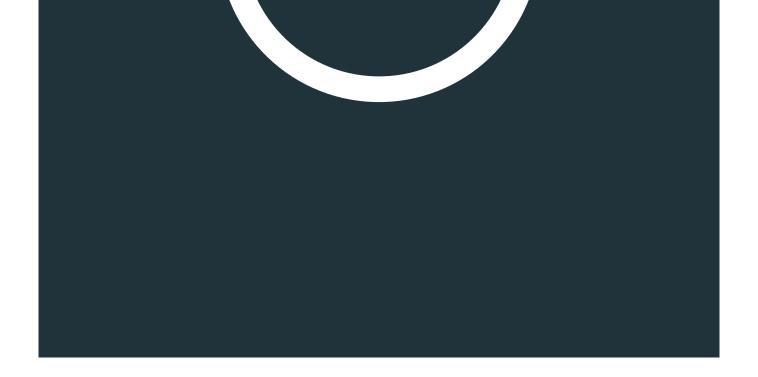




DESIGNING A MARKET FOR A UNIQUE REQUIREMENT

HOW TO BUY GREENHOUSE GAS CREDITS WHEN NO MARKET EXISTS



THE CUSTOMER CHALLENGE

In the US, manufacturing companies in several sectors are required to offset the emissions their products create. This can normally be achieved by acquiring greenhouse gas credits previously made available by the regulating authority. Not acquiring credits, however, could result in significant penalties in the billions, up to a ban of the respective products from the US market.

A further complication was that all other companies in the market, except TWS Partners' customer, received a share of the initial allocation of greenhouse gas credits from the authority. TWS Partners' customer did not, because they had been exempted from the regulation at the point in time when it came into force, and no further credits had been made available by the authority since.

The key challenge for TWS Partners' customer was therefore to find out who in the market actually has excess credits, given their own product performance and roadmap, and is willing to sell those excess credits to a direct competitor – an apparent incentive problem.

TWS Partners' customer budgeted a high two-digit million USD figure for those credits in the light of these developments and findings.

THE TWS APPROACH

Using Market Design and Mechanism Design techniques, TWS Partnered developed in conjunction with their customer a process that incentivized all players in the market to reveal their ability and willingness to sell any excess credits.

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This was possible, because the team found out that any unused credits have no value to the owner of those credits but could be sold to a third party. Another key finding in the project was that the value of those credits to the potential seller deteriorates over time.

It therefore came down to the same question each of the potential sellers had to answer themselves. Do I want to sell to a competitor helping them to fix an issue they have getting some significant unforeseen revenue in return? TWS Partners and their client therefore literally designed a bespoke market for the unique demands in the absence of an official market place for those credit.

In addition to this market design aspect, TWS Partners had to develop a mechanism that optimally allocates available batches of credits to the actual demand profile of TWS Partners' client, leveraging the competition created in the market. The dynamic that was then fostered by signaling through the process itself that is not a question of being able to purchase those credit for TWS Partners' customer, but from whom and at which price. A very dynamic bid process resulted.



THE BENEFITS

With the TWS approach, companies can create markets for unique requirements that do not even exist today and leverage market forces to their own advantage. The costs for the greenhouse gas credits purchase ended up being $50\,\%$ lower than the first market research suggested and the company had budgeted for.