

# AME/APQC Benchmarking CoP Virtual Networking Event June 18, 2013

---

Innovating with Lean Tools

Ken Rolfes, KDR Associates

# Session Agenda

- 10:00 a.m. Welcome/Housekeeping
- 10:05 CoP Business
- 10:10 Benchmarking Presentation
- 10:45 Open Q&A
- 11:00 Adjourn

# 2013 Benchmarking CoP Calendar

Month	Date	Session	Presenter
February	2/19/2013	Real-Time Case Studies in Benchmarking	Travis Colton, APQC Don Davies, General Dynamics John Mellin, GlaxoSmithKline
March	3/19/2013	The continuous improvement journey at UL	UL
May	5/31/2013	Vet STRONG Program	Joe Barto
June	6/18/2013	Innovating with Lean Tools	Ken Rolfes
July	7/16/2013	Using Lean Tools in Healthcare	Mark Graban, KaiNexus
August	8/20/2013	TBD	TBD
September	9/17/2013	TBD	TBD
October	10/22/2013	TBD	TBD
November	11/13/2013	Knowledge Management at Eaton	Eaton
December	12/17/2013	TBD	TBD

Send your topic or presenter recommendations via the Q&A tab or email at [rwebb@apqc.org](mailto:rwebb@apqc.org).

# AME Events ([www.ame.org](http://www.ame.org))

## June

- 06/20 Hanover, Pennsylvania
  - R.H. Sheppard Tour & A3 Workshop
- 06/25 Kitchener, Ontario
  - 9th Annual Workshop and Golf Tournament

## July

- 07/11 Newark, New York
  - Operational Excellence in a Job Shop Environment
- 07/16 Sustaining Lean Improvements
- 07/17 Atlanta, Georgia
  - Utilizing Value Stream Mapping & ToC
- 07/17 Chicago, Illinois
  - Tour of FedEx Express Regional Sort Operations
- 07/24 - 07/25 Paso Robles, California
  - Lean Safety

## AME National Conference

- 10/21-10/25 Toronto
  - Breakthrough to Your Leading Edge

# APQC Events

<http://www.apqc.org/events>

- 6/19 APQC SCM/FM Webinar
  - Managing the Risk of Supply Chain Disruption
- 6/20 APQC KM Community Call
  - Building a Successful KM Program Through Sponsorship, Recognition, and Metrics
- 7/10 APQC Orientation

## 2013 APQC Process Conference

- 10/21 – 10/25 Houston, TX
  - Connecting People, Process, and Technology for Results

# APQC Research Agenda

[http://www.apqc.org/research\\_agenda](http://www.apqc.org/research_agenda)

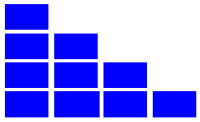
## ➤ Active Research

- Transferring and Applying Critical Knowledge (5% complete)
- How Shingo Prize Winners Manage Their Supply Chains (9% complete)
- Recruiting and Developing Talent in the Supply Chain (67% complete)
- Managing the Financial Risks of Supply Chain Disruption (90% complete)

## ➤ Upcoming Research

- Enterprise Risk Management and Strategic Planning
- Practices in Master Data Management
- State of Benchmarking
- Big Data and Sense-Making
- Using Knowledge Management to Alleviate Skills Shortages
- What does Getting "Buy-in" Really Mean?

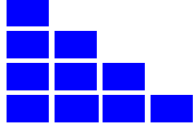
KDR Associates, Inc.



# Lean Tools for Innovation:

**Ken Rolfes**  
**KDR Associates, Inc.**  
*krolfes@kdr-associates.com*

BCoP June 18, 2013

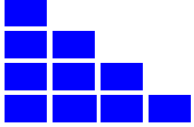


# Ken Rolfes

- President KDR Associates
- Works with clients globally to develop and execute strategies accelerating profitability and growth.
- A long time AME volunteer, 3x AME Regional President and 2x Director at large and currently serves as Director for west region.
- 35+ years experience in general management and product development has served as corporate officer, COO and VP in mid-cap and start-up companies.
- BS in Industrial Engineering and a MBA in Finance.







- Squeeze Machine
- Creative Process
- Not Rocket Science



**Ed Minnock Colleen Shinn, Pete Cionitti, David Sullivan, Boyd Rice, Kip Benson, Jason Culp**



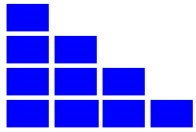
**Margaret Creedon,  
Valerie Creedon, Maurice  
Snell**

**VOC  
Customer Knowledge  
March 2012**

**Not Shown:  
Tricia Sutton,  
Scott Schiave**

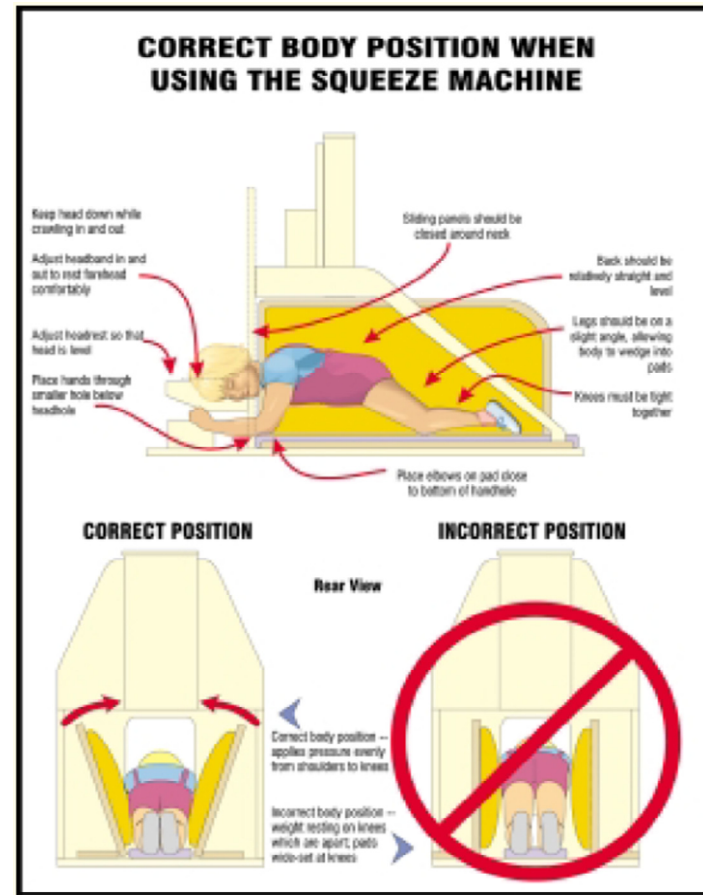


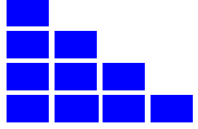
**Michael Bremer, Ken Rolfes,  
Jim Dyes**



# VOC Discovery & Interpretation

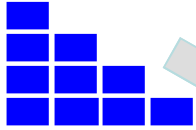
- Everyone took a turn in the Squeeze Machine
- We observed others using the machine
- Listened to Users and Clinicians
- Identified the gaps





# User's first Impression?





# 79 opportunities



	Priority	Customer Interest	Current	Target	Status
1	1	Noise	85-105 dB	30-60 dB, 250-2000 Hz	
2	1	Squeeze entry and egress	Crawl in under tower, easy to bump head	Not possible to bump head	
3	2	Adjusts for children and adults	Difficult to adjust: air pressure, squeezer sides and head rest	Easy to do correctly, difficult to do incorrectly	
4	2	Squeeze orientation	Prone/Horizontal Face Down	Seated Recline to Vertical	
5	2	User position	Training required	Easy to do correctly, difficult to do incorrectly	
6	2	Head rest hard to clean	Needs to be laundered	Wipe to clean	
7	2	Proper usage by users	No data	Data that reports use and effectiveness	
8	3	Compressor maintenance	Compressor should be drained once a week.	None required	
9	3	Size	Large and bulky	Move through 30 inch door	
10	3	Looks	Threatening	Enticing	
11	3	Cost	\$4,525 + shipping	50% reduction	

**OMG! How can we do all this?!**

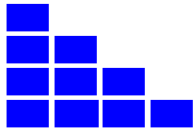
# Ideation and Design Workshop June 2012



**Back: Pete Cionitti, Charlie Fouraker, Carl Jarvis, James Bearden, Michael Bremer, Gary Daggett, Maurice Snell, K Matthew Swain, Todd Fink, David Sullivan**

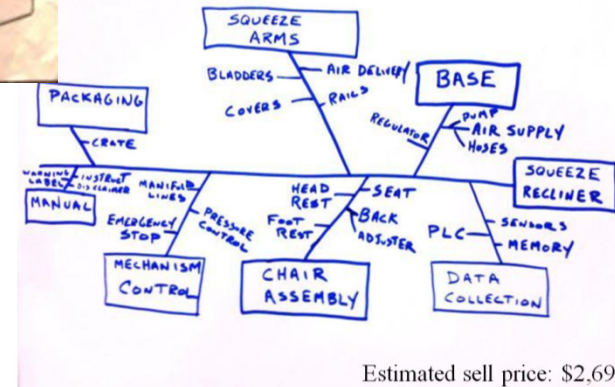
**Middle: Michael Kennedy, Lori Bearden, Margaret Creedon, Samuel Petre, Colleen Shinn, Tricia Sutton, Valerie Creedon**

**Kneeling: Jason Culp, Jim Dyes, Ken Rolfes, Jason Bogusz, Ben Zheng**



# Accomplishments

- Addressed VOC identified targets for improvement
- Developed 17 different design ideas
- Built 3 alternate models to evaluate
- Selected one to move forward to prototype
- Outlined manufacturing process
- Scoped a rough product development plan



Estimated sell price: \$2,695

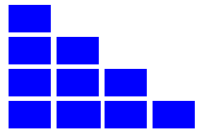
## Squeeze Machine Project Plan

Item	Description/Target	Completion %	Project	STATUS
1	Business Review Meeting	100%	2/10	Completed
2	Customer Meeting	100%	2/10	Completed
3	Requirements Gathering	100%	2/10	Completed
4	Product Design	100%	2/10	Completed
5	Manufacturing Process	100%	2/10	Completed
6	Final Review	100%	2/10	Completed
7	Production	100%	2/10	Completed

Item	Description/Target	Completion %	Project	STATUS
1	Business Review Meeting	100%	2/10	Completed
2	Customer Meeting	100%	2/10	Completed
3	Requirements Gathering	100%	2/10	Completed
4	Product Design	100%	2/10	Completed
5	Manufacturing Process	100%	2/10	Completed
6	Final Review	100%	2/10	Completed
7	Production	100%	2/10	Completed



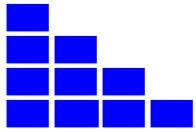


# THE NEW DESIGN!!!



	Priority	Customer Interest	Target	Status
1	1	Noise	30-60 dB, 250-2000 Hz	✓
2	1	Squeeze entry and egress	Not possible to bump head	✓
3	2	Adjusts for children and adults	Easy to do correctly, difficult to do incorrectly	✓
4	2	Squeeze orientation	Seated Recline to Vertical	✓
5	2	User position	Easy to do correctly, difficult to do incorrectly	✓
6	2	Head rest hard to clean	Wipe to clean	✓
7	2	Proper usage by users	Data that reports use and effectiveness	
8	3	Compressor maintenance	None required	✓
9	3	Size	Move through 30 inch door	✓
10	3	Looks	Enticing?	✓
11	3	Cost	≈\$2,500	✓

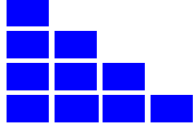
*We actually did it!*



# The new Squeeze Machine

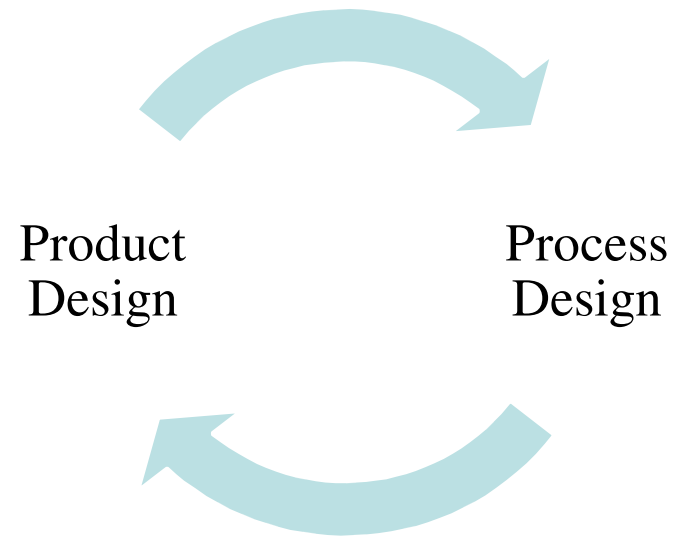
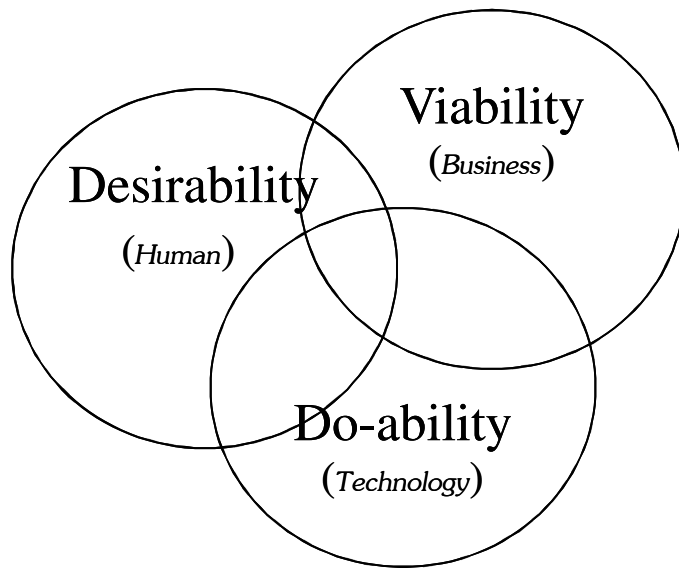


- Showed the prototype at AME Chicago
- Next steps
  - Build additional prototypes
  - National Autism Conference July 29– August 1, 2013

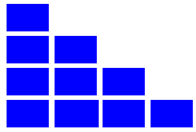


# What is 3P?

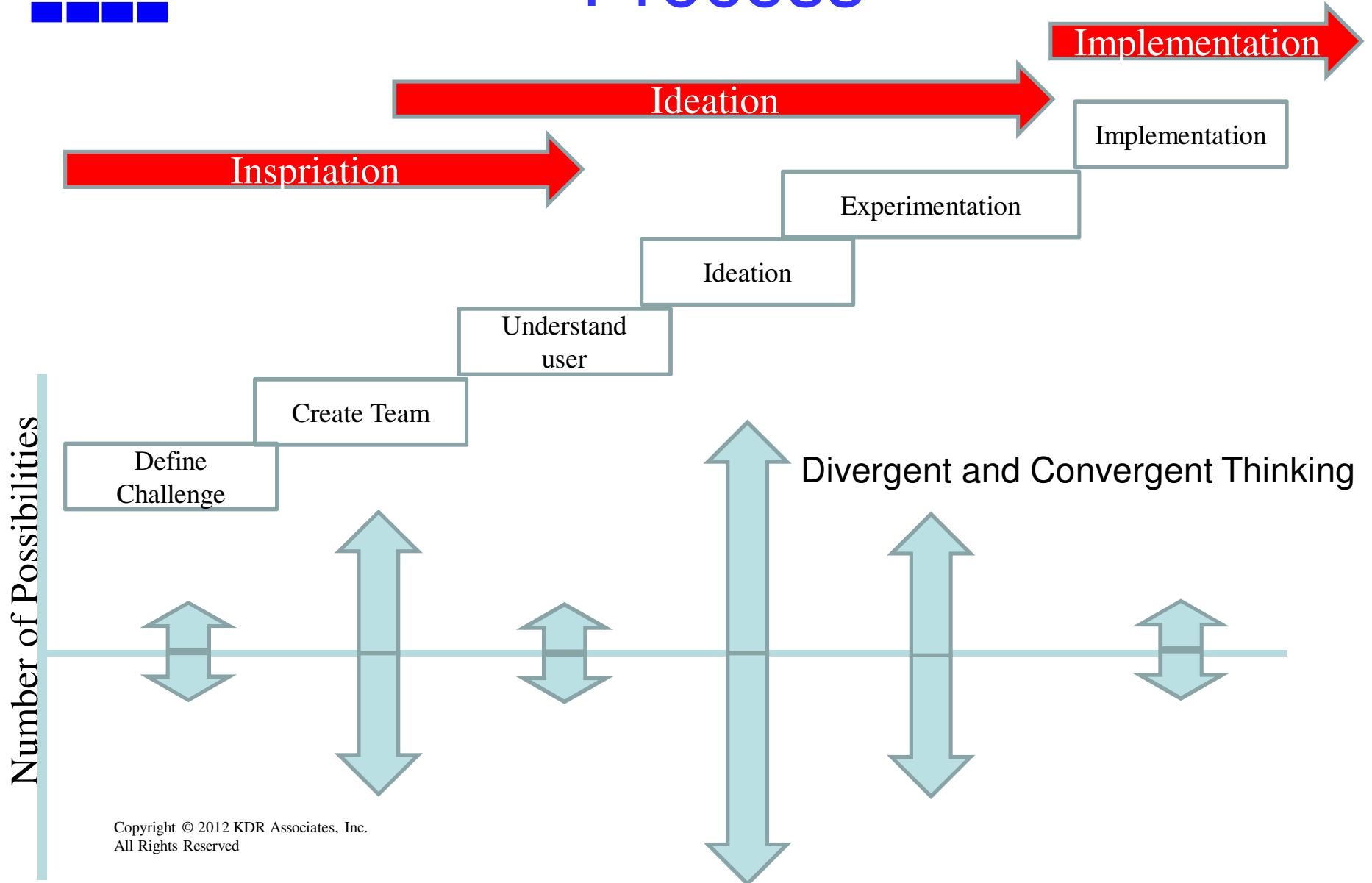
Production Preparation Process

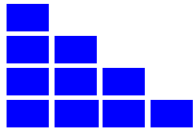


Collaborative Environment for idea exchange and development



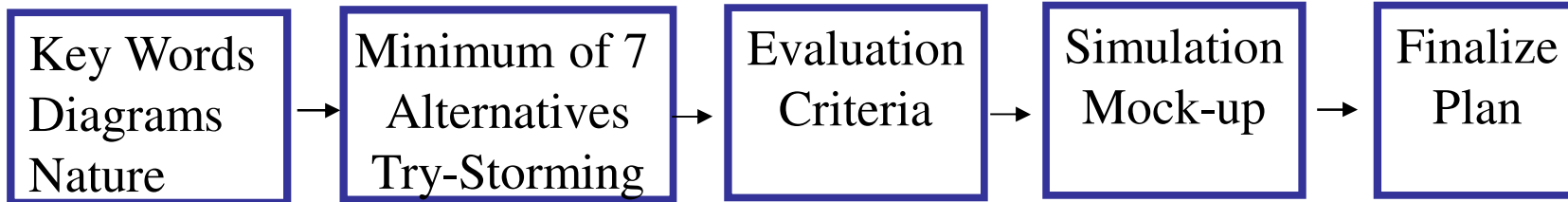
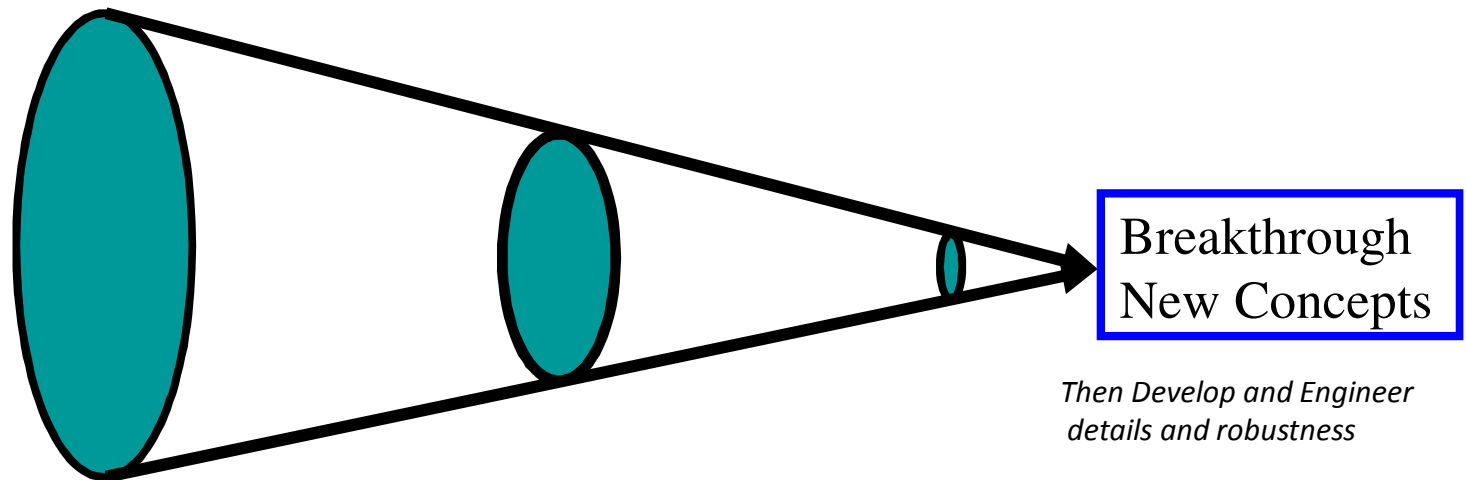
# Process



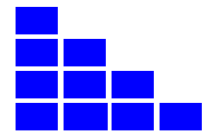


# The 3P Process

- Set bold goals
- Assemble a strong team
- Work rapidly in limited time
- Establish tight \$ limits



Kaizen Methodology along with childhood mentality



# Developing Design Alternatives

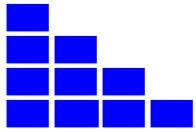








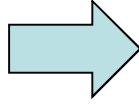




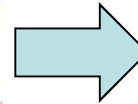
# Chair Design Cycle of Learning



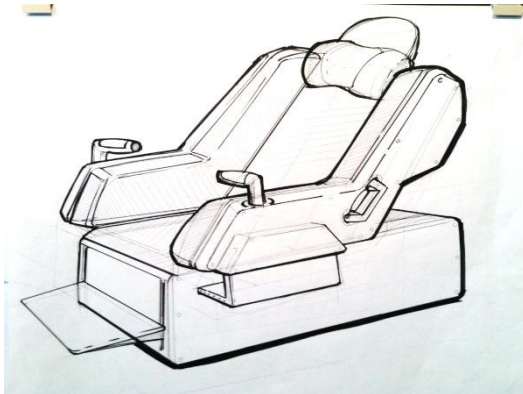
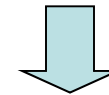
Design  
Concept



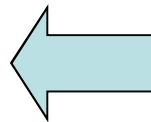
Conduct  
Tests



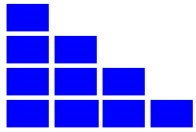
Build  
Model



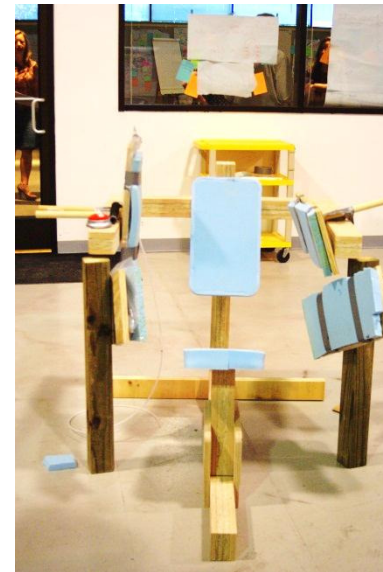
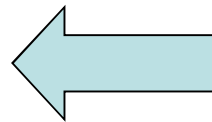
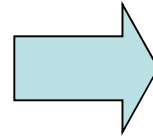
Proposed  
Product

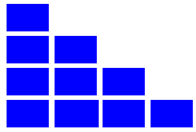


Demonstration

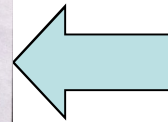
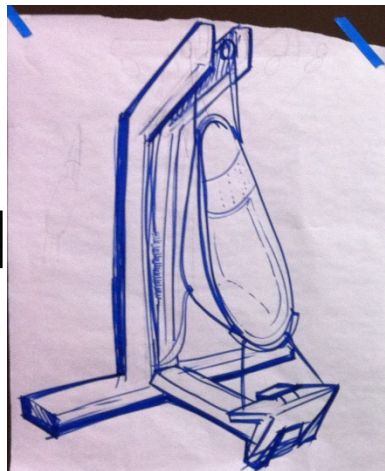
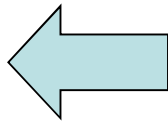
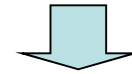
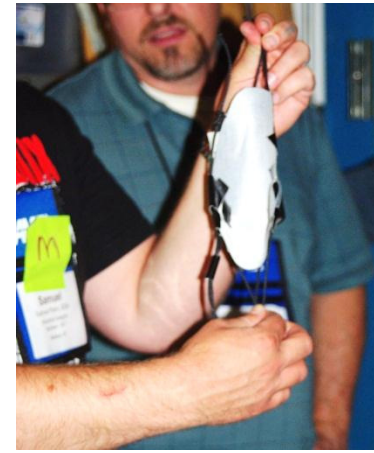
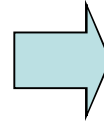
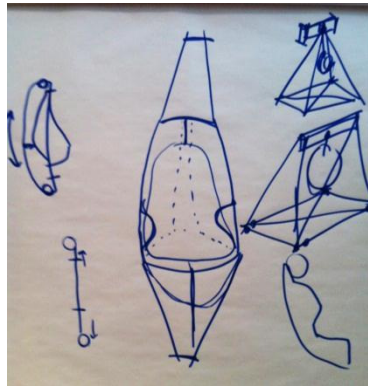
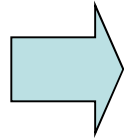


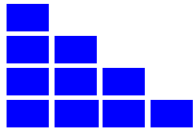
# Two Way Chair Design





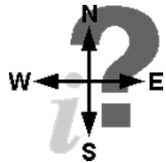
# “Squing” Design





# Lean Tools Employed

1  
Focus  
The challenge?



2  
Opportunity  
Interpretation?



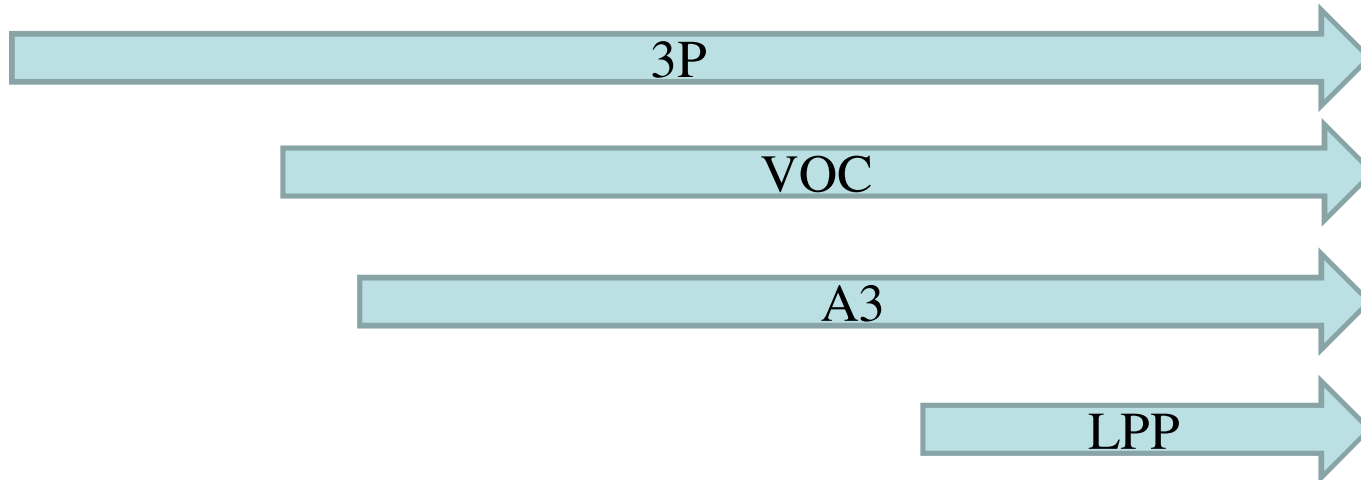
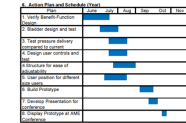
3  
Ideation  
What to Create?

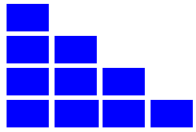


4  
Experimentation  
How to test Ideas?



5  
Execution  
How to make it happen?

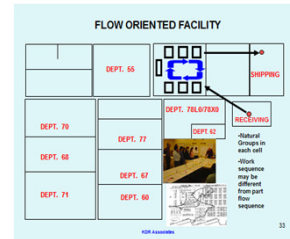
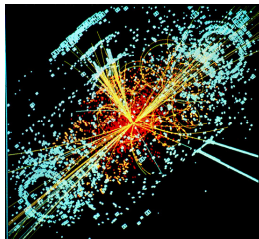


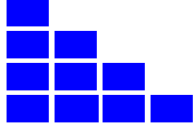


# Levels

## What level are you working at?

- NATURAL LAWS – why things happen (science level)
- PHENOMENON – things that happen (effects from science)
- APPLICATIONS – what you can do with the effects (tech.)
- CONFIGURATIONS – assembling applications for a purpose
- ITEMS – products and services that business units offer
- FACILITIES – locations that value streams flow through
- FLOW CELLS – parts of value streams with continuous flow
- STEPS – individual value-adding steps in a value stream





# You can do this

## **The real key to learning:**

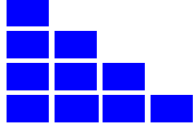
1. Get some info,
2. attempt to apply it,
3. evaluate the result.
4. If it falls short or is insufficient, go back to step 1.

## **What to expect?**

Attempt 1: Wow, this is harder than it looked.

Attempt 2: Wow, this is easier than it was last time.

Attempt 3: Wow, why isn't everyone doing this? It's so much easier.



# Thanks!

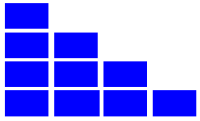
## Learn more

- See Target articles
- Attend an AME Workshop
- *Be a Host for a workshop!*





KDR Associates, Inc.



Ken Rolfes  
KDR Associates, Inc.

*Carlsbad, California 92009*  
*(760) 521-4896*  
*krolfes@kdr-associates.com*

# Thank You for Attending!

---

- Feel free to forward questions or recommended topics to  
Susan Chandler: [schandler@ame.org](mailto:schandler@ame.org)  
Christine Kelley: [ckelley@apqc.org](mailto:ckelley@apqc.org)