Manufacturing Pathways in High School

Special Committee on Improving Educational Opportunities in High School

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President, OEM Fabricators, Inc.

President, Wisconsin Technical College System Board

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Chair, West Central Wisconsin Workforce Development Board

Chair, Manufacturing Works / Gold Collar Careers

Examples of Manufacturing Pathways in Small High Schools

Webster High School

TIGER MANUFACTURING

Cardinal Manufacturing

Eleva-Strum High School

Baldwin Woodville High School

Webster's School-Based Industry:

It All Started With Brainstorming About Engaging Students With Technology…

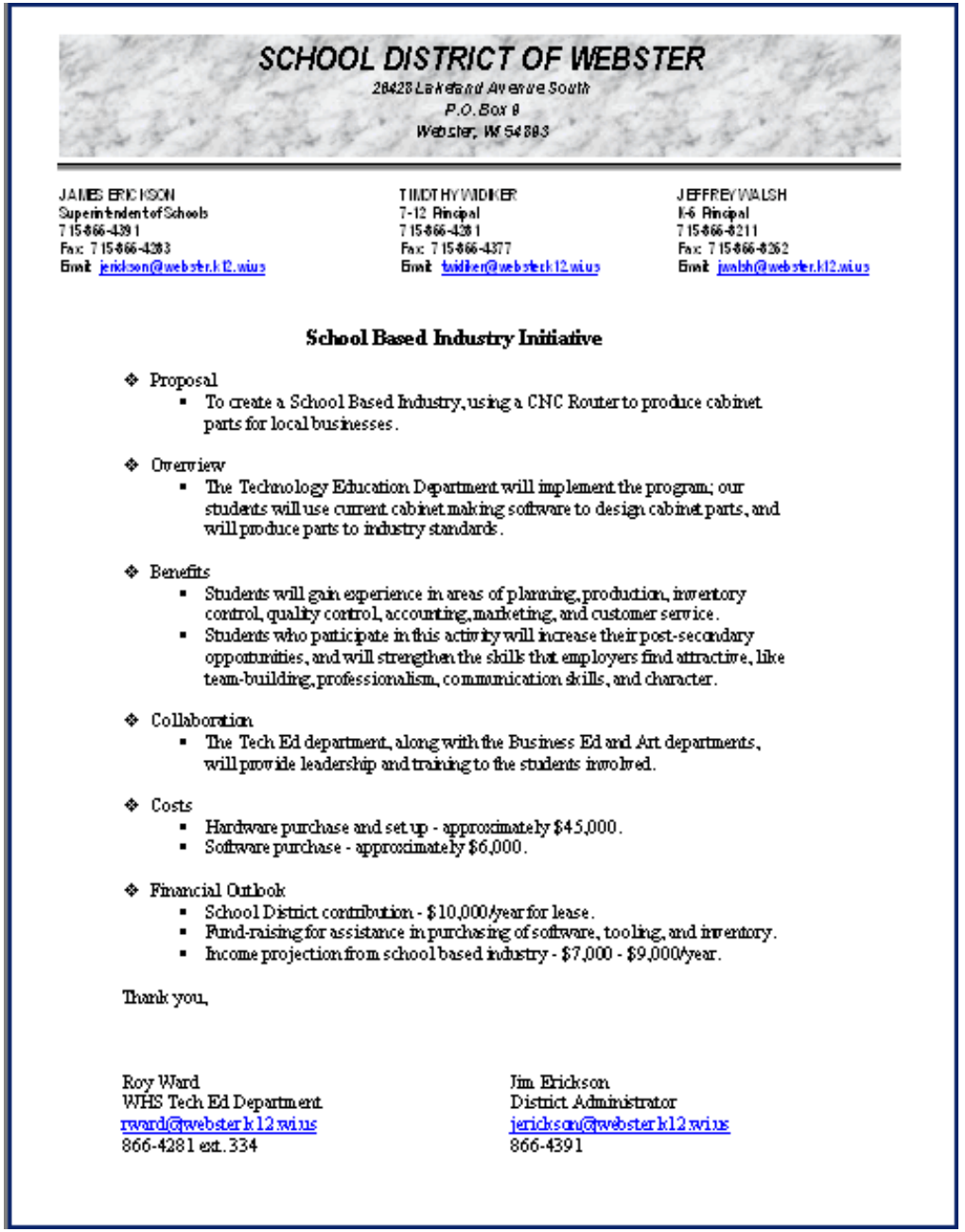
- A “Crazy” Tech Ed Teacher Who Considered the Possible

Vision:

- Teach Real Life Work Skills
- Budget Cuts
- Free for Students
- Self Funded
- Win/Win Situation
- Create a School Based Industry
- Get Support

Initiative:

- What is it?
  - Plan of Action
- Why do you need it?
  - Investors Want it!
- How do you develop it?
  - Vision and Research



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School Based Industry Initiative

- Proposal
  - To create a School Based Industry, using a CNC Router to produce cabinet parts for local businesses.
- Overview
  - The Technology Education Department will implement the program; our students will use current cabinet making software to design cabinet parts, and will produce parts to industry standards.
- Benefits
  - Students will gain experience in areas of planning, production, inventory control, quality control, accounting, marketing, and customer service.
  - Students who participate in this activity will increase their post-secondary opportunities, and will strengthen the skills that employers find attractive, like team-building, professionalism, communication skills, and character.
- Collaboration
  - The Tech Ed department, along with the Business Ed and Art departments, will provide leadership and training to the students involved.
- Costs
  - Hardware purchase and set up - approximately $45,000.
  - Software purchase - approximately $6,000.
- Financial Outlook
  - School District contribution - $10,000/year for lease.
  - Fund-raising for assistance in purchasing of software, tooling, and inventory.
  - Income projection from school based industry - $7,000 - $9,000/year.

Thank you,

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Meetings:

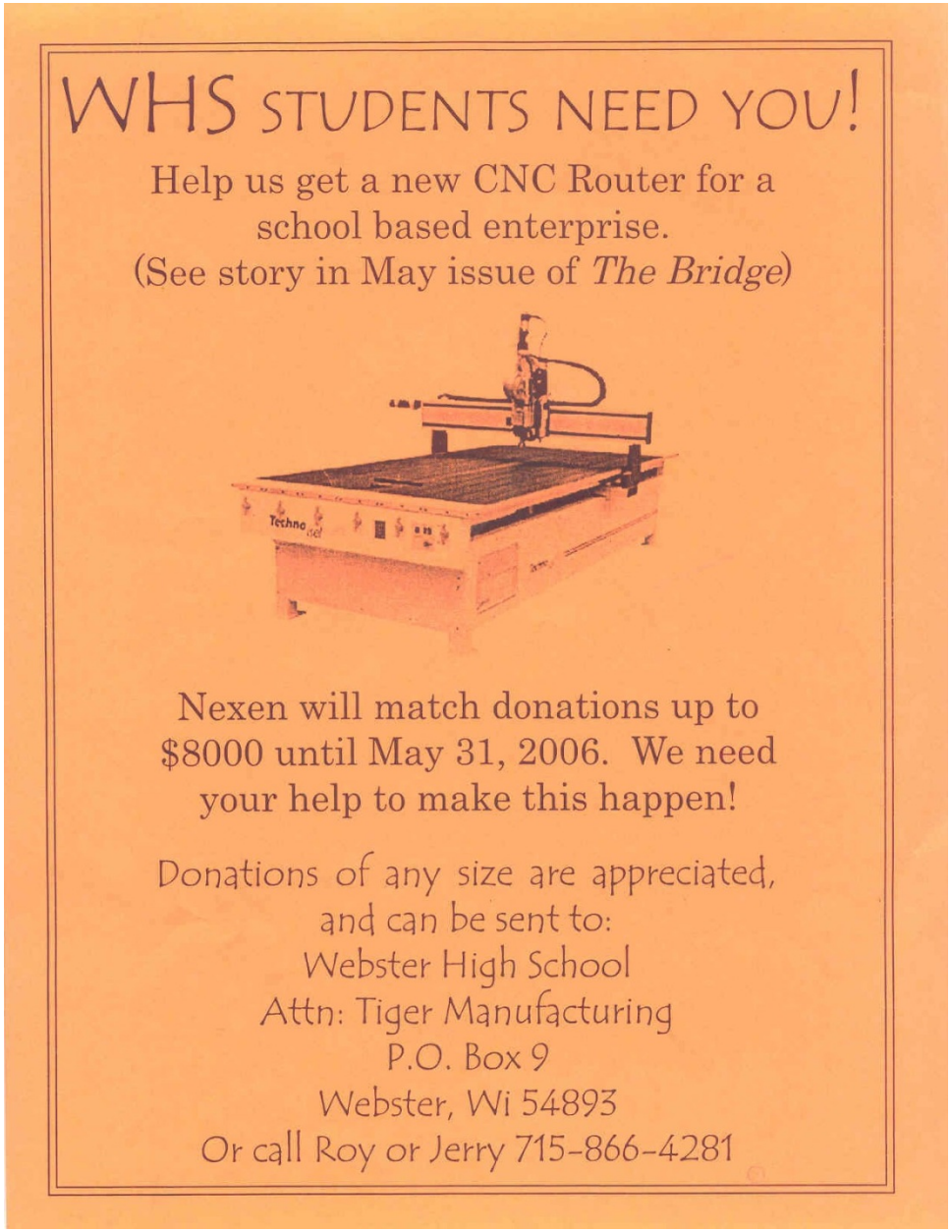
- Critical People to Meet With:
  - Administration
  - School Board
  - Community Partner
  - Business Partners
  - Vendors
- Professional Presentations
  - Initiative
  - PowerPoint

The Request:

- Need for start up funds

Fundraising:

- School Newspaper Ad
- Newspaper Articles
- Nexen
- Seek Out Donators
- Meetings
  - Initiative
  - PowerPoint
  - THANK YOU Letters
- Total Raised
  - **$22,231.00**



CNC Router:

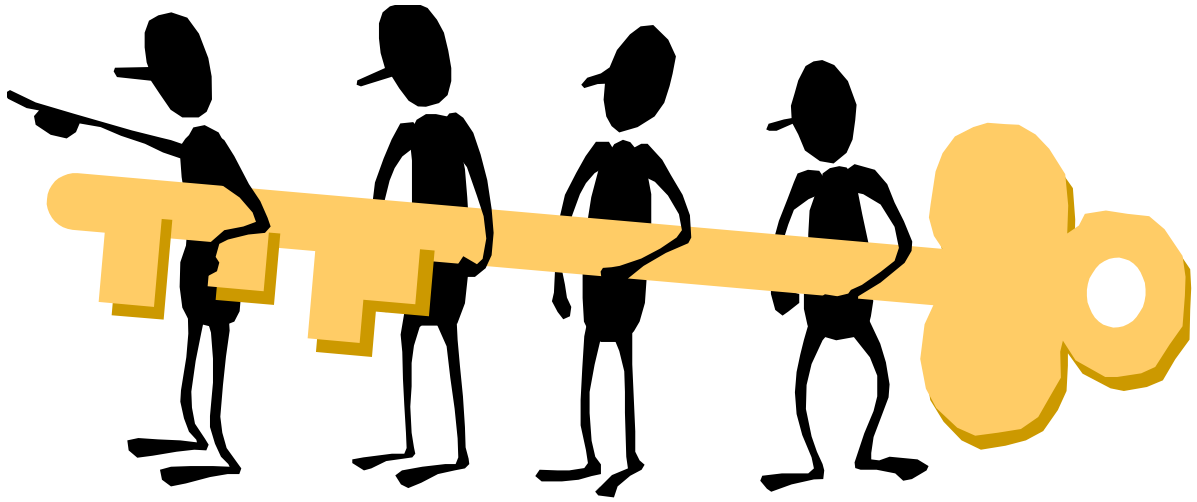
Computer Numerically Controlled

Job Positions
Tiger Manufacturing:

- Accountant
- Designer
- CNC Programmer
- CNC Operator
- Quality Control
- Production
- Inventory Control
- Shipping

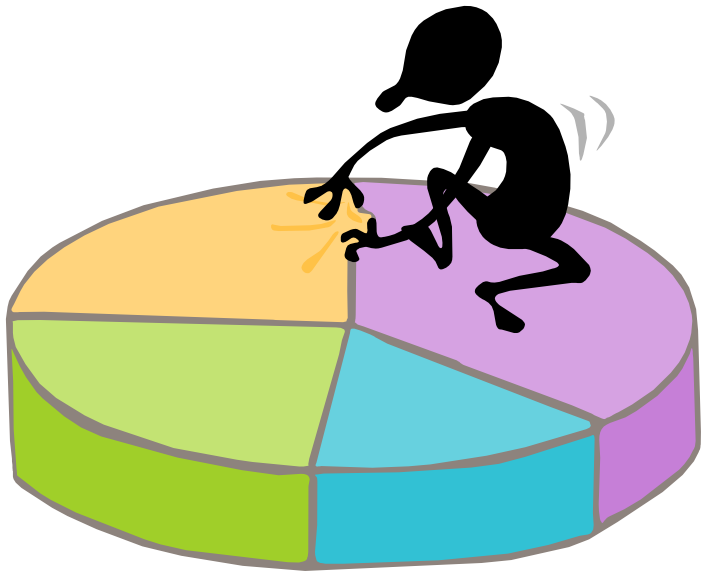
Students Exceeding Expectations

- We have to talk about how incredible these students are when they are given a chance to chase their potentials and be accountable for their actions



Key Components to Success…

- Crazy Teacher
- Administrative Backing
- School Board Support
- Community Partners
- Business Commitment
- Start-Up Funds



Eleva-Strum High School

- http://www.mmsonline.com/videos/video-perspectives-on-cardinal-manufacturing

Modern Machine Shop Video

Cardinal Manufacturing Supporters

- Ad- Delite
  Strum, WI
- A.H. Bennett Co.
  Eau Claire, WI
- ATMCO LLC
  Polar, WI
- Blades Millworks
  Strum, WI
- "C" New Roofing
  Strum. WI
- Chippewa Valley Technical College
  Eau Claire, WI
- Coachsmithing
  Blair, WI
- Continental Products Corporation
  Osseo, WI
- D & S Manufacturing
  Black River Falls, WI
- Designer Doors
  River Falls, WI
- Doug's Trucking & Excavating
  Strum, WI
- Eleva Lumber
  Eleva, WI
- Eleva-Strum Education Foundation
  Eleva-Strum, WI
- Family Farms
  Eleva, WI
- Fastenal
  Winona, MN
- Global Finishing Solutions
  Osseo, WI
- Huot Manufacturing Company
  St. Paul, MN
- Hydro-Fab Innovations, LLC
  Antigo, WI
- J & D Manufacturing
  Eau Claire, WI
- L & S Electric Inc.
  Rothschild, WI
- Michel's Electric
  Strum, WI
- Midwest RV
  Eleva, WI
- Miland Motors
  Eleva, WI
- Milltronics CNC Machines Company
  Waconia, MN
- MRS Machining
  Augusta, WI
- Nexen
  Webster, WI
- North American Fly
  Strum, WI
- OEM Fabricators, Inc
  Neillsville, WI
- Phillips Plastics
  Eau Claire, WI
- Plank Enterprises, Inc.
- Eau Claire, WI
- REB INC.
  Menomonie, WI
- River Country Enterprises
  Strum. WI
- Riverside Machine & Engineering Inc.
  Chippewa Falls, WI
- Robbies IGA
  Strum, WI
- Strum Locker Plant
  Strum, WI
- Tainter Machine
  Colfax, WI
- Timber Technologies, LLC
  Colfax, WI
- Titan Air Incorporated
  Osseo, WI
- UW Extention
  Whitehall, WI
- Value Implement
  Osseo, WI
- Village of Eleva
  Eleva, WI
- Village of Strum
  Strum, WI
- Western Dairyland
  Independence, WI
- Wolf River Expo Service
  Black Creek, WI

Baldwin Woodville High School

Why a Manufacturing Pathway?

A Manufacturing Pathway

Challenges:

- Manufacturing's Poor image
- Bias toward 4-yr degree
- Industrial Camouflage
- You can be anything
- Financial roadblocks
- Silos in and between
- Out of date knowledge
- Lack of youth employment
- We all must reduce costs

A Manufacturing Pathway

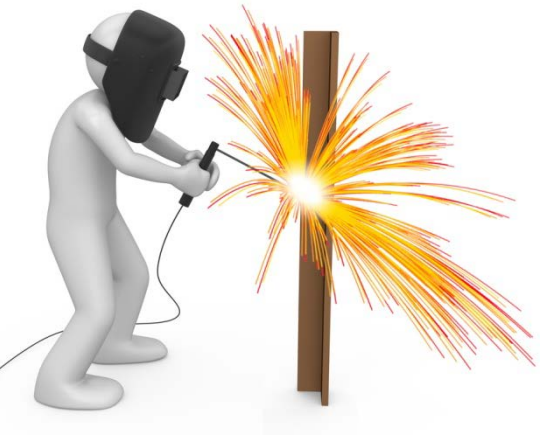
- The Concept:
  - Explore opportunities
  - Reset understanding
  - Set expectations
  - Begin learning early
  - Get a taste of success
  - Reinforce expectations
  - Gain traction
  - Succeed
  - Don’t stop learning

Our Solution….A Systems Approach

- We must act and work as a single system
- Silos within and between our institutions can't exist
- Resources need to be shared
- As we challenge the status quo, we can't be afraid of the rules
- There is "free money" in the silos if we act as a system
- Our customers are our students, each other, and Wisconsin's taxpayers

How does it work?

- Career exploration in 8th & 9th grade
- STEM classes in 8th through 10th grade
- On the Manufacturing Pathway in 10th grade
- Curriculum is aligned to the Manufacturing Pathway wherever possible
- Choose a career path as a Junior
- Part-time work (4hrs/26 wks), dual credits
- Senior (8hrs/52 wks) more dual credits
- Graduation (20hrs/52 wks), Advanced placement at WITC
- Tuition is paid through OEM's reimbursement program
- At graduation, 3 years with OEM, fully trained, expect to make $2/hr more than a typical Technical College Graduate



Some of the challenges..

- Who is qualified to teach?
- Who's insurance covers a minor in a factory?
- Who pays when it's not in the budget?
- Who solves the turf battles?
- What if the student chooses a another College or Company?
- Unexpected landmines!

OEM's WIIFM

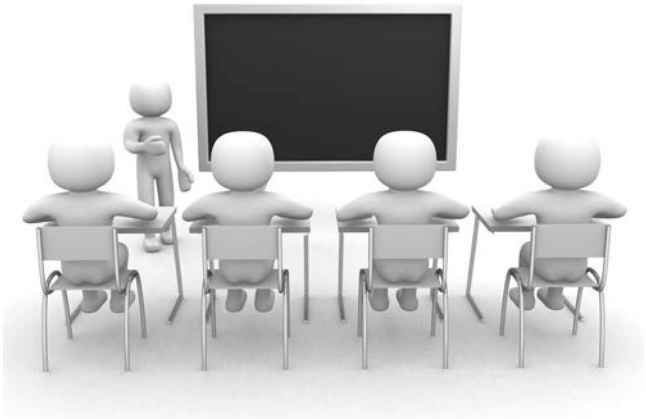
- Move the cost of recruiting into Team Member training
- A reliable pipeline of skilled workers we already know
- We make fewer hiring mistakes
- We can develop the soft skills early in the process
- Students learn skills directly related to OEM's needs
- We get to hire Team Members that already live here
- A skilled talent pool is a competitive differentiator
- It feels right, it's aligned with our values

BWHS WIIFM

- The is now a path and a plan for hands-on, visual learners to achieve higher success
- Disengaged students become engaged
- Student retention and success increases
- Successful students have happy and supportive parents
- Partnerships can help bridge resource gaps
- Opportunities for students are broader

WITC WIIFM

- Recruiting is automatic
- Extends resources
- Students come better prepared
- Solidifies networks with businesses and K12
- Lessens time to graduation
- Improves institutions performance



Student WIIFM

- Math, English, Science, Technology is taught in an applied context
- Junior earnings are over $1000 26 weeks @ 4hrs @ $10
- Senior earnings are $5000 52 weeks @ 8hrs @ $12
- Technical College Student $14,500 52 weeks @ 20hrs @ $14
- Tuition is paid through OEM's tuition reimbursement benefit
- The day they graduate they already have over three years with OEM
- Learning is High School is leveraged in the Technical College
- Learning at the Technical College is leveraged in the University
- Lifelong learning becomes seamless

The Promise…

- A Pipeline of Skilled Team Members that Live Nearby
- Knocking Down the Barriers to Success
- The Company, Region, or State with the Best Trained Workforce will Win

Next Steps

- To grow the program to 20 graduates annually
- Continue to work toward more dual credits
- Drive manufacturing context in the curriculum
- Improve, Improve, Improve
- Roll out to more schools and companies


Thanks!