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**Most commodity companies, either trading houses, agri giants or metals and mining majors, have started their journey in data science. HC Insider explores the different approaches that companies take when utilising data science, how it can add value to a business, and the talent required to fulfil that value.**

Different commodity companies are at different levels of maturity when it comes to data science, with some still using standard reporting and dashboards while others are starting with more leading-edge techniques such as machine learning. In addition to applications such as predictive maintenance in the assets/plants, some companies are also using quantitative methods to predict commodity prices. Where traditionally companies had the competitive edge through their relationships, now the focus has shifted to a company's ability to collect, store, analyse, and monetise data.

Despite the current outperformance of the sector due to a combination of Covid-19 effects, over supply, and a potential upcoming super cycle, commodity traders' margins could fall up to 15% to less than \$30bn by 2025 unless the industry invests in new technology, according to a report by management consultancy [Oliver Wyman](#). Roland Rechtsteiner, Partner at Oliver Wyman, told the FT: "The industry is maturing after a period of rapid growth, but it is also facing big changes ahead. All commodity trading firms will have to review their business models."

The Oliver Wyman report claims commodity traders are relying less on extensive traditional information networks to gain advantages from proprietary data, and instead are investing in sophisticated systems and dedicated teams to focus on using predictive analytics to draw valuable proprietary insights from common data sources. Speaking to HC Insider, Rechtsteiner said using predictive analytics to increase competitive intelligence, blockchain and cryptocurrency solutions to drive efficiency across complex physical value chains, as well as new opportunities to satisfy ESG-related new transparency demand with paper market solutions, will be key to

[commodity traders'] success.

### **Data science and agriculture**

All companies that trade commodities strive to possess an information edge. Markets are increasingly becoming more transparent, and price discovery is almost live for most actors. Data scientists can help structure the decision process, enable data driven decisions, and potentially automate some decisions, using systematic and other quantitative trading strategies.

Information is often reported through phone calls or unstructured emails and is not collected for further analysis in the agriculture commodities world. An initial challenge for data science teams in a company should be to structure the information pipeline for non-standard data sets to benefit from this more propriety information. This will be a worthy investment for companies in the long run. Starting with publicly available data through third parties can help to kick start initiatives, but this is merely table stakes and to win, traders will need to find their own edge. Taking a slower approach to harvest your own data offering could prove far more beneficial to the profit and loss in the long run. Organisations will therefore have to strike the right balance of short-term vs long term investment.



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### **Different approaches to data science**

There are different approaches that companies take when deciding who the data science team reports into. For most companies it is the CRO, CTO, Head of Analysis or Heads of Trading. This goes a long way to reflect how versatile a data scientists skill set can be and highlights the challenge to each company of where best to place them

for the greatest value add.

The decision taken by the business is often a reflection of the role they see the team playing. For a data science team to be truly impactful, a business needs to remove the vertical silos and ensure the team can assess all relevant data streams across the organisation. While an individual trader may want more control over what his team works on, this siloed approach will lose out on the economies of scale and correlated data opportunities that may exist from the enterprise – why build a weather model for each desk? The reporting line question will inevitably lead to challenges over whose budget will this team come out of and so a strong and trusted leader who can make the case for a data science organisation will be needed to convince traders that a well-run central organisation should be a win-win.

### **Commercial value**

Data science can add value to a business by enhancing forecasting capabilities. For example, making yield predictions. A poor yield can result in a devastating season for farmers, as well as all the entities that depend on the crops. We have seen an emergence in recent years of companies looking to couple technological advancements with analytics to help companies trade more effectively. Companies such as Gro-Intelligence, Praedictus Climate solutions, and Descartes Lab have entered the market in recent years and have been steadily growing through increased demand for their insights. Solutions such as this allow the users to make better and faster decisions by quickly understanding and predicting the factors that affect supply and demand of agricultural markets.

Data science can also help organisations to better manage and access internal and external data, and even potentially sell that data to external counterparts such as hedge funds. In order to pursue this, businesses need to focus on structuring their internal data sets which could lead to a whole new revenue stream for the company.

Combining data science and its real-time analytical capabilities with other technologies such as Robotic Process Automation (RPA) will over time lead to increasing levels of automation of both front and back-office activities. Over time this will lead to reduced errors and remove time consuming administrative activities. This will allow traders to focus on the highest value aspects of their jobs, while reducing the cost and time of more mundane work. Would a company say no to doubling the commercial output of a trader?

### **The talent**

According to the World Economic Forum's [Future of Jobs Report 2020](#), by 2025, analytical thinking, creativity and flexibility will be among the most sought-after skills.

The most competitive businesses, the report claims, will need to retrain nearly half of its employees' core skills to ensure they can stay in their roles over the next five years as the adoption of cloud computing, big data and e-commerce remain high priorities for business leaders.

A data science team needs to have a few key skills. Skills like programming, data manipulation, maths, statistics, and understanding machine learning are relatively standard across industries. The real value is to be able to combine these skills with industry knowledge.

It is difficult to find someone with all these skills, especially as a lot of these criteria are alien to organisations. Also, if the company's management tier does not properly understand the value of a data scientist, then identifying talented individuals worth hiring can be difficult. In addition to this, if a company has not addressed the points above, such as the reporting lines or existing data landscape that this individual will have access to, then the business could struggle to entice the individual to join in the first place.

The role of technologists within these teams, and in fact across the whole of the trading landscape, is changing as they become more commercial - with merchants leading the way on this. We are seeing their recruitment strategies changing as they seek to hire commercially facing developers that could one day even enjoy a risk-taking remit further down the road. It is becoming harder to argue that technologists are not responsible for generating profit and loss when it is their algorithms that are executing trading strategies and adding revenue to the desk. As these examples become more apparent, it will be interesting to see how companies handle the prospect of remuneration for such individuals.

When it comes to innovation, the agri space still trails behind its counterparts in the energy trading sector. However, numerous agri traders are already starting to close the gap. A key step to closing this gap will be the ability to compete in the talent war and remunerating these individuals at a level that the energy traders are prepared to do.

The physical nature of the agriculture industry offers an ideal, data rich environment for a data science team to capitalise and start adding value. So long as companies recognise the revenue generating potential these teams can add, and overall wider company value their data insights can bring, then these businesses can present a highly appealing environment.

Agri companies can also learn lessons from businesses that already possess data science teams from other industries. Significant cultural issues have risen from this relatively new division as they seek to establish themselves in the company pecking

order. If a company requires the data science team to help diversify their revenue generating capabilities, then it needs to meet head on the task of remuneration.



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