WE CAN ONLY SHAPE A BETTER TOMORROW THROUGH DEVELOPING OUR PEOPLE

What I learned from 38 years of mistakes

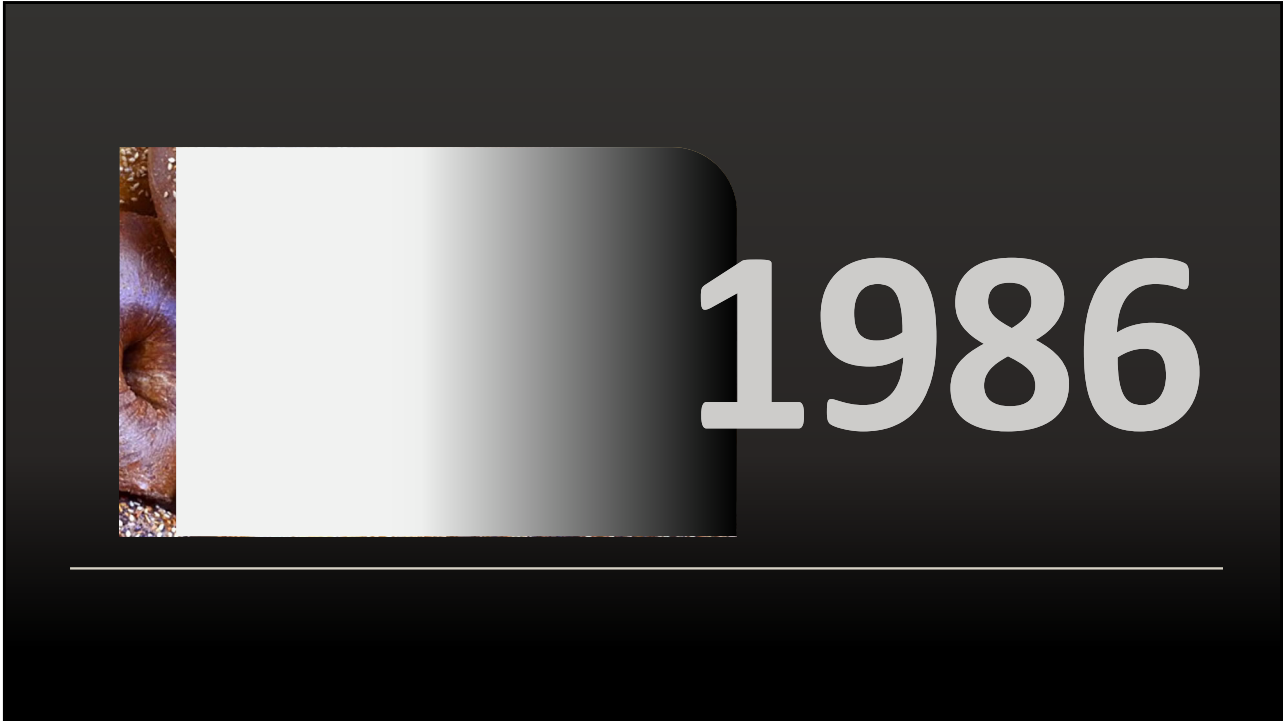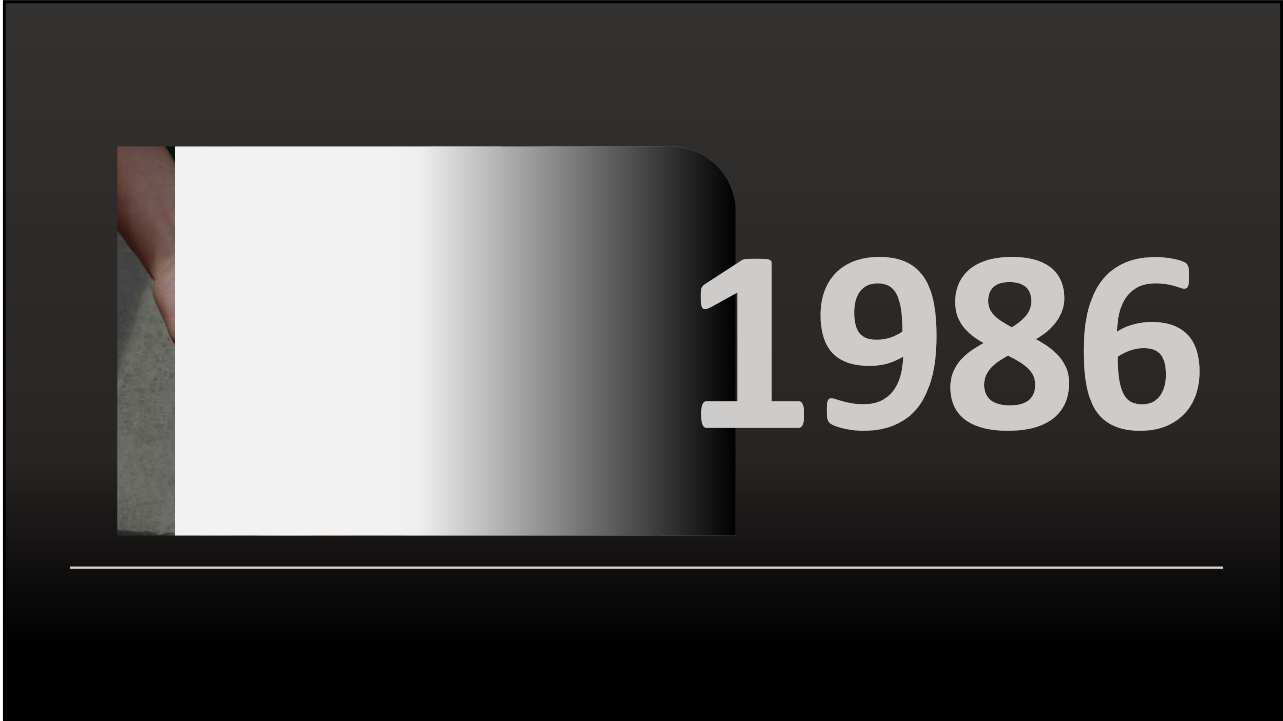RE:BUILD MANUFACTURING

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Here's what we are going to cover today

A little personal history

The development and architecture of Re:Build

-- all in the context of what I've learned, by virtue of failing

mostly, as regards developing people

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1986

1986

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1986

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1986

Industrial decay was all around us

Japanese auto, semiconductor and machine tool companies were doing a number on US companies

"Nothing if not confident"

Youngstown

Japanese Auto

Library

Deindustrialization

Semiconductor

Machine Tool Companies

Rotary Phone

1987–1993

Daewoo Puma Lathe

When the Machine Stopped
A Cautionary Tale from Industrial America
by Max Holland

THE MACHINE THAT CHANGED THE WORLD
JAMES P. WOMACK, DANIEL T. JONES, and DANIEL ROOS
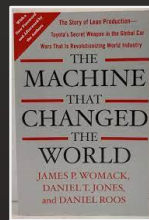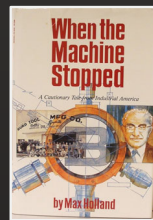
Toyota Production System
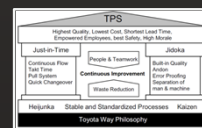
Shoji Shiba

MIT

Cincinnati Milacron Arrow VMC

MIT LGO
Leaders for Global Operations

MIT Leaders for Manufacturing

18+ LFM Graduates at Re:Build

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1993–2016

The Private Equity Years

American Capital

Oversaw turnarounds of industrial and engineering-oriented businesses from 1994 to 2016

50 BUSINESSES | **14** YEARS

Oversaw over 50 businesses during this time with my team, ultimately spending about 14 years at American Capital, a publicly traded debt and buyout firm acquired by Ares Management.

1993–2016

The Private Equity Years

American Capital

Common Threads

Short-term Thinking

Offshoring

CHIPOTLE MEXICAN GRILL

The "Chipotle" Problem

A belief that the services economy would represent an improvement over the industrial / manufacturing economy.

Lean = Cost Cutting

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An Example: **RugDoctor** *Clean deeper. Feel better.*

First
- Shift manufacturing offshore

Second
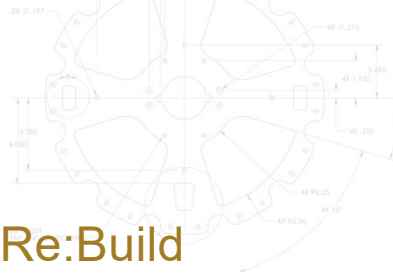- Shift engineering offshore

Third…

An Example:

RugDoctor *Clean deeper. Feel better.*

BISSELL

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An Example:

Fast forward to 2020

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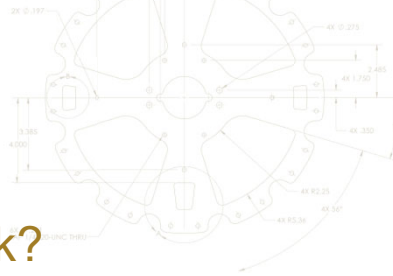
Why we founded Re:Build

1. Industry, and engineering-oriented manufacturing key to American health (economically and socio-politically).

2. We need to develop a model of industrialization that works in America, in the context of our values and way of life

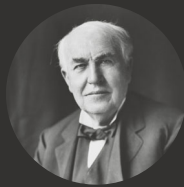3. Democracy is expensive!

How would it work?

1. America has a large number of technically deep, narrowly construed industrial and engineering enterprises.

2. We need to create a way to stitch those businesses together into a new form of "conglomerate" while respecting local culture and preferences, but gaining the benefits of scale. What could be the American equivalent of the Japanese keiretsu?

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Two major things stood in our way, culturally speaking…

- Short-term Thinking

- Idolatry of the Innovator

The Re:Build Way

01
We care about our team members and put their safety before anything else.

02
Machiavelli was wrong! Winning at all costs is not winning at all. At Re:Build we want to be as proud of the path taken as the result achieved.

03
We recognize diversity as a source of value. We welcome and respect people from all walks of life. We encourage constructive dissent.

04
We protect the environment and devote significant resources to science-based sustainability programs.

05
We listen carefully and non-defensively to one another, customers, suppliers, and community members.

06
We are honest in all our dealings and seek mutually beneficial arrangements. We do not partake in zero-sum behaviors.

07
We are open in our communications, accountable for our actions, reject corrupt behaviors, and expect the same of other stakeholders.

08
We buy businesses to build them over the long-term. We do not buy businesses with a plan to sell them.

09
We seek to improve the communities where Re:Build operates with a focus on apprentice programs and STEM education.

10
We use rigorous systems to ensure we hire and onboard team members who will be successful team members long term.

11
We provide long-term, meaningful opportunities for our team members to maximize both their contribution to Re:Build and their earning potential.

12
We provide forums for team members to share their knowledge and experience and refine their mental models. Re:Build is a learning organization.

13
We celebrate individual achievements but reserve the greatest accolades for team performance. The best ideas and solutions are rarely the product of a person working in isolation.

14
We focus on and measure inputs we control and expect excellent performance on input metrics to create long-term value.

15
We utilize Lean and continuous improvement as we strive for zero defects, lower cycle times, and minimal waste. We design quality into our products and systems.

16
We implement systems to ensure improvements last and identify and reward champions who propagate them across the company.

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Continuous Improvement

Respect for People

Rekindling
American Industry

Re:Build Manufacturing is an organization of 1,000 people capable of taking on complex multi-disciplinary engineering and manufacturing challenges dedicated to developing a model of globally competitive industrialization that works in America, for American workers.
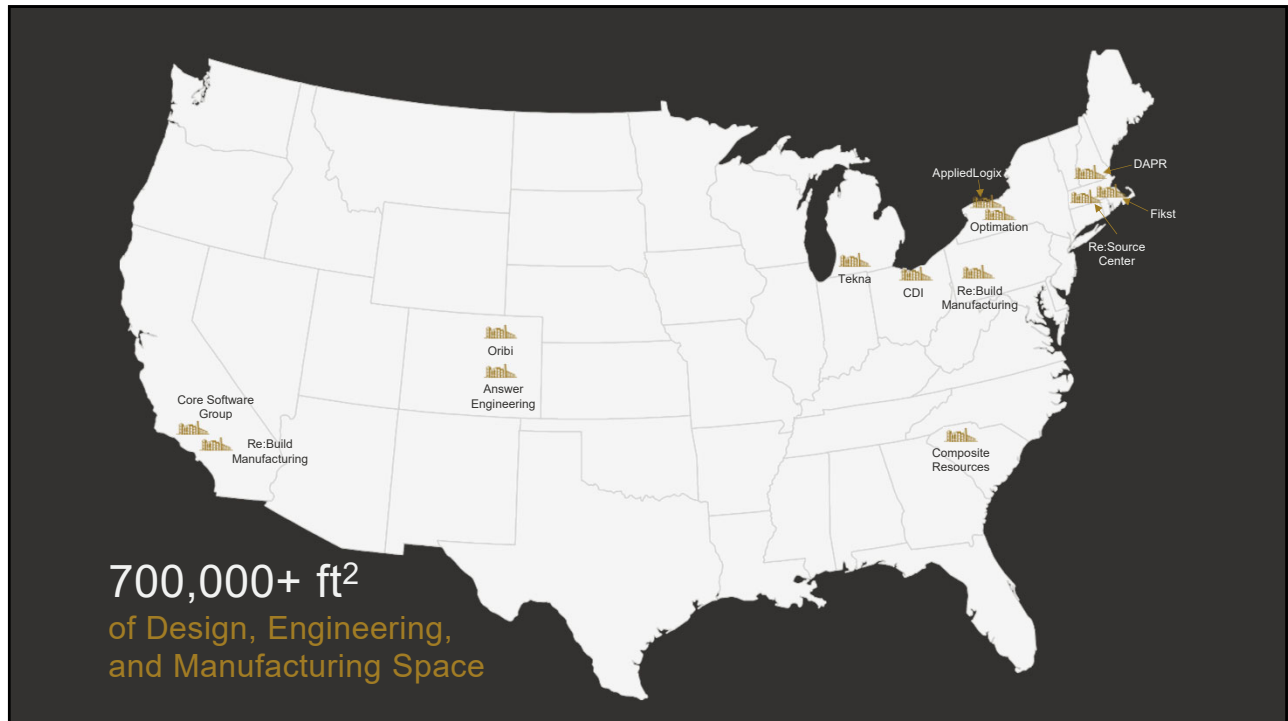
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ANSWER ENGINEERING · AppliedLogix · CDi · COMPOSITE RESOURCES · DAPR · fikst · OPTIMATION · ORIBI · tekna.

Four Pillars of Strategy

- LLEMS
- Brain to Box
- 4 Levels of Work
- Lean

AppliedLogix

DAPR

Optimation

Fikst

Re:Source Center

Tekna

CDI

Re:Build Manufacturing

Oribi

Answer Engineering

Core Software Group

Re:Build Manufacturing

Composite Resources

700,000+ ft^2
of Design, Engineering, and Manufacturing Space

1,000+ employees
400+ engineers

Map labels:
- Software, Data Analytics, AI, ML
- Engineering & Prototype Manufacturing
- Thermoplastic Composites
- Aviation & Aerospace Engineering
- Industrial Design & Product Engineering
- Electromechanical Assembly of Complex Systems
- Embedded Software/Controls
- Industrial Engineering, Automation, & Fabrication
- Precision Machining
- Metal Forming & Fabrication
- Aerostructures & Components
- Engineering & Automation
- Engineering, Prototyping, & Medical Consumables
- Re:Source Center
- Product Assembly & High-Volume Manufacturing
- Thermoset Composites

Our Wide Range of Expertise

Onshore Development
Onshore development and scalable manufacturing, from Brain to Box™

Advanced Components
Advanced materials, metallics, and next-gen structural components

Advanced Engineering
Advanced engineering, prototyping, testing, and analysis

Process Automation
Process automation and robotics

Full Stack Software
Full stack software enablement. IoT, ML, and AI

Design Services
Industrial design, UX/UI design, and brand development

Clean Energy & Electrification
Energy storage and control systems

Operationalized Process
Operationalized process analysis and development, QMS, supply chain, and distribution

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Slide 1:

What does developing people mean to us at Re:Build and why is it important?

10+

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Slide 2:

What does developing people mean to us at Re:Build and why is it important?

America is a "high labor cost" country, and we want it to stay that way.

10+

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What does developing people mean to us at Re:Build and why is it important?

To be competitive we must create an environment that enables people to be their most productive, and to have high job satisfaction if not to love their work.

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This means we need to give people a 10+ year opportunity to develop themselves and our company, and to share in ownership.

10+

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What does developing people mean to us at Re:Build and why is it important?

It starts with building connections into our communities, and outreach to educate people from all backgrounds about the merits of technically oriented industrial work.

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What does developing people mean to us at Re:Build and why is it important?

Lean, properly implemented, is central to this process. "Continuous Improvement through Respect for People" embodies this principle.

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What I've Learned

If you remember nothing else,
please remember the following!

The cost of developing people is nothing compared to the costs we incur if we don't. Failing to develop people leads to an extreme winnowing of optionality.

Establishing apprentice programs, internships, and integrating ongoing professional education into every job is essential. This approach also fosters high levels of employee retention.

Don't be fooled by the "benefits" of near-term high-yield activities. They are short-lived and often based on unsustainable arbitrage.

Sustainable competitive advantage takes considerable time and effort to create.

The test of a worthwhile improvement/endeavor/change:

- Does it require and include the improvement of the team?

- Does it lead to the betterment of not just customers or vendors or the community, but the people doing the work?

  If not, it won't last, and at a minimum is not strengthening the business.

Celebrate Success

Single Threaded Leadership

….next frontier for Lean (at Re:Build).

Engineering Bottleneck

The bottleneck for growing our business is in engineering, not production. The shortages in personnel and experience affect us most deeply in technical areas such as CNC programming, process design, structural analysis, applications engineering, etc.

Engineering Acceptance

Getting engineers to accept that 'all work is a process' and to support deep inspection of their workflow is difficult. It is also difficult to find lean practitioners/leaders who are able to lean into this work.

Engineering Engagement

Our first step is to ensure that all of our engineers participate in rapid improvement events and other Lean activities to drive familiarity with, and to see the benefits of, Lean practices.

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Lean is the antithesis of "Idolatry of the Innovator".

We all stand on the shoulders of giants. When we forget this and worship at the altar of a few "geniuses" we are under-valuing the contributions of countless people. This in turn leads to a propensity to seek sweeping revolutionary (often technological) change rather than the more sustainable benefits achieved through incremental positive changes across an entire organization. It also betrays a total lack of understanding of system dynamics, but that is a story for another day….
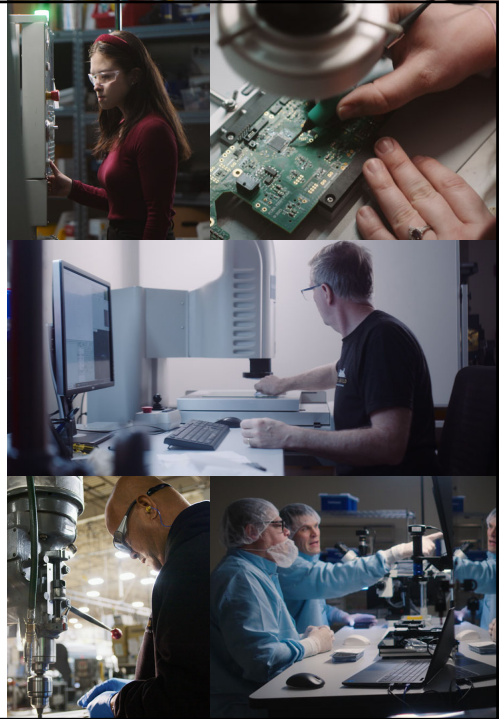
Thank You!

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