How does a company operating outside the major technology talent centres gain access to the most innovative data scientists that money can buy? Despite their 28,000 employees, including more than 5,000 Doctorate-holding experts, there is a world of talent external to Syngenta who can provide cutting-edge innovations and assist Syngenta’s mission to develop innovative crop solutions.

Research and Development in agribusiness traditionally consists of thousands of trial and error tests to optimise seeds based on growing conditions, locations, soils and others; this equates to hundreds of millions of dollars and on average a seven-year process to take a new plant variety through to a commercial product. But could data analytics facilitate a better modelling of probable outcomes, allowing smarter choices to be made, saving time, effort and money in the process?

This is where crowdsourcing and InnoCentive helped: utilising the power of the global crowd to deliver innovative solutions and assist Syngenta in their aim of smarter processes and leaner research.

Syngenta’s InnoCentive Challenges:

• One of their first forays into open innovation looked for a tool to represent field test results visually, taking the raw data from field trials and highlighting the anomalies for further investigation.
• Soon after the success of this first Challenge, Syngenta posted a second; this time looking to improve the tool that Solvers in Challenge one had submitted. They wanted to be able to automate as many steps as possible, allowing faster, easier and more intuitive data entry, and also an easier-to-understand output.

Results

• Posting this problem to an online crowd enabled Syngenta to access a huge diversity of viewpoints and thus receive creative solutions, which contracting the project to a consultant or posting internally may not have.
• Over 200 Solvers engaged with the problem and after internal evaluation of the solutions, the tool that best met the evaluation criteria and Syngenta’s needs was awarded.
• Real world impacts from the outcomes were soon felt; field managers were able to understand exactly what went wrong and where issues were with trials, and from this immediately rectify errors.
Conclusions

The open innovation methodology facilitated access to individuals who were able to develop the sorts of solutions that Syngenta would never have imagined possible. The best solutions frequently came from unlikely places: from mathematicians and statisticians to businessmen and engineers, and across six continents. With a clear societal benefit of improving plant yields, many Solvers engaged with the Challenges for the reward of tackling a problem that matters. Even if they were not winners in the end, the pleasure derived from undertaking a challenging problem that could have huge benefits was motivation enough.

Over the past eight years, Syngenta has used open innovation to develop more than a dozen data analytics tools, which have cumulatively revolutionised the way they breed plants. By replacing guesswork with science, they are able to grow more with less. The previous rate of improvement for yields was 0.8 bushels per acre each year. Since utilising open innovation and developing these analytical tools, that yield improvement has increased to 2.5 bushels per acre. To reach this level through traditional methods would have cost roughly $278 million.

Open innovation requires careful planning, internal support and resources dedicated to the project – ensuring the correct question is asked, the precise criteria are listed, and the necessary expertise are available to assess the solutions. However, once these requirements are in place, accessing a global crowd can deliver revolutionary solutions that drive forward industries.

To read the full report, please click here: http://sloanreview.mit.edu/x/57411