have better. So if you have enough demand, you have enough capacity, then the next question is, is there enough supply of whatever raw materials or goods or other services that you need to be able to produce enough of the product or service that you provide in order to achieve the goal? So it's market demand capacity supply? And then the last part is cash. Do you have enough cash to purchase enough of the supplies to produce enough of the products or services to meet the market demand? Right? Those are for market demand, capacity, supply and cash make sense to everybody?

09:33

There's a fifth constraint. And it took us a bit of time to figure this out. We were starting to work with some of the biggest companies in the world. Microsoft, within the first year that I worked with Microsoft, we got the inventories down by over a quarter of a billion dollars in sales or by few 100 million just by changing a few small rules in the way that they're managing their supply chain. But when you ask the question, even for these big companies, where's the constraint But what? Could it be the size of the market? What do you think? Like at a fundamental level? Could it be the size of the market that will constrain the profitable growth? It could be but is it right? Walmart has 2% of the global market? Is the size of the market constraining their profitable growth? No. Do you think it could be capacity or supply of cash? And then each of those cases, we said, No, it could be a temporary situation that right now, for specific product channel, we don't have enough demand, or we don't have enough capacity or supply or, you know, often these these things are not cash, right? Because most of these companies have got a ton of cash. But it could be temporary, but it's not a permanent constraint. So we will ask ourselves, Is there a resource that you will never have enough? Right? That would be like the ultimate constraint? Do you agree? A resource that you would just never have enough of? And we found it? And it was one of those things where Dr. Goddard used to talk about, do you know what the criteria is for Nobel Prize in Physics? Very simple. You can write the paper, three pages long paper. The only criteria is that your peers, other scientists, as soon as I read the paper, they go. Like, now that we miss that, right? It's the highest form of price for any logical conclusion is that people say it's common sense. You know, as soon as you read it, you know, it must be true. So we started asking that question. Think about this and just ask this question for yourself. The amount of things that demand your attention, will it always exceed your available attention? The amount of things that demands your attention in your business? Will it always exceed your available attention? Right. And this is something that if you think about it, time is not our scarcest resource. attention is attention is essentially defined as undistracted time, the time we have in the day that we can make meaningful progress. Do those goals that are important to us? make sense to everybody? How much time do you think you have available every day to make meaningful progress towards the goals that are really important to you? You have 24 hours theoretically, but practically, okay, you have to sleep you have to do other stuff that's necessary, and that's not moving you forward to your goal. So most entrepreneurs, most business people we work with, it's like an hour or two, like literally having that quiet time that you can sit and think about and reflect about, right? So basically, what you have is you have a situation where this is the 24 hours per day that you have, right, and you have some of that you are using productively. And there is this gap that you have available. Now how much of that you know, you have to sleep etc. But there is definitely a couple of hours every day that we can make available. Right to be able to make progress. So what I want to share with you now is the second part to it right? So the first part is how the heck does fear is constraints help you find that one thing? It helps you to say what is the goal if you don't have a clear goal, that's the one thing don't try to solve any other problems or overcome any constraints because a constraint only has meaning if there's a clear goal, but the constraint is something that limits me from getting to a goal. So that becomes the one thing or its market demand or capacity or supply or cash or Lastly, management attention. Right. Whichever constraint you have, think about the top of this box represent what is available. The line yours How much am I currently exploiting of that resource? Right So if you have a market constraint, then this bottom part would be your market share. Right? We have 50% market share or 5%. Market share this year is your opportunity to better exploit what you have this is current products current customers. Make sense? Right? So your job would be to figure out, what are the conditions that if I satisfy these conditions, will give me more. Does that make sense? The good news for those that know about Pareto principle and added 20 Is that it applies on itself over and over again. Right. So whenever you look at this, what you'll know is that, theoretically, there could be 100

things in this gap, things that you could do, that will help you to better exploit to not waste your scarcest resource, whether it is the available market capacity, supply, cash or management attention. However, 20% of that, or whatever that number is, whether it's 100, or 50, or 20, doesn't matter. 20% of that will explain 80% of this gap. But 20% of the 20% will explain 80% of 80%. So now, now you have full that would explain 64% Of this total gap. And then you can apply it again. 20% of the 20% explains 80% of 80%. So now down from four to one, and that one will explain 50% Of that total gap. It's quite fascinating that this is a universal law, right? The principle is always true. It's not the exact percentage, or sometimes it's more sometimes it's less, but the principle is always true at the leverage point level. So what I mean leverage point level, it might not be true at revenue, but it is definitely true at a profitability level. It's definitely true at an ROI level, at a cash flow level. Everybody is still following, right? So regardless of where you have a constraint, you're trying to figure out how much am I currently utilizing product properly, to make meaningful progress towards my goal? And what are these gaps? And what makes up the gap? So there is going to be false things yet, I'm going to share with you we now in the second bot, right? Of how do I close this gap before I elevate which means get more. So if you have a market constraint to elevate, it means adding new products or adding new customers or doing both at the same time, which is massively risky, which is going into new market with new products craziness, right. But it's amazing how quickly people jump to elevate. And I'm sure Jay has had this experience all so many times I'm sitting down with a customer talking about them and I go I'm gonna go to China or India, why the market is so huge. How much market share do you have in your local market? 5%? Like, why on earth would you go to another market? If you haven't even figured out how to capture more than 5% of the market that you know? Right? So just bear that in mind. Right. So if it's capacity, elevate means buying more machines, appointing more salespeople, etc. If it is suppliers, getting other suppliers if it's cash getting another investor if it's management attention, big problem, you can outsource stuff use Jaggi, pretty standardized automate. But it's hard, there's a certain amount of attention that only we can do. It's really hard to outsource that. But so we always say, first exploit before you ever figure out how to better exploit what you have. And this is what makes up these gaps. I'm going to give you four of these through two stories. The first one is with a mining company. I get called in to give them a lecture about constraints and bottlenecks. I walk into room 60 Minus sitting down facing me. And they all look very unhappy.

19:27

So my background is I grew up in South Africa, I studied Industrial Engineering. I've always been really really curious about why good people make bad decisions. Why some people succeed despite very limiting starting conditions and others fail horribly with ideal starting conditions. I studied Industrial Engineering went on to study psychology and economics and then did my PhD in innovation and technology, sort of combining everything I've been programming and coding. So until I was a young kid, I was fascinated with the idea that he can give us a computer very precise instruction, and we could just do it. But for those that have played around with chatty putty, this is our latest advancement right now the the differences, you can actually tell it in plain English exactly what to do in it, we'll go and do it. A little bit of my background, I started off in corporate was very quickly CEO of a very large cookware company, I'd read this book called The goal that was written by Elie Goldratt. That created Theory of Constraints back when I was studying. And immediately when I started in, in business, I started applying the concepts and the performance improvement that was possible. When you focus on the constraint of a system was enormous. We doubled the output of our factories without increasing operating expense. So capital, capital expenses, we increased our due date performance from something like 30%, on time to being 100% on time, all the time. And I've applied this methodology in just about every industry that you can imagine not quite as many as Jaya has been. But to give an idea

about the applicability, I've just been at our international conference for the last couple of days. That's why it wasn't the on on the first few days. At company in Australia grating logistics software, on a SaaS basis, they've grown the business from \$100 million to \$800 million in seven years. But what's more staggering is they're running F net profit margins of around three \$400 million dollars, almost 50%, the company at the moment is valued at 22 and a half billion dollars, some multiple of 55 times the EBIT, da, and the founder of the company reached at White said, it's all about Theory of Constraints, they apply it constantly. But from an external perspective, they are helping their customers overcome constraints to their profitable growth and have developed software to do that. They've done 43 acquisitions, and the first thing that they do when they do an acquisition is to teach the new company Theory of Constraints. Because they say that that is the by far the biggest leverage point in any company, is if you can get your whole company to be aligned to constantly think about what problem are you solving? What constraint are you overcoming? What limitation are you removing for your customers. And the bigger the problem that you're solving the bigger constraint that removing, the bigger the limitation that you're removing, the more valuable your product or service becomes the difference between the product that you're providing or service that you're providing an offer that you making, ultimately to the customer. That difference is really just made up of all the things you have to add to your product or service, to address all the reasons your dream customer has for not buying? Does that make sense to everybody. That's the difference between your product and service that you've created to serve your dream customer. And the actual offer that you're making them is that your offer contains all the elements that you've had to add, to address all the reasons they have for not buying from you. So it's a very simple way of thinking about it. So ultimately, it comes to where is the constraint in your business? Right? You have a goal. If you don't have a very clearly defined goal, and you're looking for the one thing to do, then guess what's the one thing define the goal, make it very, very clear and specific. It could be an impact goal, it could be an income goal or combination of the two. But make it very, very specific. And communicate it to people make sure that they fully fully get it. Once you have that. The next question is, do we have enough demand for the product or service that we are providing to achieve that goal? If you say no, you don't have at least a 50% buffer. So if you need 100, you need a buffer of 150 in terms of demand to make up that because there's obviously uncertainty then that becomes the one thing focus on how do I make sure I generate enough demand for a product or service I provide that I can easily achieve my goal. If you say I have enough demand, I'm pretty confident I know how to get it by helping them solve some significant problem. Then the next question is do you have enough capacity to reliably and profitably satisfy that demand? If you say no, I have a concern and that's the constraint. That's the one thing to focus on. If you say I have enough demand and capacity then it's about supply Right, there's some external resources that you need raw material skill, something else that you need in order to supply enough of the products and services to meet the goal. So then supply becomes the constraint. And then the fourth one is cash, do I have enough cash to buy whatever I need in order to produce whatever I need to meet the demand? The last one, the fifth type of constraint took us a bit of time to figure out what it is. And now today, it looks in hindsight like those obvious things, right? Is we were starting to work in the late 1990s and early 2000s, with some of the biggest companies in the world. And the question is, well, what's really constraining them from profitably growing? Would it be the size of the market? What do you think? Pick the biggest companies that you can think of the Walmart, Cisco Systems, Microsoft's? What percentage of the market share, do you think they have global market share? It's normally a tiny percentage, right? Walmart has like two 3% of the global market. So it's not really the size of the market that is constraining them, whether it be capacity or supply or cash. No. So where's the ultimate constraint? For any business? The only thing where the demand on that resource will always exceed the availability of the resource. That's the definition of a constraint, you have a goal, that goal dictates what resources you need, and how much

of each resource you need. Any resource that you don't have enough of as a constraint. Make sense? What's the one thing that you will never have enough of? We think it could be time, it could be information or knowledge, it could be money, none of those come close to attention. Just think about that. The amount of things that demand your attention at work, and at home will always always always exceed your available attention. But like any constraint, it's never that we don't have enough of it is firstly, that we wasted. Right? So whatever your constraint is, if it's the market, if it's capacity, if it's supply, cash, or ultimately, your limited attention. Step number one says, How do I make sure I don't waste this thing. And if you think about all the things that you do on a daily basis that you are giving attention to, what percentage of those things are actually helping you to make meaningful progress on the goal that's most important to you. And it's not uncommon, that that numbers, about 90% of the stuff that we're doing every day does make sense to everybody. So of all the things that is demanding your attention that you paying attention to right? Every single day, if you had to make a list of the things that you paid attention to that day, how many of those actually contribute directly to making meaningful progress to the goal that you've set for yourself for your business? It could be an impact goal, it could be an income goal, what percentage of that on that list would directly and meaningfully contribute to your goal? It's not uncommon that 90% of it wouldn't, wouldn't right? Now, that's huge, because it means that we could go 10x. That makes sense if you're doing aim things, and only one of them is actually directly contributing to your goal. You have nine potential that you're wasting. Right?

29:01

You can go clinics, that is what the software company ended up doing. They were looking at all the code that they were developing because they are resource constrained internally as the coders, right? The guys that have to develop code for the new releases of the software enough to fix the bugs, they will very critically looking at all the code that these guys were developing, and found out that 90% of the code was not helping the customer solve the main problems that the customers actually are using their software for. And it's quite common if you think about Excel, or pick some software that you're using, right? Really a lot. Think about all the functions that it's got. Now think about how much of those who are you actually using. So make sense. Even if you're super experienced user of, of Excel or ERP system like SAP, it's not uncommon. And that almost 90% of the functionality is never been used by users was developed for all sorts of other reasons. But that means that 10x is possible there. Another case study, a big coal mine, one of the biggest coal mines in South Africa, while biggest coal mines in the world, but it's on the eastern side of southern Africa and Mozambique, a new CEO was appointed good friend of mine, Sanjeev Gupta, Theory of Constraints, experts, serial entrepreneur from Silicon Valley has never been on a mind. I've never been on a mind two and a half billion dollar mine, he walks in there being appointed as the CEO, the prices of coal has collapsed by 50%. About 60% of the vehicles and equipment on a while on a mindless breaking down because there's been poor maintenance that has been done for multiple years. Seven months later, they have increased the profits by doubling and doubling the throughput of the mine. Now you can imagine if you walk into that environment, you are normally overcome if you're not an expert, by all the visible complexity, right? You approach any new industry or you start working with a new client. If you get lost in all the visible complexity you'll never get out. And that's why something like Theory of Constraints is so useful, because it gives you a practical way of finding out what's the one thing we all know we have to focus Do you agree? We all know the consequences and the pain, the suffering, if you don't, if you get distracted all the time. We know that, but what should I focus on? And the first thing I have to do is to stop all the things that's not helping. Because I also wonder the capacity to focus, I'll constantly be distracted. That's why exercises like what George did this morning is so good because it gets you into a mental state, where you can think clearly and objectively and hopefully a little bit and emotionally to say

of all the things that I could be focusing on. List all the things that are just distractions, focus on where's the constraint? Where's the weakest link? Where's the bottleneck? And then first, before I tried to get more, how am I wasting it. And attention is a great example. So we add that this conference, company after company, minds, banks, Silicon Valley startups all presenting and all reporting similar results that within a very quick time, it's normally possible to do 10x. And it's just by stopping the stuff that we that we shouldn't be focusing on. So that's just a quick introduction of it. Hi, good morning, everyone.

32:47

So the idea is, if you think about your business, I noticed that many of you are around 10 billion in revenue. So think about this, you have 10 million in revenue, and you have about 1 million in net profit. So do you think it's possible for your business within four years or less, to turn your top line into your bottom line? So that means in four years or less, take your profit and 10x it from 1 million to 10 million? Well, most business owners think that, you know, unless you're a startup in a high tech space, that type of 10x growth is simply not possible. And part of the mistake that they make, the limiting belief that's blocking them from even considering it as a possibility is that we tend to think that margins are fixed. So when you think that margins are fixed, you assume that to get your profits to go by 10x, from 1 million to 10 million, you have to increase your sales by 10x, from 10 million to 100 million. And that's what makes it feel impossible, like how the heck will I increase my sales by 10x? In four years or less? That's what makes it feel impossible. Why is it not as possible, but very probable? If you can find out? What's that one thing or few things to focus on? So if you think about if you could generate all the sales you need, just from an increase in the price, right? How much additional sales do you need? How much do you need to grow yourself by to take your profit from 1 million to 10 million? Well, let's try to X right you take your sales from 10 million to 20 million. Let's say your variable cost is 50%. So that's 5 million of the 10 million is variable costs. That doesn't change when you get it by price, your operating expenses, which might be 4 million, which leaves you about 1 million net profit will also not change. So you've got sales of 20 million, your variable cost stays at 5 million. If you had to spend another million to be able to do that on my pocketing, etc, your profit will be 5 million. And suddenly you've got a profit of 10 million, right? So just a 2x increase in the average selling price. And you have another million to spend on how to figure out how to do that could get your net profit to go by 10x? Well, you might say, well, what if I can't do it with price, if you just had to do it with volume, remember, the mistake was we assume that to 10x profit, you have to 10x your sales your volume, well, let's try Free Free X, just volume sold, not changing the price. So your sales will go from 10 to 50 million. your variable costs which is 50%, will be 15 million. That leaves you a 15 million gross margin. Let's again say we've got another million I'm giving you to spend figuring out how you're going to free x your sales and paying for the operating expenses. So your your operating costs will have gone from 4 million to 5 million. So 15 million gross margin 5 million operating expenses, again, you get a 10 million net profit. That's practically how you turn your top line into your bottom line without having to 10x your top line, like only 2x. If you can do it with AV increasing the average selling price. And for many businesses, that's not that far fetched. Because remember, you have three, four years of doing it. So it only requires an increase on average of about 20% or so if you think about the compound effect, over a four year period, very, very possible. But there's another reason why we should do this top to bottom line. And that's part of what happens. As business owners, we are constantly looking for the one thing that can change everything, right? It's like following the added 20. But kind of applies it on itself. 20% of 20%, which is for other 20 will actually give you 80% of 80%. So for changes in your business will probably give you 64% Of that total gap that you're looking for. And then you can apply it on itself again 20% of that, which is about one change will typically account for 50% of that total effects. But how do you get to that one thing? That's the like the Holy Grail, because there are so many options, and J always can share with

you, there is not just to free for up to this 40 options or 100. But how do you find the one thing, it starts with how you set targets or goals. If you set targets of increasing my sales by 10%, or increasing my net profit by 10%? How many ways are there to increase your net profit by 10%. There are so many ways you can achieve it by growing revenues by reducing costs, etc. There's so many ways it's not useful. When you ask yourself how to Dainik something. Immediately, the number of options goes down dramatically. And often there's only one or very few ways of doing that. So there's a psychological reason for also starting off with these big target what I call impossible goals is the more impossible at fields, the more likely number one it will be to help you challenging limiting assumptions like my margins are fixed. So therefore I have to 10x myself to 10x my profit, that's simply not true margins are never fixed, right? Secondly, it helps you get out of the mode of looking for all the many ways of doing something and finding that one thing or two things that can actually help you to get to the 10x. So that's just very simple. Practically, how do you turn this into a process, you start off with an impossible goal, right? If you don't have one, I would encourage you to start start off with a goal. Like, I want to turn my top line into my bottom line in four years or less. Next question is by how much do I actually have to increase sales by to achieve that? We've already seen it right? Only 2x If it comes all from price, only 3x. If it comes from volumes, right, then the next question number three is what changes do I need to make? And how much will it cost to achieve that soul's growth, the 2x or the Free X? And then the last question is What else can constrain me to get to that? I now have check that I have enough demand. I made sure I have enough capacity. That's what Question three is about what changes internally I'd have to make, how much will it cost? We gave a budget of 1 million remember now example which is more than sufficient normally. But what else can be a constraint? Is there supply constraints on schedule material skill, or maybe cash or last one management attention? I don't want surprises. So I want to proactively identify what are these external constraints and find a way to overcome it. So that's just a few minutes on it. why it's so important to set targets and goals that is not just ambitious but feel absolutely impossible because when you do that you ask yourself the question it's impossible unless and that that question impossible unless will help you to discover all these conditions to make the impossible possible.