Learning Through the School of Hard Knocks

Marketing and Networking Examples from the Western Juniper Commercialization Project

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Introduction

The majority of this paper is an anecdotal, year-by-year look at the marketing and networking issues encountered, and strategies employed, by participants in the Western Juniper Commercialization Project over the last six years. An informal discussion of what worked and did not work is woven into the narrative. It should be stressed that networking and marketing are critical to every part of a commercialization effort, and nothing would have occurred without explicit consideration of those activities. This paper begins with a description and introduction to the Western Juniper Commercialization Project.

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Western Juniper Commercialization Project Background

What is the Western Juniper Commercialization Project?

The Western Juniper Commercialization Project (Project) is an ad hoc effort to develop an integrated industry which uses western juniper (*Juniperus occidentalis*) to ensure long-term sustainability of the resource, benefit landowners and local communities, and fully utilize and add value to surplus raw material produced by ecosystem management activities (Mission statement of Western Juniper Commercialization Steering Committee [1994]).

Why is It Necessary to Commercialize Western Juniper?

There are approximately 3.8 million acres of western juniper woodlands within the species' primary range of eastern Oregon, northeastern California, and southwestern Idaho (10% canopy cover or more). About 58% of this acreage is on public lands managed by the Bureau of Land Management, U.S. Forest Service, State, Indian tribes, and other Federal agencies, and about 42% is privately owned. There are literally millions more acres of scattered juniper and areas in which young juniper are just now becoming apparent on standard resolution aerial photography.

Western juniper is the least-utilized wood fiber resource in this region. Total woodland volume is estimated to

be at least 691 million cubic feet, of which about 39% is on private lands and 61% is on public lands. Volume data for the most part do not include western juniper on forested lands which, according to industry, has the best commercial potential because of form and access. (A significant portion of forested lands which have western juniper in their understory are within National Forest System boundaries, and are not included in Pacific Northwest Research Station Oregon and California field sample plots).

The area dominated by western juniper represents a three- to ten-fold increase since the late 1800s. The expansion and increasing densities of juniper woodlands greatly concern private landowners, government land managers, and scientists. Many juniper-dominated sites show clear evidence of watershed degradation, loss of site productivity, decrease in forage production, loss of wildlife habitat, and overall-reduction in biodiversity.

How Did the Western Juniper Commercialization Project Get Started?

The Western Juniper Commercialization Project was begun as a result of feedback from a Forest Products Industry focus group run by the Winema National Forest (Klamath Falls, Oregon) in 1992. In just 18 months, over 1,200 manufacturing jobs were lost out of a total regional manufacturing employment base of less than 4,000. Reasons for the large loss in jobs included a reduction in Federal timber supply and lack of privately-owned timber in the region (over 65% of the land in Klamath County is managed by either the Forest Service or Bureau of Land Management). The Forest Products Industry saw juniper as a potential new source of fiber and wanted to find cost-effective methods to utilize juniper cut down by ranchers to improve grazing lands.

How is the Project Coordinated and Funded?

Project activities are coordinated by an ad hoc Steering Committee made up of industry, landowners, university extension, government agencies, and non-profit economic development organizations. Logistical support and facilitation of the Steering Committee and its projects are a combined effort of the Forest Service, a private business consultant hired by the Steering Committee, a local non-profit economic development organization, Oregon State University Extension, and the Northwest Wood Products Association.

Western juniper commercialization start-up activities were funded by a combination of Forest Service and State of Oregon programs (about $50,000 over the first two years). Cash and in-kind contributions since 1993 have totaled in excess of $2 million dollars: Over $1,000,000 has been invested by private industry, $650,000 by the Oregon Regional Strategies Program; and about $400,000 from a mixture of Federal, Forest Service, and university programs.

Current Western Juniper Markets and Distribution Channels

Juniper is being sold into 11 main markets or distribution channels:

- Firewood and posts/poles;
- Chips;
- Animal bedding (expected to come on line summer, 1998);
- Green and air-dried, unfinished "farm" lumber;
- Kiln-dried, surfaced lumber;
- Log cabins and doweled logs/furniture stock;
- High-end, natural-form rustic furniture and architectural accents;
- Rustic, roundwood furniture;
- High-end, rustic and traditional furniture;
- Gifts and accessories, and store displays;
- Doors, cabinets, flooring, paneling and other millwork;

There are at least 35 companies or individuals who manufacture juniper products for these markets on at least a custom-order or part-time basis (includes both primary and secondary manufacturers). Of these 35, probably

five to 10 use juniper almost exclusively; none have juniper sales exceeding $250,000 per year. The marketing emphasis for log/lumber products has changed during the last couple of years from commodity products (e.g. fencing and decking) to specialized market niches (e.g. architectural accents, store displays, gifts and novelties, and custom log and timber frame homes).

The secondary manufacturer with the most experience and investment in juniper, Mike Connolly, Connolly Wood Products (Bend, OR.), has tried at least 14 different product lines using juniper. These include: 1) Wall and ceiling paneling; 2) Wainscot; 3) Flooring; 4) Decking; 5) Railings; 6) Stair systems; 7) Mantles; 8) Moulding (base, casing, and crown); 9) Gifts and accessories (boxes and awards); 10) Plywood; 11) Cabinets; 12) Doors (interior passage and entrance); 13) Store displays; and 14) Furniture. Mr. Connolly reports that current best lines are flooring, paneling, doors, cabinets, and traditional furniture. Although juniper products comprise less than 20% of gross sales, Mr. Connolly predicts juniper products will comprise at least 30%-40% by the end of 1999.

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Where Do Marketing and Networking Fit Into the Commercialization Process?

Commercialization of a previously non-commercial species is complex. The Western Juniper Steering Committee has pursued projects in 12 key strategic areas:

- Inventory;
- Stimulating Private Business Interest & Motivation;
- Markets/Products & Distribution Channels;
- Science;
- Harvest;
- Management;
- Primary Processing;
- Secondary Processing;
- Technology Transfer;
- Public Awareness, Input, and Involvement;
- Government Agency Awareness, Input, and Involvement;
- Integrating Activities and Interests, and Building a Sustainable Organization.

The Forest Products Strategy Matrix at the end of this paper illustrates the 12 key areas above which must be addressed for a successful commercialization process. Although it is not clear in the graphic, results in one area interact with results in all the other areas. Given this perspective, marketing and networking are a part of everything which goes on.

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Western Juniper Commercialization Project - Marketing and Networking Efforts and Results

Western juniper markets and networks necessary to produce for these markets did not happen overnight. Following is a year-by-year description of activities directly related to marketing and networking, beginning in 1992 (when the Winema National Forest conducted the Forest Products Industry Focus Group which identified "juniper" as an issue which should be pursued):

1992

Key Questions - Marketing and networking activities in the first year of the commercialization effort laid the groundwork to answer the following key questions:

- Is this species really considered a pest or a nuisance by landowners and land managers?
- Is a legitimate biological purpose served by removing or thinning this species?
- Is there sufficient volume of this species to make it commercially viable at the scale needed for the markets being considered?
- Is it accessible (legally, physically, economically, and socially)?
- Does this species have any unique or special characteristics which can be used to target niche markets?

Networking - Networking contacts involved identifying and locating key experts, such as field research scientists, key constituent groups, such as the Oregon Cattleman's Association and Wood Products Competitiveness Corporation (now Northwest Wood Products Association), and inventory information.

Existing Industry - At the time the project was begun, the majority of juniper cut for rangeland habitat improvement (thousands of acres per year) was piled and burned, or simply left to decompose. There was limited local use of juniper for firewood and fenceposts relative to the volume left on the ground,

Importance of the Artisan Group - The only value-added commercial use of juniper in 1992 was by a few artisans who used select "character pieces" for high-end rustic furniture. From the Artisans have been a part of the commercialization process from the beginning. The networks and contacts made by artisans complement and help expand markets for more traditional products, such as doors, flooring, and paneling. One artisan in particular, Brent McGregor (Sisters, OR.), has received national and regional media coverage for his work. He has generously assisted other artisans with their techniques, and these artisans are now also receiving media and niche trade media attention.

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Juniper Forum - In 1993 an informal *Forum* was organized by Oregon State University (OSU), U.S. Forest Service, and Wood Products Competitiveness Corporation. Participants included landowners, loggers, wood products manufacturers, scientists, natural resource agency personnel, economic development interests, and environmental interests. *Forum* participants and the mixing of the science and commercial audiences and presentations set the stage for the integrated commercialization effort that is still practiced to this day.

The organizers of the *Forum* knew they were on to something when no more than 75 were expected and almost twice that number registered. There was also local and state-wide media coverage. A Steering Committee was organized and a draft Vision Statement completed. This Vision Statement, with minor modification, is still used to guide activities (see page one). The Steering Committee has met at least quarterly for the last five years. A subgroup of the Steering Committee has monthly conference calls to help coordinate activities of the Western Juniper Industry Facilitator (see 1996 discussion).

First Year Production and Market Trials - Production and market trials with the first of many industry partners were begun in 1993. Because so little was know about western juniper, practically everything undertaken had never been done before. Following is a short-list of 1993 projects:

- Veneer Slicing and Drying Test Run;
- Fencing Production Run and Market Trial (also included log scale comparisons and fencing grade recovery reports);
- Pallet Production;
- Landscape and Decking Production Run and Market Trials;
- Treating Characteristics;
- Drying Trial in Dehumidification Kiln;
- Distribution of Dehumidification Kiln and Air-Drying Trial Results to Manufacturers Throughout Oregon and Northern California;

- Edge-Glue/Finger-Jointed Panels;
- Begin Exterior Finish Trials at the U.S. Forest Service, Forest Products Lab (FPL) (Madison, WI.);

Veneer Slicing and Drying Trial - The veneer slicing and drying trial was attempted because the expense and nature of the raw material appeared to require maximum return. The project also provided hundreds of samples which were used to elicit other commercial interests and remind government and non-profit organizations of the existence of the commercialization effort. Private industry partners were obviously more interested in sawn wood products though.

Fencing, Pallet Stock, and Landscape Timbers - The reason for the interest in fencing, pallet stock, and landscape timbers was the need to decrease costs for drying and manufacturing, and because there were established market contacts known to the consultants hired by the Oregon Economic Development Department (OEDD) to assist.

The fencing market trial failed for a variety of reasons, one of which was that material did not perform in-service in a "wringing-wet" state. Said another way, you could put a fist between boards because of excessive warping. It turned-out that acceptable juniper fencing can be made if boards are air-or kiln-dried, and additional bracing and fasteners are added. This unfortunately adds to cost.

Market acceptance of the landscape timbers was promising, but the mill which wanted to produce the material went bankrupt soon thereafter. In addition, a preservative "treatment" trial was conducted with some of the landscape timbers. Feedback from this trial indicated that the green wood absorbed "too much preservative" (later trials with air-dried timbers indicated the material accepted too little preservative!). Low-grade juniper lumber was also tried-out and found acceptable for one-way pallet deck boards (fastener test information from Ed Burke, University of Montana, later provided additional rationale to use low-grade juniper for this and other similar applications because of "superior" nail-holding capabilities).

Encouraging Manufacturers to Conduct Their Own Production and Marketing Trials - About 10 MBF of 4/4 juniper was dried in a dehumidification kiln and surfaced for distribution to interested manufacturers. The intent was to make it easy for them to conduct their own production and marketing trials. Unfortunately, the material was over-dried, most of it was low-grade (consisting of lumber pulled from the fencing market trial), there was little or no information about pricing and potential quantities, and there was practically no information available regarding what processing methods might work best. Talk about shooting yourself in the foot! It is somewhat surprising that of the 15 or so manufacturers who tried some of this material, three still use juniper in their product lines.

Despite all this, good things still resulted from the contacts made while distributing the "over-dried, low-grade" juniper: 1) Contact was established for the first time with the current leader in juniper value-added product development and sales (Mike Connolly, Connolly Wood Products, Bend, OR.); 2) Contact was established for the first time with the artisan group (sometimes called the "juniper underground"); 3) Additional leads and wood products industry contacts were generated; and 4) A strong base of support was created which later provided critical backing for State of Oregon juniper grant requests.

Given the benefit of hindsight and more knowledge about the wood products industry, here is what advice based on this experience would sound like: 1) Communicate directly with kiln operators about drying schedules and modifications needed for unfamiliar species; 2) Work intensively with a manufacturer or knowledgeable individual to perform basic woodworking tests and measurements; 3) Compile a one-page summary of what is known about the species or material, with tabular or graphic comparisons to other more common species or material; and 4) Work with industry associations and knowledgeable individuals to identify and target firms used to working with different woods and specialty markets.

Air-Drying and Wood Borers - The first attempt at air-drying juniper lumber went well. Within three weeks green lumber was less than 14% moisture content (MC). However, it turned-out that juniper becomes infested

with wood borers if any bark is left on a board, which resulted in several product service calls ("Why is my brand-new furniture leaking sawdust and making so much noise?"). Treatments were explored and this is no longer an issue, except when air-dried lumber is represented as kiln-dried.

Exterior Finishes and Composite Samples - No one knew what finishes would work best with juniper. The issue was discussed with the U.S. Forest Service Forest Products Lab (FPL), the only source of neutral finishing research results in the U.S. Results indicate that juniper acts much like eastern redcedar (*Juniperus virginiana*). Juniper is also an excellent medium for mildew (which makes the wood look gray when weathered). Early exterior finish trial results and discussions with the FPL resulted in recommendations for certain types of finishes for certain applications. Recommendations based on finish research were not always what local sales reps. suggested and finishes sometimes have to be special ordered. In addition to the finish information, the FPL made and tested various composite samples which were used to elicit the interest of composite industry partners.

Gluing and Fingerjointing - The edge-glued/fingerjoint trials went very well - standard industrial glues were used and fingerjointing was not a problem so long as minor modifications were made to the process to cope with a slightly "spongier" wood.

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Critical Wood Science and Manufacturing Tests - Ed Burke, University of Montana, began the first-ever testing of the physical and mechanical properties of juniper during this period. This research had not been done for western juniper as it had for almost all other tree species in the U.S. earlier this century. Burke also completed trials concerning common interior finishes, fastener performance, bending characteristics, in-service shrink/swell properties, pellet manufacturing, and BTU rating. Burke's information provided a hook for secondary producers to try-out the raw material.

Manufacturer Marketing Focus and Composites - Manufacturers continued their focus on various solid wood products lines, such as production furniture, flooring, raised cabinet doors, and paneling. There was also some interest in juniper chips due to a surge in chip prices. Proprietary hardboard siding production trials were conducted and feasibility demonstrated. Results from both U.S. Forest Service FPL composite samples and tests, as well as hardboard siding production trials and tests, indicate that juniper furnish can provide unique and marketable product properties. Reasons why the market for juniper chips did not take-off were basically: 1) Consistent supply sources and producers were not available (juniper harvest was more difficult and specialized than other commercial species); and 2) Cost of raw material was not competitive once chip prices dropped.

Markets for Bark Residual - Bark was going to be a residual, no matter if lumber or chips were produced. With that in mind, bark was tested as a concrete aggregate substitute and wood fiber/plastic applications (FPL assistance). The objective of the concrete aggregate substitution trials was to explore the feasibility of using juniper bark, and its long thin fibers, in the roofing tile market. A patented process worked for the bark aggregate, but not for untreated bark. Lower cost aggregate substitutes were available and the effort was dropped. Pellets were not pursued for a similar reason - lower cost substitutes were available.

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Use of Previous Manufacturing and Marketing Trials, and Networking - Late in 1995 the ad hoc Steering Committee submitted six projects based on problems and issues identified by industry to the Oregon Multi-Region Strategies Program (a competitive grant program for economic development): *Drying*; *Harvest*; *Value-Added Marketing*; *Newsletter*; *Oil Distillation and Marketing*; and *Log Storage and Debarking*. Sufficient

progress and promise had been demonstrated to justify public dollar investment in the economic development opportunities offered by juniper. The restoration of rangeland habitat was also in important issue, but not the prime reason the grants were awarded. The Governor's Economic Development Commission approved all of them.

Newsletters as a Valuable Networking Tool - The juniper newsletter turned-out to be a valuable and popular networking and communication tool. Reports came back that the first issues passed through two and three pairs of hands. Special effort was made to include articles in every issue relevant to the different commercialization constituencies: Land management, harvest, manufacturing, marketing, and "personal insight" (interviews with well-known and respected juniper commercialization participants). The mailing list now has over 800 names.

The only problem with the newsletter is that it takes funding to publish and mail each issue (about $1,000), and the editorial staff is too stretched to do more than one or two a year (OSU Extension Agent and U.S. Forest Service employee). Funding alternatives are being explored to hire writers to keep the newsletter as a communication and networking tool. Advertising and subscriptions were considered, but estimates of the cost of pursuing and administering a subscription base was in excess of the revenue which would be generated, and the advertising or sponsorship funding route was not a normal and accepted practice for OSU Extension, the current editor.

Web Sites as Marketing, Networking, and Technology Transfer Tools - At about the same time the first juniper newsletter was published, a trial commercial web site was designed and set-up (westernjuniper.org). Within a year, a non-commercial web site, maintained by OSU Extension, was also up and running. Two web sites were constructed because the one with a profit motive was not considered appropriate for a server based at a public institution. Use of the OSU web site to disseminate information has potential to cut mailing and copy costs.

Little has been done to track the marketing success of other western juniper commercial web sites. It is evident that more juniper producers are putting up web sites, jumping from one in 1995 to six or more today. Connolly Wood Products is the most sophisticated wood products site, with links to other business partners and highlights from their retail showroom. The Essential Oil Company, which sometimes carries juniper oil, has been at it the longest and relies on web business for a major part of its business.

Kiln Drying - Drying work, undertaken by Mike Milota, OSU, started to yield results in 1995. Milota confirmed that juniper dried well using published schedules. Various other drying methods were tried to reduce warping, in addition to standard steam schedules. Promising leads were not identified. It appears the industry perception of a warping issue is frequently the result of simply more material with growth stress and large knots.

As orders increased, an important issue for the nascent juniper industry became the size and availability of commercial kiln space. There were insufficient orders and production in 1995, as well as working capital, to consistently fill a minimum 40 MBF commercial kiln. Small "cottage industry" size kilns (2 to 10 MBF capacity) were not considered an option because they could not generate sufficient volumes for the types of orders expected (It takes a minimum $20,000 to $22,000 at a producer cost of $500/MBF to $550/MBF to fill a small, at least by normal industry standards, 40 MBF kiln). Various other drying alternatives were tried-out, such as putting juniper in with pine charge on a slower schedule, but none worked as well as drying juniper by itself.

Dry kiln capacity and schedules continue to be an issue with the industry. It is difficult to break into larger markets without the kiln capacity and working capital to back it up. Manufacturers also believe that "there must be a better way" to reduce warp, no matter what the research says. A very slow schedule for incense cedar pencil stock recently was tried. Results were so good that follow-up efforts are planned.

Kiln Operator Training - Besides the technical issue of how best to dry juniper, the Steering Committee had to confront kiln operator (and supervisor) lack of knowledge about juniper. For example, kiln operator concerns about over-drying a new species resulted in about 20 MBF of "case hardened" lumber (pulled before the

conditioning cycle), and tens of thousands of board feet have come out of kilns with too high a moisture content (over 16% MC when specifications called for less than 12%). Operators are also frequently unfamiliar with moisture meter correction factors for different species.

Eight-Foot Edge-Glued Panel Product Tests (Never Again) - Besides drying trials, Mike Milota evaluated the results of "saw-dry-rip" trials and tested edge-glued panels in-service, finished and unfinished. Edge-glued panels are a staple raw material in much of the value-added industry and early industry comments indicated problems with splitting and cracking. Industry manufacturing trials with the 8 ft. panels indicated that they still possessed, in the words of one manufacturer, "...a whole lot of energy" (would warp or come apart when resawed or cut-up). The solution was simple: Do not to try and make long panels with long pieces sawn out of a short tree, which has a high amount of inherent growth stress.

Eastern Redcedar Industry Review Trips - A valuable market research trip to review the eastern redcedar industry in Missouri was undertaken with assistance from a special Forest Service program in 1995. Seven Steering Committee members participated. Eastern redcedar is a "kissing cousin" of western juniper and there has been a viable redcedar industry for over 50 years. Another eastern redcedar industry review trip was taken to Missouri in 1996 with two more participants, specifically to look at the shavings industry. Participants from both trips still bring-up examples of what they saw and constantly look for ways to apply methods and techniques observed during that visit. One outstanding result of that trip did not occur until 1998 - installation of the first shavings mill west of the Rockies.

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Increase in Networking Activities Related to Management - During 1996 networking activities related to management increased, due in large part to financial assistance from U.S. Forest Service programs: 1) A small demonstration area was established by OSU Extension; 2) OSU Extension put together course materials and held juniper management field workshops two consecutive years; and 3) Oregon Department of Forestry (ODF) put together a model scaled-down management plan for a parcel with juniper.

Inventory Methodology - Networking contacts increased in 1996 regarding inventory methodology. A multi-agency, two-state (OR. and CA.) project was completed and a subgroup formed to review future inventory proposals. The goal of the project was to include meaningful, low-cost data categories to field plot samples, such as log quality indicators and key plant associations.

Industry interest in local and large-scale inventory results cannot be over-stressed. One of the first questions (or actually series of questions) asked at the 1993 Juniper Forum was:

- 1. How much is there?
- 2. What is its quality?
- 3. Where is it located?
- 4. How accessible is it, both physically and legally?

Western Juniper Industry Facilitator - A critical networking market development step taken in 1996 was submission of a grant request to the Oregon Multi-Region Strategies Program for a Western Juniper Industry Facilitator. Raw material supply and manufacturer and sales connections could no longer be handled by the Forest Service representative and a part-time volunteer. It was time to transfer these duties to a private party. The grant was awarded and, due to the success of the person involved, renewed for 1998-99. Recently the Industry Facilitator reported over 13 flexible juniper supply/manufacturing networks in place (three or more companies cooperating for a specific product or product line). Eight of the 13 flex-nets have operated over a year.

The success of the Industry Facilitator was not without a few detours. A professional wood products marketer was hired to assist in developing products and markets, but his expertise was in commodity products and pricing, rather than niche products, and by mutual agreement he went on to other things.

Private Business Facilitator for Steering Committee - A private business consultant was hired about the same time the Industry Facilitator was hired. Duties of the consultant are to facilitate Steering Committee meetings, arrange logistics, and complete notes for Steering Committee meetings. The rationale was the same as for the Industry Facilitator - the Forest Service employee and OSU Extension Agent could no longer offer the time and quality of service needed by the Steering Committee.

Critical Grant-Funded Projects - Three projects funded in 1995 were essentially completed in 1996, all of which contributed to networking contacts and marketing:

1. Harvest - A key issue for the juniper industry was and still is the high costs associated with juniper harvest. Baseline data were gathered and support was generated to take harvest investigations to the next level, which will consist of testing new techniques and methods, rather than simply gathering baseline data on existing equipment. This project was recently funded by the U.S. Forest Service.

2. Essential Oils - Another project finished in 1996 was the distillation of essential oils and completion of a marketing plan, based on a preliminary analysis of essential oil markets and economics. Results from this study changed the way that most people viewed potential business opportunities involving oils. The conclusion was that a more niche market orientation was needed.

3. Value-Added Market Research and Market Confirmation - The third project was a value-added market research and market "confirmation" project (report was written in 1998). Initial market research for this project focused on furniture. Retailer and manufacturer interviews indicated a different direction: Specialty value-added niche markets which took advantage of the unique characteristics of juniper.

Key juniper characteristics identified for specialty value-added niche markets were appearance, fragrance, and "finishability". Prototypes were produced and market interest confirmed for the "gifts and accessories" and "store displays" markets. Of these two, the "store displays" market is currently the most active. One of the potential customers identified during this process, Pendleton Woolen Mills, has become a steady customer for juniper store displays. Juniper store displays are now in over 35 Pendleton retail stores nationwide.

Value-Added Market Research Project Results - The value-added project yielded several interesting results: 1) Market niches and product lines could be identified, but small manufacturers and "cottage industry" were not necessarily interested or able to respond (working capital was a primary issue because of the potential size of orders and timing of payments); 2) There was insufficient kiln-dried, high-grade lumber inventory to tackle large orders; 3) Retailer interest was high for several unique juniper design elements (for example, a "woven" wood accent), but no manufacturer has yet followed-up; 4) Economies of scale are still necessary for most value-added specialty markets. For example, the Pendleton Woolen Mills account now consists of over 25 different display items, but sales average less than $10,000 per year; and 5) Experience with the Pendleton store display account subsidized development of other new product lines.

Direct "Gifts and Accessories" Sales - Direct sales contacts with small "gifts and accessory" retailers were made by the Western Juniper Industry Facilitator to offer "cottage industry" size businesses the opportunity to enter the market. Although products were well-accepted, volumes and time necessary to service accounts did not warrant continued involvement.

Picture Frame Moulding - The "gifts and accessories" market niche was further explored with a major manufacturer of picture frame moulding. Juniper appears to be well-accepted and desired by a certain market segment, but the company's sales and distribution network does not cater to that segment and product line design did not highlight unique characteristics of juniper. Ed Burke (University of Montana) completed picture

frame joinery testing to confirm ability to perform with standard equipment.

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Juniper Forum '97 - Another *Juniper Forum* was held in 1997 to share results of western juniper commercialization projects, as well as recent and biological research and management projects. The *Forum* used the same format as the first one in 1993. Over 140 people attended, and there was local and regional media coverage. The only major issue for participants appeared to be when the next one was going to be. *Forum* "sponsorships" were obtained for the first time ever from all Bureau of Land Management (BLM) District Offices and National Forest headquarters in Eastern Oregon/ This indicated strong Agency support for the integrated commercialization approach.

OSU, School of Veterinary Medicine Kick-Off Meeting - A major networking meeting was held with the OSU academic community to kick-off a series of projects with the School of Veterinary Medicine, Forest Research Lab, and Departments of Entomology and Pharmacy (projects will be discussed more detail under *1998*). The Oregon Speaker of the House, Lyn Lunquist, attended, as did the Oregon Cattleman's Association Executive Director.

International Literature Review - An international literature review of *Juniperus* spp. related chemistry and oil articles was completed in 1996 by Joe Karchesy, OSU. Recommendations were made regarding areas to examine more closely.

Conscious Decision to Focus on Log and Timber Frame Home Market - A conscious decision was made by the Steering Committee to target the log and timber frame home market segment. Product lines made by key juniper industry members directly targeted this market segment or appeared to complement it (mainly furnishings). Several members of the Steering Committee also had experience and success showing at log and timber frame home shows. Plans were made to attend two log and timber frame home shows in 1998.

Sustainability of the Western Juniper Commercialization Project - The ad hoc status of the Western Juniper Commercialization Steering Committee was seriously discussed in 1997. An Industry Self-Assessment was agreed upon to begin the process of eventually funding a small association. Success in getting companies to pay the Self-Assessment has been marginal unless the Industry Facilitator directly facilitates sales. About $20,000 has been generated by the Self-Assessment over the last 12 months, mainly from just one or two producers.

"Free Ink" - An effort was begun in late 1997 to take advantage of agriculture and wood products trade media interest in juniper. Since that time at least two regional newspapers (*Oregonian* and *Capital Press*), two regional magazines (*Oregon Business* and *Farmer- Stockman*), and one nationally-distributed magazine (*Wood Technology*) have published articles about the western juniper commercialization effort, as well as sidebar stories about individual manufacturers. This does not include the regional and national coverage received by some of the rustic furniture makers. The juniper manufacturers highlighted in the trade media articles report receiving numerous calls from interested parties (>15), among which were some potential customers. This is obviously a productive area to pursue to increase manufacturer interest and exposure to juniper.

Oregon Governor's Award for Networking and Partnerships - The ad hoc Western Juniper Commercialization Steering Committee's networking and partnership efforts were recognized with a special award from the Governor of Oregon at the 1996 annual state economic development conference. The irony was that the Industry Facilitator had arranged ahead of time to provide the turned-juniper cup awards for the conference, but did not know until the last minute that one of them would be for the Western Juniper Steering Committee.

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Networking and Partnership Status Check - By mid-1998, the Western Juniper Commercialization Project had worked with over 100 different private companies and partnership relationships existed with over 50 private, academic, non-profit or government organizations. The Juniper Newsletter mailing list has grown from 150 (1993) to over 800 and the Industry Facilitator reports close to 200 private business contacts since he began work in 1997 (not counting conferences and trade shows).

Science and Management Networks - Contacts with scientists continue and requests for peer review of technical papers were received by the Steering Committee Co-Chair, the U.S. Forest Service representative. It was suggested during *Western Juniper Forum '97* that an effort be made to improve networking between government scientists and managers, and academic scientists. Although well-received, no one has yet been able to take the lead on convening an organizational meeting.

Trade Show Attendance - The Steering Committee obtained funding assistance from the Oregon Regional Strategies program to attend two log and timber frame home shows - one in Portland and the other in Tacoma. Over 10 manufacturers participated. The juniper industry booth won *Best of Show* or special recognition in both shows. Foot traffic was good, but less than expected in Portland. Off-the-floor sales were over $25,000 and valuable leads are being pursued. Although only one or two of the manufacturers made sufficient income to cover expenses, most of the others thought the shows were valuable marketing opportunities. The Industry Facilitator plans to conduct followup after 12 months to see if an increase in sales resulted from trade show contacts.

Trade Show Technical Presentation - Another trade show attended was the *Wood Technology Show* in Portland. Show organizers requested a presentation about western juniper for the technical sessions held during the show, as well as a paper for the Show Proceedings. The paper focused on questions which might be raised by secondary manufacturers and would have been ideal to have five years earlier (when the initial effort was made to distribute juniper lumber). This effort yielded at least one company who has begun seriously exploring and negotiating a business relationship with an existing juniper manufacturer, to open up new market for both of them.

Basic Fiber and Oil Market Research Projects - A number of basic market research projects were completed during 1998, some of which had been requested years ago but lacked the right set of circumstances and partners. The projects included characterization of fiber diameter and fiber chemistry, common bioassays (brine shrimp, TB, and certain crop diseases), mosquito and flea tests, anti-microbial activity, and animal testing for reactions to juniper shavings. Also begun were field trials involving honeybee mites and potential uses in bee keeping activities. All but the fiber diameter and fiber chemistry work, which was done at the U.S. Forest Service, Forest Products Lab (FPL) (Madison, WI.), were done at OSU.

It appears that the next logical step in animal toxicity testing will involve a much larger sum of money (about $100,000) than is available through economic development sources. State of Oregon legislative action has been suggested due to the investment already made in juniper and potential ramifications of law suits at this stage in the development of a western juniper shavings industry.

Basic Fiber and Oil Market Research Spin-Offs - Some of the basic market research testing and trial results are beginning to spin-off to other organizations and businesses. For example, the National Cancer Institute, Center for Disease Control, and an unnamed major agriculture business are now involved. In addition, followup will be conducted at OSU on some particularly promising results involving juniper shavings and use of juniper in animal enclosures.

Market Development Benchmarks - Several market development benchmarks were achieved during 1998: 1) Enough information had finally accumulated about potential juniper product lines to allow the Steering Committee to publish a draft set of lumber grading rules; 2) A retail juniper showroom was opened up in Bend

(co-located with Connolly Wood Products, OR.); 3) A revised Steering Committee Strategic Vision and set of goals were adopted (noteworthy because this was the first time anyone had tried to quantify production and other statistics for the western juniper industry as a whole); and 4) It became necessary to trademark and begin protecting the juniper logo which had been created about three years previous. The trademark was finding its way onto various business cards and other items, and the Steering Committee decided to assign one member rights to it to begin enforcing its brand and value.

Shavings Mill - Another landmark in 1998 was the largest investment to-date in a juniper fiber project: Over $1,000,000 in private, foundation, economic development dollars were invested in a shavings mill venture. The shavings will be used for animal bedding. Much of the marketing background information is being provided by the informal consortium of OSU scientists. The idea for a shavings mill resulted from Steering Committee visits to the eastern redcedar industry in Missouri, several years previous.

Market Feedback Resulting in Product Improvement - Based on service calls and extensive experience, at least one manufacturer has decided to manufacture some of the traditional juniper product lines, such as paneling and flooring, using a composite core with a resawed veneer face.

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Strategy Matrix
Marketing and Developing Previously
Non-Commercial and Under-Utilized Forest Products

Inventory • Forest/Range Resource • Regional Industry Infrastructure • Science Red Flags	**Private Business Interest/Motivation** • Experience With Raw Material • Capitalization • Marketing & Distribution Contacts	**Markets/Products & Distribution Channels** • Mkts: Opportunities • Prods: Uniqueness/Pricing • Distrib: Wholesaler/Retailer/End-User • Competition
Science • Forest Prod. Phys. Mech. • Forest Prod. Processing • Forest Prod. Harvest • Biology et al.	**Harvest** • Rules/Regs. • Economics • Technology • Seasonality	**Management** • Prvt. Landowner Objectives • Public Land Mgt Objectives • Non-Profit Objectives
Primary Processing (Using Logs as Example) • Chips/Hog Fuel/Shavings • Bark/Mulch • Oil • Lumber/Posts/Beams • Veneer • Posts/Poles	**Technology Transfer** • Govnt. Forest Prod. Marketing/Utilization • Coop. Field Research • University Extension • Econ. Development Assistance • Business Assistance	**Secondary Processing** • Commodity • Specialty Niche • Artisan
Public Awareness, Input, & Involvement • Individual Companies • Industry Trade Groups • Private Landowners • Elected Officials	**Who Connects All This?** • Individuals • Formal & Informal Organizations	**Govnt. Agency Awareness, Input, & Involvement** • Federal • State • Local

• Communities/Economic Development Groups • Media	• Funding • Legislation	

Larry Swan, U.S. Forest Service, Klamath Falls, OR. - Improved Wood Utilization Opportunities for Meeting Ecosystem Management Objectives, Forest Products Laboratory, Madison, WI. (January, 1998)

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