Eco GDD - Economy Quality of Life Changes

Stores, trades, and the economy will be modified to be more useful to players. Specifically:

1. Make it easier to specify trades
1. Make it easier to understand prices
2. Make it easier to see and understand market activity and thus make better economic decisions

Modifications will be in these three categories:
1. **Broader specifications of goods**
2. **Richer market data**
3. **Interface improvements.**

Broader Specification of Goods

Filters
Currently you can only buy/sell things by choosing individual items, with this change you can specify items using a filter. The filter will allow you to define a range of items using the following parameters:
- Matching names
- Tier
- Tags

Tier and tags will be introduced with this change. Tags are simply strings attached to item types, and a type can have as many tags as needed. Tags will be overlapping categories like 'Tool', 'Building Material', 'Wood', etc. Tier will be the general tech level, which already exists for building materials, but will be extended to most items, and can be a decimal number.

This filter can be used in the Economy Viewer as well, and will be constructed to dynamically show the items you're targeting as you make changes to the filter.

Tags
How do we make the selection of tags easy? We could do something like the player selection, where it pops up the matching name given a string. Though, it would also be nice to be able to browse easily, so you can see the different categories of tags and then the tags available under it. Picturing a panel

Pricing

Once the filter is specified, you can define the pricing for the group. This is defined by setting values in specific slots:
- Flat cost
- Cost per tier
- List of extra cost per tag

This way, you can still specify individual items, or groups of items, or specific items, and then either price them individually or create a system for pricing them. This combination of Filter + Pricing will work for both buying and selling goods: you can dictate items you want to sell and it will auto-populate the store with them and price them when they appear in the inventory.

Richer market data

Market data will be automatically calculated and presented to players to help them make decisions. Two types of data will be collected and displayed with this addition:

- **Exchange Rates**. This has been added to the game just recently, and with this change the values displayed by it will be shared inside the pricing dialog described above, as well as in the economy viewer. This will allow players to make rough approximations of value based on goods for sale in both currencies.

   For example, when the player is pricing their goods they will see the competitor prices displayed and their distance, with any exchange rates available showing their relative value.

- **Volume**. Three types of volume will be collected and displayed to users to understand the supply and demand of an item.
  - *Buys/sells:*   How many items were traded and for how much.
  - *Used/consumed:*   How many items were used (tools) or consumed recently.
  - *Exists:*   How many of a given item exist.

   Volume data will be shown when choosing items and their pricing for stores. A new panel in the economy viewer will also be added to allow you to see volume amounts per-item and aggregated over a specified filter (so you can see how much food was consumed in the game of a given tier, for example). This data will be collected in the database, and can be seen there using graphs to get ideas of changing values over time.

   Players can also view their own personal volume: items they've bought and sold, consumed, or possess, as well as that of others in the graphs.

Interface

The interface for using stores will be simplified, allowing players to specify filters for items they already possess quickly and responsively. Players can see the performance of their stores and others easily.

The Economy Viewer will be given tools to show items that are in high demand (lots of consumption) but don't have enough production to meet demand, highlighting them in colors based on the ratios.

Mockup