

Understanding the Real Value in Wheat

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13/11/07

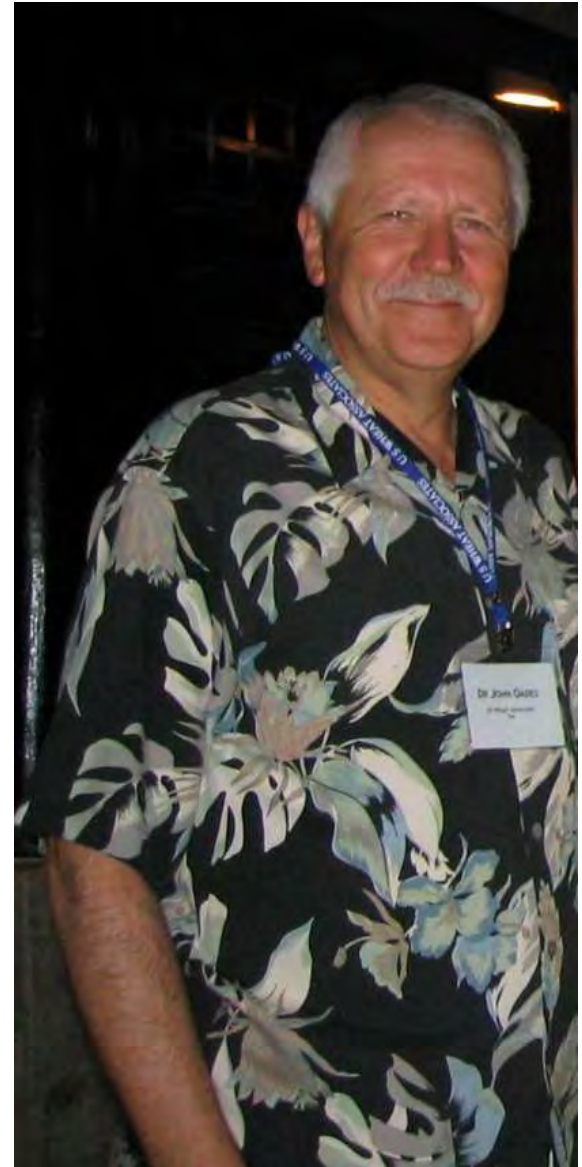


U.S. WHEAT
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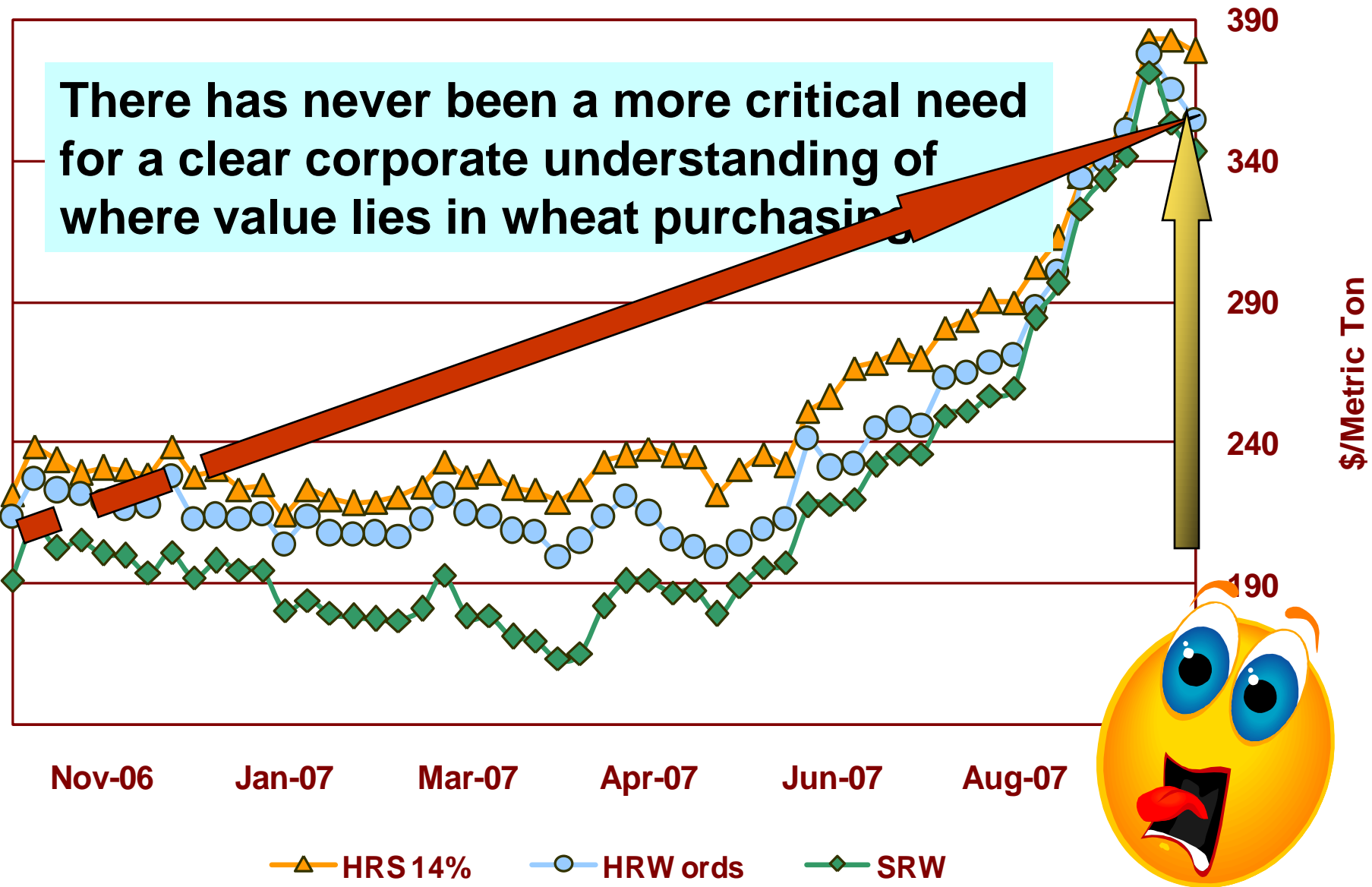


A note of thanks

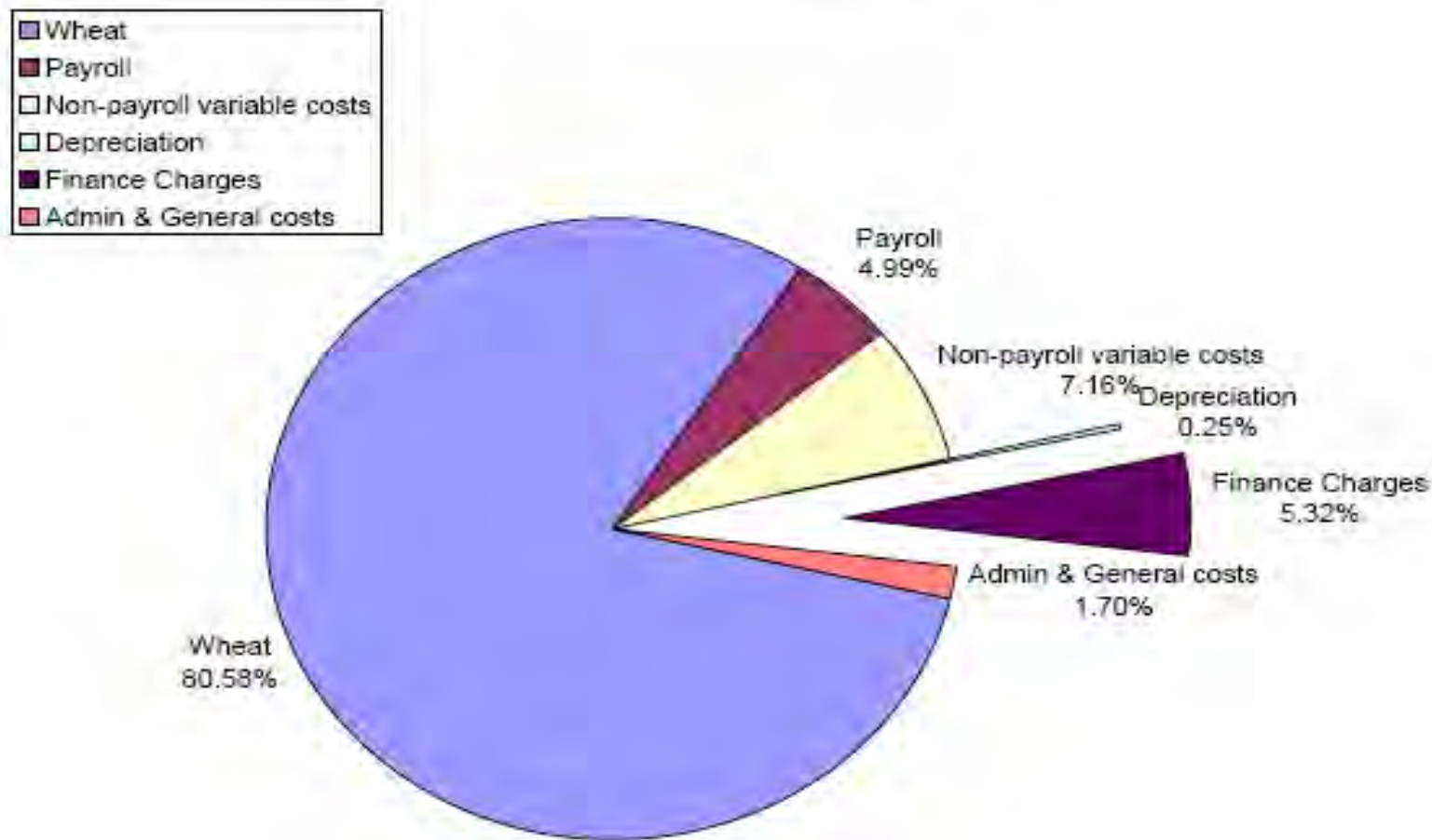
- Many thanks to Dr. John Oades of US Wheat Associates West Coast Office in Portland, Oregon for his inspirational work entitled “Developing a Wheat Value Matrix” which is at the core of today’s presentation.
- Also to the many users in Asia of the WVM who have shared their experiences with us.....



FOB Prices 2007



Wheat accounts for over 80% of your costs!



And is probably closer to 90% at today's prices for grain C&F this region!

Some definitions;

Value Component or **FACTOR** = for example, wheat protein.

Each FACTOR has a numeric **target value** = 12.5% (0% mb), decided by You.

To each Factor you assign a **weighting of importance** = e.g. 25% of total value score of 100%



Wheat Price vs. Wheat Quality

- Is your first priority wheat price or is it wheat quality?
 - Or is it a balance of both price and quality?
- If both, **how do you calculate** the **price:quality:service** relationship?
- Do you **have a program** for calculating the relative economic value of one wheat vs. another?
 - Can you easily estimate the approximate value difference between two wheats available to you?



Wheat Value Calculator Example

Wheat Type - Strong Gluten

Wheat Value Matrix Factors		Min/Max	Target Value	Weighting %	Wheat Value Inputs			Weighted Values		
					Wheat A	Wheat B	Wheat C	Wheat A	Wheat B	Wheat C
Landed Cost:										
(Formulas - Do Not Input)										
FOB Price (\$/MT)	Max	\$350	36.0	\$320	\$370	\$355	39.4	34.1	35.5	
Freight, insurance (\$/MT)	Max	\$45	12.0	\$45	\$50	\$50	12.0	10.8	10.8	
Time in transit (days)	Max	20	3.0	30	21	25	2.0	2.9	2.4	
Wheat Quality:										
Test weight (lbs/bu)	Min	58.0	6.0	56.0	61.0	61.0	5.8	6.3	6.3	
Screenings (%)	Max	5.0	2.0	8.0	3.0	6.0	1.3	3.3	1.7	
Moisture (%)	Max	12.0	5.0	13.0	11.5	12.5	4.6	5.2	4.8	
Protein (%; 12% mb)	Min	13.0	5.0	11.0	14.0	12.5	4.2	5.4	4.8	
Flour / Dough Quality:										
Flour yield 1 (%)	Min	40.0	7.0	30.0	45.0	45.0	5.3	7.9	7.9	
Flour yield 2 (%)	Min	20.0	4.0	15.0	20.0	15.0	3.0	4.0	3.0	
Protein loss (%)	Max	1.0	2.0	1.5	1.0	1.25	1.3	2.0	1.6	
Farinograph stability (minutes)	Min	15.0	5.0	5.0	20.0	12.0	1.7	6.7	4.0	
Bake absorption (%)	Min	62.0	3.0	55.0	64.0	61.0	2.7	3.1	3.0	
End Product Quality:										
Loaf Volume (cc)	Min	950	3.0	875	1,000	975	2.8	3.2	3.1	
Crumb Grain Texture (Rank, 1-10, 10 best)	Min	7	1.0	4	8	7	0.6	1.1	1.0	
Customer Service:										
Communications (rank, 1-10, 10 best)	Min	7	4.0	7	8	8	4.0	4.6	4.6	
Contract execution (rank, 1-10, 10 best)	Min	7	1.0	7	8	8	1.0	1.1	1.1	
Problem resolution (rank, 1-10, 10 best)	Min	7	1.0	7	8	8	1.0	1.1	1.1	

Relative Value 100.0 90.5 **100.5** 94.4

Wheat Value

- Value, to a **wheat buyer**, is a function of the **price** charged by, the **quality** received from and **service** given by the seller of that wheat.
- Components, or factors, of Value are **perceived and prioritized differently** by each member of your Management Team.
- **All perceptions of value impact upon the OVERALL CUMULATIVE VALUE of that wheat to Your Company.**



Perception and Priorities



Millers think:

- Extraction
- Millability
- Color or Ash
- No Surprises

QA/QC think;

- Food Safety
- Nutritious
- Consistent quality
- No surprises

Purchasing Think:

- Lowest cost
- Quickest delivery
- No surprises
- Reliability of supply

Management thinks;

- Profit
- Potential
- No surprises
- Reliability of supply

Marketing think

- Potential
- Consistency
- No surprises

Sales Think

- Profit
- Potential
- No surprises



Combining these we get;

- Color or Ash (at a comparable extraction rate to the benchmark)
- Consistency (of quality and performance)
- Extraction (dirty wheat, clean wheat, finished products)
- Food Safety (a social obligation)
- Lowest cost (to achieve a known performance and extraction)
- Millability (process related priority)
- No Surprises (the only common factor to all)
- Nutritious (a social obligation)
- Potential (sales, management and marketing)
- Profit (on the whole transaction)
- Quickest delivery (remember the Cash Gap?)
- Reliability (of the supply chain)



Please don't forget to involve your **suppliers** and your **customers** in this process too!

A clear understanding of their Value construction is critical to your success.



The value chain extends all the way from farm to dining table

Now comes the hard part..... assigning priorities and numbers to each of the value components

- Using the Wheat Blend Calculator©, you are able to determine the actual value of many of the quantifiable components, in your mill, in your country, at this time – and monitor these as the situation changes.



Economic Yield per Factor – Examples

Factor	Higher	Lower
B1 extraction change, per % per ton milled	+\$3.55	-\$3.75
Screenings , per % per ton milled	-\$0.24	+\$0.24
Wheat Moisture , per % per ton milled	-\$3.05	+\$3.00
Cash Gap (1 day)	-\$2,000	+\$2,000



Rheological Factors

The flour type under consideration could specify;

- Minimum protein of 11.5% on 14% moisture content, with
- A 'W' value of minimum 300, and tolerance of 280-350
- A minimum stability of 12 minutes with a tolerance of 11-17 minutes.
- These are the 'easier to dimension' factors, though assigning a weighting to them is difficult.



Rather more difficult numbers to define are things like..

- Your corporate **Targeted Milling Return** of \$60/ton sets maximum grain price at \$350/t FOB.
- Your maximum **improver addition** costs are not to exceed \$1.50 per ton.
- **Supplier dispute resolution in your company** is valued at 1% overall weighting, and supplier communication is weighted at 4% of total score.



A poor understanding of the value chain can have undesirable consequences!



Developing a Wheat Value Model

- The most effective WVMs are developed and maintained by representatives of all the stakeholders in the Value Chain *(rather than the Boss alone)*.
- A team is established to develop the WVM. (Getting the team right is central to the success of the project.)
- Develop a different WVM for each main wheat class or type.
- Be prepared for (heated) discussion!



Developing a Wheat Value Model

- Charge the Team to develop a list of key factors that determine the real economic value of any wheat you are buying
 - Keep the list simple! **You can always add more factors later**
 - Start with a limited number of value factors and evolve your Model as you learn more
- Think about critical value factors within price, quality and service



K.I.S



WVM Value Factors: Price



Examples:

- Landed cost factors:
 - FOB price
 - Load port charges
 - Freight & insurance
 - Financing
 - Time in transit
 - Discharge Rates



WVM Value Factors: Wheat Quality

Examples:

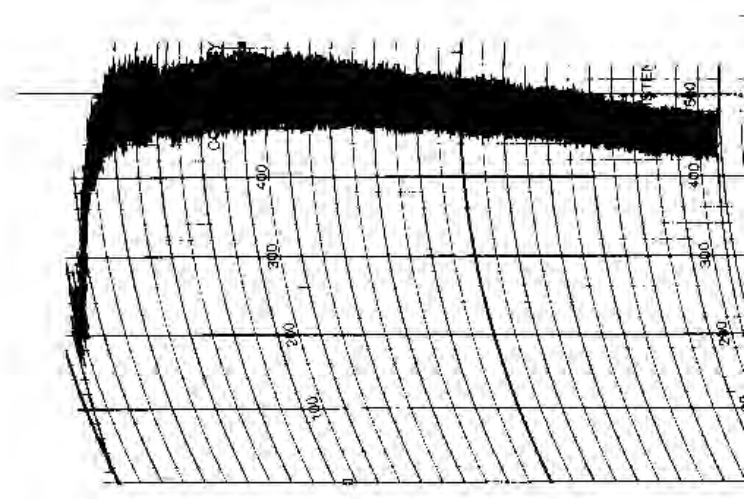
- Wheat (kernel) quality factors:
 - Test weight
 - Damaged kernels
 - Screenings
 - Moisture
 - Protein (% mb)
 - Falling number
 - Consistency of Quality per subplot.



WVM Value Factors: Flour Quality

Examples:

- Flour/dough quality factors:
 - “Millability”
 - Flour yield (1, 2, 3): Ash, color
 - Protein loss
 - Farinograph peak & stability
 - Alveograph W, P/L ratio
 - Wet gluten %, Gluten Index
 - Bake absorption
 - Improver burden.



WVM Value Factors: Functional end-use quality

Examples:

- End product quality factors:
 - Bread volume
 - Bread crumb grain & texture
 - Noodle texture
 - Noodle color/stability



WVM Value Factors: Service

Examples:

- Customer service factors:
 - Reliability of Supply
 - Effective communication
 - Contract execution
 - Problem resolution





STEP 1: WVM Meeting Deriving Quality Factors, their numbers & weightings

This SHOULD result in a list of weighted value factors

For example:

Target Price: \$350 FOB, weighting 35%

Protein: 12.5% / 12%mb, weighting 5%

Freight: \$45/t weighting 15%

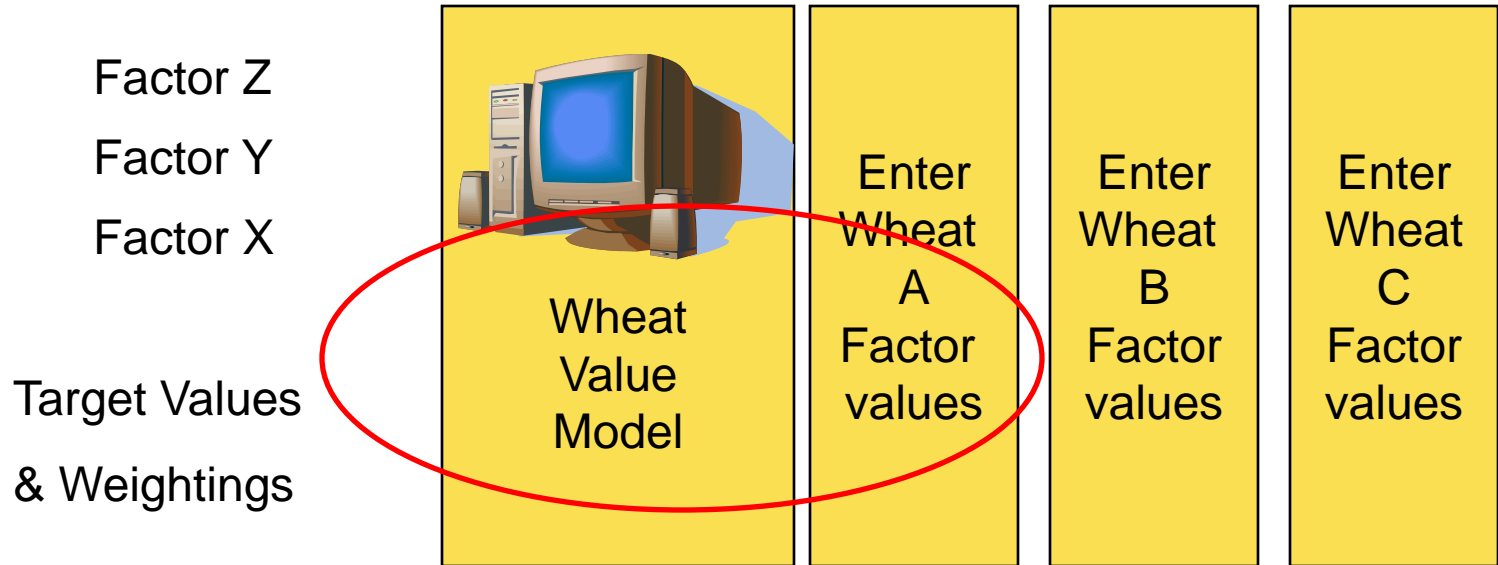
Peak Time: 5 minutes, weighting 3%

Screenings: Max 1%, weighting 2%

Moisture: 12%, weighting 10%



How it works



In this example wheat B represents the highest value to our company.

Target score = 100%

Relative Score

Wheat A = 97%

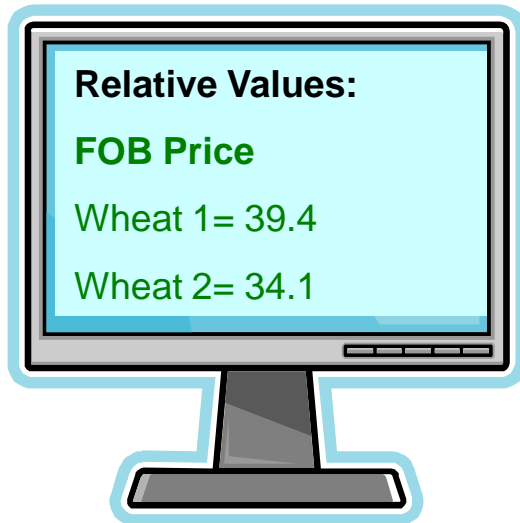
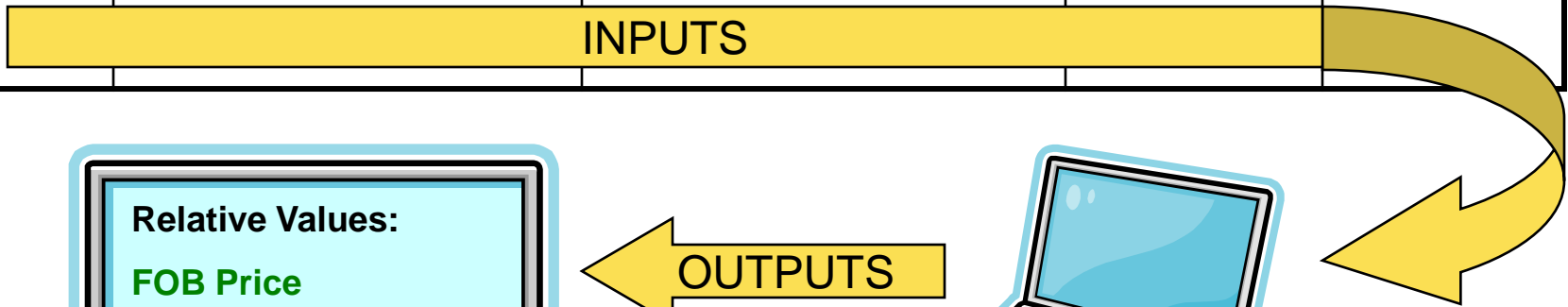
Wheat B = 102%

Wheat C = 92%



Operation of the Value Model:

Value Item:	Target value:	Weighting of importance:	Wheat 1	Wheat 2
FOB price	\$350	36%	\$320	\$370



Example of inputs

Value Item:	Target value:	Weighting of importance:	Wheat 1	Wheat 2
FOB price	\$350	36%	\$320	\$370
Freight	\$45	12%	\$45	\$50
Protein	13.0%	5%	11%	14%
Others ↓	Others ↓	Must add up to 100%		

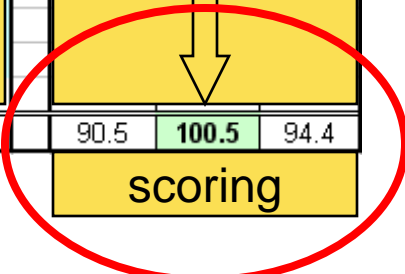
Relative values are calculated for each wheat:



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Wheat Value Matrix Factors		Min/Max	Target Value	Weighting %	Wheat Value Inputs			Weighted Values		
					Wheat A	Wheat B	Wheat C	Wheat A	Wheat B	Wheat C
Factor Input		Max		Number Inputs		Weighting calculations				
		Max								
		Max								
		Min								
		Max								
		Max								
		Min								
		Min								
		Min								
		Max								
		Min								
		Min								
		Min								
		Min								
		Min								
Relative Value				100.0				90.5	100.5	94.4



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Wheat Value Calculator Example

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Freight, insurance (\$/MT)	Max	\$45	12.0	\$45	\$50	\$50	12.0	10.8	10.8
Time in transit (days)	Max	20	3.0	30	21	25	2.0	2.9	2.4
Wheat Quality:									
Test weight (lbs/bu)	Min	58.0	6.0	56.0	61.0	61.0	5.8	6.3	6.3
Screenings (%)	Max	5.0	2.0	8.0	3.0	6.0	1.3	3.3	1.7
Moisture (%)	Max	12.0	5.0	13.0	11.5	12.5	4.6	5.2	4.8
Protein (%; 12% mb)	Min	13.0	5.0	11.0	14.0	12.5	4.2	5.4	4.6
Flour / Dough Quality:									
Flour yield 1 (%)	Min	40.0	7.0	30.0	45.0	45.0	5.3	7.9	7.9
Flour yield 2 (%)	Min	20.0	4.0	15.0	20.0	15.0	3.0	4.0	3.0
Protein loss (%)	Max	1.0	2.0	1.5	1.0	1.25	1.3	2.0	1.6
Farinograph stability (minutes)	Min	15.0	5.0	5.0	20.0	12.0	1.7	6.7	4.0
Bake absorption (%)	Min	62.0	3.0	55.0	64.0	61.0	2.7	3.1	3.0
End Product Quality:									
Loaf Volume (cc)	Min	950	3.0	875	1,000	975	2.6	3.2	3.1
Crumb Grain Texture (Rank, 1-10, 10 best)	Min	7	1.0	4	8	7	0.6	1.1	1.0
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Communications (rank, 1-10, 10 best)	Min	7	4.0	7	8	8	4.0	4.6	4.6
Contract execution (rank, 1-10, 10 best)	Min	7	1.0	7	8	8	1.0	1.1	1.1
Problem resolution (rank, 1-10, 10 best)	Min	7	1.0	7	8	8	1.0	1.1	1.1
Relative Value			100.0				90.5	100.5	94.4



Wheat Value Calculator Example

Wheat Value Matrix Factor	Target Value	Weighting %	Wheat A	Wheat B	Wheat C	Weighted Wheat A	Weighted Wheat B	Weighted Wheat C
FOB price (max) (\$/MT)	\$350	20.0	\$320	\$370	\$355	21.9	18.9	19.7
Load port charges (max) (\$/MT)	\$2	1.0	\$1	\$2	\$3	2.0	1.0	0.7
Freight, insurance (max) (\$/MT)	\$3	3.0	\$35	\$40	\$40	0.3	0.2	0.2
Financing (max) (\$/MT)	\$4	1.0	\$3	\$5	\$7	1.3	0.8	0.6
Time in transit (max) (days)	20	2.0	30	21	25	1.3	1.9	1.6
Test weight (min) (lbs/bu)	58.0	4.0	56.0	61.0	61.0	3.9	4.2	4.2
Damaged Kernels (max) (%)	3.0	1.0	2.0	1.0	5.0	1.5	3.0	0.6
Screenings (max) (%)	5.0	3.0	8.0	3.0	6.0	1.9	5.0	2.5
Moisture (max) (%)	12.0	4.0	13.0	11.5	12.5	3.7	4.2	3.8
Wheat protein (min) (% , 12% mb)	13.0	4.0	11.0	14.0	12.5	3.4	4.3	3.8
Falling Number (min) (sec, 14% mb)	300	4.0	290	350	450	3.9	4.7	6.0
Millability (min) (rank) (1-10, 10 best)	7	1.0	5	7	9	0.7	1.0	1.3
Flour yield 1 (min) (%)	40.0	4.0	30.0	45.0	45.0	3.0	4.5	4.5
Flour yield 2 (min) (%)	20.0	2.0	15.0	20.0	15.0	1.5	2.0	1.5
Flour color (min) (L*)	92.0	4.0	90.0	88.0	94.0	3.9	3.8	4.1
Flour ash (max) (% , 14% mb)	0.5	4.0	0.3	0.4	0.4	6.7	5.0	5.0
Protein loss (max) (%)	1.0	2.0	1.5	1.0	1.25	1.3	2.0	1.6
Farinograph peak (min) (minutes)	5.0	1.0	4.0	6.0	5.0	0.8	1.2	1.0
Farinograph stability (min) (minutes)	15.0	5.0	5.0	20.0	12.0	1.7	6.7	4.0
Alveograph W-value (min) (10-4 joules)	300	5.0	285	310	300	4.8	5.2	5.0
Improver / corrector addition needed per ton	\$1.25	1.0	\$ 1.80	\$ 0.80	\$ 0.70	1.4	0.6	0.6
Wet Gluten (min) (%)	28.0	2.0	27.0	26.0	28.0	1.9	1.9	2.0
Bake absorption (min) (%)	62.0	2.0	55.0	64.0	61.0	1.8	2.1	2.0
Bread volume (min) (cc)	950	3.0	875	1,000	975	2.8	3.2	3.1
Bread crumb grain / texture (min) (rank) (1-10, 10 best)	7	2.0	4	8	7	1.1	2.3	2.0
Noodle texture (min) (grams)	1,150	4.0	1,000	950	1,200	3.5	3.3	4.2
Noodle color (min) (24 hrs)	72.0	2.0	70	74	68	1.9	2.1	1.9
Noodle color stability (max)	10.0	1.0	8	6	12	1.3	1.7	0.8
Effective communication (min) (rank) (1-10, 10 best)	7	4.0	7	8	8	4.0	4.6	4.6
Contract execution (min) (rank) (1-10, 10 best)	7	2.0	7	8	8	2.0	2.3	2.3
Problem resolution (min) (rank) (1-10, 10 best)	7	2.0	7	8	8	2.0	2.3	2.3
Sum		100.0				89	101	93

Applying the WVM

- You must gather good input data for your WVM to perform effectively:
 - Critical to obtain accurate data on the price, quality and service factors for each wheat
 - “Garbage in, garbage out”
- Good data sources include:
 - Your first hand experience in purchasing, milling and supplying end users
 - Published crop quality reports
 - *(Note: these are based on Lab mills)
 - Your contract quality specifications
 - Input from others who are routinely using this wheat



Responding to Your WVM

- Be ready to change your purchasing practices and specifications to optimize economic value
 - Example: Your WVM shows a negative value for screenings content
 - Discuss options with your suppliers and USW
 - Respond with a more aggressive dockage content specification
 - Example: Your WVM shows that freight costs are a limiting factor from an origin whose quality is superior
 - Discuss options with your suppliers and USW
 - Respond with purchasing multiple class cargoes
 - Larger vessel size: Lower per unit freight costs
 - Added benefit of lower inventory costs

Review value performance with individual suppliers

- Give them the opportunity to respond
- Discuss with them **in advance of a tender being launched.**



Updating Your WVM

- You will need to periodically update your WVM, at least annually
 - Each new crop has different qualities which may necessitate value factor changes
 - Example: Wide spread sprout damage may require adding a Falling Number factor
 - Supply/demand constraints or customer needs may require factor value changes
 - Example: Protein quantity is limited, which may increase the value of that factor
 - Your current experience with a particular wheat should prompt regular updates



To Summarize

- Competitive pressures are making importer/millers increasingly sensitive to the real “economic value” of wheats they are buying. Cheapest wheat is frequently not the best value
- Developing a Wheat Value Model can be very helpful in estimating the relative economic value of a selection of wheats with similar functional quality
- USW is always available to assist your efforts to optimize the economic value of your US wheat purchases



If you want a copy....

Copies of this presentation and the Microsoft® Excel® spreadsheet are available at our booth.

If you have any questions on how to use this model, please visit with our Team at the USW booth during the Trade Show.

And finally.....





U.S. WHEAT
ASSOCIATES



Thank You to you all for your patience and attention.

On behalf of our Growers and all your partners at the US end of the Wheat Value Chain – we thank you for your Valued Business, and wish you every continued success.

