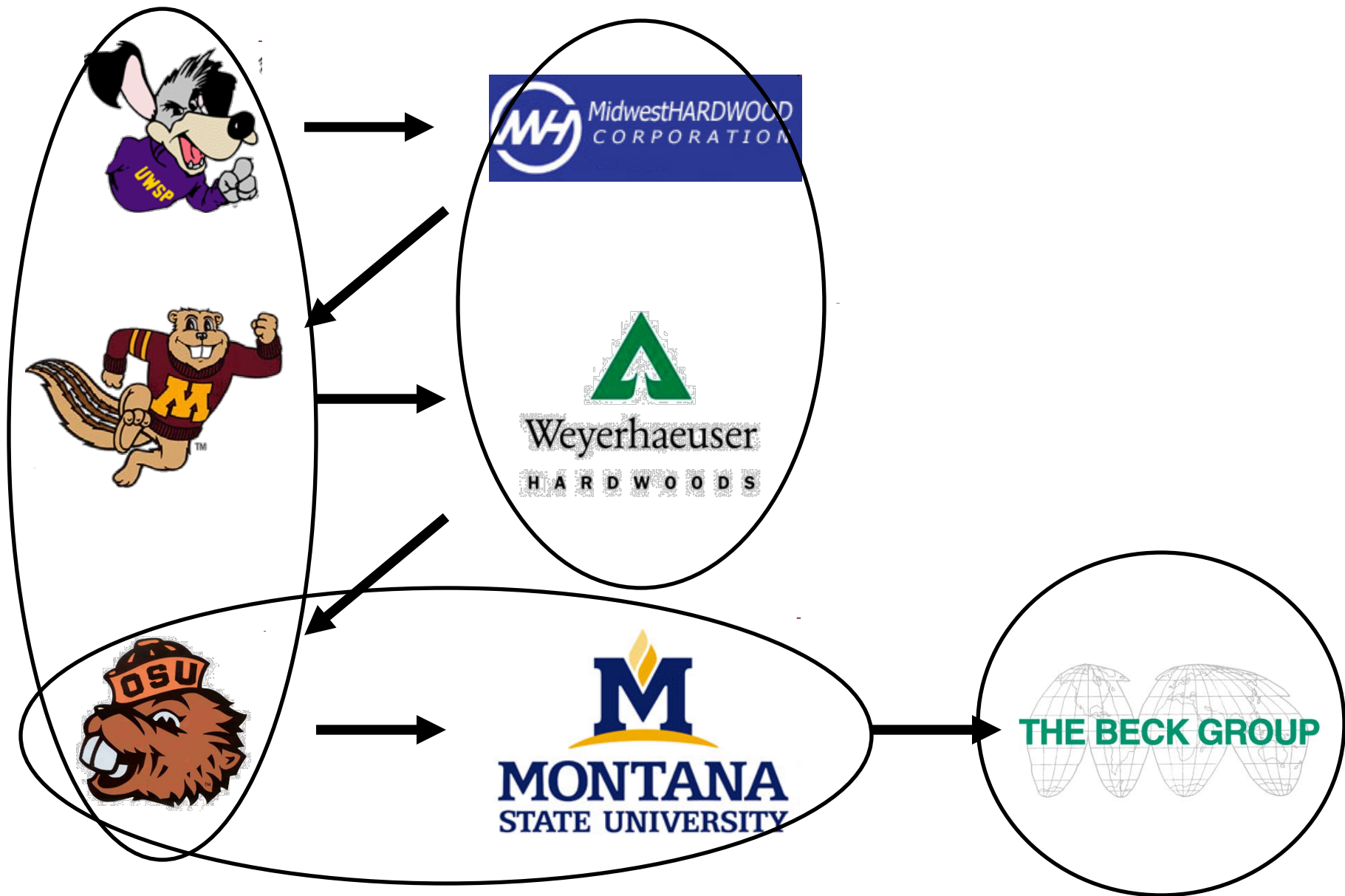


SWST International Convention: Challenges and Opportunities in Wood Science Education

Students, Universities, and
Industry: Suggestions for Meeting
Each Others Needs

Roy Anderson, PhD
Senior Consultant, The Beck Group
Portland, OR 6/22/11

My Background



Everybody has Needs

Students

Universities

Industry

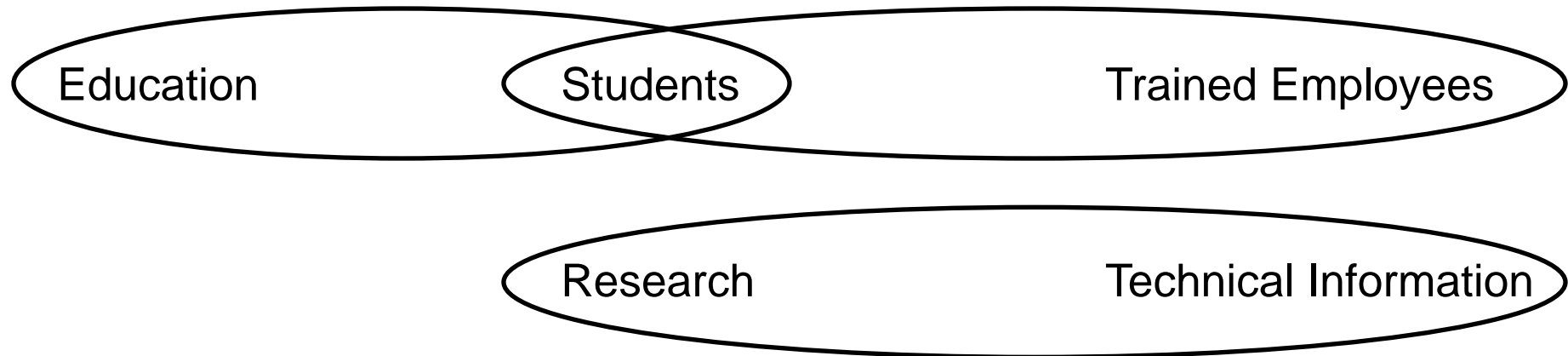
Education

Students

Trained Employees

Research

Technical Information



Students and Universities

What's In a Name?

- Mississippi State – Forest Products
- University of Idaho – Forest Products
- Penn State – Wood Products

- SUNY – Wood Products Engineering
- Oregon State – Wood Science and Engineering
- North Carolina State – Wood and Paper Science
- West Virginia – Wood Science & Technology
- University of Maine – Wood Science & Technology

- Virginia Tech – Sustainable Biomaterials: Wood Science & Forest Products
- University of Minnesota – Bio-based Products

Universities and Industry: Employees

The Beck Group

- Benchmarking Studies
- Log Procurement Planning Models
- Bioenergy
- Expert Witness
- Sawmill Planning and Design
- Feasibility Studies

Benchmarking

Statistic	Mill A	Mill B	Mill C	Survey Average	Range
Annual Production (MMBM)	50	125	225	71	50-219
Production/Manhour (bm/mh)	715	544	518	496	383-715
Employees (hourly)	30	117	203	120	30-203
Total Conversion Cost (\$/MBM)	95	80	123	103	75-140
Net Sales Average (\$/MBM)	313	283	316	288	268-316
Lumber Recovery (MBM/MBF) Westside Log Scale	2.46	2.51	2.44	2.55	2.26-2.80

Log Procurement Models

PINE	10"N	12" N	14"N
SALES REALIZATION (\$/mbf)			
Gross (Lumber)	447.55	438.34	479.32
Less: Discount	(3.80)	(3.73)	(4.07)
SUBTOTAL	443.74	434.62	475.25
By Products			
Mixed Fuel (\$/mbf)	1.05	1.05	1.05
Chips (\$/mbf)	58.65	31.00	35.56
Sawdust (\$/mbf)	4.15	4.15	4.15
Bark (\$/mbf)	7.84	3.76	4.58
Shavings (\$/mbf)	8.87	8.87	8.87
SUBTOTAL (\$/mbf)	80.56	48.82	54.20
NET SALES REALIZATION (\$/mbf)	524.31	483.44	529.45
MANUFACTURING COSTS (\$/mbf)			
Forestry	7.65	3.61	4.32
Sawmill	238.35	113.26	135.43
Stacker	5.38	3.61	3.92
Kilns	9.69	9.61	9.68
Planer	29.40	22.80	24.97
Quality Control	0.73	0.55	0.59
Maintenance	29.48	13.81	16.59
Sales & Shipping	7.07	3.53	4.16
SUBTOTAL	327.77	170.79	199.67
GROSS CONV. RET. (\$/mbf)	196.54	312.65	329.78
General & Admin	94.23	38.92	48.72
NET CONVERSION RET. (\$/mbf)	102.31	273.74	281.06
YIELD			
Tons/MBF	5.03	4.20	4.39
RETURN TO LOG			
\$/Ton	20.34	65.22	63.97
DESIRED PROFIT MARGIN (\$/ton)	11.93	14.30	13.66
ALLOW. DELIV. LOG COST (\$/ton)	8.41	50.93	50.32

Biomass Energy

Revenue/Expense Line Item	(\$ 000s)
Electric Sales	3,051
Steam Sales	908
Green Tag Sales	<u>1,080</u>
TOTAL REVENUES:	5,039
O&M	1,679
Fuel	1,568
Ash Disposal	<u>34</u>
EXPENSES:	3,281
OPERATING INCOME:	1,758
– Interest	0
– Depreciation	1,373
PRETAX INCOME:	385
+ Depreciation	1,373
PRETAX CASH FLOW	1,758
+/- Taxes/Credits/Grants	(5,621)
NET CASH FLOW	7,379

Universities and Industry: Employees

BECK's Hiring Criteria:

- Mill/Plant Work Experience
- Strong Analytical Skills
- Communication Skills
- Contact Network

Universities and Industry: Employees

- Entry Level position @ BECK (2)
- ~ 50 resumes
- UBC Dept. of Wood Science Co-op
 - 20 months of paid work experience
 - 5 year program instead of 4 year
 - Benefits to both prospective employers and students

Universities and Industry: Tech Transfer

- Hardwood Leaders Forum
 - Visioning session for the hardwood industry
 - Industry and Academia

Universities and Industry: Tech Transfer

Tech Transfer Disconnect

- Make the time to visit industry operations
- Focus on select clients