

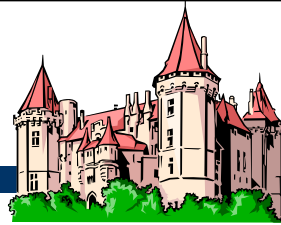
The King's Tale

describes how an effective team operates, in terms of the key measurement variables of

resources
quality
scope
time

translated from the original
Babylonian cuneiform by Ron
Jeffries

Once upon a time ...



... there was a great king who desired to give a State Dinner for a few thousand of his closest friends. He called in his Chief Artisan and informed him of the dinner plans. The king described how he wanted the finest table settings, all in gold and encrusted with intricately carved jewels.

The Chief Artisan did some sketches and agreed with the king on what the settings would be like. They agreed to meet again in a few weeks and look at the schedule for production of the table settings.

A few weeks went by, and the Chief Artisan came to report.



He showed the king a time schedule showing creation of prototype settings, review by the king, and production of the final table settings. The settings would be finished in November, but the king preferred to have an October party, in good weather. The Chief Artisan agreed to adjust things for completion by October.

On schedule, the Chief Artisan appeared with prototypes, and a schedule with October completion. The Chief Artisan said that they should meet at regular intervals to check progress. The king reviewed the simplified prototypes. The king requested more cherubs on the plates, more beautiful carving on the embedded jewels, and more complex scrollwork on the knives and forks. The Chief Artisan protested that these new features would destroy the schedule, but the king reminded him who was king and who wasn't. The Chief Artisan withdrew.

At the next project review, things were measurably behind.



There were too few jewels ready, so that the plates were not complete, and there were far too few knives and forks done. The king demanded that the artisans work harder. The Chief Artisan protested, but the king again reminded him of their relative positions. The king demanded additional reviews, even more frequently than already agreed to.

At the next review, not much more was done. The king insisted on visiting the shop to see what was being done. The next day he arrived. The artisans were a bit nervous, but they knew their arts and mostly continued with their normal efforts.

"What is that man doing?" asked the king.

He is resting his eyes and hands, O King," replied the Chief Artisan.

An egregious and insulting waste of Our time," declaimed the king. "They should rest at night, not while working."

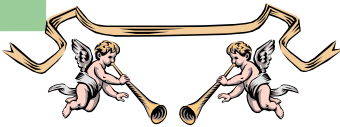
It shall be as you say, O King," answered the Chief Artisan.

And that man over there," asked the king, "what is he doing?"

He is sharpening his tools, O King."

Again a waste of Our time. No wonder you are accomplishing so little. Henceforth, tools are to be sharpened at night, not on the job."

As you wish, O King," sighed the Chief Artisan. They parted until the next review.



"These plates," he growled, "the cherubs are rough, not fine, as were the earlier plates. Our guests will not be impressed if this is the best you can do."

"The work is rough, O King, due to the use of dull tools, as you commanded."

"We did not command you to do bad work, We commanded you not to waste time!"

"O King," the Artisan explained, "just as you cannot have a good party without good food and settings, my artisans cannot have a good party without good food and settings, my artisans cannot create good art with dull tools."

Halfway to the next review...

The Chief Artisan sent to the Chief Steward, requesting some new apprentices to help with the work, specifically with sharpening the tools. The Steward, mindful of the King's budget, solved the problem in the age-old way of Stewards, by not replying to the request.

At the next review, more work was in fact completed. The king inspected the pile of completed plates and utensils. At first he smiled in satisfaction, but as he looked more closely his smile turned to a frown.



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"Must We tell you everything?" the king shouted. "Have someone else sharpen the tools!"

"I have requested new apprentices for just that purpose, O King, but the Steward has not responded to my request."

The king roared, "Do not bother Us with these internal matters, Artisan. We are the king. Allow the artisans to sharpen their tools as needed: but they must make up the time by working overtime."

"It shall be as you say, O King," responded the Chief Artisan glumly.

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The king returned to the inspection. Soon, he was again enraged.
"These plates, many of them do not yet have their carved jewels. What is wrong here?"
"There has been increased spoilage of jewels, O King," replied the Chief Artisan.
"What is causing this," boomed the king, "Are your people so completely incompetent?"
"With all due respect, O King, jewel carving is a delicate task. Without frequent rest periods, the carvers eyes tire and their hands shake, resulting in spoiled work."
"You tiny fool," boomed the king, "you must punish the workers who spoil my precious jewels. Clearly they are not being careful enough."
"It shall be so," bowed the Chief Artisan.

9



At the next inspection

The king swept into the area filled with suspicion and with a visible air of challenge. When he saw that quality was improved in the carving he calmed a little, and when he saw that most of the plates had their jewels, he became almost happy. Then, however, he counted the stacks of completed work and found that while quality was up, not as much work was completed.
"What are you doing wrong now, Artisan? Must you yourself be punished?"
"O King," replied the Chief, "several of my key artisans have become ill from the punishments You ordered and cannot work. As well, a few have left the kingdom and gone to the neighbouring kingdom, saying that their work will be more appreciated there. As a result, we have fewer workers and can produce less work."
"We ordered that your artisans work overtime," roared the king, "has there been no improvement from this?"

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Downhill slide



"In fact the reverse has happened, O King. Again, there have been those who have left the kingdom in search of a place where they will be more appreciated. Those who remain are mostly from the lower ranks, and while they are energetic, they lack the experience to do the work you require. And as they tire from overtime, again there has been spoilage and lost work."
"This is unacceptable! We are most disappointed in you, Artisan. Return to your quarters and await our decision as to your fate."



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Help to the rescue?

The Chief Artisan withdrew, certain that his days were numbered. The king was troubled. The Chief Artisan had failed him, and surely must die. Yet the State Dinner was important and the settings must be completed. And, though the king hated to admit it, the Artisan had tried mightily to do as he was commanded.
The king decided to consult his Wizard, who had been his mentor and sounding board since his youth. Before he could summon a messenger, a loud explosion and a cloud of smoke announced the arrival of the Wizard. It was said that the Wizard always knew when he thought upon her. After jumping a bit, the king wasted no time.



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He described the events surrounding the dinner, then stated his concern. "Wizard, it seems to me that the Chief Artisan has disobeyed me and must die. And yet, do not We bear some of the blame for the problem through Our inability to advise him properly? And in any case, without the Chief, how can Our artisans possibly prepare for the dinner?"

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Aspects of work

The Wizard reached up and plucked a pigeon from thin air. Drawing her dagger she contemplated viewing the pigeon's entrails for insight, only just in time remembering that she was in the throne room. Stuffing the pigeon into one of her capacious pockets, she instead snapped her fingers, producing a brief flash of flame followed by a plume of smoke. She observed the smoke as it dissipated, discerning patterns that only she could see. At last she turned back to the king.

"Majesty, I have long studied these problems and can offer some insights. There are four, and only four, Aspects of work which we must consider. And these I call **Resources**, **Scope**, **Quality**, and **Time**. Immutable laws of nature relate these Aspects."

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The Wizard went on:



"I call the work Your Majesty demands, the sum of all tasks, **Scope**."

"A curious name, Wizard, but I am familiar with your arcane ways. Go on," said the king.

"Consider now the **Resources**: the number of artisans Your Majesty has. If an artisan be lost, shall the work, or **Scope**, increase or decrease?"

"It depends on whether the lost artisan be good or bad, and what responsibility he has been given," answered the king.

"You are wise, O King. Yet Your artisans are quite capable, as You justly require, and surely they divide responsibilities generally wisely. That being so, what then shall be the result of reducing the **Resources**?"

"We still demand what We demand. And the work must be of the highest **Quality**. Then it must take more **Time**," answered the king thoughtfully.

The Wizard nodded. "Just so, O King. If **Scope** and **Quality** change not, and **Resource** is reduced, then **Time** will stretch out. Wise you are."

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The conversation continues:



"Now, O King, consider what must happen if we hold the **Resource** constant and demand that the artisans produce the same work in less time. What will then occur?"

"They will labour harder so as to please Our Majesty?" the king asked hopefully. "This has been Your Majesty's experience?" asked the Wizard slyly.

"No," the king admitted, "although they tried. At first it appeared to be working, but overall they got less done, and when We demanded more output, the work itself was poor. Working them harder only resulted in poor results, and some key artisans actually fled the kingdom."

"Can you put this in terms of **Scope** and **Quality**, O King?"

"Let me think, Wizard. Ah, I see it ... if **Resource** and **Scope** remain the same and **Time** is reduced, then **Quality** must inevitably be reduced."

"Yes, O King," agreed the Wizard.

"But this is unacceptable," cried the king. "The goods we receive must be of the highest **Quality**!"

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"Then, Majesty, what can be done?" asked the Wizard.

Thinking, the king gazed out upon his kingdom. "Your questions are challenging, Wizard. But let me think, I can see through this maze of yours. Wait, I have it! You would have me realize that even I, your king, cannot dictate all four of these Aspects. If I hold Resource, Time, and Quality to myself, then Nature controls Scope. And yet if I hold Resource, Quality and Scope, then Nature must control Time. Is this your lesson?"

The Wizard replied, "You speak wisely, O King. It is as you say. Your artisans are serving you well within the limitations given. They will apply their skills to their best ability at all times, but they cannot change this law of nature."

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"Can I then do nothing, can I have no idea what will be accomplished, or when?" cried the king.

"Not so, O King. In his work, Your Artisan well understands the relationship between the Aspects. If You will tell him Your wishes regarding three, he can estimate the value of the fourth. And though events may change the results in detail, he can keep You informed of progress against his estimate, in time for You to prepare for the outcome. If You work with him on the Aspects, he can progress most effectively, and You can guide him effectively to the best result."

18



"Well done, Wizard. You have assisted Your king, and in the doing saved the life of the Chief Artisan."

With this, the king turned to dismiss the Wizard, only to find that she was already gone. Shrugging, the king summoned the Chief Artisan.

The Chief Artisan entered the room expecting the worst, yet knowing in his heart that he and his workers had been doing their best. Trembling but erect, he awaited the king's word.

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"Fear not, Artisan," the king began. "I now see what you have been trying to tell me. I rely now upon you to tell me how best to prepare for the dinner I have in mind. Be aware, however, that the invitations are out and I cannot bend on the date. Would more artisans help?"

The Chief thought briefly, then produced his answer. "We might improve by adding a small number of artisans, but this will have little effect in the time left, or may even slow us down as we teach them our methods."

The king began to glower, then remembered what he had learned. "What, then, do you recommend, Artisan. I know that you desire only to serve as best you can."

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"It is so, O King. Here is my solution. We cannot much change our Resources, and the Time is given. Your Majesty must have the highest Quality, which leaves us with only Scope to vary."

"You use terms which I have only today learned, Artisan," remarked the king. "Have you been speaking with my Wizard?"

"Indeed, O King, she advises us often in how we do our tasks, which she calls Work Process. She is strange, yet her ideas have worked a powerful effect."

"Strange she is, Artisan, strange indeed. But go on, what of Scope?" said the king.

"Here is what we can do. We can produce all the place settings you need, of the highest quality, by reducing scope in any of these ways: we can return to the simpler design of plates which we showed you, removing the cherubs; we can provide simpler utensils, though still of the highest quality; or we can produce fewer plates or utensils. Among these, Your Majesty may choose."

21



His majesty decides

"Hold, Artisan, hast thou learned nothing? We have not as yet done Our Royal Part, if there remains risk. We shall say further." The Artisan waited.

The king continued, "You will carry out all three of your suggestions, ensuring the best possible result for the State Dinner. You will make fewer plates and utensils as We have already commanded. Those which you make, you will make simpler, yet still as high in Quality as We deserve. Can this be done?"

"Of course, O King," said the Artisan, now almost calm. "If I may suggest, we might lavish the bulk of our effort on the dinner plates, leaving the other dishes simpler, as a frame for the main course. And similarly we will keep the utensils simple, again setting off the beauty of the dinner plates."

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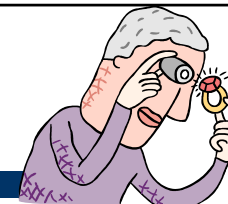


His majesty decides

"We will have the appetizers during the tour of the Royal Zoo. I will have the cook produce food that can be eaten in one bite, from the fingers. This food shall be served by the loveliest maidens, who shall circulate through the guests with trays. Thus we will need fewer dishes and utensils."

"It is good, O King," said the Artisan. "Yet still the time will be tight. There remains a risk that we might not complete our task, hard though we will try." The Artisan made to leave.

22



Helpful Artisan

"Yes, Artisan, this will suffice," said the King. "Is there anything else?"

"If I may, O King, two things. First, should anything go wrong, I crave permission to change the details of the designs to ensure delivery. I will of course inform Your Majesty immediately to be sure you agree."

"Good, Artisan. But more: you must call upon Us for further creative reduction of your effort if it is needed. Just as We can change the appetisers, We can change the desserts if need be."

"You are wise and powerful, O King. It shall be as you say."

"And the second thing, Artisan?"

"It is too soon to be certain, O King, but it may be that we shall exceed these goals rather than barely meet them. Should this be the case, would you prefer that we enhance the designs accordingly, or perhaps you would wish some small gifts for your guests?"

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The king beamed. "Now you sound like Our true Chief Artisan, supporting Us in every way. We see now that by releasing you from undue pressure We free you to do more, not less, to please Us. But let Us not speculate now. When you find that you can do more ... wait, as the Wizard would say, when you find that Scope can be increased ... see Us then and together we will decide what to do. Perhaps we will even give your people some time off ... no, this is, after all, only the 10th century. I am ahead of myself. Workers' rights are centuries away. In any case see Us, and together we shall decide what to do."

"As you wish, O King," said the Artisan. "I am now certain that we can serve Your Majesty as You deserve." He bowed and withdrew, happy to have his head still on his shoulders, and confident that his artisans could perform as the King required.

Happily ever after

The dinner was a great success, and the Chief Artisan even struck up a lively friendship with one of the serving wenches. As it turned out, they all lived happily ever after.



Question from the wizard, "What does this have to do with Software Engineering?"