A better marketplace for almonds

A properly designed online marketplace for Almonds will establish fair, competitive prices with reduced volatility.

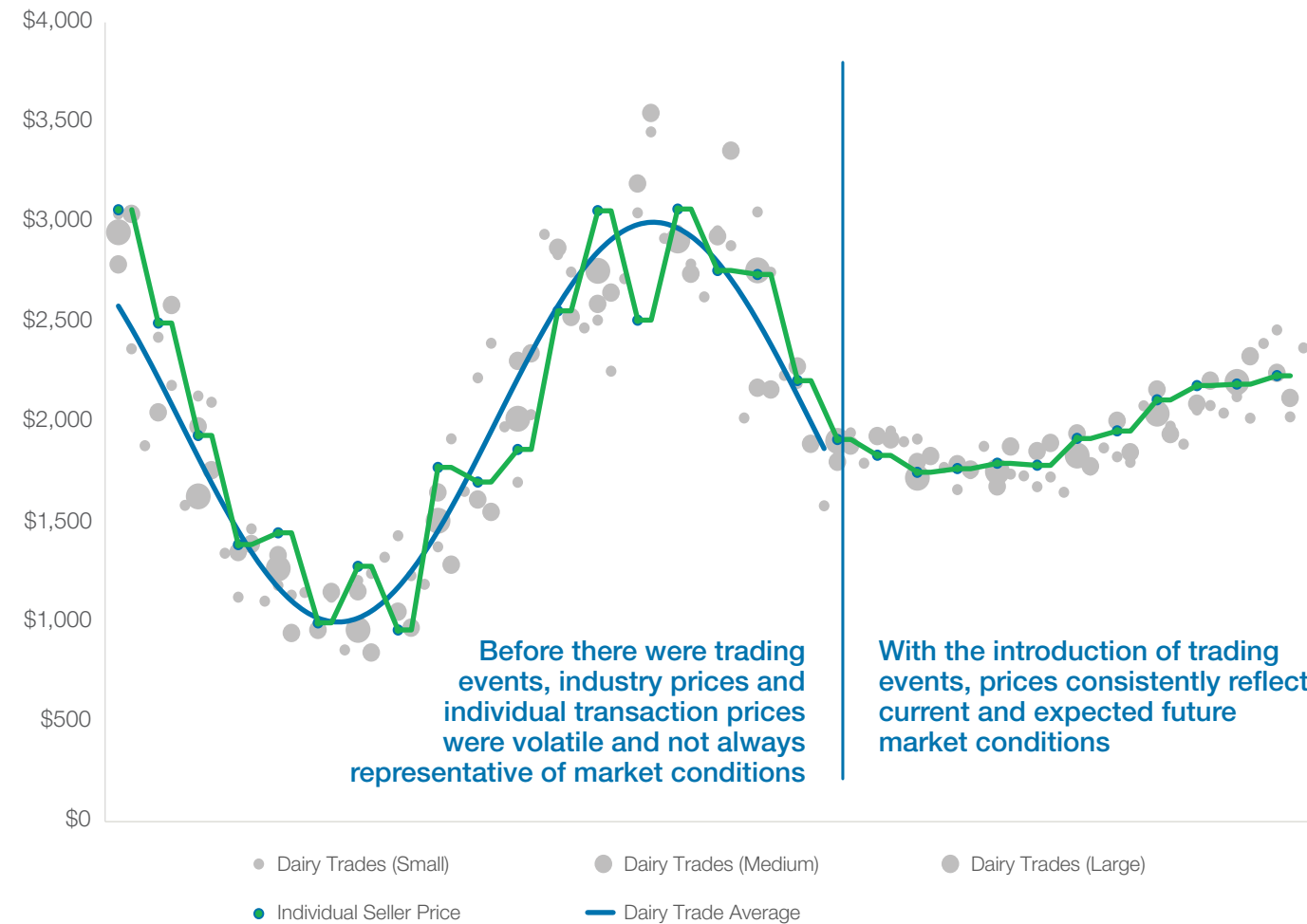Our online marketplaces have achieved the following benefits:

- A 25% to 50% (and more) reduction in price volatility

- A 2% to 5% (and more) improvement in pricing

- More reliable prices and credible market information

- Trust and confidence for both sellers and buyers

- Enhanced risk management capabilities

- Strengthen relationships and attract new customers

- New product offerings and buying options

- More efficient planning and lower logistics costs

Powered by CRA's Trading System for Efficient Markets

Our online marketplaces discover less volatile, credible prices

Sellers and buyers trust the platform to reveal fair market value through efficient price discovery. Revealed prices from the trading events become the benchmark and significantly reduce volatility and narrow the range of prices for transactions outside the trading events.

Before there were trading events, industry prices and individual transaction prices were volatile and not always representative of market conditions

With the introduction of trading events, prices consistently reflect current and expected future market conditions

Legend:
- Dairy Trades (Small)
- Dairy Trades (Medium)
- Dairy Trades (Large)
- Individual Seller Price
- Dairy Trade Average

Our online marketplaces reflect current and expected future market conditions

CRA's online marketplaces attract participants who want better, more reliable information about prices and market conditions. Our trading platforms have achieved successful outcomes in over 1,000 trading events across a range of industries.

Clearing prices are determined through a fair, transparent process, reflecting supply and demand conditions. Winning quantities are awarded to those buyers who value the product the most. In this way, price and quantity outcomes reflect market conditions, and winning bidders are those bidders willing and able to pay the market price.

Our online marketplace is ideal for Almonds because:

- There are standard categorizations on quality, grade, size

- Prices for Almonds have been subject to significant volatility

- Greater transparency and more credible market information are needed

Our online marketplaces provide for effective price discovery

- Prices are determined through a fair, transparent, and effective price discovery as supply and demand are balanced for multiple products simultaneously

- Products are offered in different time periods simultaneously as determined by sellers, and buyers benefit from this additional flexibility in buying options

- Buyers bid on various products and delivery periods, reflecting their substitution capabilities and preferred portfolios of complementary products

- The confidence of sellers and buyers is enhanced by smoother forward price curves and reliable forward-looking market information

Case study:
Global Dairy Trading Platform

$35+ billion transacted

Challenge and Opportunity

Better price transparency, price information, and price risk management was needed for dairy exporters.
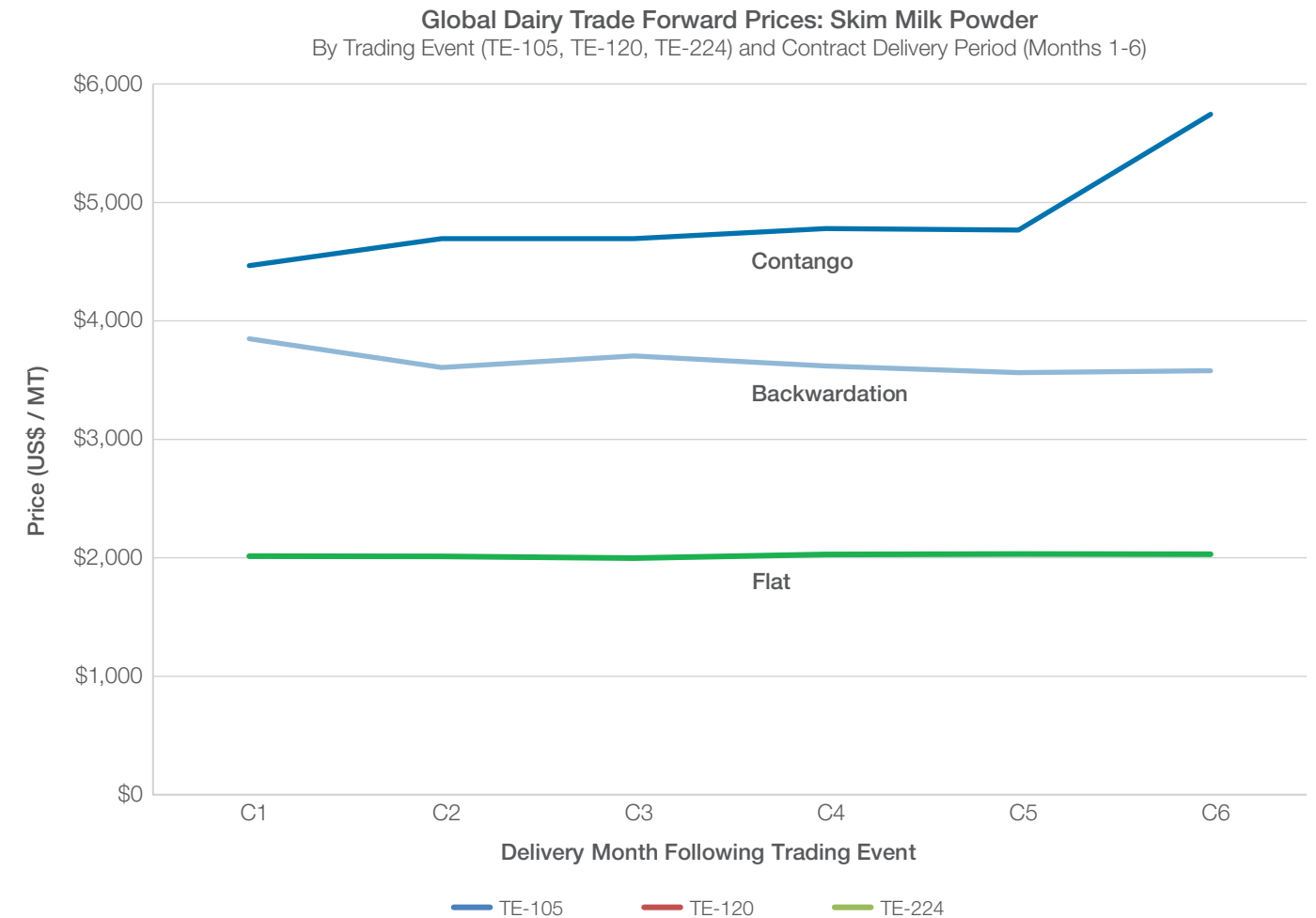
Solution

CRA designed and developed the online marketplace, Global Dairy Trade (GDT), and also is the independent Trading Manager in charge of GDT's weekly trading events.

Since 2008, GDT has grown into a multi-seller, multi-buyer platform. Hundreds of participants from around the world have participated in GDT's trading events trading about 100 products in each event. GDT generates benchmark prices that are used throughout the international dairy industry, and futures and financial contracts are traded based on the prices and outcomes generated by the platform. Over $35 billion of internationally traded dairy products have been sold on this growing marketplace.

How GDT trading events discover reliable benchmark prices

The straightforward weekly trading events offer substitutable and complementary products over multiple shipment periods. Sellers and buyers trust the platform to reveal fair market value through efficient price discovery. Revealed prices from the trading events become a benchmark for other transactions.

Along with the user-friendly and proven bidding format, the simultaneous clearing across products and shipment periods reduces volatility and generates credible forward curves that reflect current and expected future market conditions.

Global Dairy Trade Forward Prices: Skim Milk Powder
By Trading Event (TE-105, TE-120, TE-224) and Contract Delivery Period (Months 1-6)

TE-105   TE-120   TE-224

Case study:
Natural Fibre Exchange (NFX)

Bi-weekly trading events since 2018

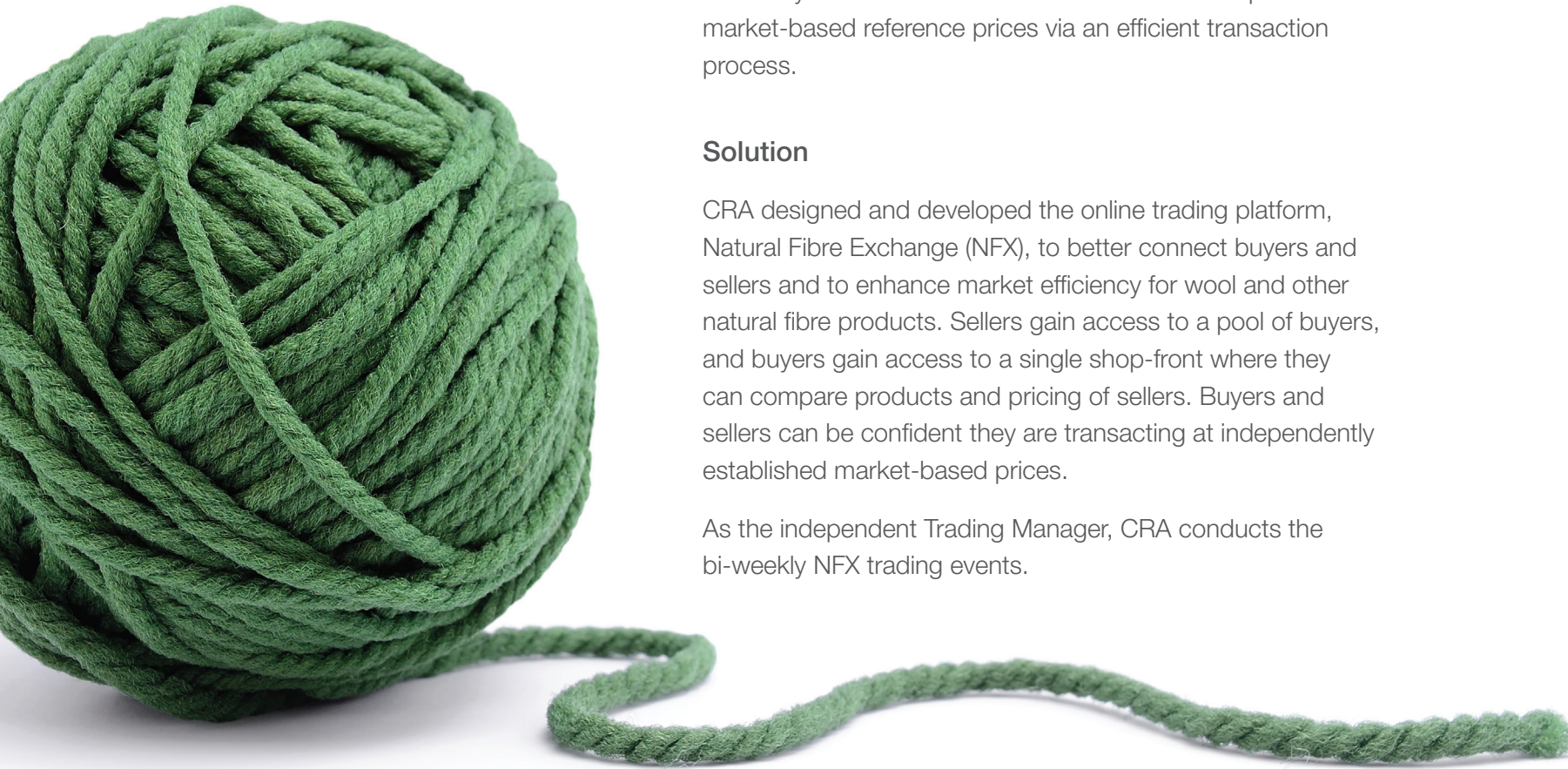#### Challenge and Opportunity

Wool buyers and sellers needed trusted and transparent market-based reference prices via an efficient transaction process.

Solution

CRA designed and developed the online trading platform, Natural Fibre Exchange (NFX), to better connect buyers and sellers and to enhance market efficiency for wool and other natural fibre products. Sellers gain access to a pool of buyers, and buyers gain access to a single shop-front where they can compare products and pricing of sellers. Buyers and sellers can be confident they are transacting at independently established market-based prices.

As the independent Trading Manager, CRA conducts the bi-weekly NFX trading events.

How NFX trading events reveal prices reflecting market conditions

All lots are open for bidding simultaneously each round, enabling buyers to switch among lots and to create preferred bundles of lots in response to changing prices.

The trading event concludes when there are no new standing high bids on any lots. Winning buyers are the bidders who submitted the highest bid prices. A bidder does not win only because they choose not to pay the market-based winning price. The process is quick and efficient.

Case study:
Ocean Spray's Online Marketplace

800,000 gallons transacted per year

Challenge and Opportunity

Ocean Spray needed improved price transparency, market-based price information, and enhanced price and quantity risk management for their co-op members and customers. No more unreliable "coffee shop" pricing.
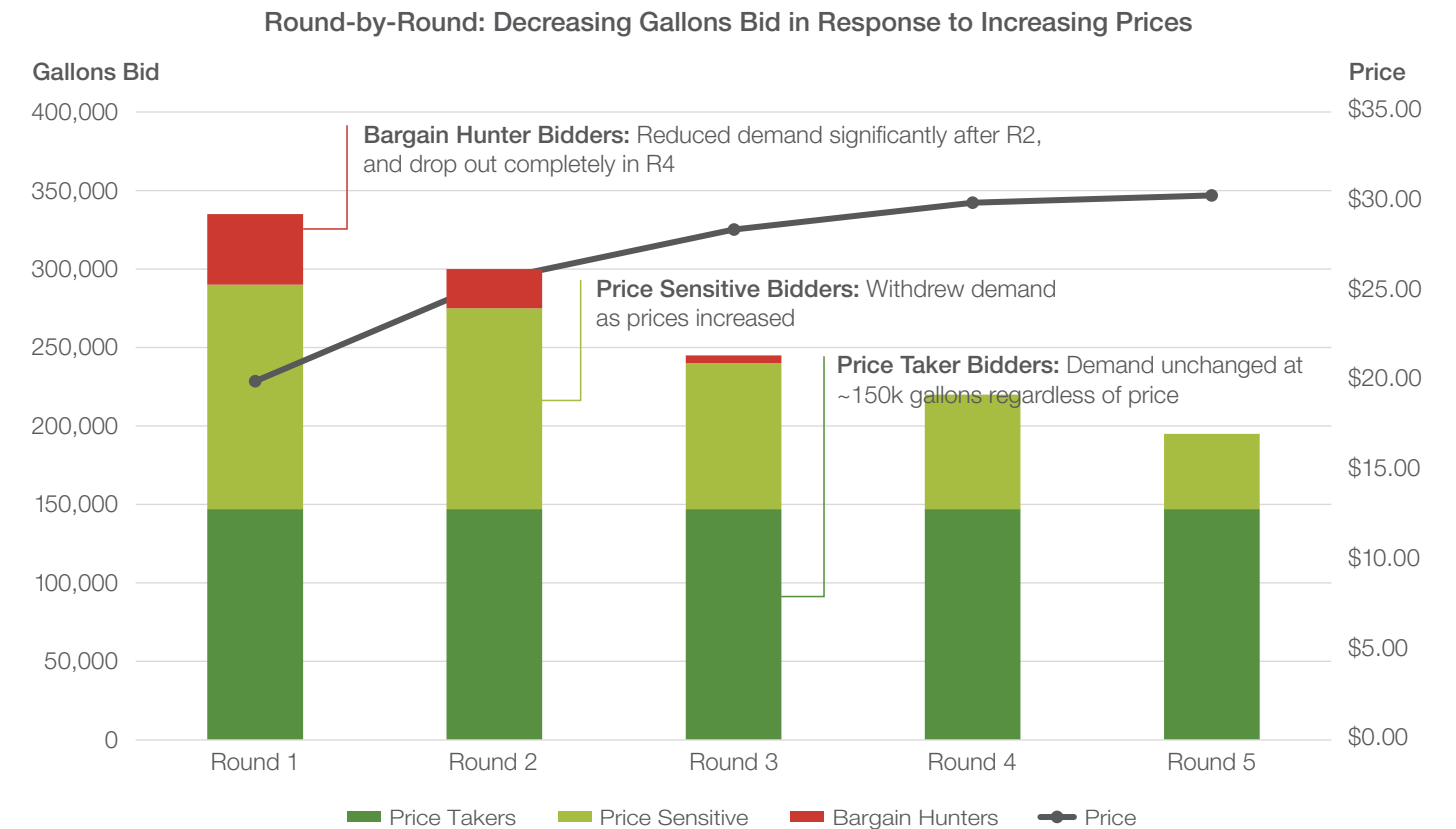
Solution

CRA designed and developed an online marketplace, CranberryAuction, based on sound economic and auction theory, as well as extensive CRA experience in bidding mechanisms and market designs. The cranberry marketplace designed and managed by CRA transacted about 800,000 gallons of cranberry concentrate per year.

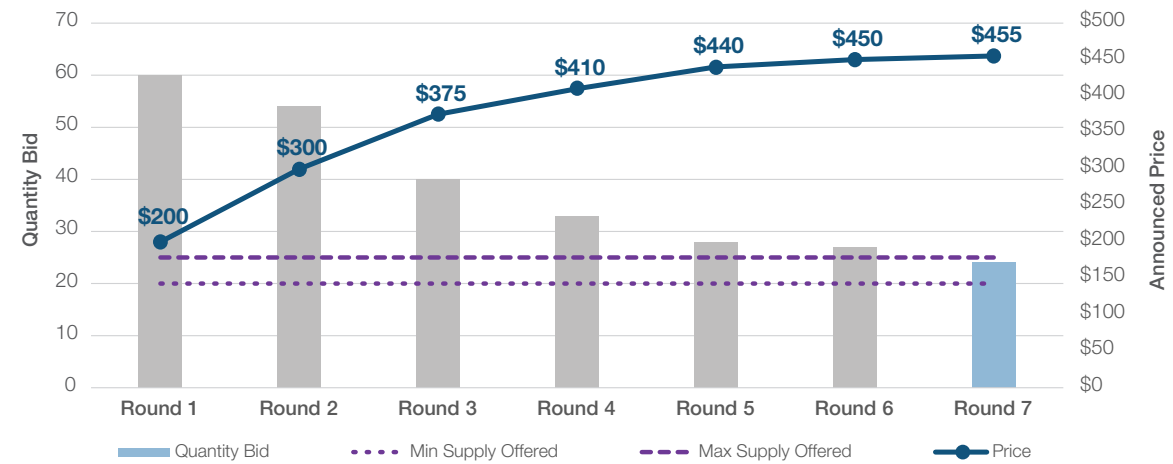## How trading events helped Ocean Spray strengthen customer relationships

Ocean Spray's trading events allowed customers to express how much they value the product. That mechanism did not exist prior to the development of the cranberry trading platform.

In this example from an Ocean Spray trading event, different customer segments responded differently as price increased. Some were sensitive to price while others demonstrated a consistent need for Ocean Spray product regardless of the price. Selling their product to customers that need it the most and value it the highest strengthened Ocean Spray's relationships with their best customers.

Round-by-Round: Decreasing Gallons Bid in Response to Increasing Prices

Bargain Hunter Bidders: Reduced demand significantly after R2, and drop out completely in R4

Price Sensitive Bidders: Withdrew demand as prices increased

Price Taker Bidders: Demand unchanged at ~150k gallons regardless of price

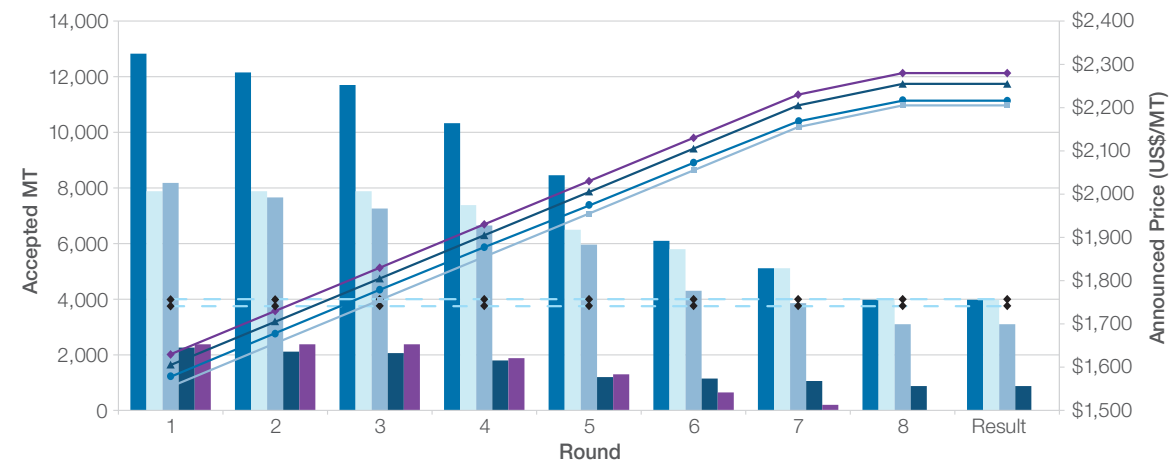Legend: Price Takers · Price Sensitive · Bargain Hunters · Price

How it works for a single product or contract

- A starting price is set for product.
- Buyers submit the quantity they are willing to buy at that price.
- After the bidding round closes, if demand exceeds the quantity offered, an algorithm determines the price increase for the next round.
- Bidding proceeds round by round until demand for the product is equal to the quantity offered.
- Only bidders that remain active until the trading event closes win product.

Single product

Multiple products simultaneously

For over 25 years, CRA has designed and managed online marketplaces that generate more reliable price and market information, reduce price volatility, and lower transaction costs

Design of Bidding Mechanisms

CRA develops trading platforms and other market designs that are tailored to the unique needs of a marketplace.

Managing Bidding Processes

CRA has implemented and managed hundreds of successful trading events with transaction values ranging from hundreds of thousands to billions of dollars.

Market Monitoring

CRA provides independent analysis and monitoring of market mechanisms. We facilitate the entire process, improving the design and implementation of the market mechanism to ensure that it is conducted in accordance with the objectives and expectations.

Bidder Support & Strategy

CRA provides market participants with strategic advice and other valuable support services prior to and during the bidding process.

Software & Electronic Trading Platforms

CRA develops and customizes software applications, systems, trading platforms, and tools used to manage trading events and to support bidders and other participants.

Regulatory & Litigation Support

CRA delivers expert regulatory and litigation services in disputes and other matters involving trading platforms and other bidding mechanisms.

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