

## The Bet

### a story about project management & project procurement

A chance conversation opens an experienced project manager's eyes to the opportunity to make significant improvements, not just in his job, but also for the company he works for. After 30 years in the industry, he discovers that the way he was taught to manage major projects flies in the face of day-day common sense.

George works as a project director for a major construction company. However today is Saturday and he is in the pub to watch the cup final on the big screen. 15 minutes before kick-off he was chatting with Chris and Andy, brothers whose parents live round the corner from him. As the bar filled up and became standing-room only, he told them how glad he was that he was an experienced project manager, and how this meant that even though he had a busy morning, he was still there in time to get a prime seat and relax over his pint.

"You reckon?" asked Chris, with a quizzical, but mischievous look. "I bet that if you had managed your morning like most people manage construction projects you wouldn't have got here yet.

"You cheeky sod!" he replied, "I'll have you know that I haven't brought a project in late in the past 18 years.

Andy chipped in.

"What I think Chris meant to say is that you wouldn't plan to be here until half-time. I'm sure you would make your plan"

At that moment the bar staff turned the volume up as the teams walked onto the pitch.

"If you can convince me of that, then I'll pick up your bar bills for a year" shouted George above the rising volume.

A thumbs-up from both Andy and Chris meant the bet was on. Andy mouthed that they would continue the discussion after the game. Their attentions transferred to more important matters.

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After a close and exciting game of rugby, slowly the bar emptied and the three of them found a quiet corner. Chris bought the beers, and as he placed them on the table said

"They're the last ones I'll be buying in here until next year's cup final"

"Why's that, are you working away for a whole year?" As usual, George had a quick-fire reply.

Although they chatted quite often in the bar, George didn't know much about what Chris and Andy did for a

living, other than the brothers both worked for the same company, and their work often took them away for several weeks at a time.

"OK", started Andy "So this morning went like clockwork then did it?"

"Hardly! Traffic hold-ups, then later on there was a queue as though it was Christmas in the butcher's. But I know stuff like that can happen, so I built-in some contingency time. A couple of other things I did went easier than expected and I pulled back some of the lost time. As it was I didn't need all my contingency anyway. I had a cuppa with Olwen before I came out, and as you saw, I had the prime seat.

That's the benefit of thirty years of hard-earned experience!"

"Yes, how you planned the morning makes sense. You deserved your prime spot" and with that Chris smiled and raised his glass. "Cheers"

"Cheers!" replied Andy and George as they touched their glasses together and laughed.

"But I still reckon that had you planned your morning like you plan your projects, you'd have missed the kick-off!" This guy is not giving up thought George.

"Go on then, convince me!" The challenge was laid

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"Do you use sub-contractors in your projects?" asked Andy

This is going to be easy for me, these guys know nothing about construction thought George.

"Yes, of course we do. Almost all of the work on our projects is done by other companies. Our employees are the glue that keeps the project together, coordinating the efforts of our sub-contractors and making sure that they do what they should."

"So would you say over three-quarters of the actual project work is done by other companies?" Chris enquired.

“Yeah, at least that” confirmed George

Chris continued, “and would I be right in guessing that you try and use as many fixed-price contracts as you can with these other companies”

“You bet!” affirmed George. “If you don’t you have the devil’s own job managing your costs, and delays will crop up if you don’t have a good tight contract. I learned that one a long time ago”.

“Well there you are” said Andy. “If you planned this morning using the same approach of fixed prices and firm deadlines” you wouldn’t have seen the game start here. I’ll go and buy my last round before I get free beer for a year”

And with that he gathered up the three now empty glasses, and went to the bar.

“I’m afraid you two have lost me” George said to Chris. “How on earth can you tell me that the way I engage my contractors, which by-the-way is the way most successful projects have been done for years, is going to make a project take longer? Without a commitment and target dates, a project of any reasonable size would be chaos”.

“We’re not saying you don’t need a good plan and schedule” said Chris, “but we are suggesting that maybe those projects have been successful despite the contracts, rather than because of them. How do you know that your plan is the best one possible if you only compare it with projects which use the same method? Look, if fixed-price fixed-duration contracts were a major driver of project success, then you wouldn’t be able to find many examples where bad projects used this procurement approach. And I’m afraid that is not the case. Just look at the new council building in Bunwich.”

Chris started to talk about the well-publicised problems their local council was having with a new office and leisure complex being built in the town. He was just getting into his flow when Andy interrupted and placed two pints of Landlord bitter in front of Chris and George.

“So where have you got to?”

“You got back in the nick of time. Chris was trying to convince me about something I already agree with” Chris and Andy looked at George. “I’m quite happy that there are many projects that use fixed-price contracts and that go wrong. That I don’t need convincing on. However let’s get back to how I planned this morning, and how I would have missed the match. That will take some convincing, and I have a date with a fillet steak in less than an hour”.

“OK, to business. What did you have to get done this morning George?”

George twisted in his seat, put his hand in his pocket, and pulled out a rather dog-eared Post-It. He unfolded it and stuck it on the table.

- Mum’s Lawn
- Exchange drill
- 2 fillet steaks, 5 x 1lb sausage, BBQ Lamb
- KO 1pm!!!!

George explained to them his project steps, and Andy wrote them down on a page of a small notebook he had with him.

<i>Load mower into car</i>	<i>5 minutes</i>
<i>Drive to mum’s house</i>	<i>20</i>
<i>Mow lawn</i>	<i>50</i>
<i>Recycle grass clippings</i>	<i>25</i>
<i>Drive to the DIY store</i>	<i>5</i>
<i>Exchange faulty drill</i>	<i>15</i>
<i>Drive to butchers</i>	<i>15</i>
<i>Collect meat order</i>	<i>10</i>
<i>Drive home</i>	<i>15</i>
<i>Contingency time</i>	<i>30</i>
<i>Walk to pub</i>	<i>5</i>

With this plan he left home at 9.30 (his mother wouldn’t let him start the mowing before 10.00 so as not to disturb the neighbours), and got him to the pub at 12.45.

“Looks a good plan” said Chris “so how did it go”

“Well as Eisenhower once said, ‘no plan survives the first encounter with the enemy’, or something like that” said George. “The car still had the grandson’s child seat in, and three boxes of files that I am taking back to the office on Monday. Then when I eventually got onto the road, I had to wait 5 minutes as a farmer moves his cows across the road. So by the time I get to mum’s I’m 10 minutes late but only 25 minutes into the plan. It wasn’t looking good”

After explaining his morning in detail, Andy had added the actual times to the plan

	<i>Plan</i>	<i>Actual</i>
<i>Load mower into car</i>	<i>5</i>	<i>10</i>
<i>Drive to mum’s house</i>	<i>20</i>	<i>25</i>
<i>Mow lawn</i>	<i>50</i>	<i>40</i>
<i>Recycle grass clippings</i>	<i>25</i>	<i>35</i>
<i>Drive to the DIY store</i>	<i>5</i>	<i>15</i>
<i>Exchange faulty drill</i>	<i>15</i>	<i>8</i>
<i>Drive to butchers</i>	<i>15</i>	<i>10</i>
<i>Collect meat order</i>	<i>10</i>	<i>20</i>
<i>Drive home</i>	<i>15</i>	<i>10</i>
<i>Contingency time</i>	<i>30</i>	<i>17</i>
<i>Walk to pub</i>	<i>5</i>	<i>5</i>

George was sure he saw Andy and Chris smile to each other as he explained that planning a project can never be a science, that some tasks will take longer and others less time than planned, and that overall, things will average out. As his Saturday morning proved!

“Now let’s try and imagine how contracting-out your morning would affect the plan” suggested Chris.

“We know this will be a bit false, but try and stay with us” added Andy, “If you get this part, you might even make your name and your fortune” he added cryptically.

Chris started. “Do you agree that in your original plan, you based the durations on the average time each task would take, and you knew that although some activities

might take longer, that it was very unlikely that all of them would, and some might even be shorter?”

“Of course” confirmed George, wondering where this was going.

Andy continued “So if as you claim you use the same logical approach at work, does that mean if the foundations take a longer than the plan, and your sub-contractor wants paying 15% more than they bid, they you will be quite happy, knowing that you will probably make-up the time and cost on the electrical works later on?”

“Don’t be stupid, of course we don’t!” George was getting frustrated. “We have fixed prices, so if the foundations are late, the sub-contractor covers the cost”

Andy continued. “Does that mean that when your sub-contractors bid to you they have to include in their prices for the many things which might happen, but also might not?”

“Yes of course they do” confirmed George “otherwise we would spend all our time managing changes”

“You mean you don’t spend much time managing sub-contractor accounts and changes?” enquired Chris, with a knowing look.

Before George could reply, Andy interrupted. “Back to your plan for this morning, what is the longest it’s ever taken you to drive to your mum’s to mow the lawn?”

“Well on a couple of occasions it’s taken almost 45 minutes. Even this morning would have taken 10 minutes longer if the farmer had got up 10 minutes later this morning – when I arrived most of the herd had already crossed the road. I don’t see what cows crossing the road have got to do with a civil engineering contractor though. When are you two going to admit failure?”

“Oh, I don’t think we will need to.” There it was again, that mischievous look between those two.

“If we were to ask you to bet £100 on how long it would take you to get to your mum’s, would you bet on 20 minutes?”

“Probably not” said George”

“What about 45 minutes?”

“I guess I would take that bet, most of the time I would do it easily.” George was getting intrigued

“So, although you know that on average it would take you 20 minutes, when there is money involved, you want better odds than 50:50, and you would want a time you had, say, a 90% change of achieving?” George nodded his agreement. “Well now imagine you are one of your sub-contractors preparing a fixed-price bid for this “drive to mum’s” task. Are they going to give you a 20 minute proposal, or a 45 minute one?”

“Well a 45 minute one I guess. But so what, that’s how business works” George replied, but with a little less of his previous confidence.

“Well actually, we know a few companies which don’t work like that at all, and very successful they are too!” claimed Andy “but that is for another day.”

“Let’s look at your plan from this morning, and put in the durations that you would get from fixed-price contractors, bidding conservatively.” He added another column, and went through each step asking George the longest it had ever taken him in the past for each one.

	<i>Average Plan</i>	<i>Actual</i>	<i>Worst Case</i>
<i>Load mower into car</i>	5	10	10
<i>Drive to mum’s house</i>	20	25	45
<i>Mow lawn</i>	50	40	75
<i>Recycle grass clippings</i>	25	35	40
<i>Drive to the DIY store</i>	5	15	20
<i>Exchange faulty drill</i>	15	8	25
<i>Drive to butchers</i>	15	10	25
<i>Collect meat order</i>	10	20	25
<i>Drive home</i>	15	10	25
<i>Contingency time</i>	30		
<i>Walk to pub</i>	5	5	5
	<i>3h15</i>	<i>2h58</i>	<i>4h55</i>

“If I’m not mistaken, your professional fixed-price contracting approach would have added 1 hour 40 minutes to your plan, making it almost 65% longer than “common sense” – and that’s assuming you don’t include any contingency. In other words, your common sense plan is two-thirds the length of your “professional” plan!

You’d have missed kick-off, and now you need to give the bar your credit card details to cover our beer for the next 12 months. Even if you had brought your Rottweiler of a buyer in, you still wouldn’t have got bids anywhere near the average times. The risk to your suppliers would be just too high”

Chris sat back and smiled. They both looked straight at George.

“Mmmmm” George looked at them. “Give me a moment and I’ll spot the trick”

“There isn’t one. Honest” said Andy

“Got it!” George smiled at them. “This is just a plan. It would still take the same amount of time that it did this morning. I would just come in well ahead of the plan”

“Well yes, if it was only you, then of course you would average things out. But we are not talking about a single person. We have sub-contracted the work remember. How often do your suppliers call you and say ‘George, we’ve had a bit of luck and things went well, we wont need to charge you as much as we bid?’”

“Yeah, as if! We do have some maximum price contracts where we share savings with suppliers, but that’s only if they help us reduce the scope. If they have a bit of luck, they keep the benefit” George started to have a strange feeling that these guys might have something here.

“So do you accept that if some of the things they expected don’t happen, they are very unlikely to let you know about it?”

“Yes I’ll give you that” George replied

Andy continued “and even if one of your contractors obviously finished early, how often would the next contractor be able to mobilise and start early”

“Not very often, well not without us giving them a hefty payment” confirmed George. George also remembered the supermarket he build last year. They actually finished it three weeks early, but it just stayed empty until the client’s fit-out contractor arrived as planned. After the project finished the supermarket’s operations director told him how much additional profit they would have made had they been able to open three weeks sooner – it was double what his company made on the whole contract.

“There is another reason projects don’t take advantage of all those potential early finished of tasks. They don’t finish early because there is too much time”

Andy and Chris both noticed George’s quizzical look. But since he stayed silent, Chris continued.

“When a task has a comfortable budget or duration, there is temptation to delay starting it. Remember when you were a student – you had plenty of time to do assignments, but they all seemed to get done the night before?” George smiled as he nodded his acknowledgement.

“Well the same happens in projects. All that contingency time gets used up before it is needed - wasted. Have you even had a task that had plenty of time in the plan that was late?” Chris didn’t wait for an answer, but continued

“That is why projects with more contingency than they need, frequently end up where they don’t have enough! People expect things to go well, they delay starting, and then problems crop up and they no longer have the time”

“Mmmm. So let me see if I have understood what you are claiming.” suggested George.

On the one hand we have my Saturday morning project. If I did everything on a project myself, I would put my schedule and budget together based on an average duration or cost for each main task. Some things would take more, some less, but over the project these would average out. A small project-wide contingency would give me enough safety.

However, when I go to work and outsource the main project activities, I ask for fixed prices. This encourages bidders to give highly-achievable durations and budgets. When I add these tasks in sequence, my total project is much longer, and more expensive. I don’t manage my project to take advantage of any early finish, or low spend, and anyway my contract discourages my suppliers from letting me know when things go better than they expected. However, if they go over, that definitely impacts the project.

Chris and Andy looked at each other.

“George, we are impressed. In three years we have never had a client who has given such a clear summary, within such a short time” claimed Andy.

“Maybe you should include a few pints of Timothy Taylor in your presentations” suggested George.

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Without saying anything else George picked up his phone and made a call. Having delayed his dinner, and suggested Olwen his wife came over to the bar, he then spent the next hour learning about Andy and Chris’s work.

He learned about an approach to managing projects called Critical Chain, and some of the well-known multi-nationals that they had helped to implement it. The results were impressive. Organisations such as Boeing, Tata, ABB, The US Military and the Japanese Government being amongst those claiming 20, 30, 40 and even over 50% reduction in project durations without compromising on the scope or adding cost.

He discovered how Critical Chain builds a schedule like his Saturday morning plan, how team members flex to accommodate the actual durations, and how they all share a single contingency – or buffer as they called it. This buffer then provides a clear and simple base for the controlling the project.

Andy and Chris also explained how the traditional approaches used in the construction and capital projects sectors to select and contract with project suppliers were incompatible with Critical Chain. To apply Critical Chain within a project team consisting of several companies, they team needs to be able to work collaboratively together, they need to be selected based on competence and compatibility, and have their rewards linked to the success of the overall project not their part in the project.

The consultancy they worked for was working on three projects in the construction sector, though none of them in the UK. In the US, a large contractor had spent 18 months teaching their method to its sub-contractors. In the past 12 months they have increased their sales by 35% in a falling market, using the same number of project managers, and with margins four times their historical average.

On Monday George changed his plan went to head office. That evening he called Chris and told him that he and Andy had their first UK client.

If your business is involved in major capital projects – either as a client or a supplier – and you are interested in further exploring the ideas in this story, please contact

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