

his hair is a mess, clear signs that we interrupted him in one of his brainstormings. I feel guilty.

He heads directly to the couch. "Thank you for saving me from my misery. I woke up with some stupid problem, and since then I've been chasing it in circles. Tell me that you have a simple, elegant problem for me, something I can solve in five minutes and feel good about."

"We have," Jim promises him.

I start to explain.

Johnny listens and then says, "I don't know enough about projects."

"And we don't know much about constraints. So can you help me?"

"The blind leading the blind," he sighs. "Fine, let's put our heads together. But first, Jim, I need coffee."

"Miriam!"

## Chapter 20

I'm in my office going over homework assignments. I teach four courses, and I'm a firm believer in homework. Unlike Jim, I like reading it. It's time consuming, but it's the only way to get real feedback; what I taught well, where was I too quick, what I mistakenly took for granted. So I'm not bored. Besides, some of the mistakes the students make are hilarious.

A knock on the door.

"Yes?"

Ted sticks his red head in. "Can I interrupt for a moment?" he asks politely.

"Sure thing. Have a seat." It's not time for student hours, but if it's important enough for him to come during the week, I have the time.

"I don't know how to do my homework assignment," he sighs.

"Since when are students concerned about such things?"

He laughs nervously. "This time it's important. You see, I know that we should shorten our lead time. And now, after



what you taught us and what the Genemodem team have done, I'm beginning to think that maybe it's possible. But . . ."

"But what?" I encourage him to continue.

"Look. The homework assignment was to calculate the damage to our company, the damage resulting from delaying the completion of a project."

"Correct. So, Ted, what's the problem?"

"I can't find any damages, I can only find advantages. But that can't be true."

Desperately, he adds. "I wanted to implement it in our company. I even spoke with my boss, and he is open. But now I don't know any more. If shortening project lead times doesn't benefit my company, why should we bother doing it?"

"Hold your horses. Don't jump to hasty conclusions."

"That's why I'm here," he says flatly.

"Good. Let's take it slowly. Have you tried to follow Brian and Mark's examples?"

He shakes his head. "They are not relevant for me."

"Why?"

"They own their projects," he answers. "We are just subcontractors. In our case the owner of the project is the developer, not us."

I see what he means. The owner of the project is the one who reaps the benefits from the completed project. No wonder the damage of not completing the project on time affects mainly the owner. But there must be repercussions on everybody involved.

"Let me understand it a little better," I say. "For your company, what is the penalty of finishing a construction site three months late? Yes, I know, you are never that late. So let's say that due to changes requested by your client you finish three months later than the original date. Does that happen?"

"All the time. Forget what I said in class. Between these four walls, I don't remember one project that we finished on time, in spite of all the safety we put in. Everything that we covered in class, all the problems, we have them. But when you ask the real question, 'why should we care?' the answer is that we shouldn't."

There is no penalty for our company being late. On the contrary, it helps us."

"How come?"

Aggressively, he answers. "Let me tell you the full story. At the time we sign the contract, our prices are very low. Competition is so fierce that we don't have any choice. You can win or lose a bid on a three percent difference in price. Everybody is cutting everybody else's throat. Where do we make our money?" He pauses for a second as if waiting for me to answer.

I don't know the answer.

"On the changes!" And then he elaborates. "Our motto is, the client is always right. They want changes, we won't argue, we'll gladly do them, the more the better. But at this stage we are not afraid that our dear client will turn to our competitor, so they pay. Handsomely." Ted looks as if he has just revealed the secret of his trade.

Judith just finished major repairs on our house, so I know how much they charge for things that are not spelled out in the contract. I suspect that if Judith hadn't initiated changes, the contractors would have their ways of inducing her to ask for them. Come to think of it, they probably did. Who needs eight inches of insulation in the roof?

Ted is right. For his company, what's the point of finishing ahead of time?

Getting paid earlier? Can't be a major consideration, they get progress payments.

Before I give up, I try to understand more about his business environment. "Aside from the money you overcharge for the changes, what is the damage to your client of having the buildings ready three months late?"

"I don't know, but isn't that his problem?"

"Maybe. But let's think about it. Three months' delay. What might be the damage for him?"

"For the developer?" Ted thinks a little. "He will sell the apartments three months later than he expected."



I keep asking, "Is that a big deal for the developer? It must impact his cash flow."

"That might be a problem," he agrees. Then, slowly, he adds, "It might be a big problem."

"Why?"

"Most developers don't have enough capital; the investments are far too big. They borrow money. I don't think I know any developer who is not mortgaged to the hilt. Cash flow is their major concern."

"Actually, I can give you more than one example where a three-month delay bankrupted a developer." Smiling, he adds, "Thank God it's not our problem. We get paid one way or another . . . I think."

After a moment of silence, he says, "You might have a point. I'd better check how much money we lost because developers went bankrupt. As a matter of fact, their tight cash flow affects us all the time. They delay their payments to us. Which is a problem."

He stands up. "Thank you." He shakes my hand, and with a warm smile, he is gone.

"See you next weekend," I say to the closed door, and return to my work.

Not for long. Another knock on my door. I didn't know they turned my office into a train station.

"Come in."

This time it's Johnny. I stand up to welcome him.

"I haven't made any progress on bottlenecks in projects," I warn him.

"Neither did I," he smiles. "I came for something else. Charlene told me about something interesting she picked up in your class."

"If you mean 'net-present-value,' I don't teach it, and in spite of all Charlene's efforts, I don't even understand it. I know she claims the opposite, but . . ." And I leave the sentence open.

"I'm sure you teach many interesting things, but the one I'm

particularly interested in is how to negotiate with vendors. The shorter lead time aspect."

I like this subject. I started to really like it after Roger gave his brilliant presentation. He described all four meetings, using such sharp and dry humor I almost started to like him.

"What do you want to know about it?"

"Everything." And then he explains. "You know that I'm connected to UniCo. You also know that UniCo is putting a large operation here."

Of course I know, who doesn't? "But isn't it well on its way?"

"Yes, it is. So much on its way that they started to get nervous that they are going to be late. I got a call to look into it; something has to be done to speed up the contractors. So here I am ready to learn anything you care to teach me about it."

It doesn't take as long as I expect. Johnny absorbs in less than half an hour what took me almost two sessions in class. This guy is like a sponge. When we finish, I summarize, "Remember, you have to offer money for lead time. On their own, construction companies will never do it. Shrinking lead times is against their interest."

That surprises him.

I tell him what I learned today from Ted.

Johnny listens. Intently. But then he says, "I don't buy it."

"Why?"

"I don't know."

That's not an answer.

When Johnny notices my expression he hurries to add, "There must be something wrong here, even though I can't put my finger on it."

And I thought that Johnny was all facts and logic. Now I start to suspect that he is as superstitious as the rest of us. "What possibly can be wrong?" I express my disappointment.

"You describe a situation where a win for the subcontractor is definitely a loss for the developer. According to the Theory of Constraints that is an impossibility. Win-lose situations do not exist."



What an argument. "So here goes your theory," I flatly say.

"No, Rick, every time it seems like a win-lose exists, it's only because we are looking at the problem too narrowly."

I don't respond. I'm not going to argue about ideology and I don't want to offend Johnny.

He leans his elbows on my table and covers his face. I keep quiet. It's embarrassing. What is he doing? Constructing cloud diagrams in his head? Exposing assumptions?

After what seems a long time, probably three minutes or so, he raises his head, and smiling, he says, "Here it is."

"What?"

"You talked about the impact delays have on the developer's cash flow. Rick, can we safely assume that finishing before time also impacts his cash flow?"

"Naturally."

"And usually cash flow is very important to a developer?"

"Yes."

"You also told me that Ted's market is very price sensitive. A three-percent price difference will decide which contractor wins the bid."

"Yup."

"How do you reconcile these contradictory facts?"

I'm puzzled. "I don't understand. What contradicts what?"

"If a month's difference in delivery is so important to the developer," Johnny starts to explain, "then promised lead time should be a major consideration in choosing a contractor. But you said that's not the case, that price is the overwhelmingly decisive factor."

"Yes, it is," I say, still not fully grasping where he's leading.

Johnny tries to explain it in a different way. "Rick, do you agree that shorter lead time is important to a developer?"

"No doubt."

"So the developer should press the contractor to shorten the lead time."

"How can they?"

"One way to 'encourage' a contractor to reduce lead time is to

attach big bonuses to early completion and big penalties to delays."

He raises his hand to prevent me from commenting. He wants to better explain this point. "Let's not forget," Johnny continues, "that most of the developer's investment is tied up toward the end of the project, so a three-month early finish can easily double the developer's return on investment. Why shouldn't he offer the contractor a big bonus for that?"

"On the other hand, if a delay can put a developer into bankruptcy, he should try to put an enormous penalty into the contract with the contractor. As far as you know, are such big bonuses offered and huge penalties demanded?"

There are some bids that have small bonuses, but nothing like what Johnny is talking about. But the bonuses are not the problem; penalties are. "Show me a contractor," I say, "who would agree to penalties, even small ones. Their margins can't support it. What do you want? That they'll go bust?"

"Not at all. But Rick, imagine a contractor who knows he can deliver three months faster than anybody else."

"There isn't one."

"If they will bother to implement what you are teaching, there will be," he presses.

"If you insist. But I don't see the point."

"Don't you see that such a contractor won't have to compete on price?"

"I don't get it." I'm not stubborn. I really don't get it.

"Look, contractors know about future projects well ahead of time. They have their connections, and updated lists periodically appear in their professional magazines. What a fast contractor has to do is get in touch with a developer before a formal request for proposal is out. Contractors usually have good connections with several developers, so it shouldn't be a big problem. And then, all our fast contractor has to do is persuade the developer to put, in the request for proposal, a demand for relatively short lead times and hefty penalties."

"Hefty bonuses, you mean."



"No. Penalties."

To persuade the developer to put in hefty penalties? It doesn't make any sense. Then it dawns on me. It makes perfect sense.

"I see your point. If the request for proposal specifies relatively short lead times coupled with penalties, no other contractors will dare to bid. The developer will get a much higher return on his investment with much less risk, and the fast contractor will make much more profit." I smile at Johnny. "You are right after all. What contractors have now is not a win-lose, it's a lose-lose. The developers suffer from long and unreliable lead times, and the contractors suffer from a throat-cutting, price-sensitive market."

"And the contractor who realizes it can have a tremendous competitive edge," Johnny continues my thoughts. "Such a contractor could take the market while commanding good prices. The problem is that, like everybody else in projects, contractors think that they cannot do a thing to cut their lead times. The first ones to wake up will make a killing."

When Johnny leaves, I start my search for Ted's phone number.

## Chapter 21

A pink note is on top of the pile in my mailbox. "Please call Mr. Brad Newbolt." And a telephone number. Who is Mr. Brad Newbolt? Probably a salesman of some kind trying to interest me in something. I put it aside. There are more pressing things to do. Jim is all over me to complete our third article in the series. Not that it matters now, but I don't like to let Jim down.

I'm deeply into it when the telephone rings.

"Professor Richard Silver?"

When I respond, the voice says, "I have Mr. Newbolt for you."

"Wait," I say. What gives salespeople the guts to think that they are allowed to command other people's time? Interrupting whenever they want. "Who is Mr. Newbolt?" I demand to know.

A deep baritone answers, "I'm the president of Q.E.C."

I gulp. Charlie works for them.

"I've wanted to call you for some time," he continues. "I'm very impressed with your work. We are using it, and it works very well."