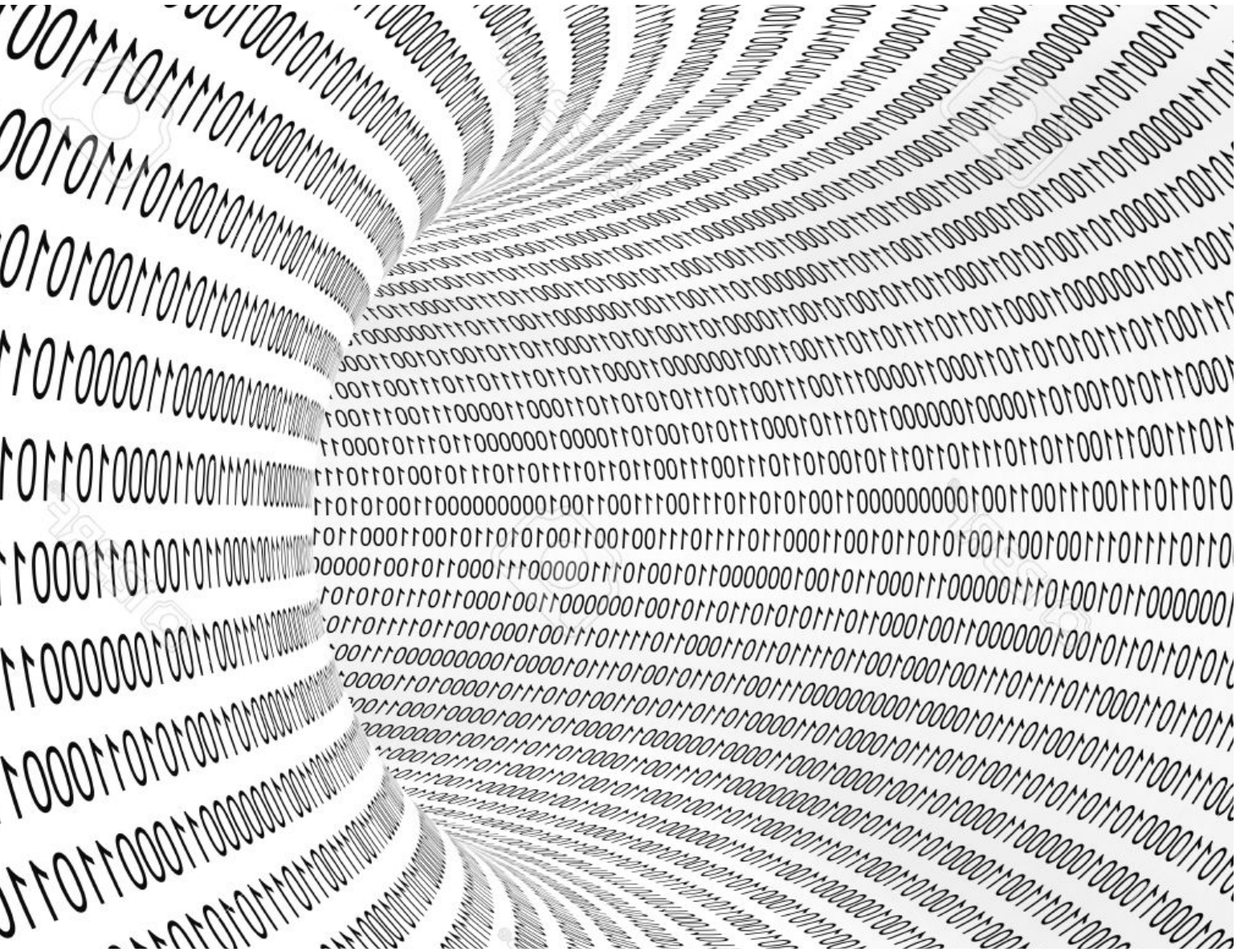
WHITE PAPER

# PROVE IT OR ELSE!

## Traceability - regulation and consumer demands on your data management



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Commodity Technology Advisory

CTRM Market Research, Analysis and Insights

# INTRODUCTION

**The commodity business has always been fraught with complexity, but under increasing scrutiny from legislators, regulators, consumers, and therefore auditors, that complexity is growing steadily and inexorably. One significant challenge in which complexity is increasing, is the need to track commodities, consumables, and fuels, from source to market. It is no longer the case that buyers can simply pick the best price in choosing a supplier as concerns over issues like food safety, as well as an increasingly savvy consumer that is concerned over abusive labor practices, workers rights, and environmental issues, for example, are increasing the traceability complexity across almost all supply chains.**

The recent Trade Facilitation and Trade Enforcement Act, for example, has tightened import controls into the US allowing customs to detain and seize any product thought to have been produced with child labor. The legislation has already been used to detain a shipment entering the US. In order to release a shipment, the owner is required to prove that the custom's suspicions are incorrect. This is a good example of how a myriad of new rules and regulations are forcing commodity firms to pay much closer attention to traceability. Increasingly, the onus is on the owner of the commodity or product to prove compliance with standards for environment, labor and sustainability etc.

What is traceability? The widely accepted definition from the International Organization for Standards (ISO) is as follows, *"The ability to identify and trace the history, distribution, location and application of products, parts and materials, to ensure the reliability of sustainability claims, in the areas of human rights, labour (including health & safety), the environment and anti-corruption."* This is a fairly broad definition, but it does not include the additional driver of protecting brand value. Selling food products or commodities that are substandard, defective, or that do not live up to certain environmental claims, can have a massively detrimental impact on brand value. Nestle is a good example of how brands can be tarnished after being targeted by a very vocal Greenpeace campaign regarding its use of palm oil to make Kit Kat bars procured from producers deemed to be destroying rainforests and habitats.

# THE ISSUES DRIVING TRACEABILITY

**There are really two major groups of drivers for traceability at work in today's commodity markets,**

**/ Food safety and general safety practices,**
**/ Social and environmental concerns.**

Food safety is one issue driving the traceability challenge. As trade in agri-food and commodities has and continues to increase, it has led to changes in the global production network with increasing fragmentation and complexity across multiple enterprises with global reach. Implementation of verifiable safety and quality compliance programs allows these businesses to better manage operational risks and allows faster reaction to emergencies, recalls, and withdrawals. It also allows for better brand protection by streamlining withdrawals of substandard products.

Meanwhile, an increasingly savvy and environmentally aware consumer is driving the development of the branding and labeling of products as sustainable, environmentally-friendly, produced by workers with proper working conditions and rights, and so on. The ability to prove these brand claims goes hand-in-hand with the ability to attract a premium price for the goods. Table 1 shows a number of examples of different environmental and social traceability drivers as they relate to different commodities.

| Commodity | Drivers |
|---|---|
| Beef | - Preventing deforestation<br>- Protecting land rights for indigenous peoples<br>- Promoting animal welfare |
| Biofuels | - Working to protect human and labour rights through the supply chain<br>- Working to preserve the functioning of local economies and small-scale producers<br>- Managing the impacts of new feedstock farming and working to protect local food security and prevent deforestation |
| Cocoa | - Labour rights in terms of working conditions<br>- Human rights – following the law and respecting children's rights<br>- Sustainable livelihoods for farmers |
| Cotton | - Environmental impacts – reduction of chemicals and water use as well as carbon footprint<br>- Social impacts – workers rights, fair compensation for smaller farmers<br>- Labour and children's rights |
| Palm Oil | - Sustainable farming without deforestation<br>- Prevent destruction of habitats and management of impacts of farming<br>- Climate change issues with deforestation and water pollution issues<br>- Respect for land rights of indigenous people and provide incomes to small farmers |
| Sugar | - Working conditions and prevention of child labour<br>- Management of environmental impacts and guarantee local food security |
| Timber | - Environmental – deforestation, water quality and CO2<br>- Prevent illegal harvesting, promote sustainable harvest levels with replanting<br>- Avoid destruction of biodiversity and habitats<br>- Protect indigenous land rights and prevent land ownership conflicts |

Table 1: Traceability Drivers

# TRACEABILITY IS EVERYWHERE

**While it is logical to associate traceability issues and processes with food supply, traceability is rapidly becoming an issue for almost all commodities to some degree. For example, is green power, for which the consumer may pay a hefty premium truly generated in an environmentally friendly way? Traceability now impacts areas like jet fuels, refined products, timber, and many other commodities outside of food for a variety of reasons. New regulations are emerging on a consistent basis that continue to create the need to properly track and account for commodities and products through the supply chain.**

Implementing proper traceability is an expense and complexity for all participants involved in the supply chain. Investment is required in technology and processes aimed at tracking goods along the supply chain. Despite that, there is often a premium or penalty aspect to pricing associated with commodities and products that can be shown to have been produced in a certain way whether that is environmentally friendly, socially acceptable, or some other criteria that consumer's value. Furthermore, there is a brand aspect to the ability to conduct proper traceability that is extremely valuable.

According to the United Nations[1], there are three main approaches to tracking sustainability claims and each involves different methods of tracking a claim and assuring at each point in the supply chain (Table 2). The UN also points out that further investment and work is required in the area of traceability to improve it both generally and for specific commodities.

Each of the three approaches involves some degree of cost and complexity, and the more rigorous the approach, the more costly, and complex it will be.

As traceability is mandated or required by more and more consumer groups, industry associations, regulators, and governments, there are several other factors to consider. The commodities business is founded upon trust and verification such that, for example, the physical metals at a warehouse actually exist and ownership is clear. Without this trust and verify mechanism, commodity finance would suffer. There would be no confidence in trades and banks would have issues financing companies involved in the supply chain. In some commodities, repo financing where the bank takes ownership of the commodity for a period of time releasing cash to the owner with a provision to sell the commodity back at a certain point in time, for example, is a key aspect of this. Traceability then can also be seen to have other uses and benefits.

1. A Guide to Traceability, United Nations, 2014

| Method | Description | Detail | Example |
|---|---|---|---|
| Product Segregation | Certified materials and products are physically separated from non-certified materials and products at each step in the supply chain. | Bulk Commodities – Certified and non-certified materials are separated but mixing from different producers of certified materials is allowed. All producers have to comply with certification standards.<br><br>Identity Preservation – Certified and non-certified products cannot be mixed and certified products may not be mixed either. This affords traceability to a specific producer, farm, or forest | Bananas – Fairtrade bananas have achieved the ability to trace back to a specific producer. |
| Mass Balance | Certified and non-certified products may be mixed however, the exact volumes of certified materials are tracked such that an equivalent volume of the product can be sold as certified | Commonly used for products where segregation is difficult such as Coffee, Cocoa, Sugar, and Tea. | Timber – The complex nature of the production process at paper mills makes segregation almost impossible.<br><br>Cocoa – Complex supply chain means that segregation is very expensive. |
| Book and Claim | A company can obtain sustainability certificates for the volume of certified materials put into the system. The certificates can be bought and sold meaning that sustainability claims can be made via the existence of a certificate even though the actual product may not have been certified. | In this system, certified and non-certified products are mixed and there is no requirement to track them. Rather, the certificates issued and traded are tracked. | CO2 Emissions and Green Power – the trading of certificates allows retailers to offer green power at a premium despite not knowing if the electrons it supplies were certified or not so long as it has purchased the certificates needed to do so. |

Table 2

The importance of traceability has now grown to the point that it is essential in many commodities and products as,

- Many shippers and/or important consumers now have their own requirements, standards and mandates including for example, tire manufacturers,
- In areas like biomass and green energy, subsidies are only available where adherence to environmental standards can be proven,
- Industry associations, consumer bodies and intra-government organizations are developing an array of standards and requirements,
- Brand value protection demands it,
- Consumers demand it and are willing to pay a premium.

Traceability is rapidly becoming a key requirement and constraint in many industries where it is seen as an important operational risk item that needs to be effectively managed.

# TRACEABILITY AND CTRM/COMMODITY MANAGEMENT SOFTWARE

**In order to fully support traceability requirements, Commodity Management or CTRM software, has to exhibit several key characteristics. These include,**

- Overall support for the supply chain for a commodity and/or products from point of origin to point of consumption. This will include a good deal of detailed functionality from logistics through inventory management, assay or chemical analysis functionality, and much more,

- Ideally, the solution will also need to support multiple units of measure and multiple currencies with a seamless ability to move from one to another in the supply chain. An example of this might be in terms of procuring or producing volumes of a commodity but selling products on a mass balance basis. Another example might be where the calorific value of stock needs to be tracked in order to quantify the volume required to be procured and maintained,

- It needs to have the ability to track bulk and/or packaged commodities at granular levels throughout the supply chain such as cotton bales, lots, shipments, and so on. Furthermore, it needs to be able to track, merge and split activities throughout the supply chain where different lots or quantities of a commodity are split or merged either in packaged form or bulk,

- The solution must support user definable work-flows and track actions along the process so that transactions are auditable and activities traceable from start to finish,

- This also requires detailed logistics tracking of items like trucks, containers, bails, packages and so on,

- It must also be able to track green certificates, calculate and track carbon footprints and support communication with registry's to allow buyers to claim subsidies, incentives and defend claims made regarding the nature of commodities or goods sold.

The ability to perform these activities is a non-trivial exercise but brings a number of other benefits in that supply chains can be optimized for cost and timescales as well as traceability. The issue in providing all of this functionality is almost certainly in being able to set up the solution for different commodities and products. Many solutions on the market are designed with a specific commodity and industry segment in mind and extending functionality across commodities then requires significant modification and/or enhancement. In order to provide a viable and complete

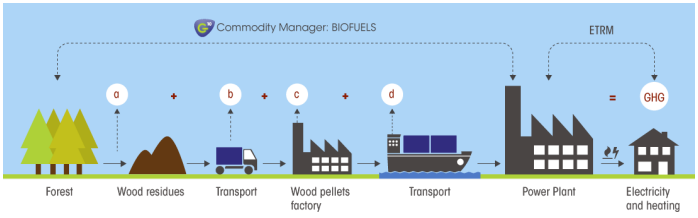
solution for the purpose of traceability, it must also be relatively easy to set up different commodities/products and specify the particular physical attributes that influence pricing and settlement.

Increasingly, users are demanding that the CM/CTRM solution aids them in supply chain optimization, which includes traceability. The ability to identify slower, less reliable or more costly transporters, for example, is one area where optimizations can be made. Additionally, all three approaches described above to traceability, must be supported.

# Generation 10 (Gen10)

**Gen10 is a company that has had traceability and supply chain optimization firmly in mind since its inception in 2000. It provides a number of solutions on its cloud-based Commodity Manager platform, from specific stand-alone products like its G10 Supply Chain Map to its comprehensive CTRM suite.**

For example, G10 Commodity Manager can be used to track biomass from forest to generation through the entire supply chain and any certificates generated or traded along the way. This allows the generator to prove the power it is generating is green as well as to calculate and claim any subsidies it is entitled to. In the area of cocoa, it easily tracks cocoa through a complex supply chain, allowing tracing of beans back to their source. The same with palm oil and rubber.

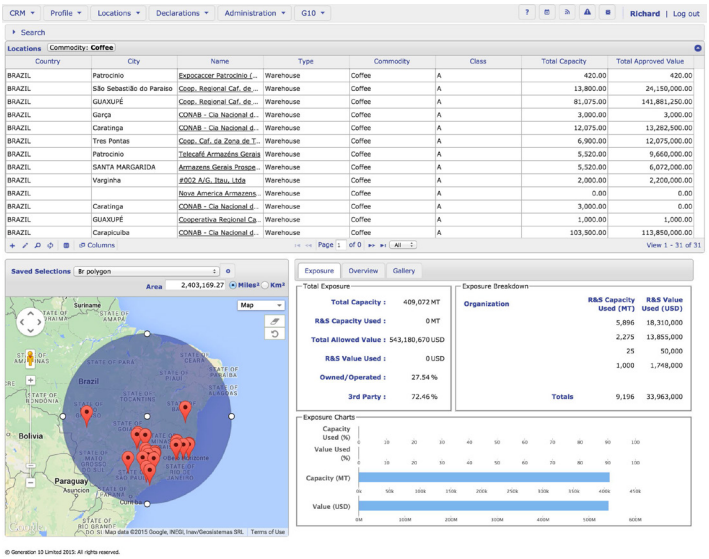



Green Power Traceability

The underlying architecture caters for extensible data collection, fluid business processes and workflows. The traceability module handles bulk, lots, units and all the splitting, merging, blending, reweighing, reclassifying, certifying and revaluing that happens in the real world. It's inherently flexible - multi-unit of measure/conversion solution that allows new commodities/products to be defined to the system without enhancement or modification. Similarly, for each commodity, the important physical attributes can be added, utilized and valued in the solution without coding. It was one of the first solutions available commercially to be able to track coffee and cotton at the individual package level, for example.

## G10 Supply Chain Map

The G10 Supply Chain Map product provides users with a due diligence platform for auditing their suppliers, capturing key metrics at ground-level on sustainability, environmental and socio-economic factors, while at the same time it can capture financial, quality and marketing data. It goes on to manage annual review and renewal processes, plotting trends graphically and triggering business alarms. It can be implemented as a stand-alone service with APIs that complement an existing CTRM/IT ecosystem.




The solution captures all of the detail and information required about suppliers and customers using an extensible supply chain survey tool. It combines site visits and market intelligence data about purchases and sales to the lowest level such that traceability (using any of the three approaches defined above; segregation, mass balance, book and claim) can be effectively managed and supply chains optimized. To bring all the data and metrics together, there is an easily consumed set of graphical tools to map the supply chain and perform interactive analytics, visualizations, and reports to make this task even simpler.

One of the things about the platform is how it can combine all of these aspects with the rest of the business process to give that holistic approach to visibility and decision-making, rather than siloed sustainability, financial, and operational data.

And it's all Cloud-based with Off-line capability that simultaneously gives instant global deployment, reach and access while catering for those hard-to-reach places at origin where internet connectivity can be limited or off-grid altogether.

# SUMMARY

Traceability is now a critical requirement both from a brand protection perspective as well as a legal or industry standard point of view in many commodity supply chains. To meet these requirements demands a different approach to commodity trading, tracking, and management than that offered by many CTRM solutions or indeed, CM, or ERP solutions in the market. Traceability needs to be at the core of business processes, culture and the systems employed in the business. The G10 Commodity Manager platform and targeted products like its G10 Supply Chain Map, are one of the few solutions commercially available that provides both the appropriate granularity and the tools required to truly manage traceability and supply chains for the vast majority of commodities.

A quick visit to any corporate presence on the web for any company engaged at any step in commodity supply chains particularly in food-related areas, is already replete with mission statements and marketing speak regarding issues like sustainability, social responsibility, de-forestation and climate change. However, words, no matter how many times spoken or written, will not create nor sustain a reputable brand. Only actions and the actual buyer experience can do that. When it comes to protecting and promoting that brand and being responsive to new regulations and/or quality issues, you simply have to prove it, or else!

# ABOUT GENERATION10

Generation 10 is a company providing data management services and solutions throughout the commodity supply chain with specialist domain expertise in softs/ags. With core competencies in origination, through logistics supply chain tracking and optimization, to cost control and risk management, they serve a diverse international client-base from producers, brokers, traders, importers and processors to banks, insurance and government institutions.

Solutions come pre-configured for a range of commodities, enabling fast implementations on a web-based, device-friendly, modular platform that is feature-rich, easy to use and highly configurable to individual user preferences.

Their flagship CTRM platform, Commodity Manager, is the only offering in the market to offer end-to-end transaction lifecycle processing, integrated CRM, origination, supply chain optimisation, embedded analytics, risk management and compliance modules on a single, modern, affordable and scalable platform.

Available as a hosted Software-as-a-Service, or on-premise solution.

generation10

generation10.net
info@generation10.net

# ABOUT

## **Com**modity **Tech**nology **Advisory LLC**

Commodity Technology Advisory is the leading analyst organization covering the ETRM and CTRM markets. We provide the invaluable insights into the issues and trends affecting the users and providers of the technologies that are crucial for success in the constantly evolving global commodities markets.

Patrick Reames and Gary Vasey head our team, whose combined 60-plus years in the energy and commodities markets, provides depth of understanding of the market and its issues that is unmatched and unrivaled by any analyst group.

For more information, please visit:
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**www.ctrmcenter.com**

19901 Southwest Freeway
Sugar Land TX 77479
+1 281 207 5412

Prague, Czech Republic
+420 775 718 112

ComTechAdvisory.com
Email: info@comtechadvisory.com

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