IRONHORSE

Advanced Business Valuation Symposium

Valuing a Dream-Lost Profits Damages for a Development Stage Start-Up

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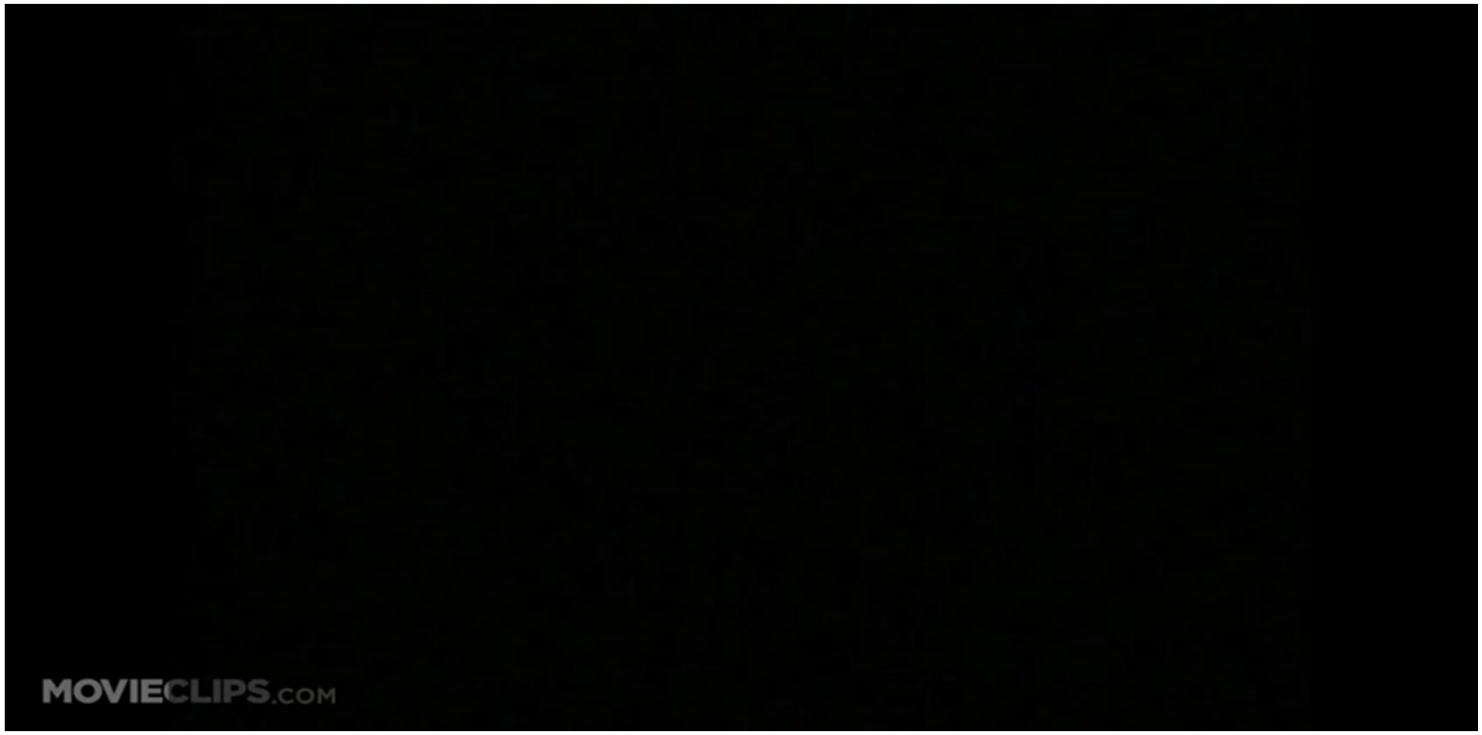
Advanced Business Valuation Symposium

Wednesday, December 10, 2014

Valuing a Dream-Lost Profits Damages for a Development Stage Start-Up

I may not be in Kansas anymore, but there’s no place like home.



What if our brand, shiny new business was wiped out by a big ol' Kansas twister????

Ok now, wait. Wut?????

Let's start over, shall we.

- Overview of The Situation -sanitized:
  1. Start-up enterprise
  2. Alternative/renewable energy provider
  3. Shake-down cruise – "weeks away" from production launch. Supposedly.
  4. Development-stage industry
  5. Business completely destroyed.
  6. Lost profits insurance claim filed.

Reality or Fantasy: The Critical ?'s

- Lost profits or lost investment value-Can we lose something we never really ever had?
- What about been there, done that:
  - What of a future without a past?
  - Does experience matter? If so, what experience, exactly?
  - Can we pretend and if so, are there limits to our imagination?
  - May we, should we look to the dreams of others that came to life to ponder whether our wise sage's would have as well?

Reality or Fantasy: The Critical ?'s

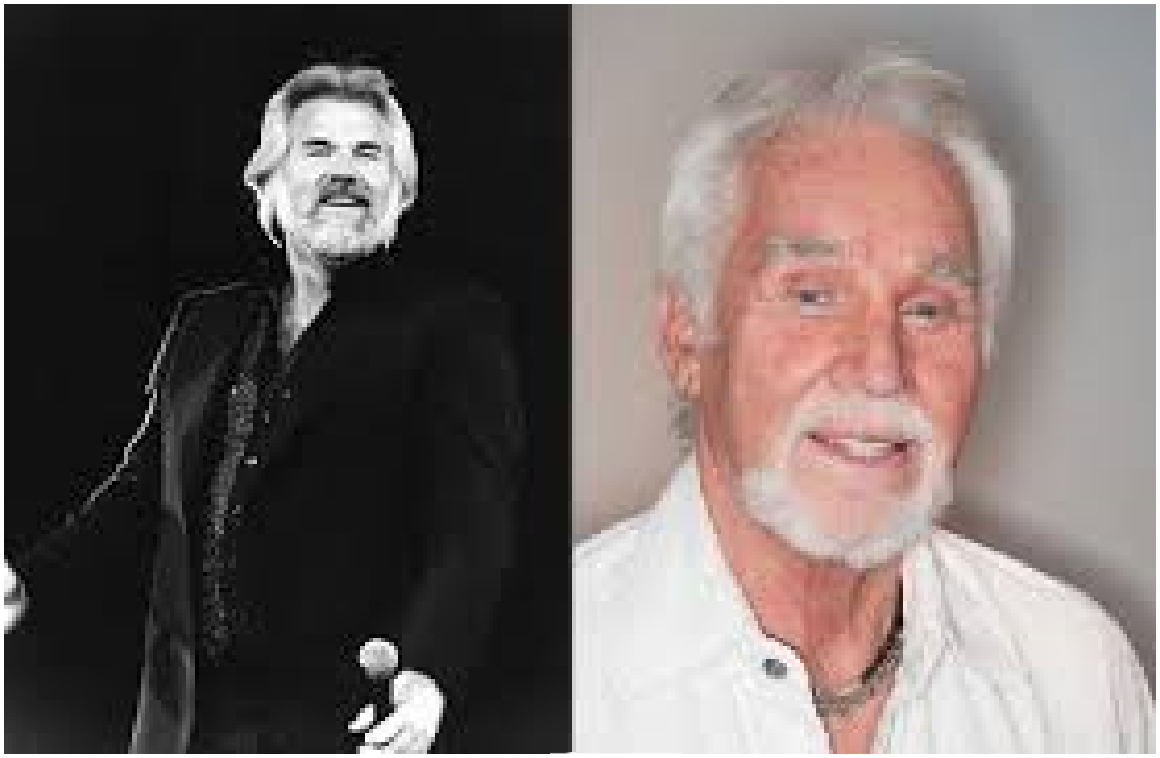
- The dreamer's dream of abundant fields of gold, ruby slippers, and a conversation with Jim Morrison:
  - Can we dream right along with him, or must we at some point awaken to the cold-hearted and sometimes brutal reality of today?
  - May we/should we look back in time, grounded in the here, the now and the real to question the imaginings of the visionary?
  - Or, must we limit our musings to the known and/or knowable right when the storm robbed him of his envisages of ever-flowing fuel, riches and nothing but strikes down the alley of life?

Reality or Fantasy: The Critical ?'s

Fantasy?????

Or……

- Reality??????????



The Background:

- C-corp founded 2007
- Producer of agri-based alternative energy
- Start-up producer, yet to become commercially operational & viable
- Developing process capability, process experimentation at the date of the casualty.
- Only using 50% of the equipment at date of casualty
- Under-capitalized. Attempted to sell test raw materials for initial working capital.

The Background:

- Neither of ownership, directors or key associates had **<u>any</u>** experience in this space. No previous energy production & distribution success.
- Date of casualty-no customers, no sales, no orders.
- Limited by-product market potential-primarily for animal & human grade consumption.
- Glut in market supply of lower-grade by-product.
- Substantial investment required in capacity/capability to process refined higher-grade by-product.
- Firm lacked capability and capital resources to invest in, develop this required capability.
- After the casualty, the firm never rebuilt, never started operations.

Lost profits or lost investment value-Can we lose something we never really ever had?

Lost Profits or Lost Business Value?

- What factors, considerations, analysis and relevant facts in this situation might be important to resolving this question?
- Why might this be an important question to thoroughly think through in terms of putting a number on an alleged loss?
- Was there an interruption in operations and hence, a profit stream?
- Where might we turn for guidance, for commonly used approaches and practices to help us answer this question?
- How likely is it that a valuation professional will have extensive experience appraising damage claims for start-up enterprises in a development stage industry, without any track record of performance whatsoever?
- How might the court react, can we turn to case law to assess this potential reaction?

Lost Profits or Lost Business Value?

- Opposing experts took the position this was a lost profits claim, valuing the damages at approaching $ 15 million.
- Our position was this was an asset which was totally destroyed. As such, we approached it as a valuation of a going-concern enterprise immediately preceding the casualty.
- We valued the alleged damages at less than $ 250,000.

Lost Profits or Lost Business Value?

- Fortunately, there are a number of quality resources to utilize in answering this question:
  - **AICPA FVS Practice Guide 06-4**; *Calculating Lost Profits*.
  - *The Comprehensive Guide to Lost Profits and Other Commercial Damages***,** Nancy J. Fannon, Jonathan M. Dunitz. **2014. Published by Business Valuation Resources.**
  - *Business Valuations and Economic Damages-Conceptual Difference* Dr. Thomas C. Stanton, MCBA, FIBA. Summer 2000.
  - *Business Valuation Considerations.* Neil J. Beaton, CPA/ABV, CFA, ASA. June 25 2013
  - *Damage Measurement Issues in Recent Cases.* Charles S. Lunden, CPA/ABV/CFF, CFE, CLU, FLMI, CMA**. National Litigation Consultants Review- February 2009.**

Lost Profits or Lost Business Value?

- *Business damages measurement: Lost profits or business valuation?* Neil J. Beaton, CPA, ABV, CFF, CFA, ASA and Michael A. Fahlman, CPA, CFF, CIRA. **Focus on Forensics - January 2011.**
- *Modeling and Discounting Future Damages.* Robert L. Dunn and Everett P. Harry**. Journal of Accountancy-January 2002.**
- *Recovering Lost Profits For Start-Up Companies: A Balancing Test.* Rob Hoffman, ESQ and Camille M. Penniman, Esq. **The Value Examiner November/December 2005.**

Lost Profits or Lost Business Value?

- There was a time when many (if not most) courts rejected the notion of projecting lost profits for a start-up enterprise as overly-speculative conjecture.

- Today, in most venues the courts will consider this analysis, as long as the standard of “reasonable certainty” is met.

The Case for lost business/investment value

- Our review of the various practice aids, professional literature & research, and the court cases we read points to the use of a business valuation approach when businesses are totally destroyed.

- In particular Hoffman & Penniman spoke to:
  - Avoiding “wild conjecture”
  - Situations where the projection of lost profits was “overly speculative & unrecoverable”:
    - New business offering with a new product
    - No profits pre-casualty
    - Highly competitive, high degree of uncertainty/risk
    - Was business able to open & commence operations?
    - Sufficient track record to reasonably project profits
    - Promoters breadth & depth of experience in subject entity business
    - Critical for extensive computational support, sound/grounded assumptions for profits projections.

The Case for lost business/investment value

- The Beacon article touched on some of the inherent challenges of valuing a totally destroyed start-up business:
  - Business plan & management have yet to be proven
  - Not uncommon for years to pass before first positive profits are demonstrated
  - Typically, heavy front-loading of costs and losses because of learning-curve, costs to build & refine the infrastructure, and to develop the market and establish defendable market share
  - Capital constraints for start-ups
  - Discount rates from 40-70% not uncommon for initial stage development enterprises

The Case for lost business/investment value

- There are many complex issues and calculations that are necessary to arrive at a "value" for a start-up company.
- Frequently, early stage projections are overly optimistic and require a "haircut" to adjust them downward.
- Another unique item relating to start-up companies when utilizing a DCF method is that the terminal value usually represents the vast majority of the company's overall value.
- As such, assumptions relating to the terminal value become critical.

The Case for lost business/investment value

- As stated in Chapter 12 section 2.5 of the *BVR Practice Guide*, claims for whole damages relate to the loss of the entire business and are more prevalent for new businesses, since they are more susceptible to complete failure than established companies.
- Whole damages involving the loss of a new or early-stage business often requires its valuation, usually (and advisedly) by a qualified financial expert. When making a whole business damages claim, however, the expert should be sure to address the overall value of the company.

The Case for lost business/investment value

- In Chapter 13 of the *BVR Guide*, it states that, "…[I]f a business is completely destroyed, [then] the proper total measure of damages is the market value of the business on the date of the loss".

- In some matters, because the loss of future profits extends into perpetuity, the courts have found that loss of business value is the proper measure of the loss.

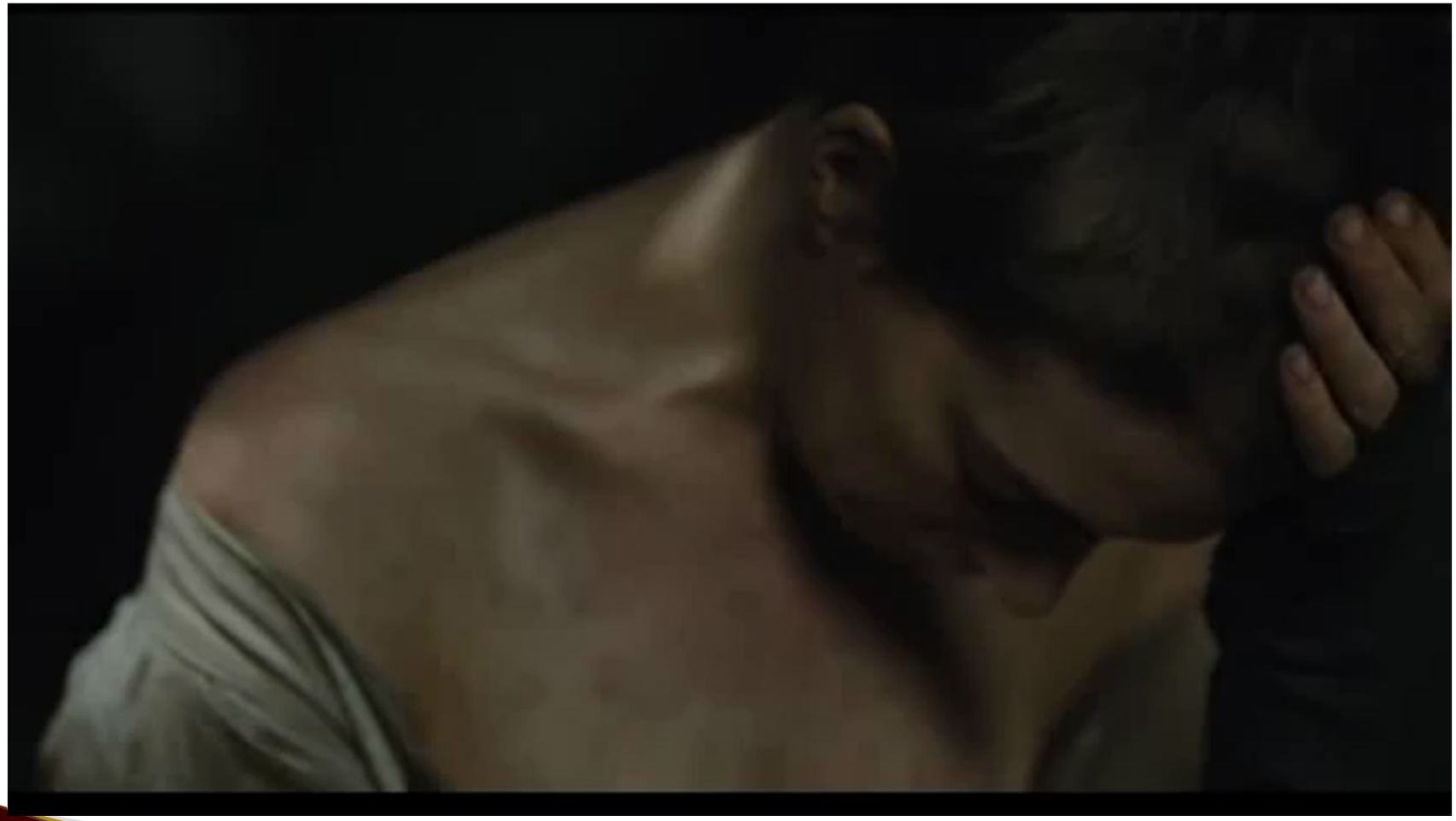
- When an entire business is destroyed, the financial expert's task remains to determine the business's lost future cash flow, but the earnings or cash flows are lost in perpetuity, rather than for a finite period.

Will they most definitely come, Ray?

What if we've never been there, done that?

- Can we expect a glorious, fertile and opulent future with no history, no demonstrated performance, and absent proficiency in the required technologies and target industry?
- Practically, how can we overcome these hurdles to arrive at a defensible estimate of the lost value destroyed as a result of the casualty?
- Must we, or should we ponder the realistic likelihood that Dorothy was in fact simply dreaming and the Land of Oz was never to be?

What if we've never been there, done that?



The Standard of Reasonable Certainty

- The standard of “reasonable certainty” is the prevailing industry standard in cases dealing with assertions of lost profits, in particular with start-up firms with no operating history in a development stage industry.
- This does not mean, however, that the “reasonable certainty” test lacks clear parameters.
- Profits which are largely speculative, as from an activity dependent on uncertain or changing market conditions, or on chancy business opportunities, or on promotion of untested products or entry into unknown or unviable markets, or on the success of a new and unproven enterprise, cannot be recovered.

The Standard of Reasonable Certainty

- ***Factors like these and others which make a business venture risky in prospect preclude recovery of lost profits in retrospect*.**

- ***Business valuation is almost always used in cases where there is "complete business destruction".***

- ***When there has been permanent impairment/diminution in the value of the business, in cases where the business will never recover from the act of harm, the expert should strongly exercise caution and refrain from the use of a lost profits approach.***

The Standard of Reasonable Certainty

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The Standard of Reasonable Certainty

- Ok, so even though we are urged by the practice guides, the professional literature and case rulings to refrain from estimating profits that were never interrupted from a business that never operated, what is this “asset” we are appraising and how can we value a non-existent stream of cash that was never generated?

- Moreover, given the challenges of applying reasonable certainty to a wish, a hope and an aspiration, must we rigidly adhere to the concept of “known or knowable” at the date of the casualty?

The Standard of Reasonable Certainty

- What can we say about our dreamer, given these apparent obstacles???

The Standard of Reasonable Certainty

- Where there is total destruction of the business and a valuation approach is utilized and when years have passed since the date of harm, it is indeed appropriate to consider the events and experience after this date to, “correct uncertain prophesy”.

- Business valuation standards outside litigation employ a known-or-knowable concept, requiring a valuation professional to consider only information that is known or knowable as of the valuation date. However, a damages expert may very well consider subsequent information when estimating damages.

The Standard of Reasonable Certainty

- When relying on future financial projections to estimate damages, in particular with a start-up with limited operating history and financial track record in a development stage industry, “cheerful prognostications” are rejected by most courts as insufficiently compelling to meet a standard of reasonable certainty.

The Standard of Reasonable Certainty

- Per AICPA Practice Aid 06-4, the following factors should be considered by the expert in assessing whether projected future revenues, “make sense” and are indeed, “reasonable”:
  - Capacity considerations
  - Market share
  - Industry knowledge and working with industry experts

The Standard of Reasonable Certainty

- A plaintiff still has to show with reasonable certainty that, but for the actions of the defendant, it would have made a profit. Some of the factors that the practitioner should consider in assessing the likelihood of the plaintiff's success are as follows:
  - The plaintiff's business plan
  - ***The availability of the required capital for the business***
  - ***The plaintiff's prior experience in the area***
  - ***The plaintiff's level of expertise***
  - ***The plaintiff's subsequent experience***
  - Barriers to entry in the industry
  - The quality of the available records
  - The economy in which the business operates
  - ***The experience of other similarly situated businesses***

The Standard of Reasonable Certainty

- Damages may not be awarded on the basis of wild conjecture; they must be proved to a reasonable certainty that is applicable to proof of damages generally.
- Whether or not a business was able to open and begin operations is a critical factor, along with whether the business was around long enough to be able to reasonably project profits. If the business never made profits while operating, this may preclude the ability to reasonably project future profits
- The promoter's experience with the specific area of business at issue is relevant in assessing the likelihood of future projected lost profits for a start-up.

The Standard of Reasonable Certainty

- The credibility of an economic damages measure can depend on the assumptions as well as how the financial expert supports, determines, and documents his or her analyses of these various elements within their work-papers and expert's report damages for net lost profits are recoverable only if the plaintiff establishes legally sufficient proof that the financial expert's economic damages are reasonable and that ***the expert has used reliable factors in his or her analyses without undue speculation.***

The Standard of Reasonable Certainty

- According to the *BVR Practice Guide to Lost Profits and Other Commercial Damages (3rd edition, 2014, t*he methodologies that a financial expert uses to calculate the amount of lost revenues should consider and address the reasonableness of his or her analyses, including the documents and assumptions upon which they are based:
  - The company's financial position and its effect on damages;
  - Prior historical results and outlook for the future;
  - ***The impact of competition***;
  - ***Capacity and cost constraints on the subject business***;
  - ***Relevant market share***;
  - Impairment of the subject company's assets, if any;
  - Depositions of fact and expert witnesses;
  - Other legal filings in the case;
  - Publicly available documents related to the subject company;

The Standard of Reasonable Certainty

- Other factors per the *BVR Guide*:
  - Trademarks, trade secrets, patents, customer lists, copyrights, licensing agreements, and other intangible assets;
  - Noncompetition agreements and their effect on economic damages;
  - ***Outlooks for the economy and the industry and their effect on the damage*** calculations and period;
  - ***General and specific business risks***;
  - Geographic or geopolitical issues, to the extent they may affect the loss;
  - Available technology changes and their effect on the subject company's economic damages;
  - Regulatory and environmental issues and constraints;
  - Selection of the appropriate growth rates for all the periods included in the analyses;
  - ***Elimination of other intervening factors that may cause the decline in the plaintiff's financial performance; and other relevant considerations, depending on the facts and circumstances***.

The Standard of Reasonable Certainty

- In addition, when calculating lost revenues, the "reasonably certain" standard applies to the entire economic damages claim—not just the first or baseline year.

- The practical effect of this standard (vis-a-vis the reasonable certainty standard) becomes apparent in calculations that forecast multiple years, during which time the impact of the above factors can become more speculative and/or unknown—and more subject to attack by defendants, unless supported by sufficiently reliable evidence.

The Standard of Reasonable Certainty

- Great. Got it.

- But, can we, must we throw that cold splash of reality water to wake our visionary up to that his was but merrily, merrily a dream?

The Standard of Reasonable Certainty

- The expert should try to conduct additional, independent analyses of management projections and business plans to determine that they are consistent with the industry, the guideline company, or other benchmark data that might be available to produce a reliable and credible calculation of damages.

- The AICPA *Code of Professional Conduct* states that the expert must obtain sufficient relevant data to afford a reasonable basis for conclusions or recommendations in relation to any professional services performed.

- In performing a lost profit damages calculation, an expert must obtain sufficient *relevant* data in determining his or her opinion. An expert should demonstrate the relevance, reliability, comparability, and usefulness of the data relied upon.

- The credibility of the damage calculation/model may be defined by the relevance, reliability, comparability, verifiability, usefulness, and level of sensitivity with the assumptions utilized in the model.

The Standard of Reasonable Certainty

- While “reasonable certainty” allows for imprecision regarding the amount of damages, it still requires the plaintiff to offer the best available proof for each factor used in calculating the damages claim. Assumptions, to the extent that they are required in the lost profits calculation, should be backed by strong factual support.

- Courts are particularly concerned with an expert’s use or reliance on unsupported conjecture and assumptions, particularly when these conjectures and assumptions come solely from the plaintiff or the ipse dixit of the expert. Under the *Daubert* standard and Rules 702 and 703 of the Federal Rules of Evidence (or the state analogue), courts will exclude expert testimony and evidence that fails to have a relevant, reliable, and non-speculative basis.

The Standard of Reasonable Certainty

- The lost profits financial expert should ***independently verify*** the facts that any party to the case provides, including specific facts related to the litigants, the customer and competitors of the plaintiff's business, as well as the environment in which the business operates and the viability of its ongoing earnings streams.

The Dream and The Wake Up Call

The Dream

- Facility would be at full-production capability and operating at close to 100% of capacity within two weeks of the casualty.
- Purportedly, "general operating metrics" for the industry were obtained by opposing experts and analyzed from the date of the casualty (mid 2011) through 12/31/2014.
- They assumed there had been no casualty, then computed expected results from operations for the firm over this same period of time.
- Relying on an alleged "contract' (verbal) between the firm and the adjacent business where the casualty loss was triggered, they assumed that immediately upon commencement of operations at the date of the casualty, that 100% of the by-product would be purchased by this other business throughout the stated time-period.
- As an aside, the two firms share some common ownership and directors.
- And, the managing owner of the adjacent business is the mother of the managing owner of the plaintiff business in the litigation.
- No start-up losses, inefficiencies, one-time impacts, or learning curve impacts were factored into the lost damage estimate.

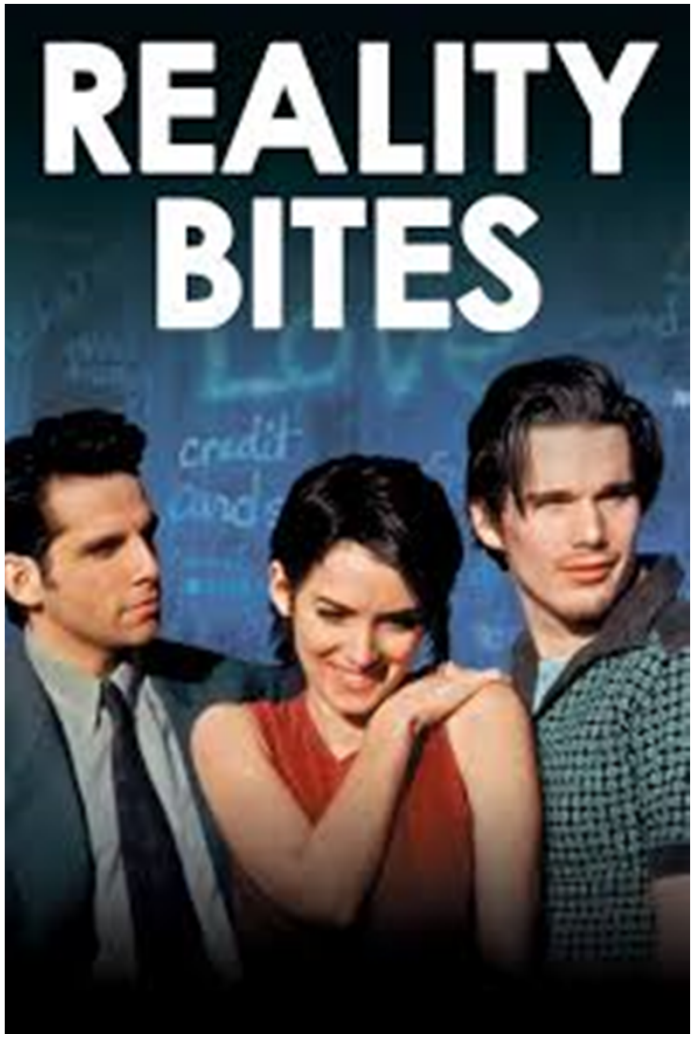
The Dream

- The opposing experts in fact assumed the firm would be immediately profitable, operating at full capacity with no start-up impacts whatsoever on day one and but two weeks from the date of loss.
- Even though they had only produced but two batches of test product (100 gallons) and only 50% of the equipment was operational. Their annual capacity was 2 million gallons.
- The firm lacked a specific marketing plan, no marketing organization, or outside sales and marketing resources. They had no shipping or distribution arrangements in place, no working capital facility available.
- They had no raw material vendor relationships in place. No agreements, contracts or purchase orders in place prior to the casualty.
- They opted to include revenue streams from a variety of potential sources such as government incentives, rebates, tax credits, subsidies, etc. None of these potential streams were supported with documented and firm agreements from the providers.

The Dream

The Wake-Up Call

- Well, indeed……



The Wake-Up Call

Industry trends:

- Fortunately, there was an abundant collection of quality/reliable and independent industry information from a variety of very reputable sources; industry associations, university databases, professional journal articles, and numerous trade research studies.

- More importantly, given that developments after the date of casualty were not only admissible but very necessary, this data was essential to us in our analysis, while calling into question the assumptions relied upon by the opposing experts.

Industry trends/data

- This U.S. manufacturing industry includes about 300 companies with combined annual revenue of more than $30 billion.

- The industry is highly concentrated and has experienced substantial consolidation over the time period in question: the largest 50 companies generate more than 75 percent of aggregate market revenue.

- The average commercial-scale plant produces about 8 million gallons per year; some 4 times larger than the capacity of the subject entity.

Industry trends/data

- Production is capital-intensive, as plants are highly automated. Average annual revenue per employee in the U.S. industry is about $2 million. Gross margins are about 30 percent of net sales. Cost structure is highly material intensive, but also not at all labor intensive.

- **Annual Market Volume ($):**
  2010 7,649,530,455
  2011 8,887,740,216
  2012 10,533,079,133
  2013q2 11,883,743,069

Industry trends/data

- For small providers, annualized revenue volume fell by 28% from 2010 to 2nd quarter 2013.
- This decline in volume and market share with smaller providers, coupled with the substantial consolidation of share and market growth with large providers (30 million+ capacity) contributed to an accelerated failure rate with smaller providers:

Industry Entrepreneurship Performance:

1. **2013q2 Startup Firms**: 15
2. **Average Startup Sales**: 73,996,938
3. **Total Startup Firm Market Volume**: 1,095,838,767
4. **Startup Firm Market Share**: 9.22%
5. **Year-end 2011 Startup**: Firms 15
6. **Year-end 2013q2 Startup Survivors**: 8
7. ***Startup Firm Cessation Rate: 46.67%***

Industry trends/data

- Market contraction with small (1-25 employees) is further demonstrated by the increased concentration of volume with larger firms at the same time the number of small producers entering the space continued to grow:

SOURCE:	BIZ MINER			
DECEMBER 2013 INDUSTRY MARKET RESEARCH REPORT				
		# SMALL	PER	%
YEAR	REVENUES	BIZ	COMPANY	CHANGE
2010	$84,286,842	39	$2,161,201	
2011	$92,232,075	48	$1,921,502	-11.10%
2012	$51,885,435	54	$960,841	-50.00%
2013	$61,105,000	58	$1,053,534	9.60%
			-51.30%	

Industry trends/data

- Geographical concentration with huge producers is also shown by the following analysis:

SOURCE:		U.S. ENERGY INFORMATION ADMINISTRATION			
		MONTHLY PRODUCTION REPORT			
			Jan-14		
		CAPACITY		AVG	%
	#	MILLION GALLONS	PER	TOP 5	TOP 5
STATE:	PRODUCERS	ANNUALLY	PRODUCER	STATES	STATES
TEXAS	13	428	32.92		
IOWA	9	280	31.11		
MISSOURI	8	188	23.5		
ILLINOIS	5	167	33.4		
ARKANSAS	3	85	28.33	**30.21**	**52%**
OKLAHOMA	1	15	15		
KANSAS	1	1	1		
	40	**1,164**	**29.1**		
UNITED STATES	**112**	**2,210**	**19.73**		

Industry trends/data

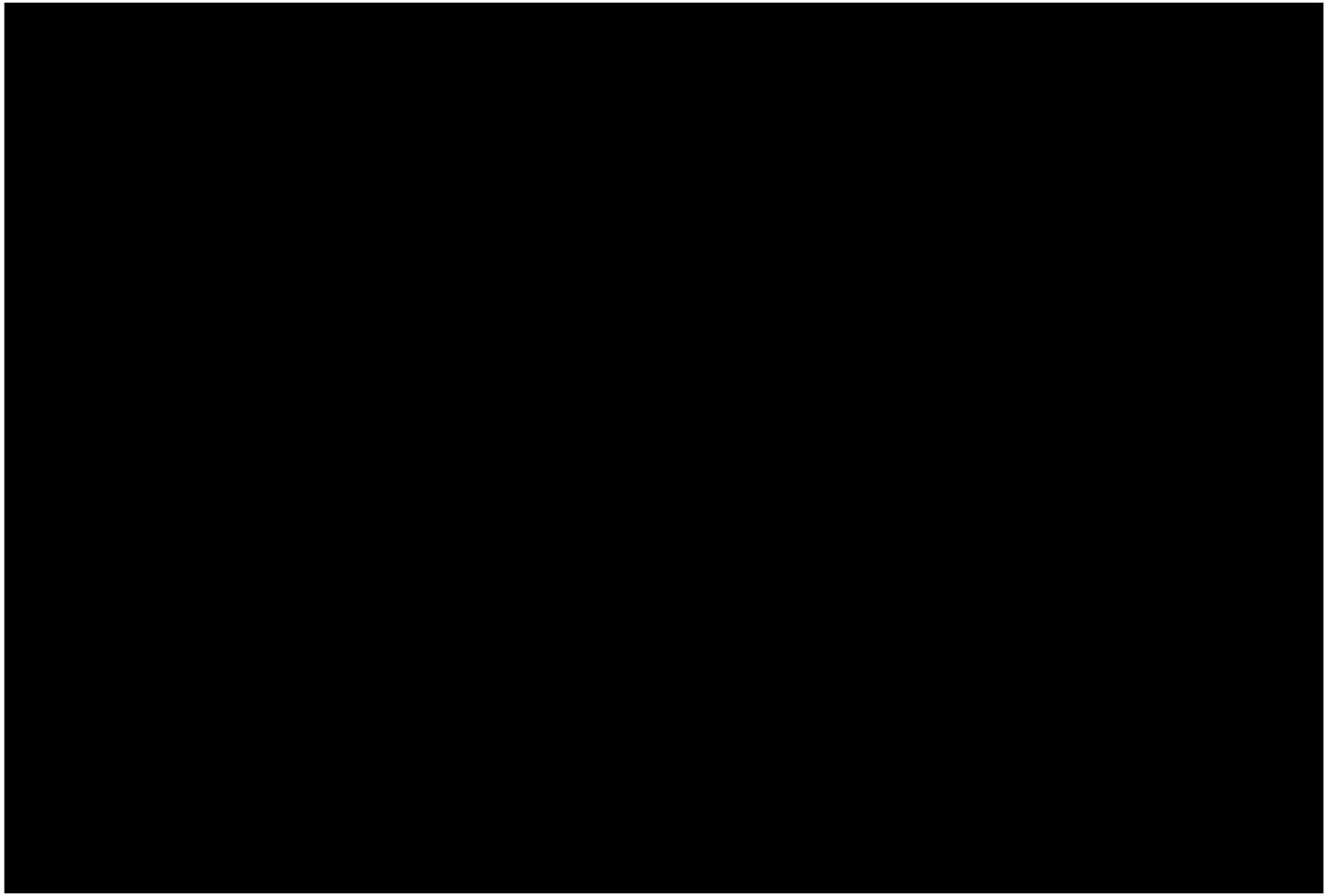
- Just 38 producers in states well within the primary target account for over 50% of the total U.S. production capacity, averaging 30.2 million gallons annually per producer.

- This concentration of market volume and capacity with firms many times larger than the subject entity within their target geographical footprint demonstrates the challenges they would have had in getting established and remaining competitive, given their stated capacity of 2 million gallons annually.

- The 2013 average annual revenue of slightly over $ 1 million for a small provider as reflected in the First Research report, a reduction of over 50% in only three years coupled with industry failure rates approaching 50% for small start-ups makes it very unlikely the subject entity would have operated anywhere close to 100% of their full capacity from 2011-2014.

- Especially given their lack of experience in this niche and the other inherent risks within this development stage market space.

Co-Product, what co-product???



Co-Product, what co-product???

- To assist in the formulation of our conclusion of value for the alleged casualty loss, we reviewed numerous documents provided to us that spoke to the assumption that the subject entity would be able to sell approximately 2,000,000 million pounds per year of a by-product at an assumed .$ 36 market price per lb.

- The opposing expert report purported to show a total of approximately $ 14 million in lost profits due to the June 2011 casualty. This estimate included $ 2.6 million in assumed revenues from by-product sales.

- The report indeed asserted that they “would have” produced and sold this volume over the 3 ½ year period subsequent to the casualty, if not for the casualty. The opposing experts used $ .36 per lb by reference to, “… the agreement in place with the related party/commonly owned entity where the casualty originated for the purchase of the entire production of the by-product at the predetermined price of $ .36 per pound”.

Co-Product, what co-product???

- The deposition of the subject entity owner revealed:
  - There was a “verbal agreement” with the related party entity to purchase approximately 7.1 million lbs. of the by-product at $ .36 per lb, or a cumulative dollar total of $ 2.563 million over the 3-year period.
  - The affiliate would be using this by-product from the subject entity as a raw material ingredient in their products which are for animal consumption.
  - He asserted in the depo that the $ .36 per lb. was, “…what every market price was”.
- The owner indicated that the verbal agreement on behalf of the affiliated entity was executed by an individual who on information and belief is his mother as well as a Director of the subject entity.
- At least as documented in the original articles of incorporation filed with the Secretary of State January 2007 she was.

Co-Product, what co-product???

- To comply with the reasonable certainty standard and to follow common practices in total business destruction case law, we investigated :
  - The market pricing trends for the by-product in question.
  - The average yield trends for this by-product by other producers in the industry.
  - The historical demand for the product as reported by the affiliate firm that purportedly had a “contract” with the subject entity to buy/consume 100% of the output, beginning day one.
  - The different grades of the by-product in question, the processing requirements and capital investment capability necessary to process, refine then sell the by-product.

- Within this industry, typically the crude by-product generated is safe only for limited industrial applications and not for animal consumption.

Co-Product, what co-product???

- Because of the significant growth in the number of start-up firms entering this niche over the past 10-12 years, there has been a lingering glut and excess supply of the commodity within the market.

- Based on our research and our communications with experts we have relationships with within the niche, only a small number of very large suppliers have the capability to refine the by-product for the higher-grades required to be fit for animal consumption.

- The process capabilities required and capital investment necessary to have this capability is cost-prohibitive for most as at a minimum, it can run several hundred thousand dollars if not well in excess of $ 1 million.

Co-Product, what co-product???

- ***The subject entity lacked the capability to process the higher grades fit for animal consumption, and the investment required to commercialize this capability was well beyond their reach.***

By-Product Industry Data Summary

- Through counsel to the subject entity, we were provided documentation that purported to reflect:
  - All affiliate company purchases for all the by-product consumed by them from December 2005-2011.
  - Invoices for actual purchases for 2010 and 2011.

DATE	QTY	PRICE	EXT
12/12/2005	2,200	$0.25	$550.00
6/19/2006	871	$0.17	$148.07
5/31/2007	1,650	$0.20	$330.00
3/18/2008	2,200	$0.27	$594.00
12/1/2008	1,100	$0.22	$242.00
3/11/2009	550	$0.22	$121.00
3/31/2009	2,220	$0.22	$488.40
1/21/2010	2,222	$0.22	$488.84
4/8/2010	4,444	$0.24	$1,066.56
6/17/2010	8,888	$0.25	$2,222.00
10/25/2010	4,448	$0.25	$1,112.00
4/12/2011	8,080	$0.22	$1,777.60
	38,873		**$9,140.47**
MEDIAN PRICE		**$0.22**	

By-Product Industry Data Summary

- As the consumption data reveals:
  - Mean price per lb. paid was $ .22; not $ .36 as allegedly agreed to within the verbal "contract".
  - Over the 7 year period of actual reported assumption, 38, 900 lbs of the high-grade by-product was consumed by the affiliate; $ 9140 in aggregate.

- The mean average actual consumption of the by-product by the affiliate over the 7-year period shown above is 5553 pounds per year. As such, this contract would reflect a ***360+ year aggregate demand*** at an assumed annual purchase quantity of 2 million pounds.

- Once again, we are reminded that the standard for estimating damages in a total destruction of a business is one of "reasonable certainty" which demands of the expert a standard of due care to provide sufficient relevant data and evidence to support a projected loss. This standard is even more rigorously applied in cases where there is total business destruction of a start-up enterprise lacking demonstrated operating and financial history to support projected results.

By-Product Industry Data Summary

Another perspective of the projected by-product consumption rate:

By-Product Industry Data Summary

- Due to the glut of crude by-product flooding the market and unlike the "agreed upon" price of $ .36 per lb for the high-grade, pricing trends have been ***just a bit*** under that.

- Numerous studies we referred to consistently demonstrated that on average, expected crude by-product revenue yields per gallon of finished product produced were in the ***$ .02-$ .05*** per gallon range

- In an April 15, 2013 trade journal article it spoke to the substantial impact that production start-ups were having on the glut of glycerol and resultant downward pressure on pricing.

- Additional studies revealed that this by-product commodity market is highly limited and additional producer capacity projected to come on-line would cause an additional decline of 50% in the crude by-product value.

By-Product Industry Data Summary

- In addition, the other research we conducted documented the following observations, findings and conclusions:
  - Crude by-product is of very low value because of various impurities. Additional refining capability depends on economies of scale sufficient to support more advanced purification capabilities.
  - These capabilities require advanced filtration systems, chemical additions, and fractional vacuum distillation.
  - The usage of low-grade quality by-product is limited because it cannot be used for direct food and cosmetic uses.

I Dream of a World Without Any Risk

I Dream of a World Without Any Risk

- The professional literature, the practice aids, and case law for total destruction of businesses are replete with discussion of the importance of factoring in the time value of money, as well as formal and thorough analysis of projected outcome risk.

- Risk is primarily a function of uncertainty, and given the standard of “reasonable” certainty to be applied in this particular case, coupled with the complete absence of any verifiable track record of performance for the subject entity makes a rational, reasonable assessment of risk even more critical.

I Dream of a World Without Any Risk

- There is no one-size fits all in terms of considering risk and uncertainty when it comes to computing damage estimates in total business destruction cases-a challenge compounded with the total destruction of a start-up entity.

- In practice, the specific company risk analysis can be performed by either:
  - Performing multi-scenario projection and assumption analysis, weighted by multi-variable probability analysis.
  - Consideration of specific company risk and uncertainty within the discount rate build-up.

- There are differing opinions and schools of thought on which approach is most effective, easiest to understand for juries and judges. Moreover, the availability of relevant applicable case law within the particular jurisdiction and court venue can be quite challenging as well.

I Dream of a World Without Any Risk

- Another practical challenge is the availability of sufficient independent industry risk data (e.g. Duff & Phelps, beta, etc.) for an industry that's still highly-development stage, if not embryonic.

- However and with this particular set of facts, the business never reopened and we ***are able*** to move from the known and knowable concept/limitation to consider post-casualty date events, industry trends and developments, etc.

- In our opinion, when we consider the industry data and trends previously enumerated, the substantial specific subject entity risks that existed, the typically increased risks associated with a small fledgling start-up attempting to compete with industry consolidators some 10-15 times larger and more strongly capitalized, the required rate of return for an investment of this type in a development-stage industry would have indeed fallen well within the typical VC range of 40-70%.

- In fact and indeed, the business never re-opened after the casualty which is a pretty strong indicator and confirmation of the substantial hurdles they faced, even without the total destruction of the enterprise.

I Dream of a World Without Any Risk

- The opposing expert's discount rate used and formal consideration of risk and the time value of money in their report??????

I Dream of a World Without Any Risk

- The opposing expert's discount rate used and formal consideration of risk and the time value of money in their report??????

- They opted ***not*** to discount their projected 4-year profit stream total of $ 14 million, and reported the damage estimate in aggregate and not in terms of a net present value as the date of the casualty.

I Dream of a World Without Any Risk

- Their rationale for not applying a discount rate to their projected damage estimate (from the depo):

Q: ***"Why didn't you do a business risk evaluation then is my question? Is it because you were never asked to or because you didn't think it was necessary? Why wasn't one done?"***

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I Dream of a World Without Any Risk

Q: ***"Why didn't you do a business risk evaluation then is my question? Is it because you were never asked to or because you didn't think it was necessary? Why wasn't one done?"***

A: *"I didn't think it was necessary".*

"We're looking at lost profits that have happened over past years. We're not looking out at an annuity going forward. I guess I calculated it based in present value dollars. If we were calculating the profits for the next five years out back to today, you know. I mean we're looking at -- we're almost to the end of the period that was forecasted".

I Dream of a World Without Any Risk

COST OF CAPITAL BUILD-UP		
RISK RATE COMPONENT MODEL		
SOURCE: BLACK/GREEN BUILDUP SUMMATION METHOD-JAMES SCHILT RISK PREMINUM GUIDELINES		
RISK RATE PREMIUMS:		
RISK-FREE INVESTMENT RATE(20 year T-Bill Rates)		0.03920
EQUITY RISK PREMIUM		0.06620
SMALL COMPANY RISK PREMIUM		0.05000
SPECIFIC RISK PREMIUM:		
COMPETITION:		
PROPRIETARY CONTENT	3	
RELATIVE SIZE OF COMPANY	10	
RELATIVE PDCT OR SERVICE QUALITY	10	
PDCT/SERVICE DIFFERENTIATION	10	
NON-COMPETE	3	
MKT STRENGTH-COMPETITION	10	
MKT SIZE & SHARE	10	
PRICING COMPETITION	10	
EASE OF MKT ENTRY	10	
	76	
# COMPETITIVE RISK FACTORS	**9**	0.08444
FINANCIAL STRENGTH:		
BUSINESS CONCENTRATION	10	
CURR RATIO	5	
QUICK RATIO	7	
TOT ASSET TURNS	5	
NET FIX ASSETS TO NET WORTH	5	
LEV RATIO	4	
INT COVERAGE	1	
MGT DEPTH	10	
KEY MAN RISK	8	
FACILITIES CONDITION	10	
ACCTG & OPERATING CONTROLS	10	
OPERATING MARGIN	10	
YEARS IN BUSINESS	10	
INDUSTRY LIFE CYCLE	10	
EARNINGS VOLATILITY	10	
EARNINGS VS COMPETITION	10	
OPER EARNINGS GROWTH RATE	10	
UNION RISK	5	
	140	
# RISK FACTORS	**18**	0.07778
INITIAL BUILD-UP DISCOUNTED FUTURE EARNINGS DISC RATE		**31.76%**
ADD: ADDITIONAL HIGH-RISK PREMIUM:		
SMALL-FIRM INDUSTRY START-UP FAILURE RATE OF 47%		5.00%
NO OPERATING FINANCIAL HISTORY		5.00%
NO VERIFIABLE BUSINESS & MARKETING PLAN, NO INDUSTRY EXPERIENCE/EXPERTISE		10.00%
DISC LACK OF MARKETABILITY-LIQUIDITY		12.00%
LESS: SUSTAINABLE LT EBITDA GROWTH RATE		-3%
DISCOUNT RATE		**61.26%**

The Wake-Up call

HISTORICAL/COMPARATIVE w/PROJECTIONS									
INCOME STATEMENT	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**	**WTD**	
	YEAR 1	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 7**	**YEAR 8**	**AVG**	
ASSUMED PER GALLONS PER YEAR		123,767	700,000	760,000	860,000	900,000	1,000,000	***452,236***	
% CAPACITY ASSUMPTION		**6%**	**35%**	**38%**	**43%**	**45%**	**50%**		
REVENUES-BIO DIESEL	$96,402	$733,726	$3,120,540	$3,509,042	$3,655,000	$3,825,000	$4,250,000		
REVENUES-GLYCERINE BY-PDCT RECOVERY		$15,000	$21,000	$22,800	$25,800	$27,000	$30,000		
TOTAL REVENUES	**$96,402**	**$748,726**	**$3,141,540**	**$3,531,842**	**$3,680,800**	**$3,852,000**	**$4,280,000**	***$2,072,451***	***WTD AVG***
REV PER GALLON		**$5.31**	**$4.49**	**$4.65**	**$4.28**	**$4.28**	**$4.28**		
VARIABLE COSTS:									
Start-up Impacts:									
MATERIALS	$14,688	$156,200	$354,340	$231,105					
INEFFICIENCIES		$55,420	$30,188	$21,850					
Yellow Grease		$365,940	$2,035,017	$1,955,750	$2,214,852	$2,317,868	$2,575,409		
CHEMICAL COSTS		$22,278	$126,000	$136,800	$154,800	$162,000	$180,000		
VARIABLE OPER COSTS	$4,821	$25,832	$201,250	$218,500	$247,250	$258,750	$287,500		
TOTAL VARIABLE COSTS	**$19,509**	**$625,670**	**$2,746,794**	**$2,564,005**	**$2,616,902**	**$2,738,618**	**$3,042,909**		
CONTRIBUTION MARGIN	**$76,894**	**$108,056**	**$373,745**	**$945,037**	**$1,038,098**	**$1,086,382**	**$1,207,091**		
CM PER GALLON		**$0.87**	**$0.53**	**$1.24**	**$1.21**	**$1.21**	**$1.21**		
CM %		**16.4%**	**11.9%**	**26.8%**	**28.2%**	**28.2%**	**28.2%**		
FIXED OPERATING COSTS	70,531	$261,070	$522,139	$522,139	$522,139	$522,139	$522,139		
INC FROM OPS	**$6,363**	**($153,014)**	**($148,394)**	**$422,898**	**$515,959**	**$564,243**	**$684,952**	***$122,764***	***WTD AVG***
EBITDA	***$6,363***	***($153,014)***	***($148,394)***	***$422,898***	***$515,959***	***$564,243***	***$684,952***	***$122,764***	***WTD AVG***

The Wake-Up call

DISCOUNTED FUTURE PROJECTED EARNINGS			
		PV	
YEAR	EBITDA	FACTOR	PV
1	6,363	62%	$3,946
2	(153,014)	38%	($58,841)
3	(148,394)	24%	($35,386)
4	422,898	15%	$62,536
5	515,959	9%	$47,313
6	564,243	6%	$32,085
7	684,952	4%	$24,153
TERM VALUE	1,118,107	15%	$165,340
VALUE INDICATION			$241,146
DISCOUNT RATE	61.3%		
TERM VALUE			
EBITDA YR 7	$684,952		
HISTORICAL CAP RATE-EBITDA STREAM	61.3%		
MULTIPLE	1.6323865		
TERM VALUE	$1,118,107		

So……..
How Did The Dream End, and What Woke Us From Our Deep Slumber???

Settlement……

The Take-Aways

- Lost profits damage claim litigation allows us to consider post—casualty date events, trends developments. Do your homework.
- Stick to your knitting, don't wander far from your comfort zone. We knew the alternative energy and traditional fuel distribution retail business. I served on the Advisory Board for the Center for Industrial Research & Service (C.I.R.A.S) at ISU in Ames for five years. The C.A.R.D agency was right down the hall. In addition, we have had other bio—fuel and ethanol clients.
- Reach out, connect with those in the industry who have successfully start-up ventures in your space. Confirm your own industry research with their direct experience. Consider engaging industry experts as well.
- The reasonable certainty standard can be quite tough-in particular absent any track record. Take extreme care with your assumptions, carefully document your analysis of evidence to support them, and be sure to thoroughly test them for holes.
- This was one part valuation, one part expert witness/litigation support, one part forensic. Our opposing expert had never served as a testifying expert and kept trying to fall back on the industry operating metric database their firm maintained.
- Be sure to consider an independent, peer/quality review of your work product and work closely with, partner up with the attorney who engaged you.

The End