

IPRO 341

Design and Global Market Analysis of a Tool Product



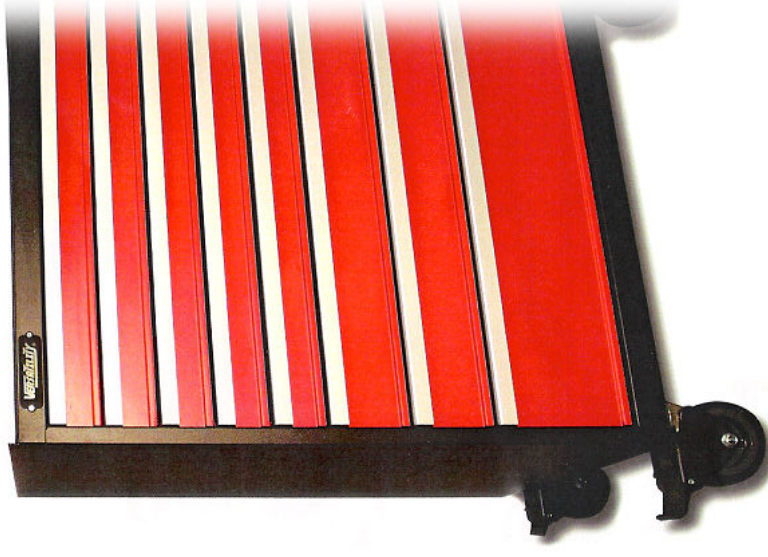
Versatility Tool Works and Manufacturing

11532 S. Mayfield Avenue
Alsip, IL, 60803

Phone: 708.389.8909

Fax: 708.389.8955

E-mail: info@versatilitytool.com



Illinois Institute of Technology

3424 S. State Street
Central Building, 4th floor
Chicago, IL, 60616

Phone: 312.567.3940

Fax: 312.567.3950

E-mail: keplinger@iit.edu

Conclusion

The IPRO team has made a lot of progress in the time span of one semester. A significant amount of data and insight has been obtained about the root causes of the premature failure of the tooling cabinet drawers. The marketing team has conducted the first-ever marketing efforts for VTW and was able to collect data on potential improvements and additions to the tooling cabinet, which will serve to expand the customer base and increase sales.

Further Steps

The future IPRO teams will need to continue testing of the drawers and determine the best, most cost-effective solution. The team may help VTW design new tooling cabinets that meet the specific requirements for its customers. On the marketing side, the next IPRO team should be able to collect even more data from the surveys and conduct further market analysis to determine the best methods to reach more customers and increase VTW's market share.

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Introduction

Versatility Tool Works and Manufacturing (VTW) is a small metal works company based in Alsip, Illinois. Recently, the company has started producing tooling cabinets to accompany press brakes manufactured by Amada America Inc. However, the company has run into a few problems and decided to contact Illinois Institute of Technology for help.

Objectives

The IPRO 341 team was charged with two tasks:

- Determining the cause of premature failure of the tooling cabinet drawer and developing potential solutions
- Gathering market intelligence data to help the company improve and expand

Team Organization

In order to accomplish all of the objectives in time, the IPRO team was split up into testing and marketing sub-teams.

The **testing team** took up the task of performing numerous tests on the jamming drawer slides and researching possible solutions.

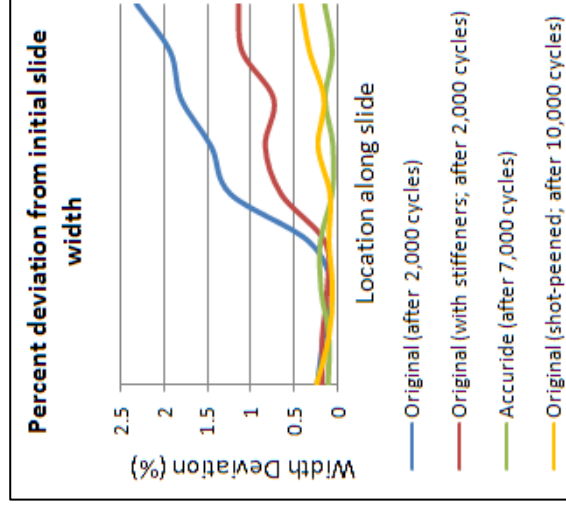
The **marketing team** performed market research, conducted surveys, and created a video testimonial for the company.

Throughout the semester, the IPRO team as a whole met with the sponsor and kept them up to date on the progress.

Accomplishments

Testing Team Findings

- Yield strength of the original slides was too low (HRB 55). Slides deformed and caused drawer failure after only 5,000 cycles of opening and closing drawer.
- Slide deformation allows drawer to bend in, which led to scraping against bottom of the cabinet.
- Accuride® slides were tested to be significantly harder than original (HRB 72). Drawer showed no signs of failure even after 7,000 cycles.
- As a cost effective solution, stiffeners were added to inside of drawer to prevent bending. Drawer started jamming after 8,000 cycles.
- Original slides were hardened using shot-peening (HRB 67). Drawers showed no signs of failure after 10,000 cycles.



Accuride® slides showed significant reduction in slide deformation even after 7,000 cycles

Marketing Team Findings

- Using SurveyMonkey.com, the team created an electronic customer satisfaction survey that addressed the major areas VTW was using to promote their tooling cabinet
- A list of 104 VTW customers was obtained and each was contacted by phone to obtain email addresses for survey delivery.
- Surveys emailed to 62 customers who provided their email addresses. 5 customers responded so far.
- A testimonial by Amada America Inc. tooling supervisor was video recorded and edited into a short video clip to be displayed on VTW website.

Survey Results

Quality:	★★★★★	4.6
Design:	★★★★☆	3.75
Stability:	★★★★★	4.25
Customization:	★★★★★	3.75
Longevity:	★★★★☆	4.2

Critical Barriers

The entire IPRO team had to put in a lot of effort to satisfy the requirements of this IPRO. The testing team had to spend extra time learning how to use AutoCAD, ProEngineer, and other software. The marketing team, composed entirely of non-business majors, had much to learn about marketing research tools and techniques. A great amount of time was also spent on weekly meetings with VTW in order to determine their expectations and keep them updated on the progress.