



+ PROMISES PERILS **-**

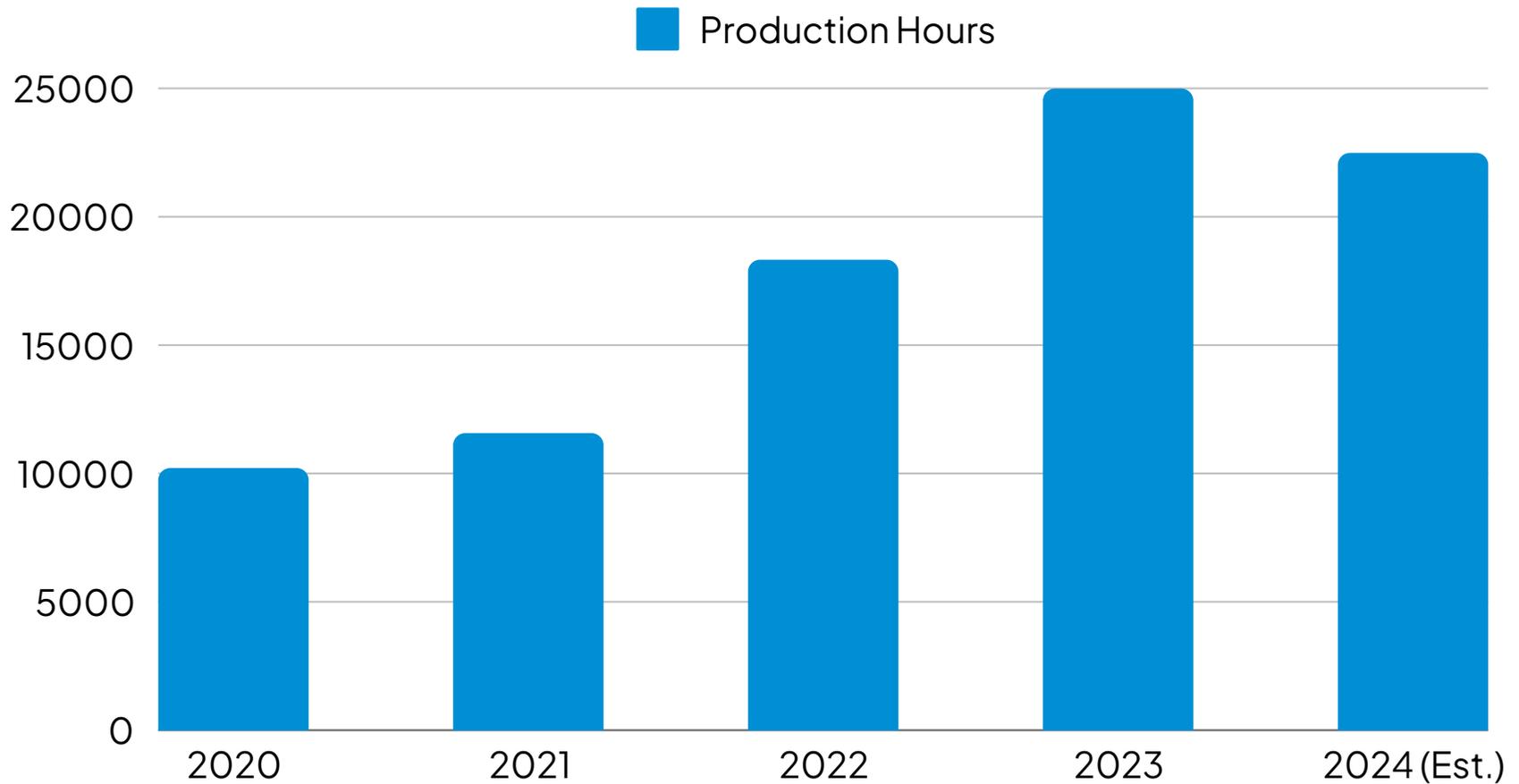
AUTOMATED, FLEXIBLE MANUFACTURING IN A HIGH-MIX ENVIRONMENT

A presentation by Peter Doyle, President and CEO of Hirsh Precision





HOW DID WE GROW BY 80% IN 2 YEARS?





OUR EXPERIENCE

What is an FMS?

- Multiple machines connected
- Advanced software for scheduling

Our systems

- 2 Fastems cells
- 5-axis and 4-axis milling, 105 total pallets





AUTOMATED, FLEXIBLE MANUFACTURING

PROMISES

Increased Productivity

- Increases utilization and agility via dynamic MMS scheduling

Ensure Precision & Quality

- Ensure quality and reduce the risk of human error by controlling process variability
- New capabilities: tool management, collision detection, probing, SPC, fast inspections

Support Scalability

- The FMS systems are flexible and modular to allow expansion
- Facility output: size x density x velocity

Improve Profitability

- Increase unattended production hours and reduce direct labor inputs per part
- Create white space in your schedule – and spend your time on higher level challenges facing your business



AUTOMATED, FLEXIBLE MANUFACTURING

PERILS

Long-term Financial Commitment

- Difficult to move
- Ancillary costs involved (presetter, tool holders, fixturing, probes, labor time, indirect planning)

Workforce Implications

- Staffing schedules
- Training & Development
- Skills mix

Organizational Change

- Process adaptation
- Sales and continuous improvement implications
- Systems integration and scheduling



MAKING GOOD DECISIONS FOR YOUR BUSINESS



CONTEXT

- Machining is economically critical and durable, but high-mix high-precision businesses are complex
- Enduring characteristics of smaller component manufacturers: modest margins, relatively high CapEx, limited access to capital, & unlimited liability for owners
- New technology required to remain competitive under any strategy – (focus, differentiation or cost leadership)

Takeaway

Machine shop owners are at risk of failing to invest adequately to meet market needs because of uncertainty and personal guarantees





MAKING GOOD DECISIONS FOR YOUR BUSINESS



DECISIONS

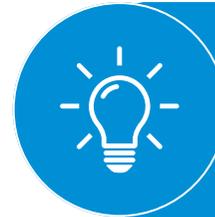
- Success and failure are terrible teachers
- Personal commitment and passion can be a double-edged sword
- Right vs. rational decisions - being “right is past tense, and your goal is to make rational decisions with the information you have
- Risk and ignorance
 - Risk means you know the profitability of outcomes
 - Ignorance means the probability of outcomes is either unknown or nonexistence
 - Investment often feels like decisions under ignorance
 - In these cases, make decisions in which the downside is still acceptable (you have nothing to lose)





MISTAKES & LESSONS LEARNED

- Do your research and plan ahead (tool management, in-process quality controls, system integration, facility needs)
- Every problem is a systems problem - standardize your processes and test if you can go 10x
- Don't underestimate the learning curve - in sales, operations, and support processes
- Get ready to grow!



Good implementation
creates organization lift

Partial implementation is still
progress, but feels harder



A WORD ON PEOPLE

It's a team effort, not a new piece of equipment; anybody can buy equipment, but not everybody uses it well.

- Increase job satisfaction
- Enhance skill development
- Attract and retain talented team members
- Increase productivity, efficiency and work flexibility
- Improve collaboration and foster innovation
- Make better decisions at lower levels
- Mitigate safety risks

If you're a decision maker, it's up to you to introduce risk and drive growth.

Not everyone is ready or will come with you on the journey, but don't let that deter you.

