

# HOW TO CHOOSE A **SOFTWARE VENDOR**

Game Theory in  
Software Outsourcing



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# To our **READERS**

## **Dear reader!**

We realize that you've invested your time in downloading and reading this paper because you expect immediate business value. Worry not – there will be plenty, we promise. We are confident enough that we would even offer a 100% refund in case you were not happy with the research and other materials featured in this paper, but we can't: The paper is free as it is. We also ship it conveniently to you. That's just how awesome we are.

Alas, we have to ask you to hold on on the “immediate value” part for just a few quick moments. We'll do so for the sake of good tone: some of our readers might not be correctly introduced to the concept of The Game Theory. Not everyone majors in math, you know ;) )

This is why we will be giving some background to the research in the opening paragraphs. If you already know all the basics – feel free to mozy on ahead and dig into the next chapter [here](#).

If you are in for the entire ride and would like to enjoy a great read from A to Z while learning something new – buckle up for you are in for one hell of a ride.

Let the show begin!

# **Nobel Prize And ACADEMY AWARDS WINNER?**

If there are people experienced in showcasing eccentric geniuses and their complex ideas in a convenient, easily digestible format capable of amazing and entertaining viewers, they've come from Hollywood.

Millions of people stuck to the screens, 4 Academy Awards and 4 Golden Globes with as many nominations prove this point. We are, of course, speaking about the magnificent "A Beautiful Mind" and Russell Crowe's jaw-dropping performance as John Nash.

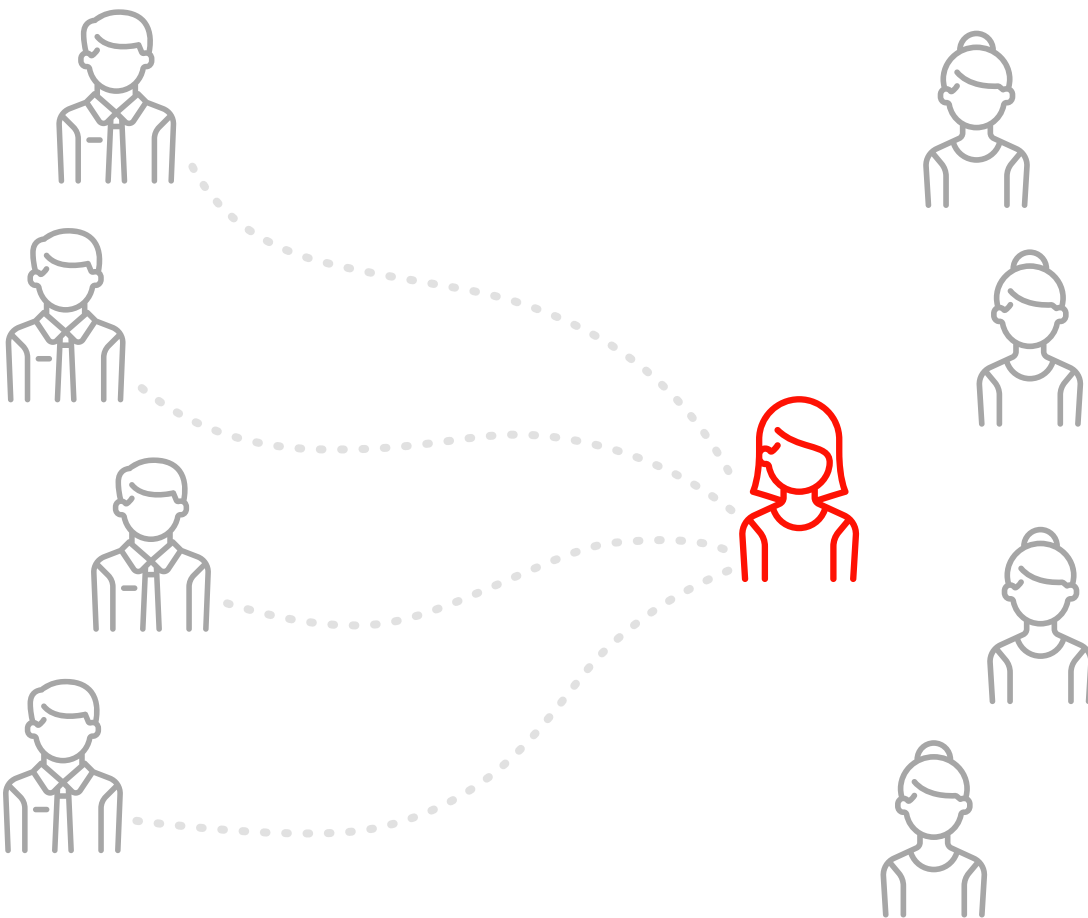
## **ONE OF THE MOST MEMORABLE SCENES IN THE FILM WAS THE FOLLOWING:**

John Nash with a group of his friends was having a night out in a bar when all of a sudden several ladies strolled in. They were beautiful. But one of them, a blonde, was particularly gorgeous. The men gave up to their primal instincts and were ready to hit on her when John stopped them.

**What did he say?**

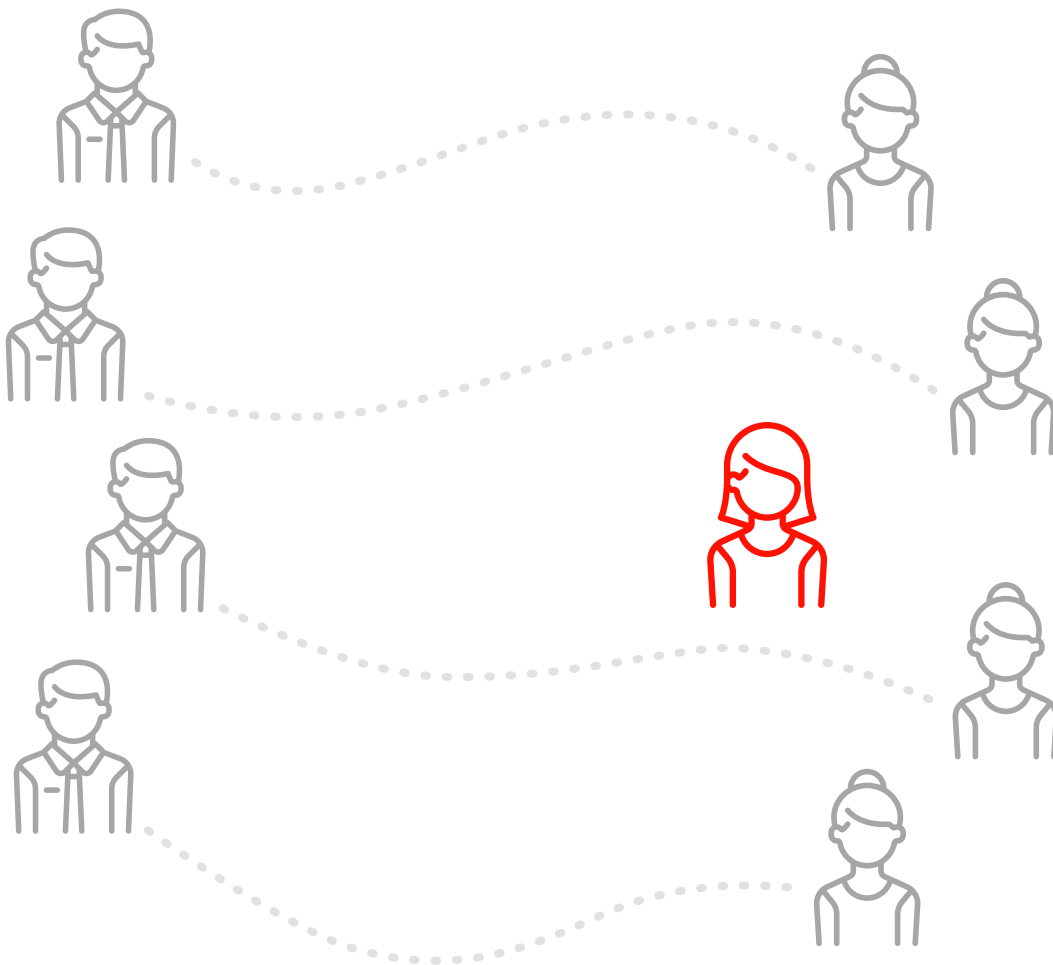
# HE STATED THAT EVERY SINGLE ONE OF THEM WAS ABOUT TO LOSE IN A GAME

Think about it, John said. If you all go for the blonde she will either pick one of you or she won't pick anyone. Anyway, the night will end for you right there as you can't just casually change the object of your attention to one of her friends as that will be offensive.



**GAME  
OVER**

However, if you'll coordinate and pick one of the brunettes each, you will all enjoy an amazing date in a scenario where everyone wins!



What an amazing concept. It's so brilliant in its simplicity that it actually got John Nash a Nobel Prize in economy.

**SUCCESS**

Yeah, we know what you are thinking, but it was 1994. Ideas like that could get much more than a lawsuit of offence back in the day. Besides, the concept was used to define a game and its rules as well as players.

Men and women are irrelevant in this case and are easily replaceable with a couple of sweet-tooths and a limited amount of double-chocolate icing cherry-pop flavoured cones with extra sprinkles in an ice-cream truck. Or anything else you can think of for that matter.

**However, in the end of the day it's the concept that matters. We'd prefer ice-cream though...**



## **All Games**

# **HAVE RULES**

There isn't a strategic issue in existence that can't be visualized as a game model. Marketing, politics, participation in tenders or outsourced team management – you name it. As long as there are people involved they can and should be considered as players. All of them follow certain rules as everyone has a goal he or she wishes to achieve.

Game Theory makes these challenges less, well... less challenging as you have the power of determining the moves of your opponents. As long as you know the rules, of course.



# #1 KNOW WHAT YOU WANT

What is the problem you are trying to solve? Are you entering a new market, launching a new project or, in our case, trying to get the best from a team of overseas engineers?

Are your goals correlating with established solutions on the market? For instance, you are developing your next gamechanger product and considering whether to outsource the process or to hire an in-house team.

Are other players in your niche doing the same?  
Of course they are.



**Operations leaders have to look at the world, and the organization's growth, and understand how to conceptualize the digital business that can take them to the next level**

Phil Fersht, CEO of HfS Research

## **In case you are looking for additional proof, here are a few stats from the outsourcing industry.**

- 65% of organizations that outsource application hosting have plans to increase the amount of work they will outsource ([Computer Economics](#))
- IT healthcare outsourcing is expected to grow from 2013-2018 with a CAGR of 7.6% ([Statista](#))
- IT outsourcing in the next years to come will lean more on cost savings (26%), quality improvement (21%), skills access (19%), financial flexibility and market time (11%). ([KPMG](#))
- 31% of IT services have been outsourced, and organizations will continue to do so for the years to come ([Deloitte](#))
- 89% of clients are satisfied with their outsourcing contracts

## #2

# KNOW WHOSE GAME

Believing that your fight is with your competitors and that it will be either him or you is a common misconception. We know this may not seem so, but businesses are not gladiators in the arena. We are not forced to clash one another until the last bloodied man standing.

There can be a couple of bloodied people left standing. For you to be one of them you must know whose game.

### Here's an example:

#### Game 1

**Players:** You and your Vendor

**Your goals:** fast, budget-friendly development that will bring in an increase of revenue

**Vendor's goals:** You'd be surprised, but fast, budget-friendly development that will bring in an increase of revenue

The Vendor's goal is to buy low and sell high. They are, after all, running a business, just like you. Where will this lead us to? Failure, plain and simple. Buy low - sell low does not work as a service and poor quality of talent will lead to the vendor being demolished by competition.

There are other players on the board – other vendors. They matter because you have the chance of you choosing their team. The scenario gives birth to competition in which no business will benefit from winning you with just dumping prices.

As a result, all vendors are interested in keeping their teams in shape and delivery of jaw-dropping solutions.

You win and get your project done on time and within budget. The vendor wins and gets you as an amazing client. Heck, even the unicorns sing their song of success on the mountain of rainbows. What a time to be alive, right?

## #3

# HOW DO WE PLAY?

Games always have a flow. In cards you have passes, checks, and folds, in football you have defence and a quarterback you use to punch your way through opponents. In either case, the move set has patterns. You are to realize with which you are playing right now.

When it comes to game theory, your options are as follows:

- Players move simultaneously
- Players move in turns

You must also know how aware your opponents are. For example, when the blonde walked into the bar the players had one chance to move simultaneously.

None knew what the other players were up to.

In the little game you had with your vendor we mentioned above each took turns from showing interest to making an offer and to accepting it. Both parties are pretty much aware of what's running through each other's mind.

## #4

# WHO GOES WHERE?

Game Theory states that the end-goal of each player lies in receiving maximized profits. In life, however, this is rarely the case. Players might have different goals in mind like conquering a larger share of the market or an increase of their client base, or simply higher profits. Sure, all of them lead to increased profits in the long run, but both serve as tools in that, bigger game while as for this particular occasion monetary goals are withheld.

Let's say your goal lies in development of an automation solution for your sales team and you believe the other players want the same. But, in reality, they might go for sticking with the notebooks they have without progressing forward in an all-out conquest.

If you'd believed that automation is their goal and tailor your strategy accordingly you would be the one on the losing hand both financially and brand-wise.

# Blondes, Recruiters And The NASH EQUILIBRIUM

Remember when we were talking about how the game with the Blonde won John Nash a Nobel Prize? And now, after going through game rules do you still believe that the choice of going for the brunettes still makes sense?

It doesn't. The concept behind a scene is called the Nash Equilibrium and it is, in fact, award-worthy, but that's not how it works.

It's only obtained when all players adopt a strategy where no single player, by changing his strategy, can obtain a better outcome.

Anyone of the men in the bar could have changed his pick. While believing that the rest are going for brunettes, a player could have easily gone ahead for the win.

The trick hides in the following: according to game theory, all players analyze (are aware of each other's moves) and obviously every man would go for a better deal with the blonde while thinking the rest will not do the same.

Therefore, the strategy of going after the second choice does not satisfy the conditions for a Nash Equilibrium.

A true Nash Equilibrium is only obtained when all the men follow the strategy of going after the blonde. Mr. Nash's idea was about everybody losing, not winning.

Then what was the point of writing about it in this whitepaper?

Easy!

Our goal was in revealing the truths to you about picking up blondes. And the best way to do it is...

## **If you really need the perfect blonde working on your project – stay away from the bar!**

Mathematically speaking, there's a slim chance for one of the men to actually end up with the blonde at the bar. It's obnoxiously small, but when scaled differently, won "blondes" would result in hundreds of A-level talents accepting job proposals from various companies. Hiring them should be the vendor's task.

As we have already discussed above, all of the vendors are playing a game of their own. They wish to increase market share, portfolios and revenue while competing against each other.

Let others do the dirty work and you dedicate your time to working on the aspects of the product that matter. It's really that simple!

## Lifters And Sticks:

# THE GAME THEORY AS A TOOL OF MANAGEMENT

Now that we know that the vendor already has the blondes and is interested in delivering maximum value to your company as a means of gaining higher profits some may believe that the time has come to kick back, relax and enjoy the show.

**Alas, that time is yet to come.**

## How motivation works, really?

Your newly acquired asset of an A-start team still requires management. Here's a fascinating illustration from Steven Landsburg's amazing book "[The Armchair Economist: Economics and Everyday Life](#)". 100-150 years ago cargo shipments were not as automated as they are today. No Amazon, no drones, not even cars were a commodity. Especially in China.

So how'd the shipment process go? Lifters had to drag a large cart with crates manually through the country. Every team of lifters consisted of six people. They were only paid for their work if the shipment arrived on time.

That seems like an efficient motivation – if you don't do your job you will not get paid. And yet it never worked. The shipments were never on time! Let's figure out why that happened together.



Imagine you are one of the six lifters. You can work hard, really hard and if everyone else in your team do the same, you will arrive on time. If one of you is not be as invested, the rest will still work hard and the shipment will also arrive on time.

This probably gets you thinking something like, “hey, if I don’t work that hard we’ll still be on time and I will be paid anyway. And if no one puts an effort into this delivery I will not make a difference alone. Why bother then?”

The Nash Equilibrium here would be not to work hard because everyone would choose that option. **If you choose not to slack you will be the only loser.**

The lifters found a way out though. They themselves started hiring the seventh player – a person that would beat them with sticks if they slack.

Ok, just to make things clear – we ARE NOT encouraging you to beat people with sticks. This example is only here to emphasize how important appropriate motivation is and what a role it plays in the long game. If the correct approach to project management is nowhere to be found, your workers will choose loss over victory for as long as nobody else wins.

Isn’t that a nice thing to keep in mind all the time?

Our advice here is in either finding a qualified vendor who is completely aware or investing in coaches and leaders for your teams.

## Know Your Team's **NEXT STEP!**

China is awesome, but leads head on home. Imagine your own town and the trouble you get through every single day while getting to work. There's always that one jammed street blocking you from a smooth ride. Isn't traffic obnoxious?

Sure it is. And we know why!

You see, even in traffic, everyone's playing the game. Every person has a choice to either drive to work by bus or to take the car. The car is obviously more comfortable, but it's what causes jams. Busses are icky and sticky and ugly, but they fit a lot of people. If everyone chose the bus there would have been no jams.

And yet we still choose our cars because of awareness. You know that you alone can't change anything. Even if you do go for public transportation you will be the only loser in this game. Everyone else will still go for their sweet ride, there still will be a jam, but you will be experiencing discomfort.

If you also go for the car though, it will still be one hell of a drive and it will take ages but hey, at least you are comfortable.

## The Nash Equilibrium strikes again!

What can this scenario teach a manager? That everyone in a team is a person; everyone is a player with personal needs, interests, and goals. You can pick the most optimal routine that fits best for the project, sure. But what will you do if it doesn't fit the team?

Making your goals and choices mutual is easy – simply explain the benefits of your decisions to everybody and give them a piece of candy for choosing the bus (speed) over a more convenient activity.

We, at QArea, use an established schedule of meetings that fits the project's needs exactly for that. Our clients can always join in digitally. Their presence ensures that the focus of the discussion remains centered around business objectives. This way, whenever a challenge or a milestone is discussed, we ensure that the decision satisfies the business side completely.

Lean teams and SCRUM's best practises help us greatly.

Win though letting everyone on your team win and benefit from a positive (victorious for all) Nash Equilibrium.

# Use a Commitment Device TO CEMENT COOPERATION IN PLACE FOREVER

Ok, the next one is going to be gruesome. There are times when a player needs to convince others that he or she is not bluffing. That player needs solid proof of intentions AKA the commitment device.

Here's an example – the laws of several countries forbid family members to pay ransom to kidnappers. This sounds reasonable at the first glance, but if a close relative or a friend is taken you will surely break the law just to set them free.

But will it work? Is paying the kidnapper truly the better option? What are his choices after receiving the money?

The kidnapper may let the victim walk free, but then he risks getting caught because the victim might report him to the police.

If you pay, you'll break the Nash Equilibrium and ruin the slim balance.

Something as simple as a commitment device can change the game entirely. Let's say the villain and the victim went for a deal. The first one made a discreditable naked photoset with the latter and, in the scenario where the fiend goes to jail, the victim's photos will be published online.

In this scenario the victim gets to live, while the kidnapper has guarantees of silence. We wouldn't call it a win-win, but this scenario is definitely better than dying.

When working with a vendor you also need a Commitment Device. You have to have all of your expectations, negotiations and estimations documented. Ensure that the vendor is legally responsible for delivering exactly what you want. Here's a minimal list of the papers you need to succeed:

- A legal agreement and SLA Terms between the companies
- NDA documentation
- An agreement that displays responsibilities clearly and describes the criteria for success (i.e. a working app that does business goal 1, 2 and 3 in a particular manner like A, B, and C)

Such agreements work both ways, as the vendor will also be happy to know you won't run off with the results or that you won't try to stick in a few extra services into an already established budget.

# LESSON LEARNED

So, at the end of the day, what can project managers on outsourced project learn from the Game Theory?

- The value of information. A risk only exists because we do not have enough data. We are not sure of what the opponent will do.
- The balance of choices. When a game is defined and the outcomes are clear it's easier to plan your next move in a way in which you will either won or at least not lose.
- Importance of management. Without guidance, your team will choose balance. That balance rarely aligns with the goals of your business. Don't let that happen.
- Motivation comes from reason. Everyone plays the game. Knowing your team's goals will help you get along better and it will enhance the impact of the message you are getting across.

# ENDGAME

Your vendor will provide the lion's share of it through a dedicated team lead or project manager. They probably have an established corporate culture, motivation, bonuses and whatnot, but your involvement is still critical.

Have you ever used Game Theory in project management? If so, was the experience a success? Please share your thoughts and ideas with us - we'd love to hear back from our readers.

QArea's business analysts and business development managers will be happy to also answer the questions of those who've just read the truth about the Nash Equilibrium in this book. Just [shoot us an email](#) with your ideas or questions and we will get back to you ASAP.

## About QArea




QArea is a custom software development company with 17 years experience in the industry. It provides a full cycle of the desktop, web, and mobile application development, testing and QA services.


QArea's offices are located in the US and Europe with 4 R&D centers in Eastern Europe. QArea provides a full cycle of the desktop, web, and mobile application development, testing and QA services.

The Company stands for client-oriented services with a well-rounded approach. The team of 250+ qualified engineers specializing in Golang, Python, Java, JavaScript, C++ and other most demanded programming languages stimulate the development of truly unique customized products. QArea is a winner of numerous industry awards, named as a TOP outsourcing company in 2017. World's biggest brands like Microsoft, Skype, HuffPost and more intrust QArea to build software solutions united by the high standards of quality.

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