ERP paper simulation

Credit to HEC Montreal for concept and structure

Board Layout

Preload Customer board with $10 cash in round one and blank cash in rounds 3+

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vendor | | | | | | | | | |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Round 1 |  |  |  |  |  |  |  |  |  |
| Round 2 |  |  |  |  |  |  |  |  |  |
| Round 3 |  |  |  |  |  |  |  |  |  |
| Round 4 |  |  |  |  |  |  |  |  |  |
| Round 5 |  |  |  |  |  |  |  |  |  |
| Round 6 |  |  |  |  |  |  |  |  |  |
| Round 7 |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Customer | | | | | | | | | |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Round 1 | Cash 10 | Cash 10 | Cash 10 | Cash 10 | Cash 10 | Cash 10 | Cash 10 | Cash 10 | Cash 10 |
| Round 2 |  |  |  |  |  |  |  |  |  |
| Round 3 | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash |
| Round 4 | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash |
| Round 5 | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash |
| Round 6 | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash |
| Round 7 | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash | Cash |

ERPsim on Paper - Jr. Core

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Round | Customer Price | Vendor Price | Task | Finished Goods (Paper Squares) | Invoice | Cash Receipts |  | Purchase Order (limit - 2 sheets) | Cash Disbursements | Raw Materials |
| 1 | 4 |  | Sell  (announce price) | deliver paper to customer | deliver invoice |  |  |  |  |  |
|  | 3 | Buy  (announce price) |  |  |  |  | deliver purchase order |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 2 | 3 |  | Sell  (announce price) | deliver paper to customer | deliver invoice |  |  |  |  |  |
|  | 7 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 1 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 3 | 1 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 1 |  |  |  |  |
|  | 5 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 2 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 4 | 2 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 2 |  |  |  |  |
|  | 8 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 3 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 5 | 6 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 3 |  |  |  |  |
|  | 1 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 4 | receive raw materials |
| Break - discuss and reorganize groups (if needed) - [at end of break ask - are business processes conducted face to face or via documents and electronic exchange - thus, all communication for rounds 6 - 10 can only be done on paper - no talking, hand signals, silly wand waving or incantations! | | | | | | | | | | |
| 6 | 2 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 4 |  |  |  |  |
|  | 2 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 5 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 7 | 6 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 5 |  |  |  |  |
|  | 6 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 6 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 8 | 3 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 6 |  |  |  |  |
|  | 4 | Buy  (announce price) |  |  |  |  | deliver purchase order | pay for raw materials from period 7 | receive raw materials |
|  |  |  |  |  |  |  |  |  |  |  |
| 9 | 5 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 7 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 10 | 4 |  | Sell  (announce price) | deliver paper to customer | deliver invoice to customer | retrieve payment from period 8 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

|  |  |
| --- | --- |
| Invoice (blue) |  |
| Team # |  |
| Price |  |
| Quantity |  |
| Total |  |
|  |  |

|  |  |
| --- | --- |
| Purchase Order (hot pink) |  |
| Team # |  |
| Price |  |
| Quantity |  |
| Total |  |
|  |  |

|  |  |
| --- | --- |
| Sales Order/Internal Document (dark yellow) |  |
| Team # |  |
| Price |  |
| Quantity |  |
| Total |  |

|  |  |
| --- | --- |
| Payment to Vendor (green) |  |
| Team # |  |
| Amount |  |
|  |  |

|  |  |
| --- | --- |
| Cash (pale yellow) |  |
| $10 |  |
|  |  |

Questions:

1. What is your net income?

2. How many products do you have in inventory and what is its value?

3. How much do you owe your supplier?

4. What is your total cash collections?

5. How much does the customer owe you?

6. What percent of the time during the exercise did you spend in value added production activities (cutting the paper). What percent did you spend running your system?

7. What would happen if we added additional complexity? For example, more suppliers, customers, products, countries, currencies, buying and selling at the same time, etc.

I had 2 people from each group stand up after they report net income. I then ask them to certify whether the numbers are correct. We talk briefly about what certification means (they could go to jail or face a fine if the numbers aren’t correct). It’s a fun addition to the game.

Take Aways

1 - A well designed system allows you to spend more time on value added activities.

2 - What is the value of a well-designed system?

3 – Did you overdraft in period 2?

4 – Your team interacted with one customer and one vendor, how much more difficult would it be with two customers and two vendors? Or, how about 1,000 customers and 300 vendors in six different countries and four time zones.

5 - Thus, what is the value of a well-designed and properly controlled system?