



Center Focus

Fall 2012

EDUCATION NEEDS IN THE FOREST PRODUCTS INDUSTRY

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As part of the University of Minnesota's Forest Products Management Development Institute service to its members and the industry in general, and in collaboration with Virginia Tech's Center for Forest Products Business, a study of educational needs in the Forest Products Industry was conducted in the summer of 2012. This document summarizes the results from the study and compares the educational needs of forest products companies in Minnesota and Virginia.

During May-July of 2012, a web survey was conducted concurrently in Minnesota and Virginia to assess the educational needs of the Forest Products Industry. In total, 73 companies participated in Minnesota and 101 in Virginia. Participants belonged to many subsectors, ranging from lumber manufacturers and distributors, to secondary manufacturers, such as producers of kitchen cabinets and millwork. Company demographics of respondents are

Table 1. Participants' type of business and size

Category	Minnesota		Virginia	
	Companies	Percent	Companies	Percent
--- Company Type ---				
Primary manufacturer	18	24.7%	31	30.7%
Secondary manufacturer	50	68.5%	49	48.5%
Distributor	5	6.8%	12	11.9%
--- Company Size ---				
Small companies (25 or less employees)	40	54.8%	47	46.5%
Medium and large companies (>25 employees)	33	45.2%	51	50.5%

presented in Table 1. A 15-item questionnaire was developed and tested. The final version contained the following sections: demographic information (primary business, number of employees, number of facilities, and type of product distribution), business management factors (major factors for business, strategic plan, the major performance measures used, product development), training needs (business factors, greatest training need, training delivery method, current training providers), and one open question for comments. Following the survey, executives in 19 companies were interviewed to verify and expand on the results from the survey.

Survey Results

External Factors

We were interested in learning what external influences most affect forest products industries. Respondents were asked to rate a list of external business factors according to their effect on their businesses (Table 2). The highest-rated items were similar in Minnesota and Virginia and included "housing market," "transportation costs," "energy costs," "changing customer demand," and "business closures." Companies in Virginia rated "raw material costs," and "transportation costs" higher than companies in Minnesota, probably due to the relatively larger percentage of primary manufacturing companies in Virginia.



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“Lack of skilled labor” seems to be more of a concern for companies in Virginia than in Minnesota; and “business closures” received a higher rating of importance in Minnesota than in Virginia. Surprisingly, “globalization” and “international competition” were some of the lowest rated items in both states, even though some of the industry difficulties have been blamed on the growth of imports during the last decade.

Table 2. Participants’ average rating and rank for impact of business factors since 2008 .
(1=Very little or no impact, 5=Greatly impacted our business)

Business factor	Minnesota		Virginia	
	Average	Rank	Average	Rank
Housing market	3.90	1	3.84	3
Transportation costs	3.79	2	4.28	1
Energy costs	3.63	3	3.95	2
Changing customer demand	3.58	4	3.56	5
Business closures	3.49	5	3.21	8
Raw material costs	3.37	6	3.73	4
Labor costs	3.21	7	3.47	6
Government regulations	3.14	8	3.36	7
Green business practices	2.79	9	2.77	11
Interest rates	2.68	10	2.53	12
Lack of skilled labor	2.62	11	2.93	9
Globalization	2.52	12	2.77	10
E-commerce	2.45	13	2.41	14
International competition	2.24	14	2.51	13

Training Needs

Participants were asked to rate the importance of 31 training needs subjects on a 5-point scale, going from “not a training need for the company currently” (1) to a “very important need for our company” (5). Results are listed in Table 3. “Quality and process control,” “process improvement,” “plant maintenance,” were rated high in both Minnesota and Virginia, whereas

“environmental certification,”

“international marketing,” “wood drying issues,” and “Six sigma” were among the lowest-rated training needs in both states. “Sales abilities” and “marketing” were ranked high among training needs in Virginia, but not in Minnesota, while “motivating personnel” and “total quality management” (TQM) were rated among the top five in Minnesota and not in Virginia.

There were several large and significant differences in the ratings given to training needs reported by respondents in Minnesota and Virginia (indicated by asterisks in Table 3). In all of these cases, companies in Minnesota rated training needs higher than companies in Virginia. Specifically, in Minnesota “lean manufacturing” rated 7th among manufacturers, while in Virginia it rated 22nd in importance. In Minnesota “sales abilities” training was rated 10th, while in Virginia it was rated 2nd.

Following up on training needs, companies were inquired about the functional area that presented the most important training need. They were provided with a list of 5 functional areas. Results are summarized in Figure 1. A majority of companies in both Minnesota and Virginia agreed in that “manufacturing operations” and “marketing and sales” were the functional areas with the most training need (52% of respondents in Minnesota and 71% in Virginia). A considerably larger percentage of companies in Minnesota than in Virginia indicated “general business management” as the greatest need, and “procurement of raw materials” was selected by a much higher percentage of Virginia participants. “Others” included “green certifications,” “moisture content and kiln drying,” “maintenance,” “social media marketing,” “product development,” “coaching leadership and



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With the recent growth in interest for web-based training, we were interested in learning how companies perceived the effectiveness of the different training delivery methods. Participants were asked to rate effectiveness of 5 delivery methods (Table 4). Participants' responses were similar and personal visits and short courses are still perceived as the most effective training delivery methods.

Also of interest for this study was to learn who is currently providing training to companies. There were not great differences between answers in Minnesota and Virginia, "private industry," "trade associations," and "consultants" were the most common providers of training (Figure 2). Universities were the least common. "Other" suppliers included in house training, website search, and no training. Participants were also asked whether they currently have a summer internship or coop program for students from surrounding universities. Relatively few companies provide internship or coop opportunities to students, specifically 16% of companies in Minnesota and 18% in Virginia.

Table 3. Importance rating of training needs for respondent companies (1=Not a training need, 5=Very important training need).

Training need	Minnesota		Virginia	
	Average	Rank	Average	Rank
Quality and process control	3.36	1	3.13	1
Process improvement	3.32	2	2.92	3
Plant maintenance	3.18	3	2.83	5
Motivating personnel*	3.18	3	2.63	17
Total Quality Management*	3.15	5	2.70	13
Production management	3.12	6	2.77	9
Lean manufacturing*	3.12	7	2.40	22
Product costing	3.10	8	2.78	8
General problem solving	3.09	9	2.71	11
Sales abilities	3.04	10	3.05	2
Marketing	3.04	10	2.89	4
Basic problem solving skills*	3.02	12	2.67	15
Leadership	2.98	13	2.70	12
Strategic management	2.86	14	2.63	16
Inventory control	2.85	15	2.73	10
Business planning	2.84	16	2.81	7
Product development*	2.78	17	2.32	24
Product promotion	2.75	18	2.69	14
Product distribution	2.75	18	2.43	21
Plant financial issues	2.73	20	2.51	20
Finding market information	2.71	21	2.82	6
Public relations	2.69	22	2.57	18
Branding	2.64	23	2.31	25
Energy management	2.52	24	2.53	19
E-commerce	2.36	25	2.26	27
Cleaner production technologies	2.35	26	2.14	28
"Green" business practices	2.30	27	2.26	26
Six Sigma*	2.29	28	1.83	31
Environmental certification	2.27	29	2.12	29
Wood drying issues	2.15	30	2.36	23
International marketing	1.84	31	2.06	30



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The last item in the questionnaire was an open question, where participants were asked to share comments on subject areas or programs that they would like universities to include into their education training efforts for the industry. Many participants used the question to suggest training topics, such as “machine operation,” “fundamentals of woodworking tools and methods,” “impacts of regulations on costs,” “safety and regulatory compliance,” and “restoration of historic structures.” Another frequent theme in the comment section was the need for skilled employees in the manufacturing trade. One participant pointed to the gap left by trade schools, and the need for trade groups to engage in extensive training of apprentices. Lastly, short-course format was suggested for topics such as sales, marketing, industrial distribution, industry trends, and resource management issues.

Company Interviews

In order to gather more in-depth information and to verify results from the survey, interviews were conducted with executives at forest products firms. Responses were grouped and coded. The most common answers are summarized in Table 5

Finally, these executives were asked why they believe they have been successful during the current recession. In Virginia, they felt that being customer focused, flexible, being diversified and having good financial management were the key issues. In Minnesota, they believed having high quality, good customer relationships, being “lean,” controlling costs, and being flexible were their success factors.

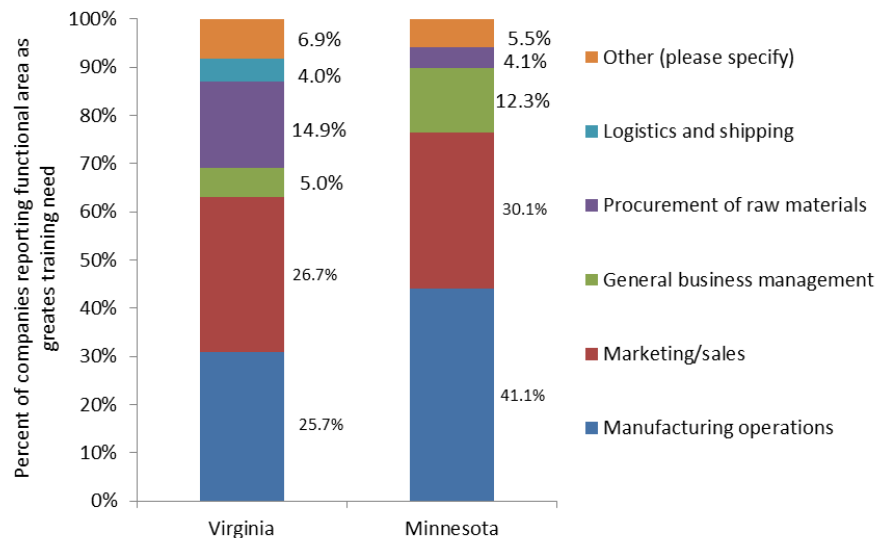


Figure 1. Functional area with greatest training need.

Table 4. Effectiveness of training delivery methods (1=Least effective method, 5=Most effective method).

Training Delivery Method	Minnesota		Virginia	
	Average	Rank	Average	Rank
Personal visits	4.05	1	4.08	1
Short courses	3.54	2	3.47	2
Webinars	2.50	3	2.47	4
On-line, self-directed studies	2.35	5	2.95	3
Training manuals	2.38	4	2.30	5



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Conclusions

This study reveals the most important external influences and training needs of the forest products industry in Minnesota and Virginia. Current economic conditions (housing market and business closures), cost issues (transportation and energy costs), and market influences (the changing nature of customer demand), were perceived as the most important factors for the participants' businesses.

Training topics that need emphasizing are quality and process control, process improvement, maintenance issues, marketing, and sales. Although internet-based training and education is gaining ground, companies still consider that personal contact are the most effective methods for training delivery. Other topics that came up repeatedly during the interviews were the need to promote wood as an environmentally-friendly material and the need to be flexible, especially in these challenging times.

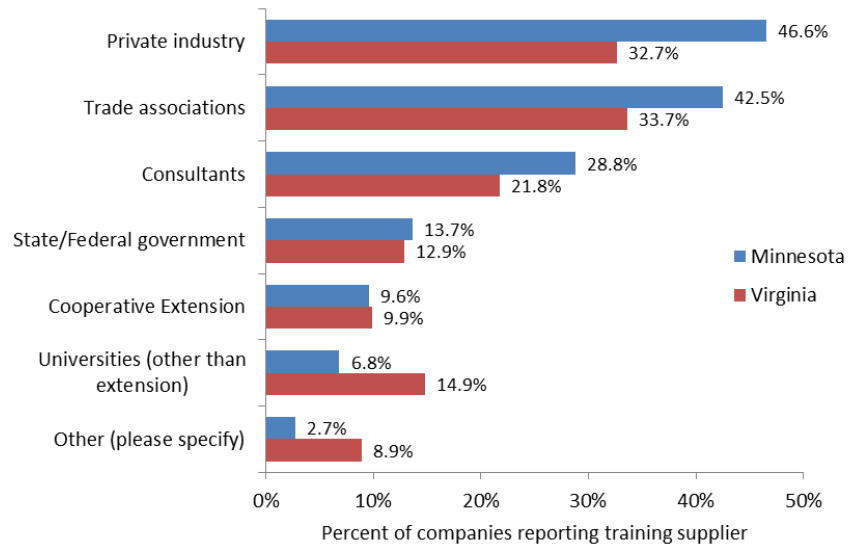


Figure 2. Organizations providing training.

Table 5. Summary of interview responses. Answers were categorized.

Topic	Minnesota	Virginia
Top business issues affecting companies	Market conditions Finding qualified labor Government regulations	Market conditions and economy Government regulations costs Raw material price and availability
Primary performance measures	Safety Profit goals Quality	Production goals Profit goals Quality
Training area for management employees	Project management Materials management General supervisory skills	General management skills Manufacturing technology Operations management
Training area for hourly employees	Machine operations Technology expertise Cross-training	Lean manufacturing Supervisory skills
Subject area with the most benefit for company	Project management Marketing Basic management skills	Project management skills Human relations Marketing
Areas to be covered in training manual	Wood as a raw material Lean manufacturing Financial management Organizational structure	Operations management Human resource management Marketing Distribution
Best delivery method for training	One-to-one on-sight personal interaction Short courses and webinars	
Current providers of training	Trade associations Insurance companies Vendors	