

# Small and medium-sized businesses in the U.S. wood products industry



Photo: AHMI

**Matt Bumgardner**

UDSA Forest Service

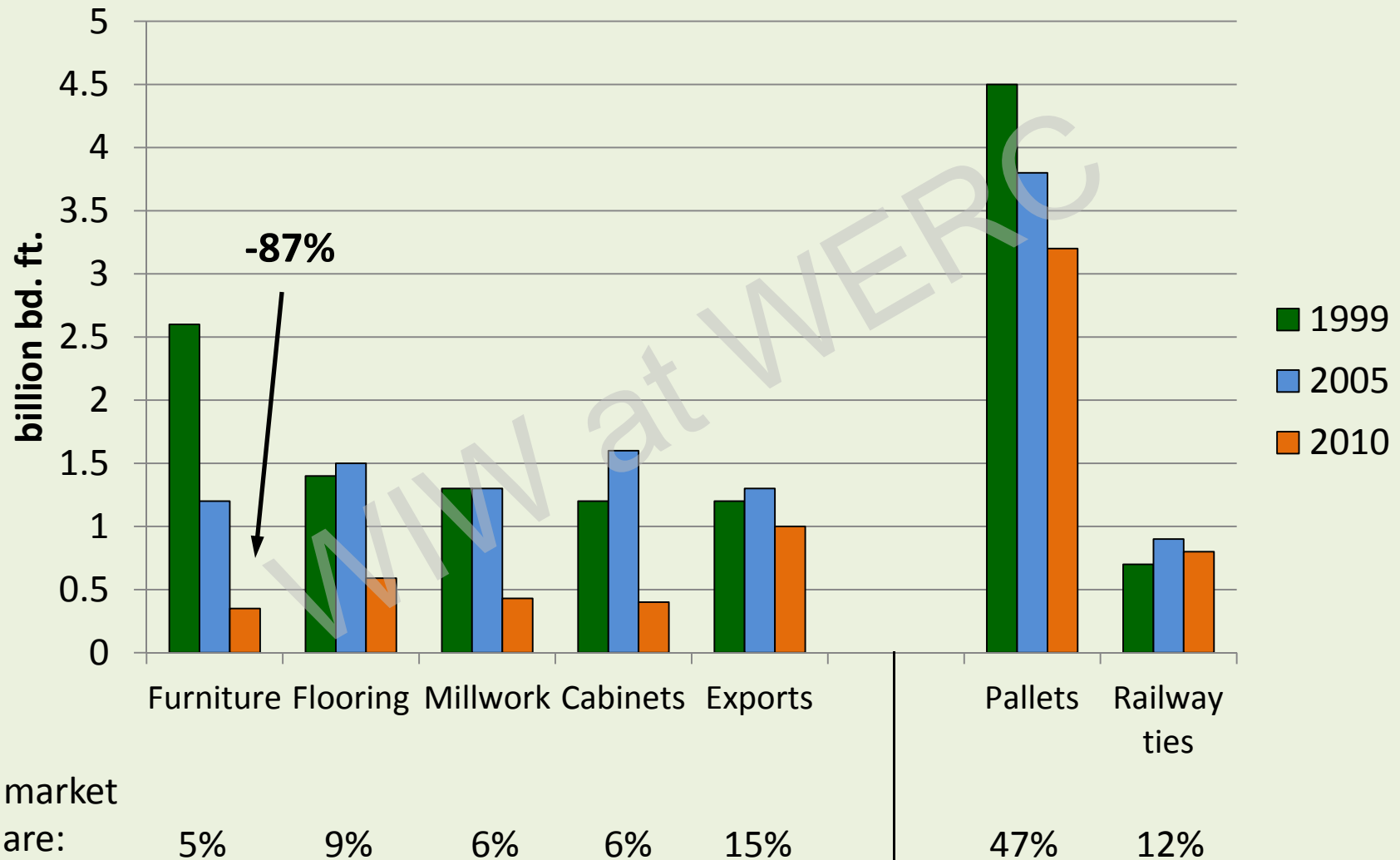
**Urs Buehlmann**

Virginia Tech

Wood Industry Week @ WERC

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## Hardwood lumber markets – Volume estimates by sector



Data source: Hardwood Market Report. 2009, 2011.

## Hardwood lumber market share – Historical perspective

User Group	1972	1982	1992	2002
Industrial	32%	40%	34%	37%
Appearance-based	68%	60%	66%	63%

Source: W. Luppold, U.S. Forest Service

## Recent market shifts

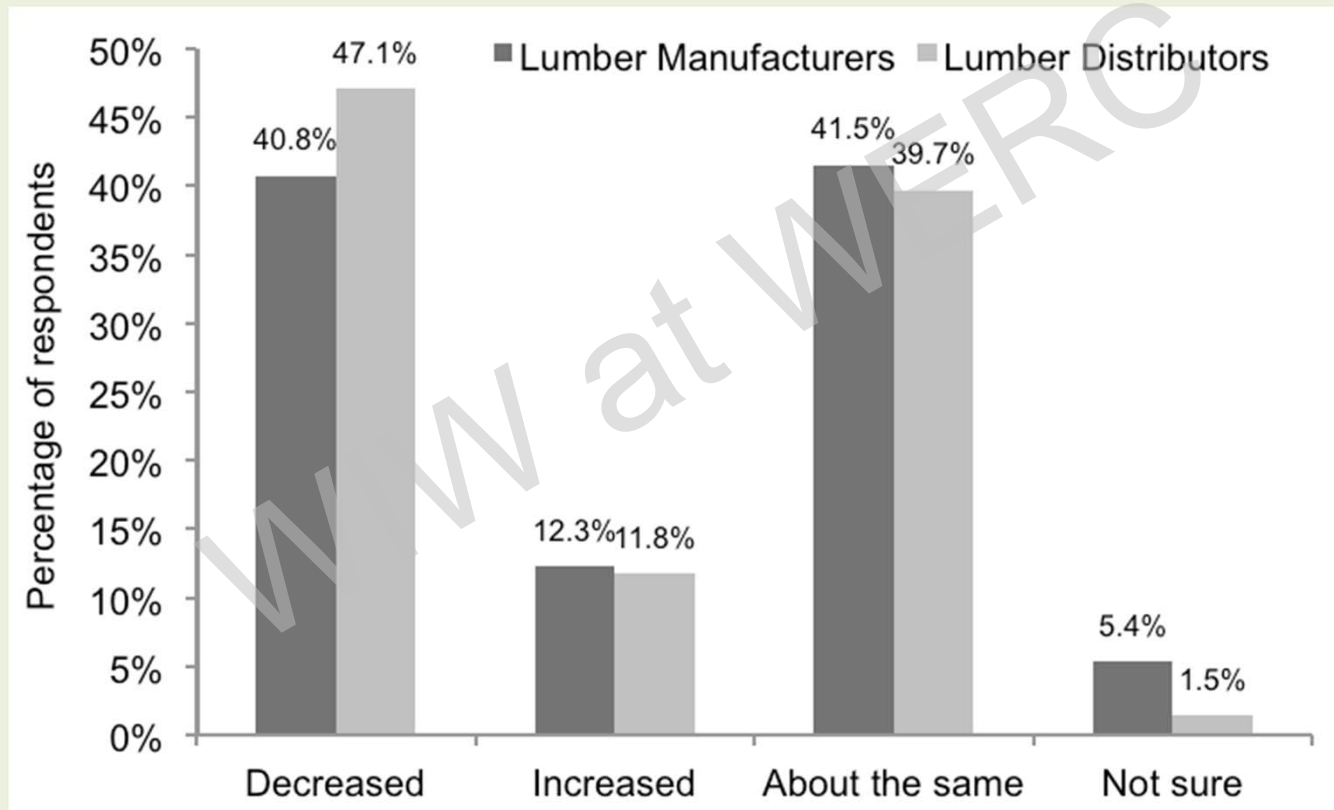
User Group	2005	2006	2007	2008	2009
Industrial	41%	42%	44%	52%	60%
Appearance-based	59%	58%	56%	48%	40%

## Increasing importance of smaller customers to hardwood sawmills

- “It used to be I only had a few large customers on my Christmas card list, now I have hundreds of small customers ”  
- Hardwood Review Weekly 2007
- “Yesterday, it was five loads to one customer; today, it is one load to five customers”  
– and all five want something a little different!
- Our research has shown that smaller firms are better able to increase sales in a declining market

# Findings from recent HW lumber industry studies\*

## Average customer size, 2004-2008



\* Espinoza, Buehlmann, Bumgardner, Smith. 2011. [BioResources](#).  
Buehlmann, Espinoza, Bumgardner, Smith. 2010. [Forest Products Journal](#).

# What is being done by these customers?

- Expanding or switching market segments
- Spending more time with existing customers
- Aggressively seeking new customers
- Improving customer service
- Smaller orders, and farther away
- Offering more customized products



## Elements of a “paradigm shift” for the furniture industry

- Customization of products
- Strategic supply chain alliances
- Agility/flexibility
- Niche marketing
- Clustering
  - Geographic concentrations of interconnected companies in a given field



# Small firms are . . .

- Able to compete by filling niches
  - “Interstices” – Penrose 1995
  - Flexibility
  - Close to customers
- Less likely to rely on cost reductions during downturns
  - Less cash flow
  - Smaller economies of scale and scope
  - Less overhead/vertical integration
- More likely to focus instead on revenue generation
  - Customer service
  - Made-to-order production
  - Finding new business

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## **Competitive Actions of Small Firms in a Declining Market**

by Matthew Bumgardner, Urs Buehlmann, Albert Schuler, and Jeff Crissey

*Small firms, through their flexibility advantages and closeness to customers, potentially can increase their sales volume in economic downturns. The decline in U.S. housing construction (beginning in 2006) provided an opportunity to develop and test four hypotheses predicting the attributes and marketing actions associated with successful companies supplying housing markets. Smaller firms and those producing made-to-order products were most likely to have realized increased sales volume. These successful firms were not engaged in several marketing actions hypothesized to increase sales volume in a declining market. Small firm competitiveness was based more on working closely with customers to produce fully customized products.*

### **Introduction**

After years of robust growth driven largely by readily available credit, favorable demographics, wealth effects, and speculation, the U.S. housing market began a precipitous decline in 2006 (Buehlmann et al. 2008). With single family housing starts at 0.74 million

annualized and permits at 0.67 million in January 2008, the industry reached its slowest pace since 1993. An additional 4.15 million single family homes were on the market. As of January 2008, single family resale inventories were at 10.1 months, and new housing inventories were at 9.9 months.<sup>1</sup> The value of private construction (accounting for 75 percent

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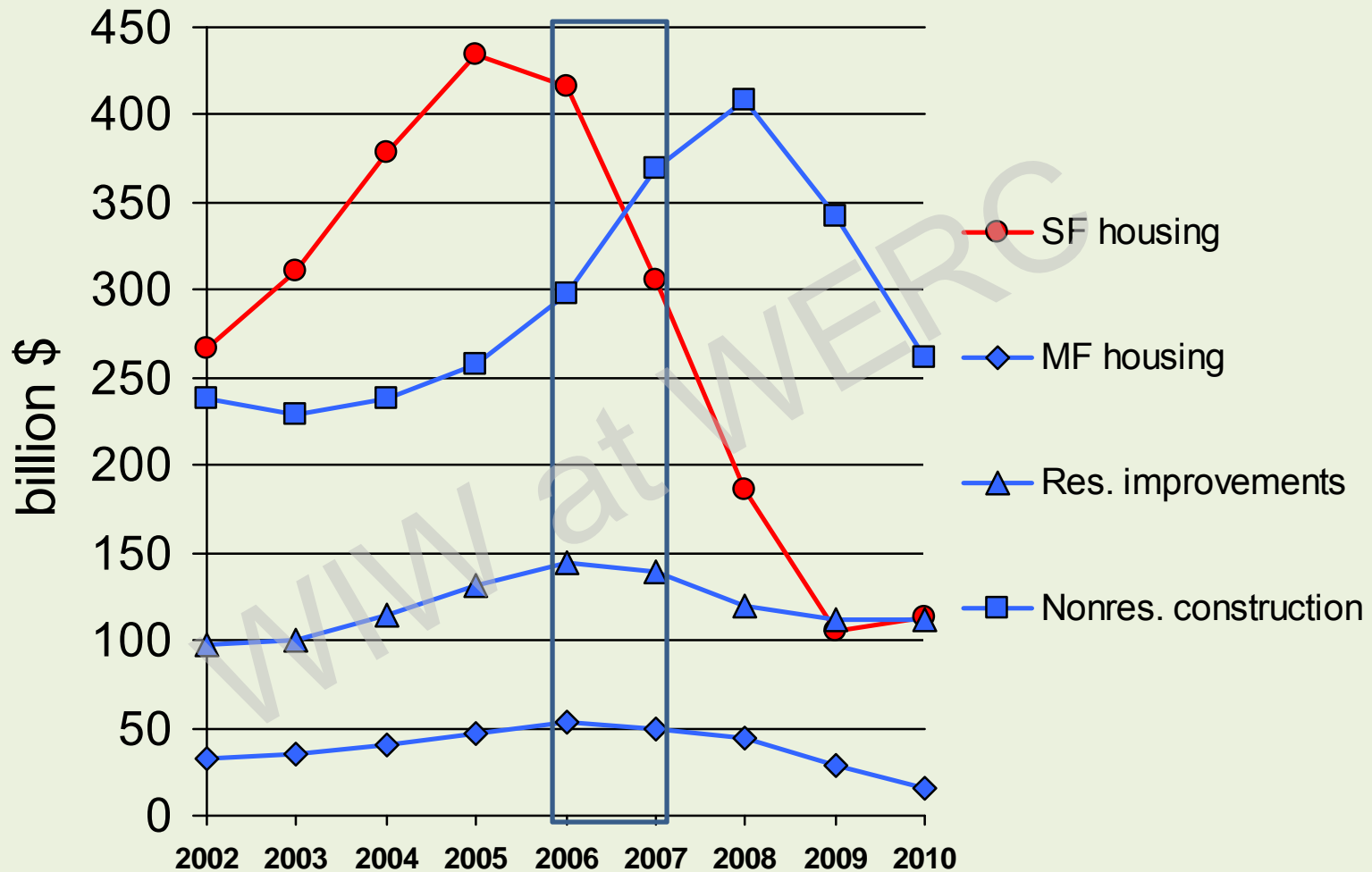
Urs Buehlmann is associate professor at Virginia Tech, Wood Science and Forest Products. Albert Schuler is Research Forester (now retired) at the USDA Forest Service, Northern Research Station.

Jeff Crissey was previously editor at *Modern Woodworking* (he is currently editor at *Commercial Carrier Journal*).

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<sup>1</sup>Source for new home inventory: U.S. Bureau of Census—<http://www.census.gov/corast/www/newresaleindex.html>. Source for existing home inventory: National Association of Realtors—<http://www.realtor.org/research/index.html>.

# Value of private U.S. construction, 2002-2010



We were interested in those firms with sales growth in 2007 in the single family housing market . . .

Data source: U.S. Census Bureau, *Annual Value of Private Construction Put in Place*

# Hypotheses

- Firms having increased sales volume in the declining SFRC market will be smaller as measured by:
  - a. number of employees
  - b. total sales
- Firms having increased sales volume in the declining SFRC market will be more customized as measured by:
  - a. proportion of semi-custom products produced
  - b. proportion of made-to-order products produced
- Firms having increased sales volume in the declining SFRC market will be operating at a higher price-point.

# Group profiles

Demographic Variables	SFRC ≤ 60 Percent of Production; Sales Volume Off (Group 1)	SFRC ≤ 60 Percent of Production; Sales Volume Up (Group 2)	SFRC > 60 Percent of Production; Sales Volume Off (Group 3)	SFRC > 60 Percent of Production; Sales Volume Up (Group 4)
	n = 118	n = 127	n = 112	n = 73
Main product:				
cabinets	27.1%	32.3%	57.1%	63.0%
architectural fixtures	12.7%	15.0%	4.5%	4.1%
molding/millwork	11.9%	11.8%	17.0%	11.0%
contract furniture	10.2%	12.6%	1.8%	0.0%
household furniture	31.4%	18.1%	11.6%	17.8%
other	6.7%	10.2%	8.0%	4.1%
Average number of business regions per firm*	2.6	2.6	2.1	1.6

\* Respondents were asked to indicate all regions of the U.S. where they did regular business, including the: Northeast, Mid-Atlantic, Southeast, South, Southwest, Midwest, Northwest, and California

## Firm size differences by group

	SFRC≤60%; Sales vol. off (Group 1)	SFRC≤60%; Sales vol. up (Group 2)	SFRC>60%; Sales vol. off (Group 3)	SFRC>60%; Sales vol. up (Group 4)
	----- % -----			
1-19 employees	<b>74.6</b>	<b>61.4</b>	<b>72.3</b>	<b>86.3</b>
20 + employees	<b>25.4</b>	<b>38.6</b>	<b>27.7</b>	<b>13.7</b>

Overall  $\chi^2$  statistic = 14.9;  $p < 0.01$

## Sales differences by group

	SFRC≤60%; Sales vol. off (Group 1)	SFRC≤60%; Sales vol. up (Group 2)	SFRC>60%; Sales vol. off (Group 3)	SFRC>60%; Sales vol. up (Group 4)
				----- % -----
< \$1 million	<b>61.0</b>	<b>48.8</b>	<b>66.1</b>	<b>78.1</b>
\$1-\$10 million	<b>24.6</b>	<b>34.6</b>	<b>16.1</b>	<b>13.7</b>
> \$10 million	<b>14.4</b>	<b>16.5</b>	<b>17.9</b>	<b>8.2</b>

Overall  $\chi^2$  statistic = 22.4;  $p < 0.01$

# Made-to-order production

	SFRC≤60%; Sales vol. off (Group 1)	SFRC≤60%; Sales vol. up (Group 2)	SFRC>60%; Sales vol. off (Group 3)	SFRC>60%; Sales vol. up (Group 4)
				----- % -----
0 – 20%	<b>18.6</b>	<b>14.3</b>	<b>16.1</b>	<b>4.1</b>
21 – 60%	<b>23.7</b>	<b>19.0</b>	<b>15.2</b>	<b>16.7</b>
61 – 100%	<b>57.6</b>	<b>66.7</b>	<b>68.8</b>	<b>79.4</b>

Overall  $\chi^2$  statistic = 13.0;  $p = 0.04$

## What else can be done to compete in declining markets?

- Entering export markets
  - Developing innovative distribution channels
  - Advertising campaigns
  - Encourage larger volume purchases
  - Develop new applications for existing products
  - Etc.
- 
- “Group 4” was less engaged in these actions



## What do the results tell us?

- Importance of fully customized products
  - Consumer driven
  - Higher profit margins
  - Requires flexibility
- Smaller firms seem especially able to compete
  - Not engaged in “textbook” responses
  - Lots of opportunities within the industry for smaller niches to develop
  - **C**loseness, **C**ustomization, **C**raftsmanship

# The Current Study

Number sent = 4,980

Usable responses = 395

Not usable = 337 (several were primary mfrs.)

Adjusted response rate = 9%

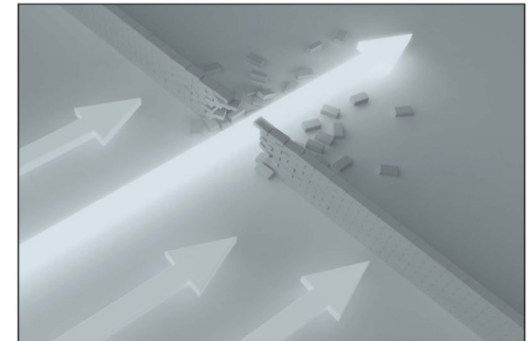
State breakdown:

VA = 99, NC = 83, WI = 81, OH = 75,

WV = 21, TN = 12

Others = 12

2011 WOOD INDUSTRY COMPETITIVENESS SURVEY



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## Background – Product type

- 22% - Kitchen/bath cabinets
- 16% - Architectural millwork/store fixtures
- 14% - Furniture (household, upholstered, instit.)
- 10% - Components
- 6% - Flooring
- 3% - Wood windows/doors
- 29% - Other, or combination of above

## Background – Respondent position

- 53% - Owner
- 32% - Corporate or operating management
- 4% - Production management/engineering
- 3% - Marketing & sales/design
- 8% - Other/more than one category

## Background – Firm size

- 1-4 employees – 28%
  - 5-19 employees – 35%
  - 20-99 employees – 24%
  - 100-249 employees – 5%
  - 250+ employees – 8%
- 
- 81% of responses were from single-facility companies

## Background – 2010 Sales

- Less than \$250K – 21%
- \$250K - \$1M – 31%
- \$1 - \$5M – 25%
- \$5M - \$10M – 8%
- \$10M - \$250M – 13%
- More than \$250M – 2%

## Background – Regular business regions

- Midwest – 49%
  - Mid-Atlantic – 47%
  - Southeast – 47%
  - Northeast – 37%
  - South – 26%
  - Southwest – 18%
  - Northwest – 16%
  - California – 16%
- On average, respondents marked 2-3 regions where regular business was conducted

## Background – Product characteristics

- Low price-point – 4%
- Low-to-medium – 12%
- **Medium – 32%**
- **Medium-to-high – 43%**
- High – 9%

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- Mostly stock items – 16%
- Mostly semi-custom – 21%
- **Mostly made-to-order – 61%**
- (More than one type – 2%)



## Made-to-order production as a percent of product mix

- 0% - 7%
- 1 to 20% - 15%
- 21 to 40% - 6%
- 41 to 60% - 7%
- 61 to 80% - 15%
- 81 to 100% - 50%

Compared to 5 years ago, this made-to-order production now is:

- Smaller – 17%
- About the same – 66%
- Larger – 17%

## Percentage of total cost of wood materials from:

Wood Material	Percent
Hardwood lumber	45
Softwood lumber	17
Dimension and components (HW & SW)	7
Composite & engineered products	27
Other	4

## Domestic Focus

Over the last 5 years, have you increased the use of imports in your product line?

- Finished products – 14%
- Components or lumber – 21%

Over the last 5 years, have you increased the export of your products (outside the U.S.)?

- Yes – 16%
- No – 81%
- Uncertain – 3%

# Results

WIW at WERC

**“Indicate the factors listed below (check four) that you perceive to be among the most important to the success of your business:”**

	Manufacturing capabilities (e.g., ability to make profitable products, quality control, efficiency)	63%
<b>E</b>	General economic conditions	57%
<b>E</b>	Cost of raw material and energy inputs	43%
	Marketing activities (e.g., reaching new customers, good customer service, effective product promotion)	36%
	Human resources management (e.g., organizational efficiency, ability to hire good people, employee morale)	32%
	Individual characteristics of owners/managers (e.g., hard work, ethics, knowledge, dedication)	30%

**E** = external factors

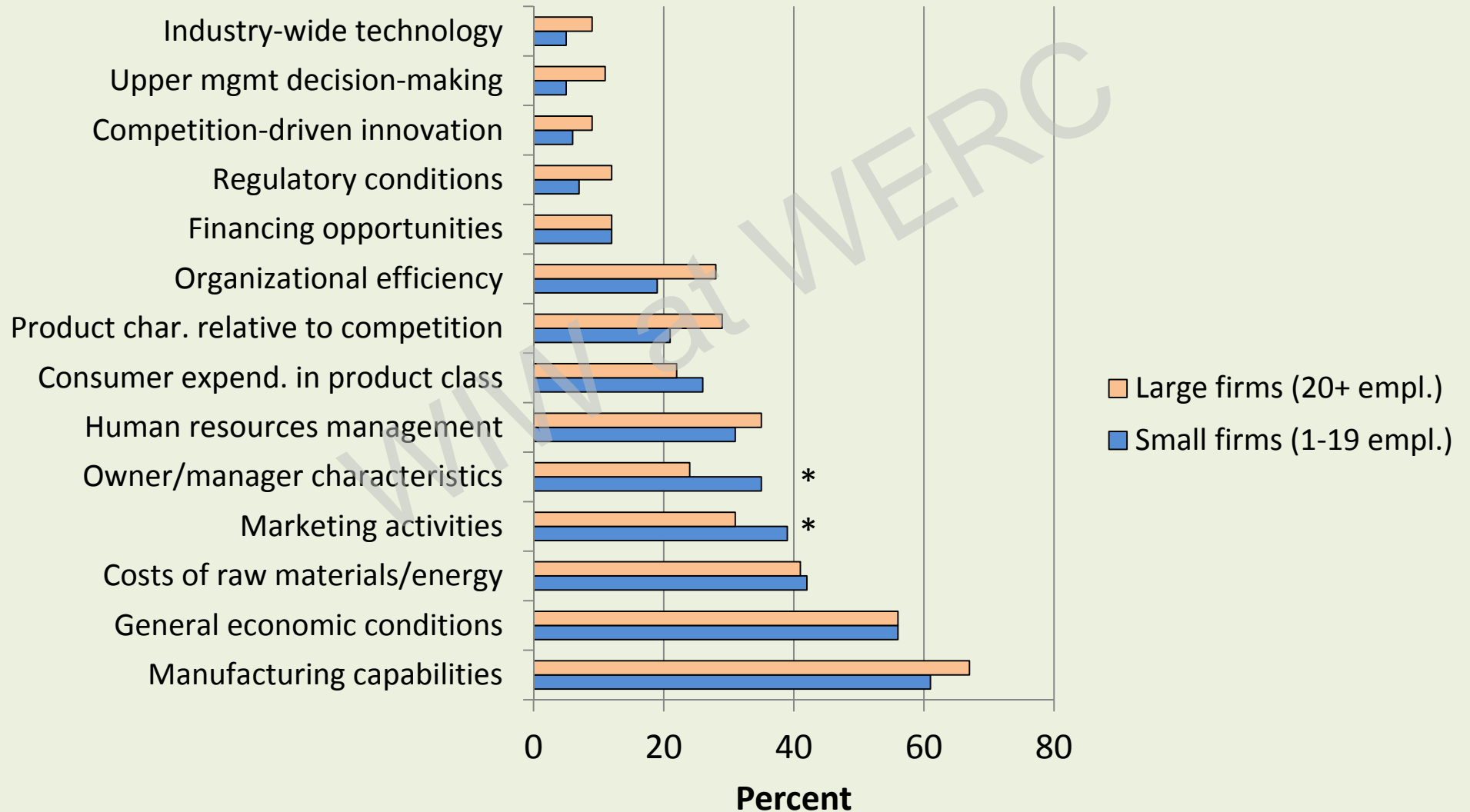
## Most important success factors, cont.

<b>E</b>	Overall consumer expenditures in our company's product class	25%
	Product characteristics relative to competition	24%
	Organizational efficiency (e.g., ability to make quick decisions, ease of implementation)	22%
<b>E</b>	Financing opportunities (e.g., loan availability)	13%
<b>E</b>	Regulatory conditions	9%
	Upper management decision-making (e.g., investments, expansions)	7%
<b>E</b>	Competition-driven innovation	7%
<b>E</b>	Industry-wide technology advancements that improve efficiency/product capabilities	6%

**E** = external factors

# Success factor comparisons

## small firms vs. large firms

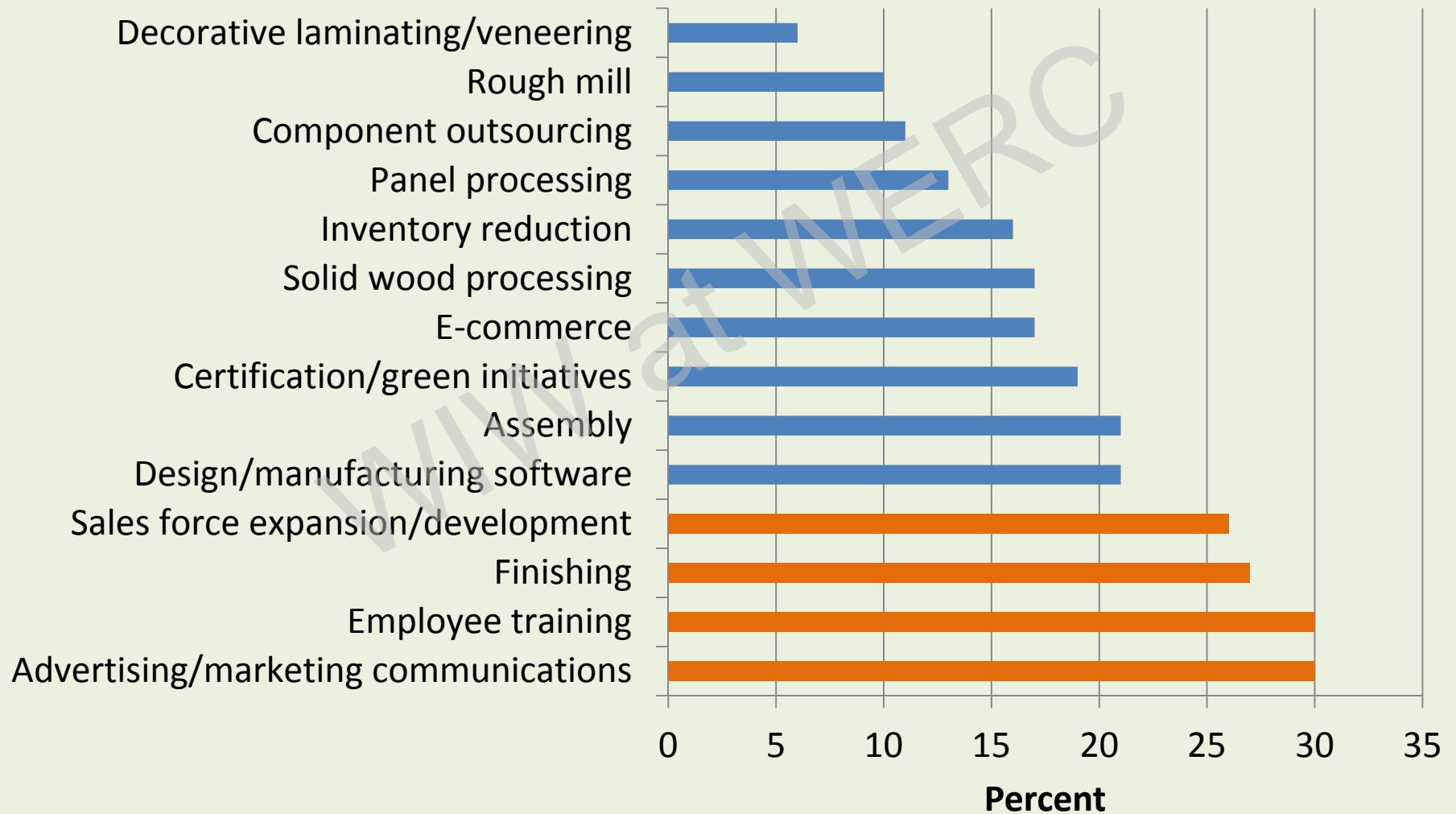


## Small vs. large firms – success factors

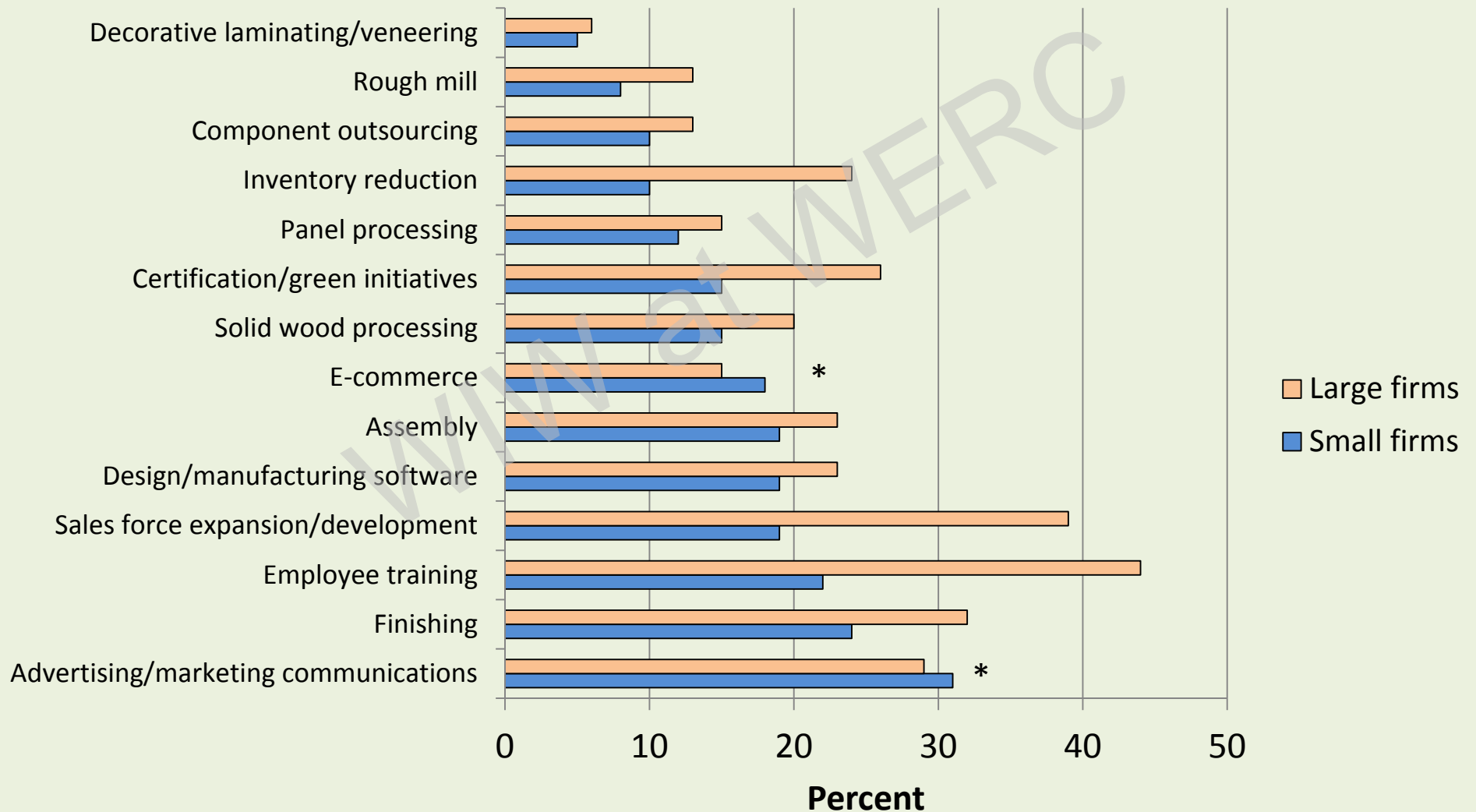
- Manufacturing capabilities, economic conditions, and costs ranked as Top 3 for both groups
- For small firms, marketing activities and owner/manager characteristics were especially important
- For large firms, organizational efficiency and product characteristics relative to the competition were especially important



## Planned investment areas for the next 5 years



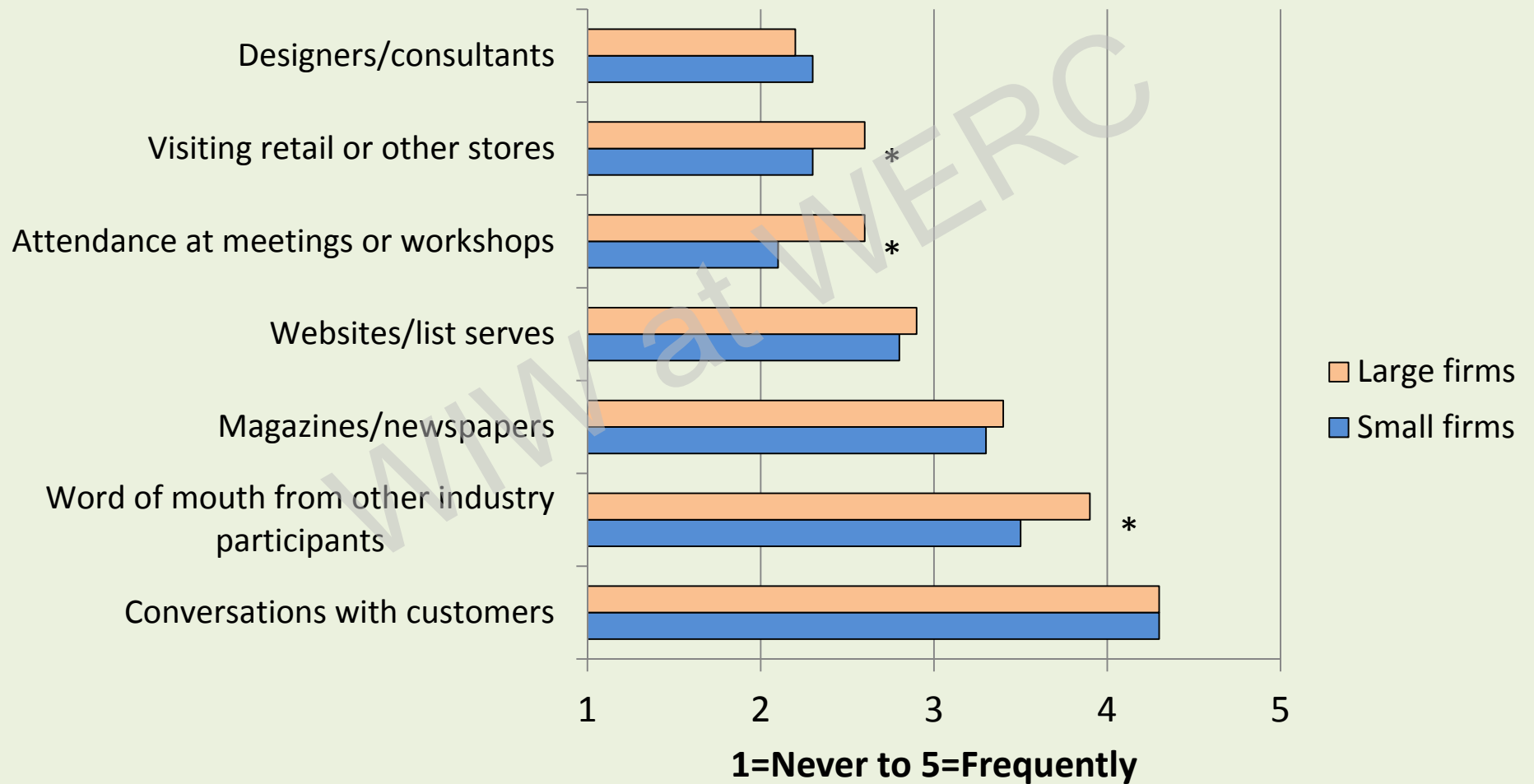
## Within the next 5 years, in which areas will your company invest significantly to improve productivity or capabilities?



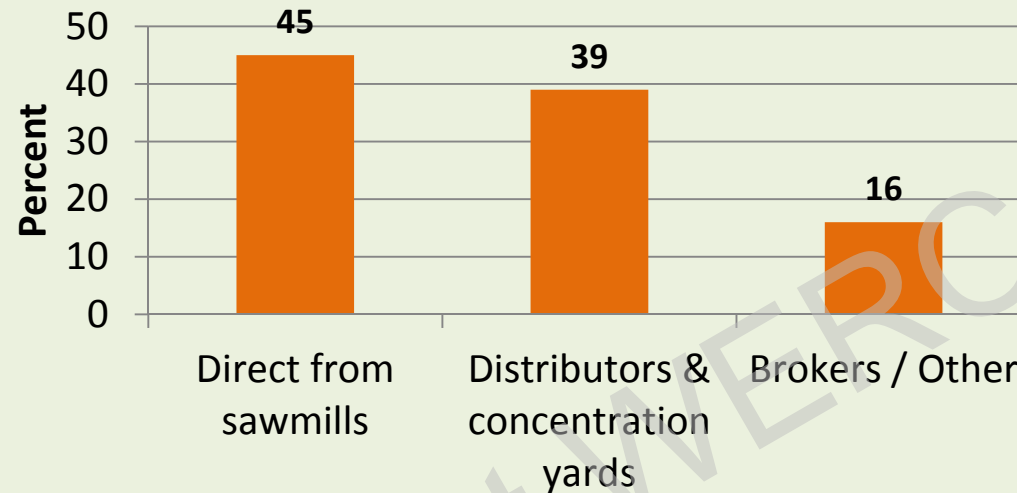
## Small vs. large firms - investments

- In general, large firms planned more investment activity
- Sales force expansion/development and employee training especially important to larger firms
- Advertising/marketing and e-commerce especially important to smaller firms
- Finishing important to both groups

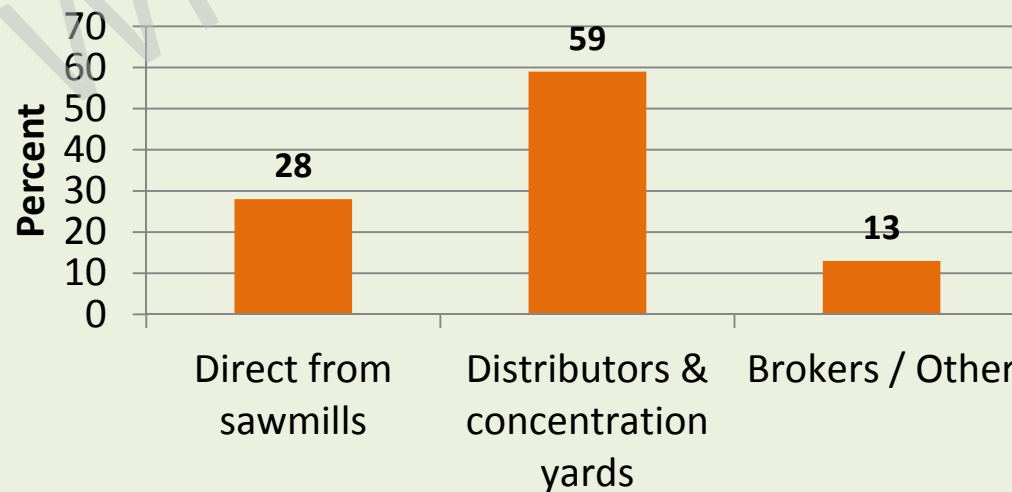
# Information sources to learn of trends in the industry



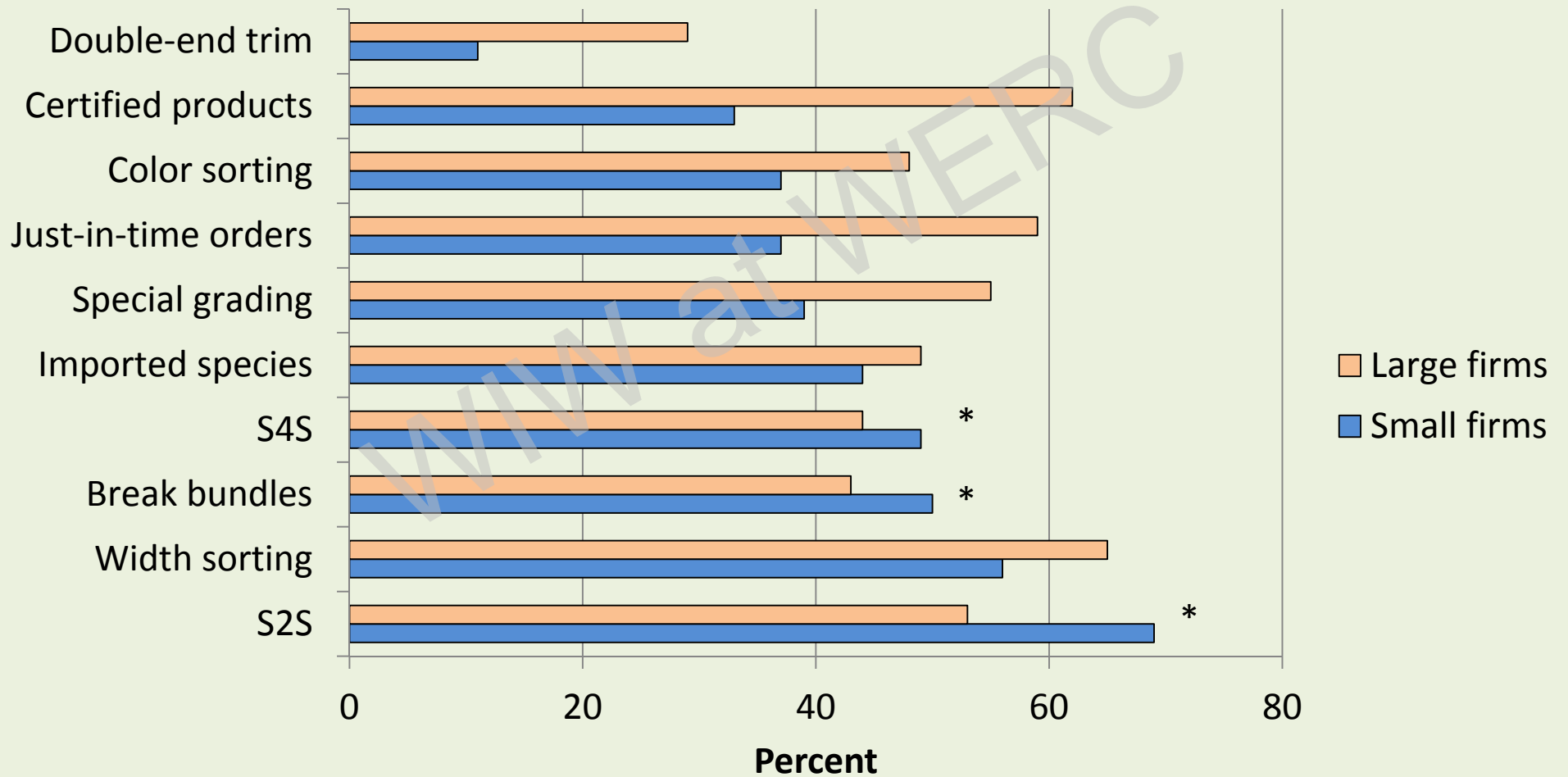
## Sources of hardwood lumber (by volume) - Large firms



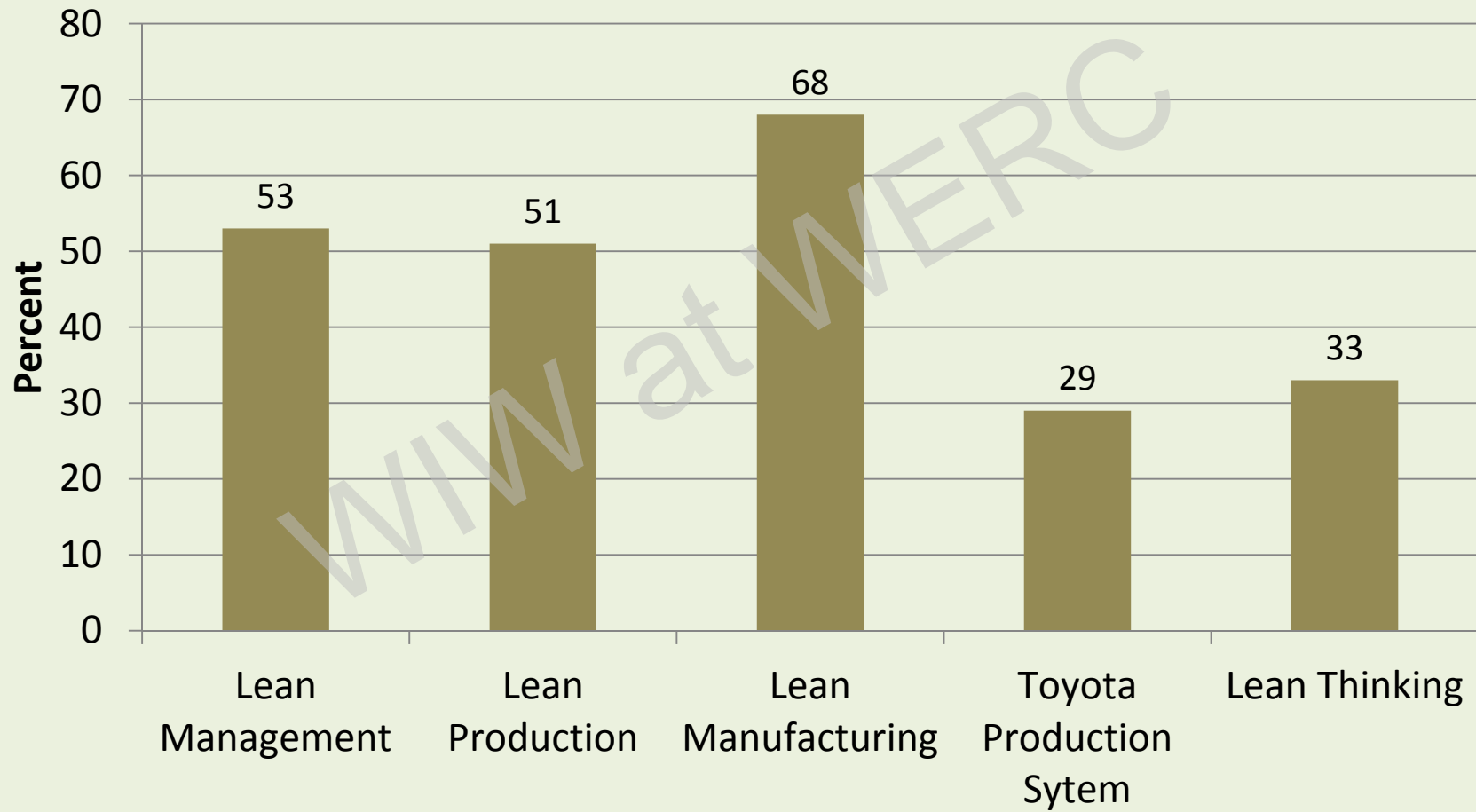
## Sources of hardwood lumber (by volume) - Small firms



# Services requested from hardwood lumber suppliers



## Have you heard of the following?



## Is your company implementing Lean practices at this time?

We are implementing	55%
We are planning to implement	9%
We are not planning to implement	36%



## Summary – Small Firms:

- Manufacturing capabilities, economic conditions, and input costs the most factors for success in the current environment
- Overall, internal factors viewed as most important for success
- Investments will focus on marketing communications, finishing, and employee training
- Conversations with customers particularly important to information gathering
- Distributors & concentration yards important to hardwood lumber sourcing

## Acknowledgements

- Wood Education and Resource Center, Northeastern Area State & Private Forestry, U.S. Forest Service
- Department of Wood Science & Forest Products, Virginia Tech
- Northern Research Station, USDA Forest Service
- State cooperators (S. Bowe, S. Grushecky, D. Saloni, A. Taylor)

# Questions?

