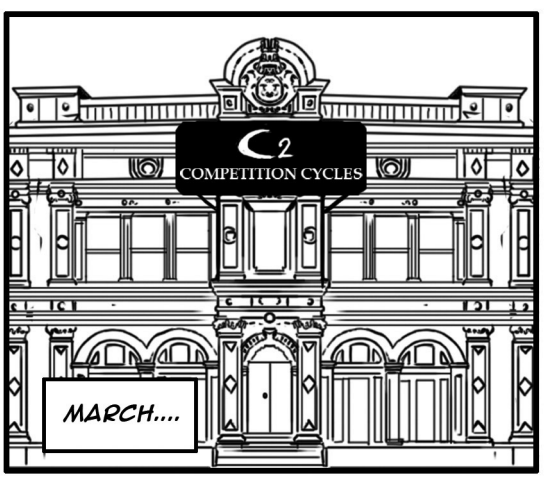
CHAPTER 3

Systems Thinking 1

The Income Formula



March

Carson entered the bike factory with a lot on his mind. He had started trying to think about the Gray Firm in the way Guy described, as a system. He could see that what Guy said was indeed true. And he could finally see parallels in the way that the firm—like the old Chaplin Cycle—was trying to do too much of everything. And worse, how a lot of those cases seemed to be stuck in neutral, not going anywhere soon.

More cases or more kinds of cases—even all the tech Briana was obsessed with—were not the answer. But what was, then? Carson needed some kind of unifying principle to start to tie it all together. He was interested to hear what Guy said next.

"So, Guy," said Carson. "Why did you want to meet down here? What's wrong with the coffee shop?"

"Because I want you to really understand that your law firm is just like my factory," said Guy. "I don't think you believe me yet. I want you to see that, as complicated as both of our businesses appear, they are really just simple linear systems with a limited number of components."

"What do you mean exactly, Guy?" Carson asked, returning to his earlier argument reflexively. "There's nothing simple about practicing law. Do you know how many things I deal with on a daily basis? Even when I was just an associate with K&M—where I didn't have to think about the business at all—I had to answer hundreds of e-mails every day, crank out briefs and pleadings, plan and prepare for court appearances, keep up with the latest changes in the law, and be on call for any sort of client question or problem."

Carson continued, "And now at the Gray Firm, I have to do all of that while worrying about bringing in clients, controlling costs, dealing with employee issues and about five million other things. I can't see how you can call that simple, really."

"We'll get to that later, Carson," said Guy. "For now, I want you to think in really basic terms. First, let me ask you: Why does the Gray Firm exist?"

"What do you mean?" asked Carson. "Ambrose founded the Gray Firm to stand as a bulwark against injustice and. . .."

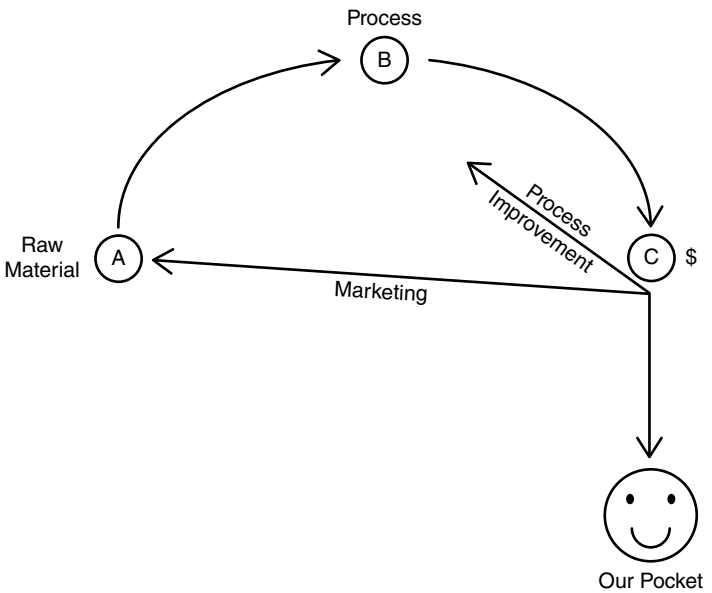
"I know all that, Carson. Go more basic. Ambrose Gray became a lawyer for two reasons: first, he cared about helping people; second, he came from nothing, had nothing, and he wanted to earn a decent living. To answer the question bluntly—his firm exists to make money by solving people's problems."

"Doesn't sound very idealistic," said Carson. "I doubt Ambrose would say it that way."

"Probably not," Guy replied. "But he knows it. He knows it, even if he's gotten deep into the weeds and the routine of daily practice. Sometimes you get so bogged down in the details of the work that you mistake busyness—answering e-mails, etc.—for business. But somewhere Ambrose knows that to continue to fulfill his firm's moral mission of helping people, he can't ignore the practical reality that he needs to be profitable. Why else would he take a chance on bringing you in?"

Carson thought this over as Guy continued, "I love making high-end racing bikes that people can actually afford. I love the joy that people get from flying down the road on them. And from winning races on them. But I couldn't keep filling that need if I was losing money, could I? So I have an obligation to my customers, and my employees, and my family, and myself to be profitable."

"Now to the point, Carson," said Guy. "Every business exists for the same purpose—to make money by filling a want or need. That's pretty obvious. What's less obvious is that at root level, every business does it the same way: by putting Raw Material A through a Process B, out of which comes Money C, part of which is kept and part of which is reinvested. A-B-C." Guy went to a whiteboard in the room and sketched:



Carson rolled his eyes. "Guy, you're right about one thing. This *is* really obvious. Why did you bring me down here to show me this?"

Guy replied, "Yes. It is obvious. But think about what happens when we look at things this way. It becomes immediately apparent that only two things, A, Raw Material, and B, Process, stand in the way of getting money. So, anything that impairs the function of A or B—a block or bottleneck, for example—will hurt C. More important, though, is the converse: Anything that optimizes A or B will increase C. Which means not only more money in your pocket, but the opportunity for more reinvestment, whether it be made in marketing or buying additional Raw Material, or in improving the Process.

"An example for you. At C^2 we build all of our frames from titanium; we cast the frames here at the factory, and they are turned into our finished product, a high-end racing bike sold for $999. Assuming consistent demand for our product—which there is, because we've focused on that single product line, and it's the very best—we can sell them as fast as we can build them.

"So, Carson, if we can acquire the same high grade of titanium for less money, what happens?"

"You make more money because your cost of production drops," replied Carson.

"Right," said Guy. "Or you could buy more and increase the number of bicycle units made. Now, hypothetically, what happens if we sold each unit for $1,100 instead of $999?"

Carson replied, "Assuming your demand wouldn't drop—which it wouldn't because it's still an amazing price—you would make more money."

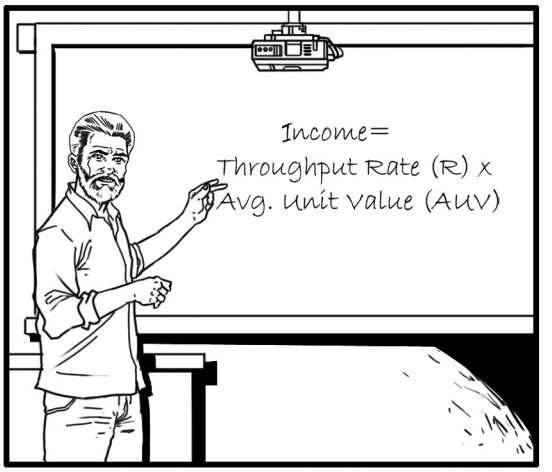
"Yes," said Guy, "that's an easy one. You've increased the Average Unit Value, and assuming the same rate of production and constant demand, you make more money. But in most businesses—yours included—the market dictates price, and you don't have that luxury. So, again, assuming there's constant demand, what do you do instead? You increase Throughput Rate; that is, you increase the number of units you produce over a given period of time. And the way you do that is not to try to build more units at the same time (which tends to overwhelm your system with inventory) but to put each unit through the system faster. You decrease the Cycle Time that each unit spends on average between start and finish of production. So, what happens if we increase Throughput Rate by decreasing the time it takes for each unit to go from being a lump of titanium to a finished bike? That is, assuming we could continue to sell them as fast as we made them."

"More money."

"Yes," said Guy. He turned back to the whiteboard and wrote a formula:

Income = Throughput Rate (R) × Avg. Unit Value (AUV)

"Now, let's talk about your law firm. Instead of making bikes, you handle cases. Problems—what you lawyers call cases—are your Raw Material. You process these by getting from the beginning of the case to the end, solving the problem (hopefully) by getting to some result. Let's assume you are handling them on a contingency, and that you get paid based on a percentage of the result. With these assumptions, let's plug some numbers into our formula.



"Let's say you have a Throughput Rate of 100 Units

per year. Since you deal in cases, let's start calling them Case Units. So, 100. That's how many Case Units get to the finish line in your firm each year, on average. And let's assume the Average Value of each Case Unit to your firm, in terms of what net fees it will yield when paid, is $1,000."

Guy went to the board and wrote:

$$\text{Income} = \frac{\text{100 Case Units}}{\text{1 year}} \times \text{\$1,000 Avg. Case Unit Value (ACUV)}$$

He explained, "In this example, our Throughput Rate is 100 cases per year. We could also express that as 8.33 per month. Throughput Rate is just like miles per hour in a car; it's a measure of speed over time. Here, since we're trying to calculate the Income over a specific period of time—in this case one year—we put our time measure in the bottom of our formula. On the top, we leave the number of case units. Then, to find our income for the given period of time, we just multiply the number of units by the average value of each. Working through the math here, our income in this example is 100 × $1,000 = $100,000 per year."

"Still obvious," said Carson, flatly.

"Yes," said Guy. "So, it should be equally obvious to you that if we improve either variable, your Income will increase. If we increase Throughput Rate 10 percent to 110 cases per year, annual Income goes to $110,000. If we increase the Average Case Unit Value 10 percent, the very same thing happens: $110,000 per year. If we increase both 10 percent, it goes to $121,000.

"So," said Guy, turning from the board to Carson. "We can improve either variable for the same result. Does that make them equal?"

"Obviously it does," griped Carson, getting bored.

"Nope," said Guy. "Wrong."

"What do you mean, wrong, Guy? You just showed that, mathematically, an equal improvement to either variable yields the exact same result."

Guy replied, "It's wrong because you have more control over one variable than the other. You have far more control over improving Throughput Rate than you do over increasing Average Case Unit Value. While there are things you *can* do to increase Value—which I'll show you later—it's far easier to improve Throughput Rate.

"Example," said Guy. "Like we talked about a minute ago, I could probably increase my unit price per bicycle to $1,100 and get away with it. But there is an upper limit to that. If I arbitrarily go to $2,000, I'm going to start losing customers and selling fewer bikes. The market—not me—dictates

price. And there's only so much the market will allow before it punishes me. For you, even though the 'market value' of your cases is far more variable (not to mention dependent on your skill), in the end—even if you take a case to trial—someone else besides you gets to decide its value.

"Thus," concluded Guy, "the lever of change that you can most easily grasp—and more or less fully control—is Throughput Rate. Putting most of your efforts there, that's what will make the biggest difference."

Carson had more questions than he could vocalize coherently, and they flowed out stream of consciousness. "What about hourly billing—this wouldn't work for that, and we do a decent bit of hourly billing? Doesn't turning the case over faster hurt us there? And it kind of sounds like you're talking about trying to settle everything on the cheap, Guy. Is that what you mean? And how do I increase Throughput Rate when we are at the mercy of the courts for scheduling? This sounds great in theory, Guy, but I just don't see how it all fits together."

"Good questions, all," said Guy. "Let's walk out to the factory floor and talk some more."

BUSINESS IS JUST BUSINESS

Is a law firm different than a manufacturing organization? Sure. Do those differences really matter for purposes of creating a Lean law firm using lessons from the manufacturing world? No, not really. But just to make sure you're really convinced, let's talk about those differences.

One difference is **output.** Manufacturers output tangible goods. We, on the other hand, are in the business of making and selling something less tangible: a legal result. That result may be a drafted and consummated contract or closing. It may be a favorable litigation outcome such as a verdict or settlement. It may even simply be well-researched and reasoned advice. While intangible, what it has in common with a tangible manufacturing product is that it is built by *a process*, and the results (and some or all of the money) generally come at the end of that process. Moreover, it's the quality and speed of that process that (just as in manufacturing) will determine the quality and Cycle Time of the end product. For our purposes, then, output is really not so different.

Another difference between lawyers and manufacturers is that we don't hold tangible inventory. Inventory in manufacturing presents two huge challenges. First, manufacturing organizations must store enough raw material

and parts along the key points in their processing systems to avoid running out. But that's a tricky balancing act. There must be just the right amount on hand to keep the system flowing; any more than that must be stored at the manufacturer's expense. Much of the Toyota Production System is dedicated to solving this problem through Just-in-Time delivery of materials or components immediately before they are needed; this keeps inventory storage costs down. Second, manufacturing organizations must accurately predict the demand for their finished products. Unsold, aging product for which there is no demand is waste (*muda*) by definition.

Law firms, fortunately, don't face the same inventory challenges. We don't have unsold products because we don't begin work on a case or matter until someone asks for it specifically. And we don't have to physically store much of anything. But that's not to say we don't have inventory problems. Ever feel like you have too many matters or cases backlogged that aren't going anywhere? That's an inventory problem. And having too many cases or matters as Work in Process (WIP) can clog the flow of your system, which can be a Throughput Rate killer. The good news is that while we don't have exactly the same kinds of inventory problems that manufacturing industries face, many of their inventory solutions will work for us, too.

What manufacturing calls customers we call **clients**. The main difference is that manufacturing generally creates products before any specific customer asks for them, hoping that if they build it (and market it properly) the customers will come. We do the opposite: We market for the customers and then create the product or output based on what they need. Regardless of the order of things, though, we both face the same core marketing issue: *We have to tailor our product to what people really want or need.* For both lawyers and manufacturers, that generally means we must find and exploit a niche, catering to (or creating) demand.

Both manufacturing and law firms require skilled **employees**. While we may think of a factory worker on an assembly line as possessing a limited amount of skill—and think of our own employees (and certainly ourselves!) as legal "artisans"—the lines between the two are not (and should not be) as solid as you think. First, as Toyota and many other manufacturers realized, workers in the line should be empowered to make decisions and suggest improvements—even to the point of allowing them to bring the entire production line to a halt to prevent production mistakes. While their training is specific, most industrial workers are highly skilled for their jobs.

In our law practices, we want to empower our employees in a similar way. At the same time as we value creativity, though, we need to embrace standardization. We want our employees to be highly trained to do things in a very specific—and repeatable—way, because standardization and repetition are key to improving the quality and speed of throughput. Finally, and

for the same reasons, we want to embrace automation in our practices, just as manufacturing did long ago.

Least importantly, in contrast to manufacturing, we have the luxury of not having to be tied firmly to a physical location. More and more, cloud-based and mobile apps allow us to work wherever we want. So while most of us still have one or more physical locations, much of our work can be done anywhere. We can also work whenever we want. But does this advantage come at a price?

BUSYNESS IS NOT BUSINESS

Being able to work anywhere and anytime is, unfortunately, as much a curse as a blessing, and not just in terms of what it does to quality of life. It can also be toxic for productivity.

Dave: When I was a young lawyer trying hard to figure out how to manage a law practice, I read all of the law firm management books I could get my hands on. One of my favorites was a hardbound book written around 1955 about how to establish a thriving law practice. It suggested that a lawyer's typical day should look something like this:

Typical Day, circa 1955

9:30 a.m.	Arrive at work.
9:30 a.m.–10:30 a.m.	Read local paper and recent court opinions.
10:30 a.m.–12:00 p.m.	Dictate correspondence and pleadings.
12:00 p.m.–2:00 p.m.	Lunch at club (no more than two martinis, though).
2:00 p.m.–3:00 p.m.	Meet with clients.
3:00 p.m.–4:30 p.m.	Place phone calls; general office work.
4:30 p.m.	Home.

Thankfully, with the addition of computers, cell phones, and various mobile technologies, our day can now look like this:

Typical Day, circa 2017

7:30 a.m.–8:00 a.m.	Drive to work (get there earlier by shaving in car while listening to voice mails).
8:00 a.m.–9:30 a.m.	Answer 143 e-mails that came overnight.
9:30 a.m.–1:00 p.m.	Type correspondence, draft pleadings, answer discovery while being interrupted by 6 cell phone calls, 48 e-mails, 16 text messages, and 14 landline calls. And meetings.

Typical Day, circa 2017, *continued*

1:00 p.m.–1:15 p.m.	Lunch (Hot Pocket standing at firm microwave while reading about Kylie Jenner's latest project on iPhone).
1:15 p.m.–4:30 p.m.	Answer more e-mails; more writing and typing. More meetings.
4:30 p.m.–5:00 p.m.	Drink two Red Bulls; read advance sheets and hope to not be in them.
5:00 p.m.–6:30 p.m.	Phones stop ringing; time to focus on what you didn't finish this morning.
6:30 p.m.–7:30 p.m.	Take kids to soccer practice; continue to work on iPhone, answering e-mails and texts.
7:30 p.m.–9:00 p.m.	Pick up family dinner at Wendy's drive-thru; get kids to bed.
9:00 p.m.	All is finally quiet; time for more work.

To quote David Byrne, you may ask yourself, "Well, how did I get here?" In a nutshell here is what's happened to us:

1. **Technology is running us (instead of the other way around).** Obviously, the biggest change in the world between 1955 and now is technology. Sixty years ago, prospective clients chose a lawyer based on reputation or personal recommendation. Then lawyers began advertising, which gave rise ultimately to Internet marketing, search engine optimization, and social media marketing. Today, Internet marketing is no longer an option for small firms. It's a business reality and a survival necessity to make yourself as "findable" as possible.

   Since we are all doing it, though, it means that prospective clients can go online and find 100 local lawyers claiming to do exactly what they think needs doing. We have succeeded through advertising at turning ourselves into commodities. If we are not available to prospective clients (who, because of their own use of mobile technology, expect to reach us on short notice), it's on to the next lawyer down the list of their Google search result. We are compelled (and over time, conditioned) to respond immediately, at the expense of getting real work done. The more general your practice is, the more interchangeable you will be viewed by the public, and the worse this problem will be for you. We talk extensively about how to fix this in Chapters 6, 7, and 11.

2. **We don't know what to do right now (or which hat to wear).** The paradox for small firm lawyers is that, even if we know we should only do one thing at a time, we don't know what that one thing is. This is where classic law firm management really fails small firms. Big firms are managed. Lawyers in them (associates at least) know what they are supposed to be working on because someone has told them. Their work is further delineated by set hourly billing goals and the limited stable of clients bestowed upon them. While they are responsible for (and their ultimate success depends upon) some rainmaking, they are not the only rainmakers in the firm. While their schedules are less flexible, they are more predictable. Thus, Big Firm lawyers are better at knowing what to do "right now" because there are fewer choices and less freedom.

   Ironically, perhaps, as lawyers advance through a big firm, their roles may become less defined by others. Partners do billable work, rainmaking, and marketing; they mentor associates, help with firm management, serve on committees, and may become involved in community projects that boost the profile of the firm. With increased freedom may come decreased clarity. So partners, particularly those responsible for overseeing teams, can actually benefit greatly from the techniques in this book.

   But, generally speaking, Big Firm lawyers wear fewer hats than solos and small firm lawyers. Associates have one job: to produce work. Higher-ups have more jobs, including some management and marketing functions. But nobody must wear *all* of the hats in a big firm. Smaller firm lawyers are responsible for marketing, prospecting, networking, working on actual work, and going to court, and they may be making the mistake of trying to handle their own accounting and web design. Because no one tells small firm lawyers what we should be doing, we flounder around in our freedom of choice and get nowhere.

   The answer to the question of "What should I be doing right now?" is, as you may be starting to guess, found when you can visualize your practice for the system that it is. Note by *visualize* we don't mean merely to accept the concept that your firm is a system, but to use tools to actually map and see that system in action. When you can see the system as a whole, identify the constraints that hinder it, and measure the results of your attempts to improve it, you and everyone on your team will always know what to do next. We talk more about how to do all of this next and in later chapters.

3. **We are trying to do too many things at once.** The irresistible urge to check our inboxes and feeds for new business and other communications (once they hire you, Clients *really* expect to get you), plus the information bombardment we are all subjected to, creates a culture of **multitasking**.

We don't have to tell you this is bad, do we? All of the studies tell us we are far more effective when we only focus on one thing at a time. You know from your own experience that, when you really have to knock out a brief, the best way to do it is to shut down all communications and distractions and get into the flow until it is done. We have to go out of our way to create space for this kind of focus. And we have to guard against its antithesis, multitasking, if we want to be truly productive instead of merely feeling busy.

Don't believe us? Here's what the American Psychological Association found:

> *[A]lthough switch costs may be relatively small, sometimes just a few tenths of a second per switch, they can add up to large amounts when people switch repeatedly back and forth between tasks. Thus, multitasking may seem efficient on the surface but may actually take more time in the end and involve more error. Meyer has said that even brief mental blocks created by* ***shifting between tasks can cost as much as 40 percent of someone's productive time****.*[1]

It's the "shifting" that really hurts us. We think when we are multitasking that we are handling several things at once. But we're fooling ourselves. We're not handling multiple things at the same time; we're just shifting back and forth serially.

And it's in all the shifting that the time is lost because shifting is really just an individualized form of **changeover.** As Toyota discovered years ago, when it reduced the die changeover time on its production line from 12 hours to less than 30 minutes, cutting changeover time results in massive productivity gains because it increases the speed of the system as a whole. You can do the same thing by focusing on one thing at a time.

But how do you figure out what that one thing should be?

---

1. American Psychological Association, *Multitasking: Switching costs*, 2006. Available online at http://www.apa.org/research/action/multitask.aspx; D. M. Sanbonmatsu, D. L. Sanbonatsu, N. Medeiros-Ward, Strayer, and J. M. Watson, "Who multi-tasks and why? Multi-tasking ability, perceived multi-tasking ability, impulsivity, and sensation seeking." *PLoS ONE* 8(1): e54402, 2013.

THE SYSTEM IS THE SOLUTION

Systems thinking can help us in many ways, not the least of which is to make clear to ourselves what we should be focusing on right now. As we will discuss later, once we learn how to visualize our practice as a system, our focus will generally be on finding the constraints that impede the flow of the system and optimizing them so that Throughput flows freely. Focus may sometimes be on marketing to get more "raw material," as well.

Before we get into all of that, though, we have to get more basic. Why does your firm exist? What is your purpose?

For lawyers (and all for-profit businesses, really) our purpose is invariably twofold: We want to help clients with a certain type of problem (mission), and we want to earn a living doing it (income). And no matter how altruistic our mission, we must remain profitable to accomplish it.

Every business makes money the same way: by putting Raw Material (A) through a Process (B), out of which comes Money (C), part of which is kept and part of which is reinvested. A-B-C.

This all seems obvious at first. But think about the implications of viewing your firm this way. First, it becomes apparent immediately that two things, Raw Material (A) and Process (B), stand in the way of getting the Money (C). So, anything that impairs the efficiency of (A) or (B) (that is, any constraint) will hurt (C). Conversely, anything that increases Raw Material (A) (that is, increases the number of cases or improves their quality) or improves Process (B) will increase Money (C). Which means not only more money in your pocket, but the opportunity to invest in marketing to further increase the number of Raw Material "case units" (Inventory) and the quality (Average Case Unit Value) of new cases. You can also invest in Process (B) that enhances the average value of the case and the rate of speed at which the case can be turned into money (Throughput Rate).

THE INCOME FORMULA

This basic truth—if you want more Income, focus first on improving Throughput Rate and second on improving Average Case Unit Value—leads us naturally into our **Income Formula**. Before jumping into the formula, however, some Warnings and Disclaimers: This formula does not work well or at all on an hourly billing model. Why? Because an hour is always an hour. And no matter how much you improve the efficiency and speed of your Process, that fact will never change.

If you are billing by the hour, improving your process may improve the results you get for your clients (and hence their happiness). However, it will not add directly to your bottom line. Perhaps (assuming unlimited client ability and willingness to pay and ethical "flexibility" by the lawyer) *less* efficiency is actually preferable (we don't counsel this, of course, but, from a pure numbers standpoint, it might be true). If you do work mainly or exclusively on an hourly basis, focus most of your efforts into marketing and results improvement.

Why? Because with hourly billing, there is a fixed limit to the amount of work you can take on, which means there is an inherent ceiling that prevents you from producing more revenue. The only way to add more hours is to add more hourly billers. You are increasing inventory, but you are increasing costs. There is nothing wrong with this method of growth, and it is a proven Big Law formula, but your ability to scale throughput is sharply curbed.

What we are interested in is a formula for firms that works well for contingent and flat fee cases. Our formula is:

Income = Throughput Rate × Avg. Case Unit Value

In our story, Guy helped us plug in some numbers to see how proportional increases in Throughput Rate or Average Case Unit Value have the same positive effect on income. Going from completing 100 cases in a year to 110 cases is the same as staying at 100 cases and making each case 10 percent more valuable.

But as Guy also explained, the fact that an increase in either Average Value or Throughput Rate has the same effect does not make them equal, because we have far more influence over Throughput Rate than we ever will over value. As Guy said, Throughput Rate is the lever we can more easily grasp. But, as we will see next, Throughput Rate itself is not really a single lever but something we can improve by working the two related levers—Inventory (WIP) and Cycle Time—upon which Throughput Rate depends.

LITTLE'S LAW: THE RELATIONSHIP BETWEEN CYCLE TIME, THROUGHPUT RATE, AND INVENTORY

In 1961, MIT professor John Little proved a mathematical relationship between Cycle Time, Throughput Rate, and Average Inventory (WIP) in a stable system. In simplest terms, Little's Law states that *Average Inventory equals Throughput Rate times average Cycle Time*. The formula looks like this:

Average Inventory (WIP) = Throughput Rate (R) × Average Cycle Time (CT)

Before we talk about what this means for lawyers and law firms, let's relate these terms to our practices. Let's talk first about what Little calls **Inventory.**

You might recall that earlier we defined Inventory as the number of matters your firm is working on at a given time. We use the term Case Units to more closely mirror system-thinking concepts. A matter in this context is one you're actively working on—that is, it's not a potential matter—and if you're representing multiple defendants, each claim is its own Case Unit.

Throughput Rate, as we've discussed, is simply the average flow rate (or speed) at which case "units" cross the finish line of your system (i.e., completed, money in the bank). Note that a rate is a measure of velocity, in the same way that a car going 60 mph is simply "completing" 60 miles every hour. A law firm might complete 12 cases per month (or 144 cases per year), and that's a measure of its velocity.

Finally**, Cycle Time** is simply the amount of time, on average, a Case Unit spends between the start and finish lines of your system.

With our terms defined, let's look at an example. Imagine a bicycle road race, with an "inventory" of five riders lined up at the start. The gun goes off and the riders commence pedaling. The five riders finish in the following times:

Rider 1: 60 min
Rider 2: 90 min
Rider 3: 120 min
Rider 4: 180 min
Rider 5: 240 min

If we take an average of these times (adding them together and dividing by 5) we get 138 minutes. This is our average **Cycle Time**. Since we know our Inventory (5) and average Cycle Time (138 min), we can use Little's Law to find our Throughput Rate. We start with the formula:

$$WIP = R \times CT$$

We arrange that through simple algebra, to solve for R, like this:

$$R = \frac{WIP}{CT}$$

Plugging in the numbers:

$$R = \frac{5 \text{ riders (WIP)}}{138 \text{ minutes (CT)}}$$

Doing the math, 5 riders divided by 138 minutes gives us

R = 0.036 riders per minute.

To convert this to hours, we now need only to multiply our Throughput Rate of 0.036 riders per minute by the 60 minutes in an hour; this gives us

R = 2.17 riders per hour.

Our Throughput Rate (R) is 2.17 riders per hour.

While the preceding example is basic, don't be deceived by the simplicity of Little's Law. Not only does it allow us to find the missing variable when we know only two (e.g., we can calculate average Cycle Time simply by knowing how many case units we have in Inventory and reviewing how many have closed over a specific time [CT = WIP / R]); **Little's Law also tells us that increasing Throughput Rate depends on reducing Cycle Time and regulating the flow of Inventory into the system.** How's that? Let's return to our bike race example. In our earlier example, the Throughput Rate of bike racers is 2.17 racers per hour. But what would happen if we cut our average Cycle Time down by about 25 percent, from 138 minutes to 104 minutes? What would that do for our Throughput Rate?

$$R = \frac{5 \text{ riders (WIP)}}{\sout{138}\ 104 \text{ minutes (CT)}}$$

Doing the math, we get an R value of 0.048 riders per minute. Multiplying this by 60, our Throughput Rate jumps to

R = 2.88 riders per hour.

What we get by cutting Cycle Time is, of course, what we expect—a proportionate increase in Throughput Rate. That's great news because Cycle Time is a lever we can really get both hands on. Because, in a law firm, almost all of what we call Cycle Time for a Case Unit is actually time the case spends *waiting* for something to happen. That is, most of our Cycle Time for a Case Unit is spent just waiting, with no active work being done on the case at all. And there are lots of things we can do to fix that.

Think about it in your firm: When a case is within the bounds of your system, how much of the time is it being actively worked on? Not very much. You have lots of cases, and you can only work on one at a time, really. The same for your staff. So, most of the time, the case is just sitting, waiting for you to finish whatever you're doing on some other case. Wait Time.

Other times, progress on the case is internally blocked by someone else in your firm—one firm member (who may be ready to act on the case) cannot do so because someone else has not finished an earlier step on which progress depends. Sometimes these blocks are External Blocks, where we are waiting on our client or even opposing counsel to complete a step. Court rules present another kind of External Block or limiting factor and (assuming the case proceeds to trial) may impose a kind of speed limit on the case. But, truthfully, most of the waiting is caused by our own faulty processes (or lack of any process).

So how can we solve this? First, we find the constraints in our own system that are blowing up our Cycle Time (and thus hurting Throughput Rate). Second, through technology and standardization, we can improve our process so that—in those times that we are actively working on the case—we are moving faster and with fewer errors. Finally—and most counterintuitively—we regulate (and most likely reduce) the Inventory of cases coming into the system at any one time so that we have more time to actively work on the cases that are within the bounds of the system (and each case spends less time waiting).

In the chapters that follow, we'll talk at length about locating (and improving) constraints and using technology and standardization to speed active work. Before closing out this chapter, though, a bit more on the most counterintuitive step: reducing the Inventory of cases in the system at any one time (WIP). While, mathematically, decreasing Inventory would appear to decrease Throughput Rate, in the real world it results in a shortening of Cycle Time that more than offsets the smaller Inventory. Over time, the increased Throughput Rate results in your completing far more cases. Best of all, because you are concentrating more work in a shorter time on each case, there's less changeover, better quality, and very likely an increase in the Average Case Unit Value of each case you handle. So, wins all around.

CHAPTER SUMMARY

Despite the formulas shown above, you really don't have to worry too much about the math in this chapter. Just remember this: The point of the system is to increase Throughput Rate, which you do by decreasing Cycle Time

through reducing constraints, standardizing your active work, and regulating the flow of WIP into your system, finding a level that allows you to move as fast as possible. In the chapters that follow, we'll show you how to visualize your practice as a system so you can optimize it. And in Chapter 10, we'll give you a way to calculate a starting point number for finding your ideal WIP level. Before we get to all that, since you can't improve what you can't measure, let's first talk about what you should be measuring.

Terms we learned:

Term	**Definition**
Output	The result of a process; in manufacturing this is a tangible good. In law it is a legal result.
Inventory	Unsold product; in manufacturing these are physical goods, in law these are matters that are not closed or collected.
Changeover	In manufacturing, changeover is when a production line switches from producing one thing to another. In legal firms, changeover occurs when you switch tasks.
Throughput Rate	In manufacturing, the rate at which a system completes units. In legal firms, it's the speed at which a case can be turned into money.
Average Case Unit Value	How much, on average, your cases are worth.
Cycle Time	Amount of time something takes between the start and finish lines of your system. In legal firms, this corresponds to the time it takes for you to open a case and close it.
Income Formula	Throughput Rate x Average Case Unit Value