Improved Safety Tools for Small Enterprises through Lean Startup
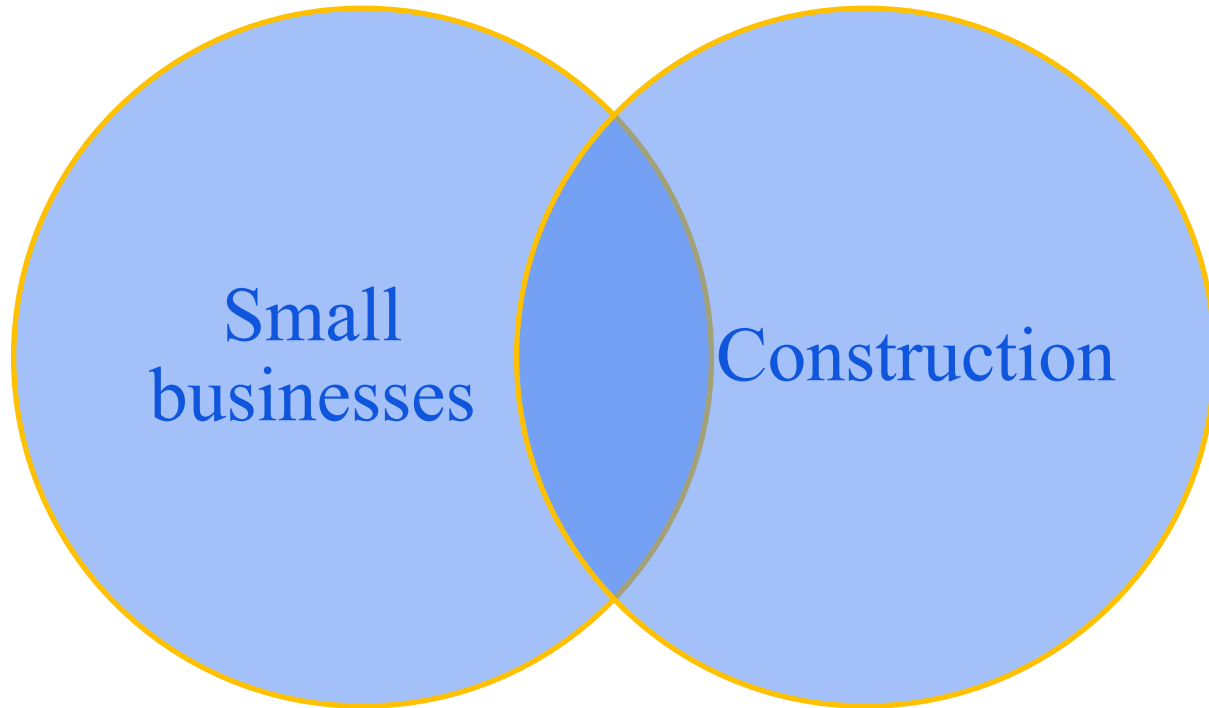
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Understanding Small Enterprises

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Risk factors: Size and Industry

Attributes of "smallness"

- Isolation from other organizations

- Few dedicated safety resources

- Lack of a safety culture

- Owners play outsized role in the survival of the company

- Unaware of workplace risks

Constraints of a government agency

- Major output is publications and articles
- Issues with sharing resources created by others
- No direct connection to individual small businesses
- Funding is mainly allocated to research

Our safety tool

- Identification of workplace hazards

- Descriptions of negative outcomes related to hazards

- Recommendations for avoiding the hazards
    - Solutions selected for simplicity and cost

Digital distribution

- Less costly to reproduce

- Easier to share

- Easier to allow customization

- Embraces proliferation of mobile

Assumptions

- That small construction businesses care about safety.

- That they want a tool.

- That the universe of our research covers enough to be valuable.

- That digital is the right medium.

- That a problem/solution structure is appropriate.

Virtual Safety Consultant – Project outline

- Inventory all NIOSH construction material.

- Organize it by job tasks.

- Rewrite it in plain language.

- Post these newly made modules on the web.

- Reuse the web content in an app.

Lean start-up

vs

Design thinking

vs

Agile

Lean start-up, design thinking, agile methodologies

Three business concepts that have several things in common:

- The customer

- Challenge assumptions

- Minimum viable product (MVP)

- Encourage failing fast

- Iterative

Lean start-up

- Move a minimum viable product (MVP)
- Build-measure-learn feedback loop

The pivot

A "structured course correction designed to test a new fundamental hypothesis about the product, strategy, and engine growth."

-The Lean Startup by Eric Ries

Design thinking

- Early prototyping approach
- Define a prioritized minimum set of features

Design thinking

- Learn
- Understand
- Build (prototype)
- Test
- Iterate

Agile

- Responds quickly to change
- Embraces iterative development
- Doesn't try to forecast the future

Agile manifesto

- People over processes and tools

- Prototypes over documentation

- Responding to change over following a plan

- Customer collaboration over rigid contracts

Minimum viable product (MVP)

- A version of the tool with just enough features to satisfy our customers
- Topics limited to
  1. Painting
  2. Framing
  3. Insulation
  4. Excavation
  5. Electrical

Content types

- How-to instructions
- Hazard identification
- Regulations
- Incident reports

What they liked

- Tool and supply checklists for planning

- Instructional videos from pros on how to do a task safely

- Real-life incident reports (interactive was better)

Our hypothesis

- We can create a tool that small construction business owners will use to do their jobs better, but also more safely.

Assumptions

- Small construction business owners/managers seek out information on how to do their work better/more efficiently.

- Safety is a lower priority for small construction business owners/managers.

- Small construction business owners are not safety experts.

Work in progress…

- Finishing a round of design thinking
- Next up: more iterative development and an MVP product launch

The impact of lean/agile/design thinking

- Challenged our assumptions

- Explored iterative approaches

- Focused on customer input

- Changed our outcome

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