Self-driving collateral management

As the collateral management industry is undergoing significant change, Martin Seagroatt of Broadridge discusses five lessons we can learn from Henry Ford and Elon Musk

Collateral management is undergoing significant change. A need to industrialise processes due to cost pressures and regulatory reform is occurring in parallel with the emergence of disruptive technologies such as blockchain, artificial intelligence and robotic process automation.

In many ways, the business of collateral management is currently inefficient and rather like a pre-mass production car plant. This includes:

- A high degree of manual processes
- A lack of standardisation and interoperability between systems, processes and market

participants across the value network
- Continued use of outdated systems and legacy technologies such as faxes

To meet the demands of the 21st century, the collateral value chain needs to become more like an automated and robotised modern day car manufacturing plant.

This article, therefore, looks at the lessons we can apply to collateral management from two legendary disruptors of the transport industry; Henry Ford and Elon Musk—one from the early part of the 20th century, the other 100 years later in the early 21st.

Henry Ford

Henry Ford popularised the use of the assembly line and mass production that became the benchmark for industrial practice in the first half of the 20th Century. He was responsible for dramatically increasing ownership of the automobile in American society, disrupting the transport industry and changing the world in the process. It was Ford's intention to produce the largest number of cars, to the simplest design, for the lowest possible cost. Through innovative production techniques and a relentless focus on process improvement, Ford was able to cut prices, double the minimum daily wage to $5, produce a superior product and still make a profit.

Elon Musk

Musk has set out to save the planet from global warming and disrupts the transportation industry in the process by mass-producing affordable, driverless electrical cars. Musk's personal brand and ability to promote his vision has seen Tesla briefly achieving valuations that exceeded both Ford and General Motors, despite having just 1 percent of their sales.

Henry Ford once said: "You can't build a reputation on what you are going to do."

More recently, however, Tesla has become in Musk's words "the most shorted stock in history"—a possibly dubious claim—following ongoing production delays versus Musk's overly optimistic forecasts. Musk's tweets (what Henry Ford would have made of Twitter is anyone's guess) about taking the company private, then keeping it public, have compounded downward pressure on Tesla's share price. We will now look at five lessons we can learn from Ford and Musk and how we can apply them to collateral management.

Lesson one: don't underestimate the effort required to hit key deadlines

Musk has made ambitious predictions of producing 10,000 of Tesla's mass-market Model 3s a week by the end of 2018. But problems with a highly robotised production line mean that just over 2,000 a week are leaving the factory. Tesla's revised goal of 5,000 still seems overly optimistic.

The collateral management business is facing its own demanding deadlines. Wider market compliance with the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) uncleared margin rules are looming on the horizon and reporting of collateral under the Securities Financing Transaction Regulation (SFTR) is also approaching rapidly.

The sheer range of counterparties falling under the uncleared margin rules for exchange of bilateral initial margin (IM) in September 2020 will see dealers facing around 1,000 new in-scope entities, according to the International Swaps and Derivatives Association (ISDA). Because each buy-side firm often faces more than one dealer, ISDA estimates the rules will require the creation of around 9,400 new relationships and 18,800 new segregated margin accounts (two per relationship for the posting and collection of IM).

The number of margin calls that both dealers and the buy side have to deal with will also increase significantly.

The work to set up segregated accounts and repaper agreements is enormous. This is on top of the need to implement technology solutions to manage the increase in margin calls and optimise collateral usage.

Similarly, SFTR poses huge challenges, with granular reporting on collateral and calculations around rehypothecation.

Early preparation and a conservative approach to estimating the effort required to comply with these mandates will help to avoid bottlenecks, headaches and short-term tactical solutions as compliance dates approach.

Lesson two: focus on re-designing processes

A key reason for Ford's success was that he broke the manufacturing process down into its constituent parts. This division of the production process allowed Ford to focus on how he could refine each practice.

This provides a useful lesson for collateral management. Before seeking to comply with incoming regulation, it's important to clearly define the target state. This includes asking questions such as:

- Where are the bottlenecks?
- Where can steps in the process be automated or ideally eliminated?
- What upstream problems cause downstream delays?

Collateral can be viewed as a value chain. Inputs include internal cash and securities inventory, client/counterparty flow and high-quality liquid assets (HQLA). The outputs are central counterparty (CCP) eligible collateral for derivatives margin, liquidity coverage ratio eligible collateral and specials/general collateral the firm can finance for incremental revenue.

Similarly, it is important to analyse the infrastructure around the collateral management process and the links in the value chain to see where bottlenecks and inefficiencies can be resolved. Connectivity to infrastructures such as tri-party agents, CCPs, peer-to-peer/all-to-all networks and trading platforms can increase straight-through processing. Collateral messaging tools and reconciliation solutions also automate a lot of inefficient manual processing.

Ford made sure that all of the feeder lines in his plant were synchronised. Musk built his huge giga-factory battery manufacture plant in relative proximity to his auto production facilities and to achieve economies of scale. Collateral desks should consider how they can reduce similar bottlenecks and single points of failure in operations.

Ford also experimented rather than just optimised. Lots of people claim to optimise systems and processes without any real baseline of performance to measure changes against. Ford experimented with all of his changes and had very objective measurements of success such as the time and cost of producing a Model T. If an idea didn't work at the experimental level, Ford quickly abandoned it. This is an approach that can pay dividends when optimising collateral processes.

Lesson three: standardise first, then automate

Henry Ford: "Any customer can have a car painted any colour that he wants so long as it is black."

After optimising the production process, Ford and his engineers noticed that the bottleneck in increasing output further was the speed at which that paint could dry. As Japan black was the fastest drying paint colour, Ford began manufacturing cars available only in black.

The drying paint in collateral management is data and its lack of standardisation. Industry associations such as ISDA, the International Securities Lending Association and the International Capital Market Association are now looking at how participants in the securities finance and derivatives industries can collaborate to standardise transaction data for ease of reporting.

For example, ISDA's Common Domain Model (CDM) 1.0 provides "a standard digital representation of events and actions that occur during the life of a derivatives trade, expressed in a machine-readable format. Using this common standard will enhance consistency and facilitate interoperability across firms and platforms, irrespective of the programming language ultimately used for each technology. Each firm has historically used its own unique representations of events and processes, which has severely curtailed the potential for technologies to interoperate."

"The ISDA CDM is intended to provide an industry standard blueprint for how derivatives are traded and managed across the lifecycle. Establishing a common set of data and processing standards will facilitate interoperability between firms and technology platforms."

The standardisation achieved through the ISDA CMD and SFTR in the securities finance business, will reduce operational workload and enable the business to industrialise. It will pave the way for smart contracts, distributed ledger technologies and artificial intelligence while making transaction reporting data more useful to regulators in identifying systemic risk.

While getting firm-level data in order is complex and may be as exciting as watching paint dry, data models are undoubtedly the drying paint in the collateral process. Following Ford's example and getting clean, standardised data models in place in advance of SFTR and BCBS IOSCO is the key to simpler compliance and future automation.

Lesson four: don't automate things just because you can

Following the standardisation of collateral data, the industry has an opportunity to add further automation to the process. However, Elon Musk's production delays hold valuable lessons in this respect. One of the reasons Tesla has missed targets is that Musk has attempted to over-automate the production process.

According to a recent Economist article: "Rather than relying on the time-tested manufacturing methods used by established rivals, who still use people to do tasks that machines are as yet unsuited for, he wants his car factory to be a hyper-automated 'machine that makes machines', bristling with robots and keeping human involvement to a minimum. Max Warburton at Bernstein, an equity-research firm, argues that the big global carmakers have realised—owing to bitter experience with overzealous previous attempts at automation—that a sensible mix of man and machine produces the most efficient car-assembly for the time being."

When deciding what to automate, it is important to assess whether a process requires significant human involvement, or is, in fact, less expensive for humans to do than implementing and continually governing an automation algorithm.

Lesson five: prioritise and stay focused

Following Musk's errant tweet about taking the company private (and other seemingly ill thought-out tweets), media speculation has increased that his heavy workload has affected his judgement. Musk's objectives of simultaneously mass producing electric vehicles, implementing large-scale underground transportation systems, and colonising Mars are certainly ambitious.

Collateral market participants should also seek to prioritise when it comes to the high volume of tasks facing them to comply with the broad scope of new regulations, while simultaneously preparing for a world of robotic automation and other disruptive technologies. Thinking carefully about the long-term view of where the industry and technology are heading and ensuring the building blocks are in place will enable your firm to stay relevant as collateral experiences its industrial revolution. In the words of Henry Ford: "Nothing is particularly hard if you divide it into small jobs." **SLT**

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