

A SHORT STORY

**PRODUCING
FOR PROFIT**

**SIMPLE STEPS FOR SQUEEZING MORE
PROFITS FROM YOUR PRODUCTION
RESOURCES**

1 THE YOUNGER BROTHER VISITS THE OLDER BROTHER

Once there were two brothers one older, one younger. They had always been close, yet independent. Like their father, they were motivated and business minded. The Older Brother shouldered great responsibility; he was the Director of Operations at a successful, global manufacturing company. Nonetheless, he was always poised, never stressed. Following in his Older Brother's footsteps, the Younger Brother was the Operations Manager of a smaller, growing manufacturer. He enjoyed his work but as the business grew he struggled more, worried more, and worked more. Meeting his objectives of delivering ontime to customers with their limited resources was becoming harder by the day.

The Younger Brother looked up to his Older Brother, but had never asked for advice because he wanted to succeed on his own. One day however, the stress became too much to handle, so he finally went to ask his Older Brother for guidance. He called his brother for help.

"Hey Brother, how's it going?"

The Older Brother responded with his usual upbeat tone: *"It's going great! How are you?"*

Unfortunately, the Younger Brother was not feeling so positive: *"Things could be better. I was wondering if I could come over to talk when you have time."*

"Anything for my little brother! Come on over today."

When the Younger Brother arrived, he asked in desperation: *"I need your help. My company is growing but our profits and customer service levels are declining. One of my top clients called and said that I have one month to clean up our services – especially our accuracy and communication"*

"Hmm... Why do you think that is?" his Older Brother asked.

The Younger Brother reflected. *“Well, my customers are often disappointed because they are not getting their products in time. My sales team is increasingly at conflict with my manufacturing team. As a result, our sales are beginning to decline. And to make matters worse, our inventory and overtime costs are at an all time high. We have great people and we all work diligently but we can’t get our operations to be as profitable and controlled as they were when we were smaller. We’re always exhausted and always behind. You manage many diverse plants while I only manage one. You have thousands of products and hundreds of customers. Yet you seem to have it all together. You have time for vacations and family while I’m always at work. How do you do it? Can you help me turn my company around?”*

The Older Brother was relieved. For some time he had been seeing that his brother was experiencing these problems and now was his chance to help. The Older Brother smiled to himself because he knew what the solution was and was anxious for the Younger Brother to see it for himself.

“I’m happy you came here brother. Don’t worry. I’m sure that together we’ll find the solutions you’re seeking.”

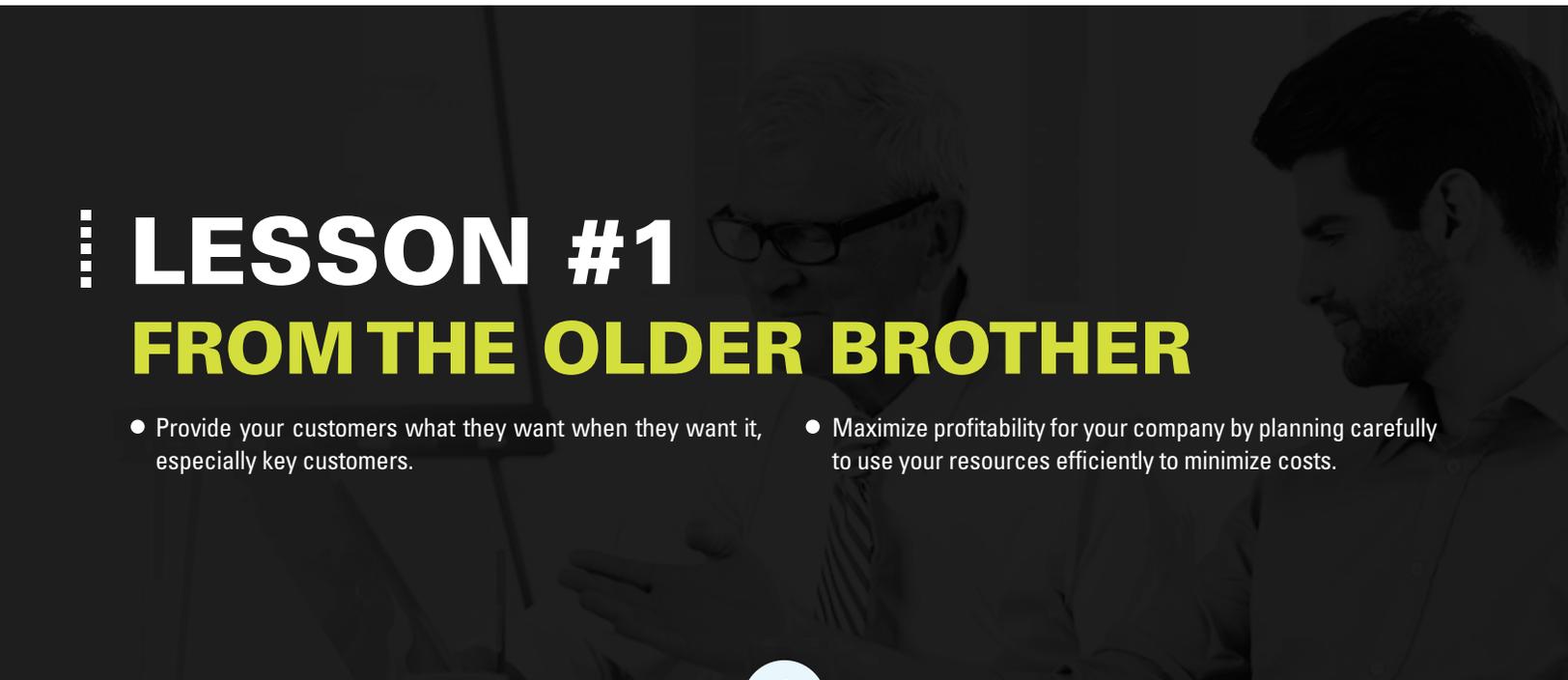
“Really? What a relief! That’s great to hear. So where do we start!?” asked the Younger Brother.

“Let’s start simply.” said the Older Brother.
“You’re the Operations Manager so what is it that you’re really supposed to manage?”

“Well, I need to get products made and get orders out the door by their due dates. Plus I have to keep my utilizations high to meet my productivity measures.”

“That sounds about right,” replied the Older Brother. But let me suggest another way to look at it. You’re responsible for providing your customers, especially your important ones, what they want when they want it. Plus you need to utilize your production and material resources effectively so you minimize costs and maximize company profits. You’ll see that by planning your resources carefully you can achieve exactly this!

The Younger Brother was feeling excited about what would come next. And as he thought about what his brother said he realized he had been spending a lot more time tracking the past than planning for how he would manage his resources for the future!



LESSON #1

FROM THE OLDER BROTHER

- Provide your customers what they want when they want it, especially key customers.
- Maximize profitability for your company by planning carefully to use your resources efficiently to minimize costs.



2 MEET STAN THE SALESMAN

"Okay, so how do you do it? Or more importantly, how can I do it?!"

"I could sit here and tell you, but you won't understand unless you see for yourself. The people in our company who are closest to the customer are the sales people so let's start there. Talk to my top sales man, Stan. He's in the office at the end of the hall."

When the Younger Brother arrived at Stan's desk, Stan was on the phone with a customer, *"Yes, we'll have the order ready for you by noon on December first, no problem! Oh you're very welcome! Yes, if you want reliability, you know you can count on us. Have a great day."*

The Younger Brother knew that one of the toughest issues his salesmen dealt with was quoting customer promise dates. When a customer calls and wants to order a certain quantity of products and wants to know when they can be completed, it is important to satisfy the customer and just as important to follow through with promises that are made.

The trouble is, how do you do that in such a dynamic business where workloads and resource availability are constantly changing?

That's why he was so amazed with Stan. Stan seemed to have it all – confidence in making promises and success in delivering on them.

The Younger Brother, amazed at the salesman's ability to give a precise date with reliability, asked, *"How do you do it?"*

"Do what?"

"Give such a precise date, so quickly, and with reliability."

Stan had worked at other companies so he understood how special their process was. *"The key is visibility. I give customers dates based on our system which reserves capacity and materials based on all of our commitments and resource statuses. This way we always know that a promise given is one we can keep. Don't you do it that way?"* he asked a bit ironically.

Half embarrassed, the Younger Brother replied,
*“No, we use standard lead time estimates or
call our planners for an educated guess.”*

*“You mean you makes promises based on
information that you know is unreliable?”*

The Younger Brother thought to himself... It
is true that the fixed lead times are based on
averages which don't take previous promises
and material and capacity availability into
account. So the promises almost always
overestimate or underestimate the real answer.
*“Uhm, yes I guess we do. And later we spend
a lot of time rushing overdue jobs through
production and apologizing to our customers
for late deliveries. Something tells me that's not
the best strategy.”*

Then the Younger Brother had a thought, *“But
what do you tell your customers when your
system says that the customer can't receive
your products when they want them? Don't tell
me you're honest with them! They would get
upset and you'd lose their order right?”*

*“Actually, our customers are mostly businesses
themselves and they understand that we both
benefit by a long term relationship with give
and take. Like any relationship, honesty is
critical and they appreciate the fact that we're
always honest with them. Our competitors are
known for always saying 'yes' but then failing
to deliver. I think we both know that it won't
take long for customers to see through that
approach. Since most of our customers are also
manufacturers, if they know their constraints in
advance they can usually work around them.
But if we surprised them with a late delivery it
could really hurt their business...and ours.”*

"Wow," the Younger Brother said, "when you put it that way it makes a lot of sense."

"OK, but what if your top customer calls and needs products ASAP? Do you tell them 'no'?"

Stan smiled. *"I'm glad you asked that. Like all companies, we have a few customers who account for a large part of our business and it's important that we do our best to make them happy. So sometimes we will have to 'juggle' our schedule to accommodate them. However, since we have a thoughtful planning and priority system this is a rare exception, not the norm. When the need does occur, our system helps us there too. Instead of making a blind adjustment to our plan, we use our system to predict exactly which other customers and orders will be affected so that we can make an informed decision and can minimize the inconvenience to our other customers. It's funny sometimes supplying a rush order to a customer requires us to bump another order from the same customer! In this situation we empower our customer to decide which is more important for them. As a manufacturer, they understand that 'something's got to give!'"*

"Remember," said Stan, "one of the most detrimental decisions a company can make is to decide that they will follow a process of blind promising and expediting. Without a thoughtful planning and adjustment process, you guarantee that exceptions will become the rule. As a result, manufacturing costs will soar not to mention stress levels!"

"Now I'm starting to understand the benefits of your system," said the Younger Brother as he made note of the lessons he learned...

LESSON #2

FROM THE TOP SALESMAN

- A scheduling system that allows visibility on current resource workloads is necessary. Making realistic promises on new orders is vital to credibility, reliability and the company's success.
- Be honest with your customers. Give them advance notice of problems when necessary to minimize the impact to their business. This is fundamental to profitable, long term relationships.
- Prioritize and decide on a priority system that make sense for the business everything can't be "priority 1".



3: MEET JOE THE PLANT MANAGER

“From the sales and customer service perspective your planning system looks great. But what does manufacturing think about it? They must have a hard time living up to these promises of yours.”

Stan replied, *“Believe it or not, unlike many companies I’ve seen, our sales department has a great relationship with the manufacturing team. We each understand the goals and constraints that the other faces. But don’t take my word for it. Here comes Joe, the Plant Manager. Talk to him.”*

Joe, the Plant Manager, looked happy and relaxed, like Stan and the Older Brother. There was a good energy about the interactions between Stan and Joe – a harmony he hadn’t seen between his own departments. The Younger Brother was amazed, once again.

Stan asked Joe to give the Younger Brother a plant tour: *“Hey Joe, we were just discussing our collaborative effort in planning together and delivering on time to our customers. How about shedding more light on the ‘delivering part’ with a plant tour?”*

Joe replied, *“Yeah, of course! I’d love to!”*

Joe then began to walk the Younger Brother through the shop.

The Younger Brother noticed that, unlike on his own plant floor, there was very little inventory lying around. Oh boy, he thought, that would be nice! He shared his thoughts: *“Wow, you have very little inventory in finished goods and work in process. How do you manage that?!”*

“Simple. We schedule for ‘just in time’ production and then we follow our schedules.”

The Younger Brother knew that more “just in time” production meant a cut in costs, since keeping inventory around cost his company in many ways, but he had never seen it achieved in such a complex production environment.

The Younger Brother also noticed that everyone was busy and that there were no expeditors running around. So he asked Joe: *“Where are your expeditors? Where is your ‘hot sheet’ for urgent orders?”*

Joe shook his head and said, *“Oh, you really are living in the past aren’t you? Let me show you something. This screen has our schedule. So do these handheld devices. They’re always up to date. We don’t need hot sheets. If we need to get an order out quickly the schedule is updated and like any other schedule, we just follow it and the orders get done when expected.”*

The Younger Brother contemplated the visual scheduling board. He thought to himself, this sure is a far cry from our paper hot sheets with multi color highlights all over the page!

Then he voiced an objection. *“Ok, so you have these schedules which are based on realistic resource capacity which is great. But what about materials? I mean, you can’t follow a schedule if the materials aren’t there. We have a full time person who shuffles through our production orders every morning to determine which ones have the material in stock so that they can be handed off to manufacturing. Who does that in your plant?”*

The Younger Brother thought he had Joe stumped until he saw that Joe was smiling again. *“Don’t tell me,”* said the Younger Brother. *“Your system handles that too, right?”*

“You guessed it!” said Joe. *“Like any efficient manufacturer, we have to keep close track of our inventory so we know where our materials are and in what quantities. We track materials with bar coding to save time and improve accuracy. Since our system knows how much we have on hand of each material in each location our scheduling system can take that into account when it creates our schedules. Because we also schedule our other plants in the same system we even coordinate effective material flows across the plants. All of this means that the schedules on the screen, on the handhelds, or on this printout, can really be followed and relied upon. What good would they do us otherwise?!”*



LESSON #3 FROM MANUFACTURING

- Minimize inventory carrying costs by maximizing “just in time” production. Do this by scheduling work based on customer demand dates.
- Avoid disruptive expediting by following business optimized schedules at all times.
- To maximize productivity and visibility your scheduling system must take both capacity and material availability into account.

4 MEET PATTY THE PLANNER

The Younger Brother gazes up at the LCD schedule board. *“So this schedule is fully automatic?”*

“Almost,” said Joe, *“but not quite – we still need the help of our experienced planners. I wouldn’t advise taking out the human element – the computer is a powerful tool when placed in the hands of our planners. In fact, let me introduce you to this plant’s planner.”*

Joe took the Younger Brother to Patty, the Planner.

The Younger Brother was surprised that Patty had time to talk with him because his planners were usually busy. They were always running around trying to figure out what was happening on the shop floor and with open orders, so they could update their disconnected spreadsheet “schedules” with the latest information. The Younger Brother asked Patty, *“are you sure you have a few minutes to spare? I don’t want to interfere with your work.”*

Patty was happy to see she had a visitor who was interested in their planning process. She invited the Younger Brother into her office.

“Oh, no problem, come on in. I have plenty of time for important discussions like these. Our scheduling system is tied into our order tracking, inventory, and shop floor systems so I only need to spend about 30 minutes a day on the system managing the exceptions.”

The Younger Brother had to sit down. His planners were known for always being on the run. They never had time to talk and could rarely take a day off for fear of plant disruptions. Clearly Patty didn’t have these problems.

Just then, Patty’s phone rang.

“Excuse me for just a minute. Oh hi Stan. Sure, let me do a ‘what-if.’ I’ll email you in a sec.” Patty then did a “what if” analysis using the system, dragging in the order that Stan had inquired about – one of those new rush order requests. Then she e-mailed Stan the list of other customers that would be affected so that he could decide whether it was worth it to take the new rush order.

The Younger Brother noticed that despite the complexity that he first perceived when he saw the visual schedule it was actually easy to adjust. All it took was a “drag-and-drop” on the schedule board.

“Even I could do that,” he thought.

“Patty, what do you do with all the time you save by leaving the number-crunching and communications to the system?”

“I use it to plan proactively. For example, I look at where the company has excess capacity and can expand sales. I search for improvement opportunities, such as where we will have underutilized people, who we should cross-train, or which resources require long setups that waste time. I also do various what-if scenarios to manage exceptions and see if occasional overtime shifts are worth the cost. Plus I review adherence to schedule and performance numbers to find out root causes for any delays or missed schedules.”

The Younger Brother noticed that his own factory was complicated and he thought about all of the special scheduling rules that had to be followed. He asked Patty, *“Don’t you find it very difficult to remember all of the special scheduling rules? For example, you have to remember which people and machines can work on different products. Plus, there are probably special sequencing, timing, or material flow rules that you have to be careful not to violate. And you probably want to group together similar work to save on those costly setup times you mentioned. It seems like an awfully long and difficult list of rules to remember every day when you create schedules.”*

Patty was impressed. The Younger Brother had just figured out one of the most important considerations in choosing a system and in configuring it. *“That’s a great question.”* she replied. *“Even though I have a great memory and lots of knowledge about the production process I would go crazy trying to remember all of those rules all the time. Fortunately for me, and the company, we chose the right system and had help setting it up the right way. Our system is very flexible and was designed by experts in production scheduling. So we found that almost every rule we needed to be followed could be switched on by just setting an option or a data value. We created an accurate “model” of our factory in about a week. One thing about computers – they have a great memory! When the system generates our schedules it always follows the rules. Plus, when I make those manual changes it keeps an eye on me and lets me know if I’m making a mistake. We make a great team!”*

No sooner had Patty stopped talking when her words were put to the test: Joe the Plant Manager leaned in and told Patty that one of their production lines had gone down unexpectedly.

The Younger Brother had been in that situation before and said *“I’d better get out of your way I’m sure you’ll spend the rest of your day re-planning around the breakdown!”*

Patty replied, *“Oh, don’t worry it’ll just take me a second.”*

She told the system that the machine was down and was expected to be repaired by the next day and the system rescheduled the work to alternate resources right before their eyes.

“Do you have to print out new schedules for the shop?”

“I could but we prefer to use the electronic schedules so they’re always up to date. Our whole company is always working off of the same information that way. ”

“Ok, all done. So what were we saying?” asked Patty as she turned around. But the Younger Brother was gone. He had rushed out and was heading back to his brother’s office bursting with optimism.

LESSON #4

FROM THE PLANNER

- Your planner’s experience and insights combined with the connectivity, memory for rules, and number crunching ability of computers make a powerful team.
- Free your people from the busy work and unleash their pro active business improving ideas. Let your employees be innovators and problem solvers. This will increase your competitive edge and increase profitability.
- Choose a scheduling system carefully to be sure it’s flexible enough to solve your scheduling problems taking YOUR production constraints and business rules into account.



5: BACK TO THE OLDER BROTHER

Amazed at the whole visit and everything he had been missing out on, the Younger Brother arrived back at his Older Brother's office.

"So little brother, I hope you got to see firsthand how my company works, and why it works"

"I sure did. Your team makes it look easy!"

"So what did you learn?" asked the Older Brother.

"I learned that your company works because your system enables your teams to plan together and work together cohesively. Every department from sales to manufacturing to planning is in harmony. Your commitments are

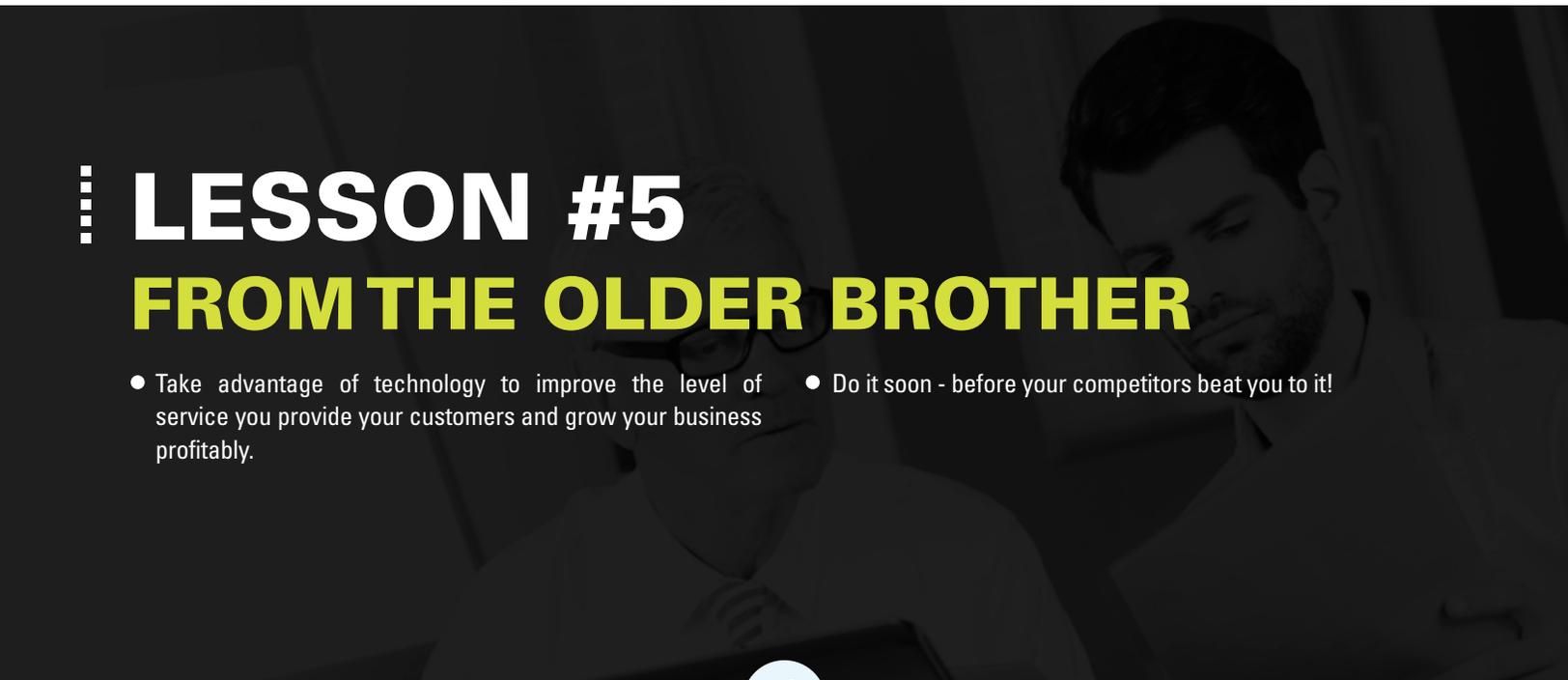
based on a realistic view of all of your resources including your equipment, labor, materials, and components. You even coordinate across your plants for an overall smooth and efficient flow of material, from raw materials to customer shipments."

The Younger Brother excitedly continued, *"Everybody has the information and visibility they need. They save lots of time by having the computer look at all of the latest information across departments and do the computations for them. The result is that your company uses its resources effectively and efficiently to deliver what your customers want when they want it. Hey...that was what you said was our goal. Now I see it!"*

The Older Brother was beaming with pride and happiness for his brother. *“You’ve really been paying attention brother. Now just promise me two things.”*

“Anything!” said the Younger Brother.

“First, that you’ll take all you learned back to your company to reach new levels of customer service and profitability. And, second, that you won’t tell anyone else our secret. It’s a competitive world out there and this is our advantage, at least for now.” said the Older Brother with a smile.



LESSON #5

FROM THE OLDER BROTHER

- Take advantage of technology to improve the level of service you provide your customers and grow your business profitably.
- Do it soon - before your competitors beat you to it!

ABOUT THE AUTHORS

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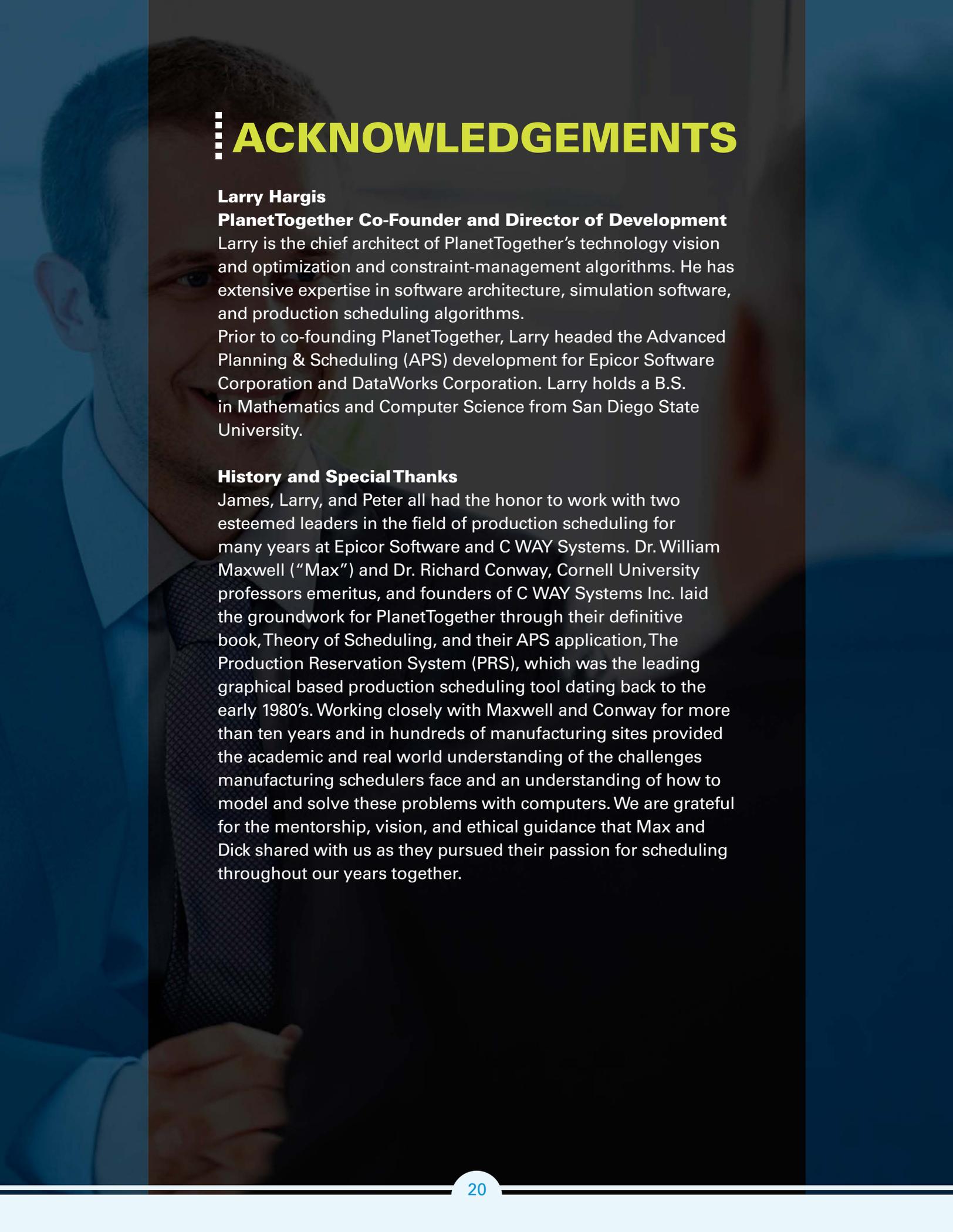
Graphic design and artwork

ABOUT PLANETTOGETHER

PlanetTogether is a software company that specializes in providing manufacturers with systematic systems and processes for managing resource allocations to maximize profitability, reduce operational stress, and enable sustainable growth. PlanetTogether focuses on planning and scheduling software that can be used in virtually any production operation to organize production activities efficiently and avoid costly planning mistakes.

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Larry is the chief architect of PlanetTogether's technology vision and optimization and constraint-management algorithms. He has extensive expertise in software architecture, simulation software, and production scheduling algorithms.

Prior to co-founding PlanetTogether, Larry headed the Advanced Planning & Scheduling (APS) development for Epicor Software Corporation and DataWorks Corporation. Larry holds a B.S. in Mathematics and Computer Science from San Diego State University.

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PRODUCING FOR PROFIT

**A SHORT STORY THAT WILL CHANGE THE
WAY YOU THINK ABOUT MANAGING
YOUR PRODUCTION RESOURCES...**

Whether the economy is in an economic downturn or a boom, managing resources are a vital part of a manufacturing firm. In producing for Profit, a Younger Brother wants to see his firm have the same success as his Older Brother's.

Through a series of encounters with employees from his Older Brother's firm, the Younger Brother learns the secrets to running a more profitable manufacturing firm. He learns the importance of planning and coordinating and how to "Produce For Profit"