

# Innovation through Lean Efficiency:

## Benefits and Barriers for Graphic Communications Companies



Presented by:  
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Western Economic  
Diversification Canada

Diversification de l'économie  
de l'Ouest Canada

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## **Founded in 2008 (Closed 2013)**

*Centre for Excellent in Print Media*

## **Industry Programming and Applied Research**

*Lean Manufacturing – Landmark Group Centre Value Improvement*

*Diploma and Certificate Course*

*Technology Incubation*

*Industry Workshops*

*\$5,000,000 investment (Federal, Provincial and Industry)*

## **Our Mandate**

*To help print companies in Western Canada become more profitable, improve current print production standards, and meet business needs efficiently by offering insight on new technology and innovations. NorQuest College also works to support printing companies by developing focused training opportunities for existing staff and by training new employees.*

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# CAL POLY

SAN LUIS OBISPO

**Graphic Communication**

## **Founded in 1946**

*School for Country Newspaper Printers*

*Print Engineering*

*Graphic Communication (GrC)*

## **Approximately 330 Majors**

## **50 Minors**

*Design Reproduction Technology*

*Graphics for Packaging*

*Graphic Communication Management*

*Web and Digital Media*

*Individualized Course of Study*

## **Over 3,000 alumni**

*Industry leaders*

*Prosperous families*

*Innovators and critical thinkers*

## **33,000 ft<sup>2</sup> of laboratory space**

*Design technology*

*Prepress and pre-media*

*Traditional press – sheetfed & web*

*Digital press*

*Finishing*

*Substrates, ink, and toner testing*

*Specialty printing and packaging*

*Management*

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# The Project

## Two-part project:

- 1) Western Canada industry trends survey
- 2) LEAN manufacturing training for 4 individual companies in Western Canada
  - Setting 3, 6 & 9 month LEAN goals

# Western Canada Industry Survey

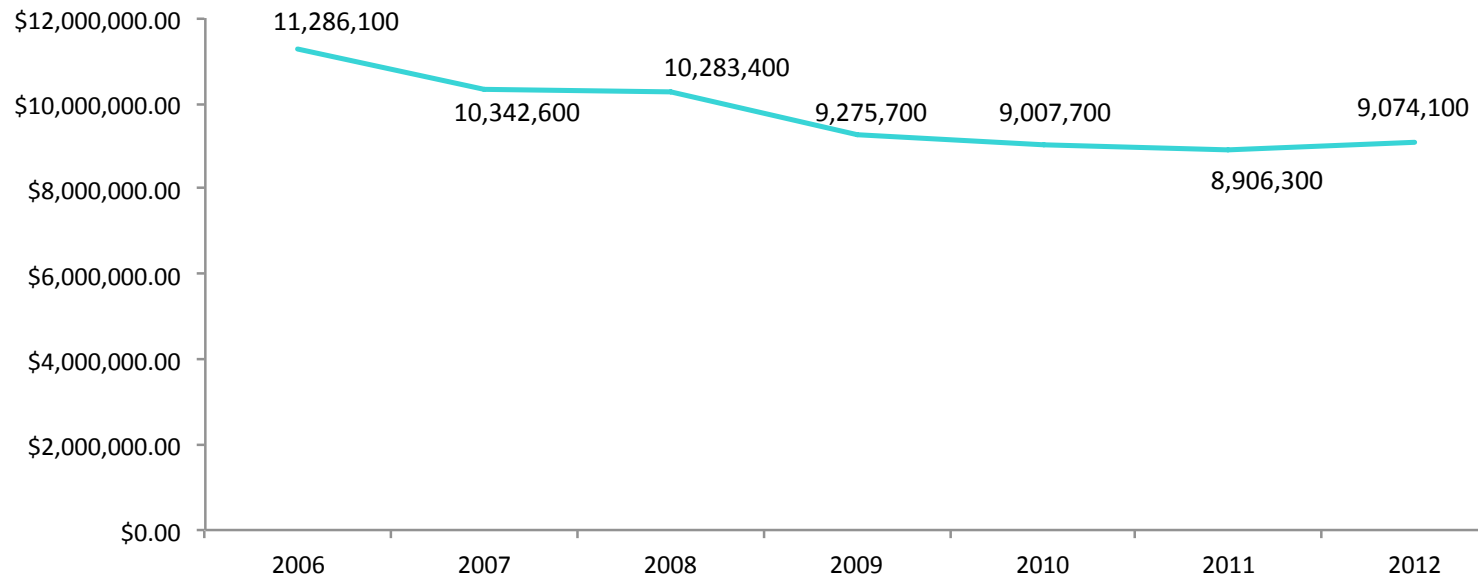
## Select findings and figures

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# Manufacturing Sales – Print

NAICS 323



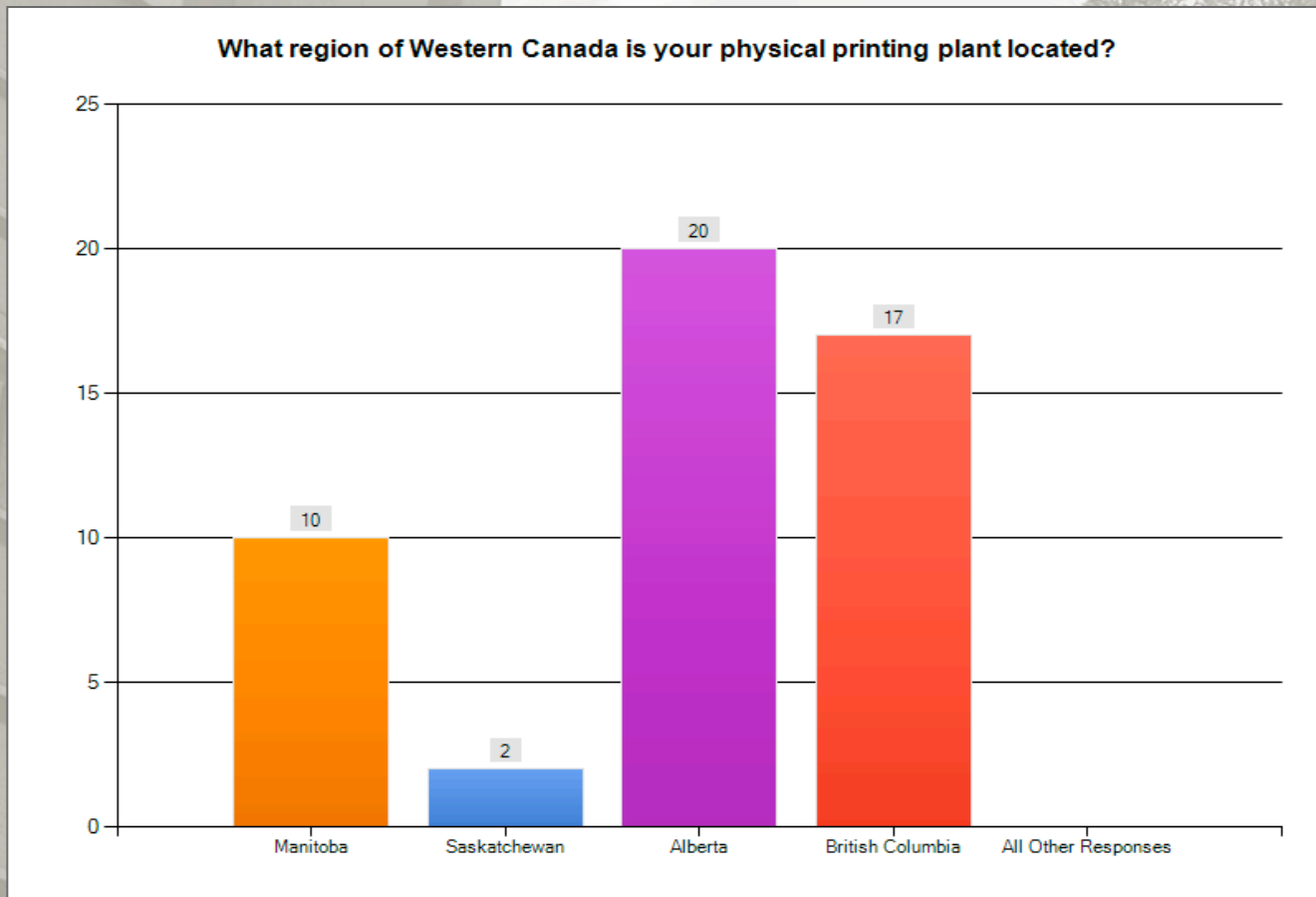
Statistics Canada- Manufacturing sales by subsector

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# Industry Survey

## 45 Western Canadian Companies

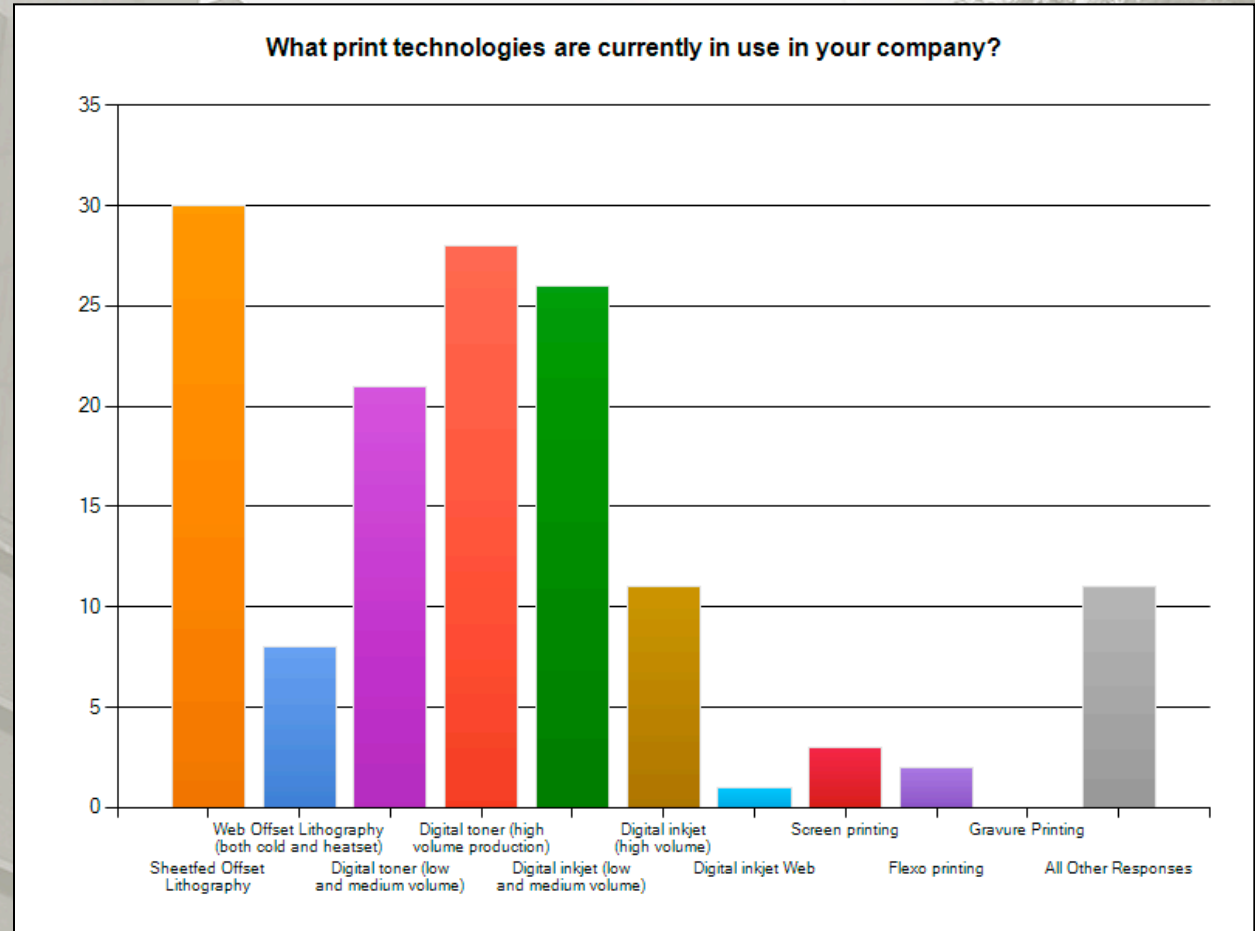


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# Industry Survey

Varied print  
technology in  
sample  
operations



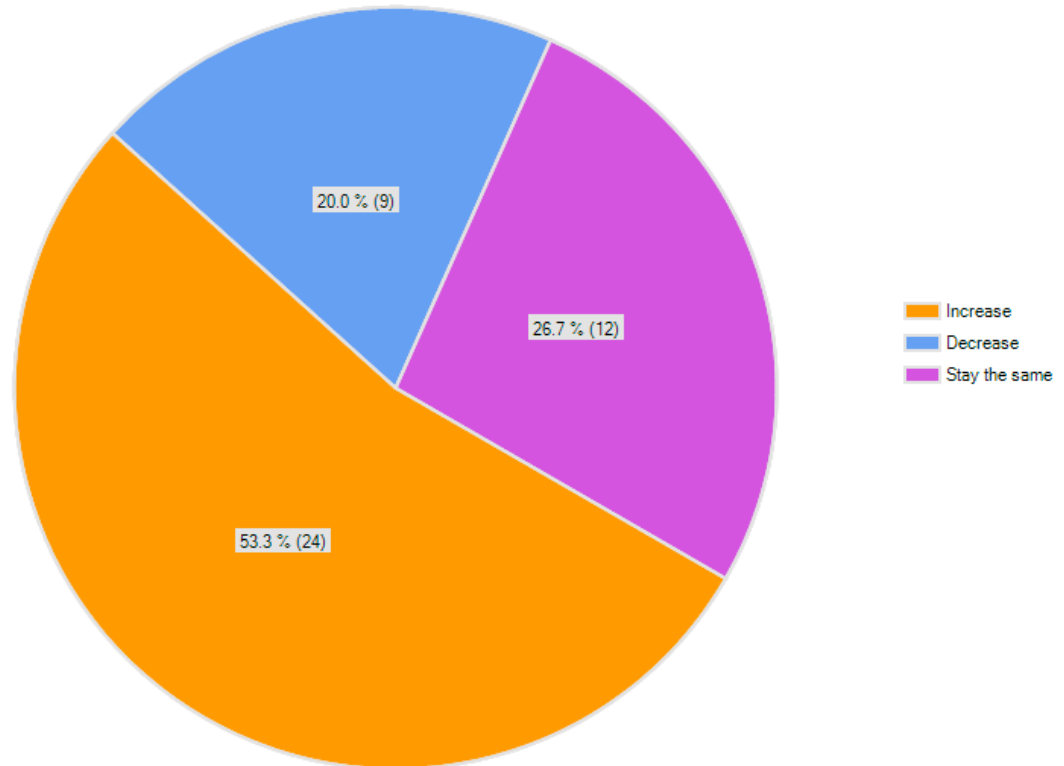
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# Industry Survey

Over 75 % of companies anticipate growth or steady print volume

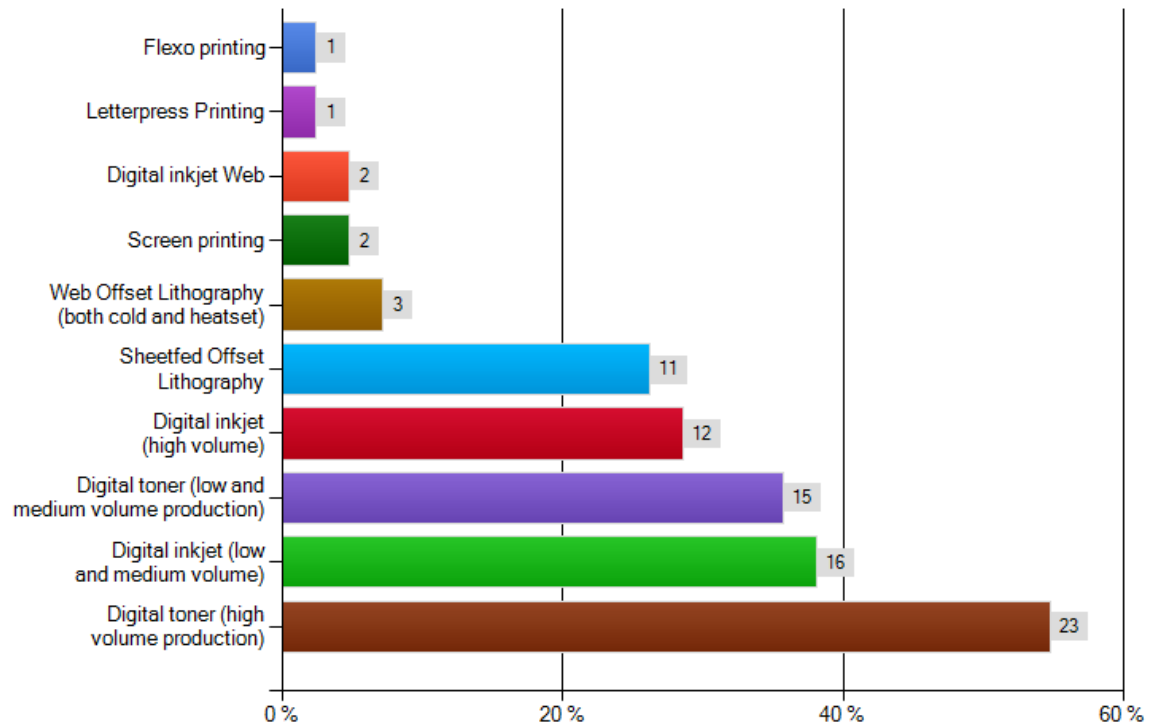
Based on last years production - do you anticipate your companies total print volumes (number of sheets printed) in 2013/2014 to



# Industry Survey

## Growth areas for Western Canada

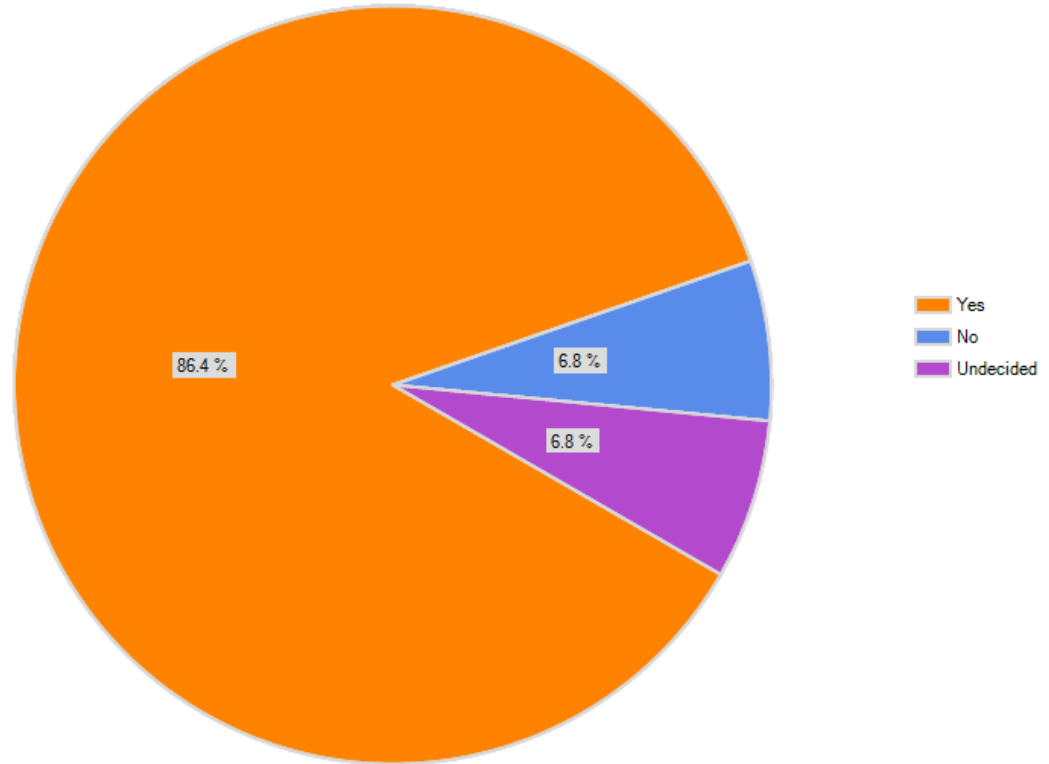
Do you anticipate print volume GROWTH in any of the following technologies?



# Industry Survey

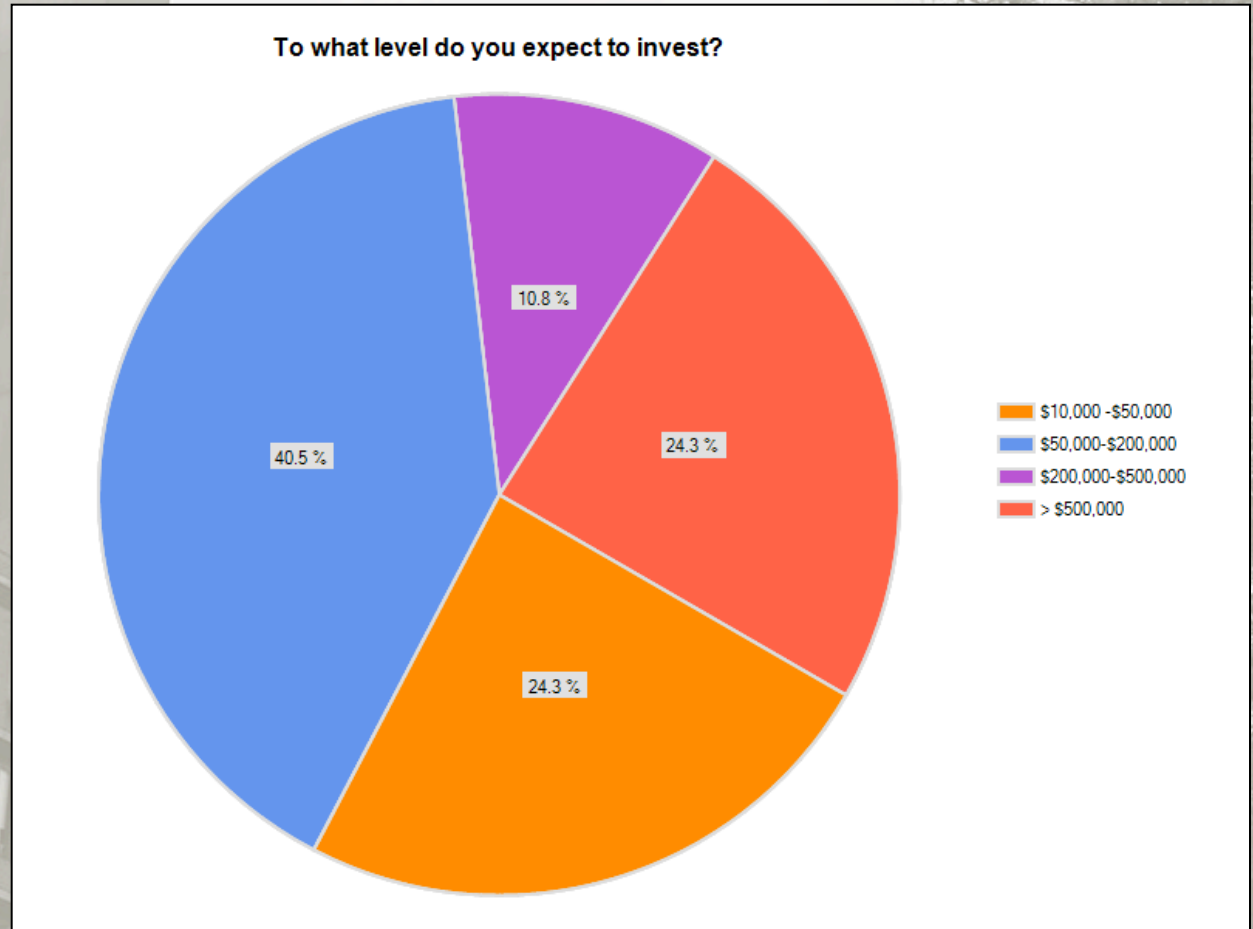
Equipment  
Investments  
will continue

Will your company be investing in significant capital assets (>\$10,000)  
within in the next two years



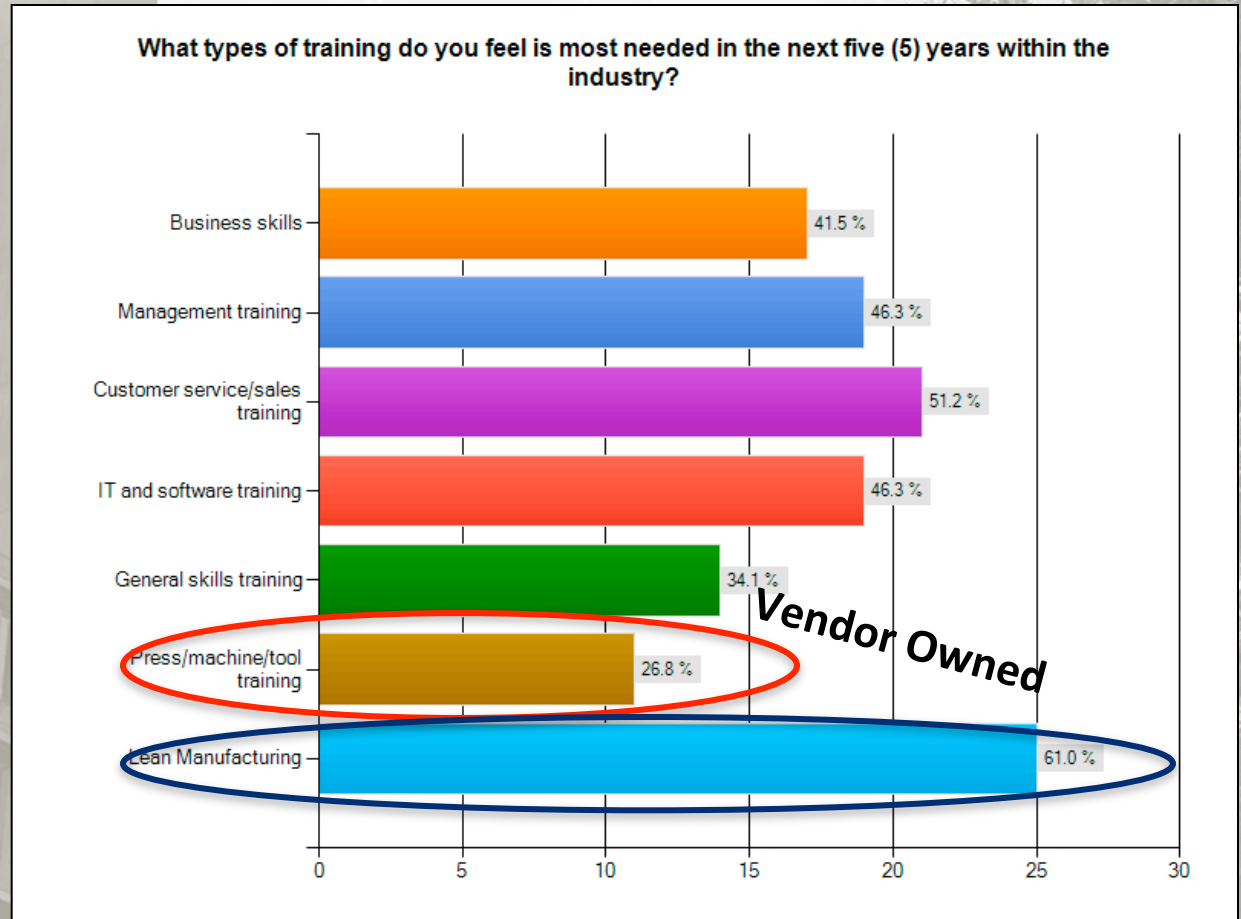
# Industry Survey

More than 70%  
of companies  
planning on  
investments of  
greater than  
\$50 K



# Industry Survey

LEAN training  
identified as  
high need  
over the next  
5 years



# What is “LEAN”?

- A philosophy
- A series of applications
- An opportunity for unified engagement
- A system of productivity techniques
- A system of quality improvement concepts
- **A way in which to define value from a customer's perspective (Internal & External)**
- An application that forces cultural change, engages everyone and demands continual improvement.



# Elimination of all Non-value-added processes

- Less human effort or motion
- Less inventory
- Reduce cycle time
- Less space
- Less visual distraction
- JIT



# Western Management

Perhaps most significantly, in the West, we tend to be oriented toward short-term results. We want to get the problem taken care of and move on. At Toyota, however, the process by which the results are achieved is equally—if not more—important, and the ultimate goal is not just a problem resolved in the immediate term, but also that:

- 1) the problem is less likely to occur in the future because the overall system is improved, and
- 2) the problem-solver has enhanced his or her problem-solving skills and is prepared to tackle even more challenging tasks in the future.

Sobek, D. & Smalley, A. (2009). Understanding A3 Thinking. Boca Raton, FL: CRC Press.

# LEAN manufacturing training for 4 individual companies in Western Canada

## Case Studies

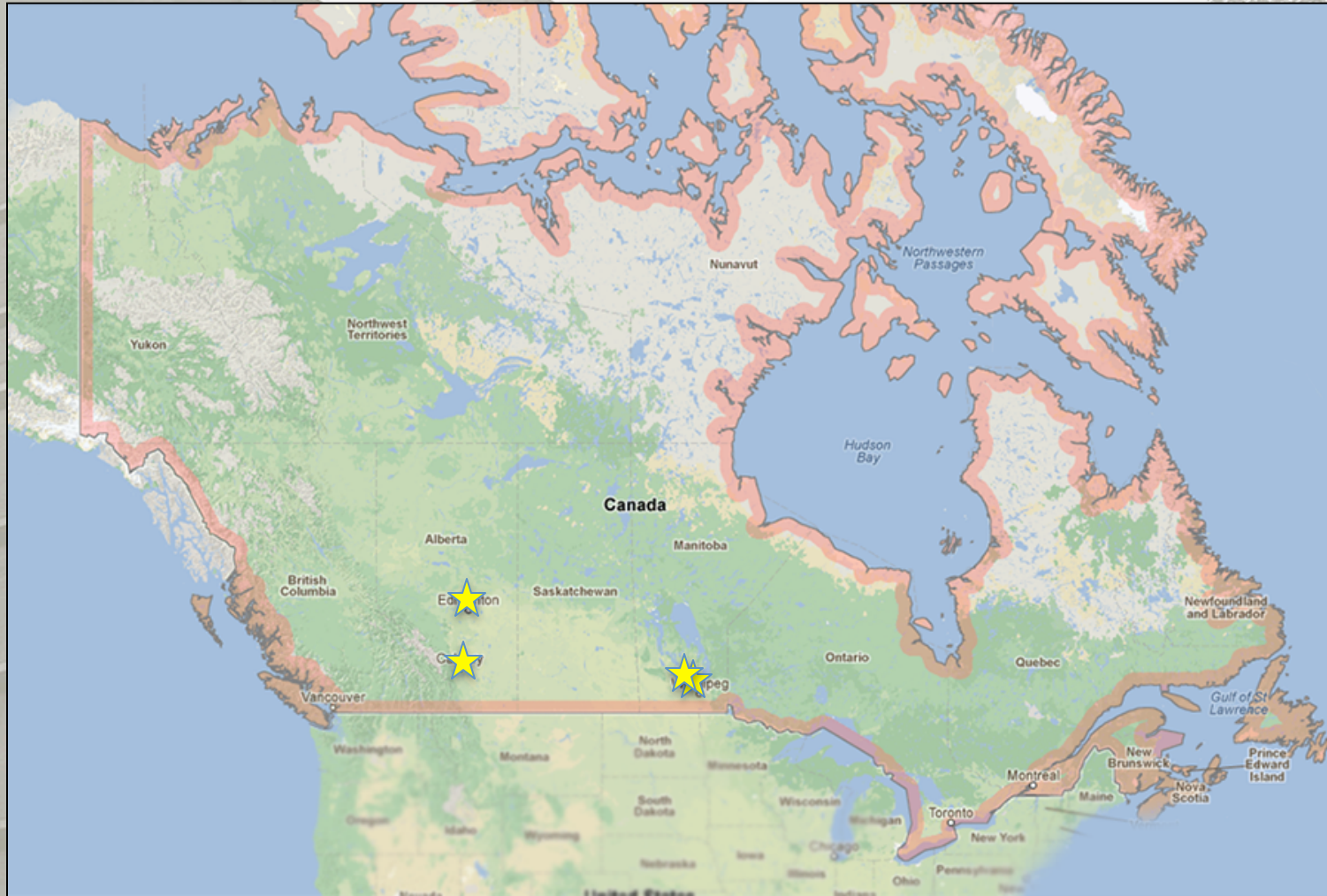
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# Plant Selection

1. A selection of small and medium size operations
  - 2 over 60 employees
  - 2 Under 30 employees
2. Selection based on diverse business focus
  - 2 Commercial
  - 2 Digital
3. 2 Provinces with different economic environments

# Plant Locations



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# LEAN Training

- Lean teams of between 4 - 12
- 3 days intensive training
- Plant and Process Exploration
- Employee (Plant) engagement
- Contracted LEAN Implementation Plan
  - 3, 6 & 9 month goals



# LEAN Company Findings

## Observations

All 4 companies did not show solid understanding of how jobs “flowed” through their operations

- Technology first mentality
- Siloed operations and employees
- Assumptions on workflows and issues
  - Current state vs. Assumed state
  - Significant gaps understanding of CSR role and responsibility **“12 touches”**
- Production focus was on equipment not efficiencies
  - Utilization rates not know and few metrics
  - Vendor solutions



# LEAN Company Findings

## Observations

- Larger plants able to build sustaining lean teams
  - One plant created value improvement position
- Smaller plants faced challenges on sustaining
  - Overcome this with constant engagements
- Ownership needs to understand it is okay to be transparent and engage outside management



# LEAN Company Findings

## ✓ Most used tools

- Process Mapping
  - Swim lanes
- Red Tags
- Floor tape
- Huddle boards
- Gemba Walks (5S)
  - Looking at the current state

## ✗ Least used

- 5S Audit sheets
- A3 problem solving sheets
- Visual Identification
  - Other than floor tape

## 5S Activity - Before



Unwanted materials and random inventory

## 5S Activity - After



Cleaner, safer and now to be used for revenue generation activities

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# LEAN Company Findings

## Outcomes

- Cumulative \$ on savings
  - Over \$60,000 (hard dollar) saved in 9 months
  - \$20,000 one location alone
    - Explored processes on vendor payments found significant overpayments and double payments
- Employee Moral
  - All locations reported increased employee moral and interactions
  - Not one position lost due to LEAN activities
- Workplace Safety
  - All locations prior to training had hidden or impacted safety equipment
  - All plants now have open access to all equipment



# LEAN Company Findings

## Outcomes

- Identifying waste and not relying on technology investments to increase productivity
  - 71% reduction in rework due to quality controls
  - \$12,000 savings within 6 months
- External Sales
  - One company leveraging internal LEAN program to engage other LEAN companies in region - increasing sales
- Understanding business/manufacturing skills
  - Owners/managers using metrics/data for decisions
  - Looking at labour costs vs. output



# LEAN Company Findings

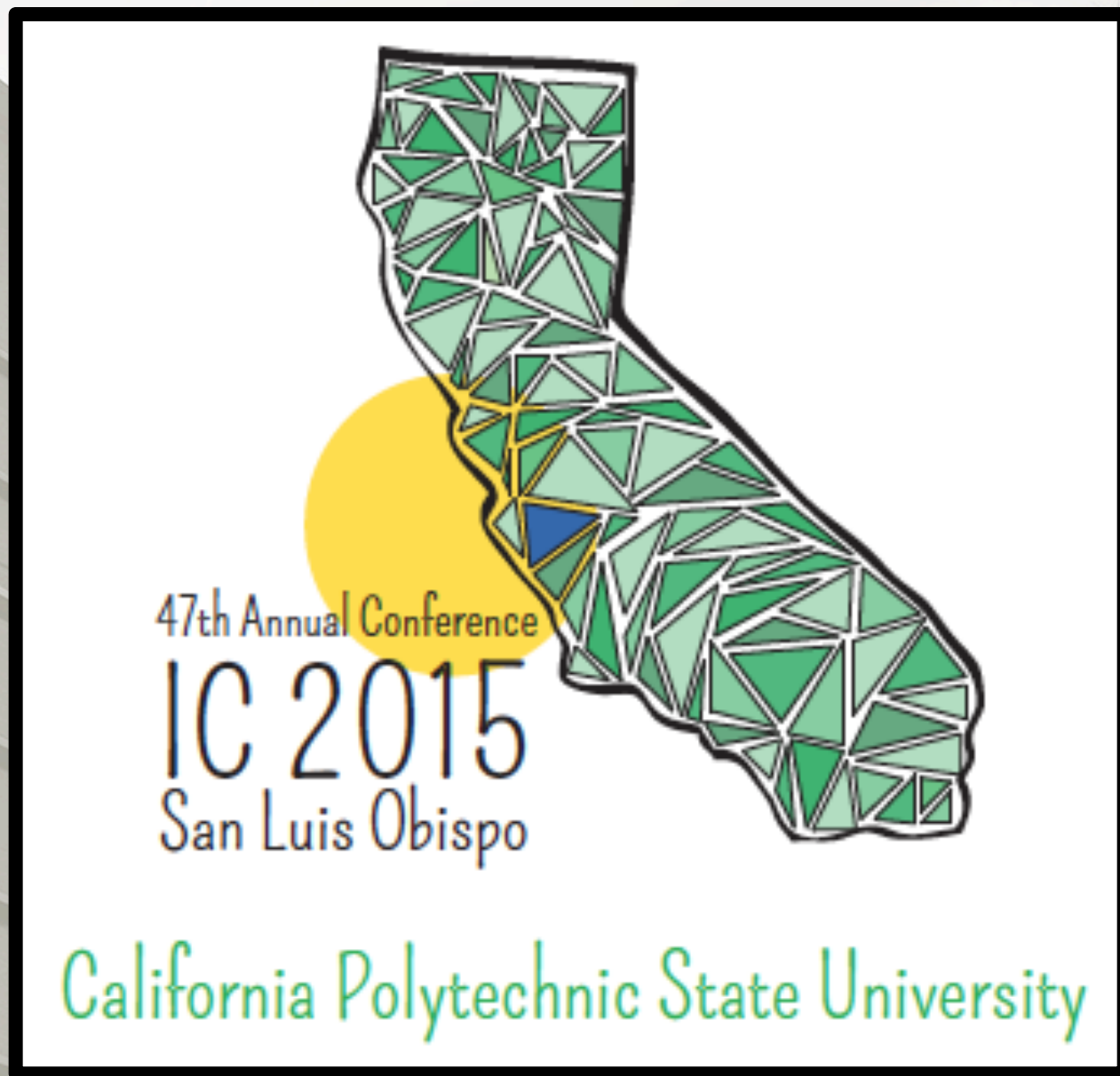
## Recommendations

- Equipment vendors own the technology training space
- Vendor gap is in **how** people interact around the technology
- Ownership and management need better understanding of:
  - 1) Business skills
    - a. Financial
    - b. KPI's
  - 2) LEAN principles
    - a. Identifying wastes
    - b. Implementing plant wide projects
    - c. Utilization rates
    - d. Communicating
  - 3) Processes

# Questions?

## Thank You

- Josh Ramsbottom
  - Landmark Group Centre for Value Improvement  
NorQuest College, Edmonton, Alberta
- Dr. Ken Macro
  - Graphic Communications  
Cal-Poly State University, San Luis Obispo, California



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