FROM THE BACK OF THE NAPKIN TO THE WORKSITE

Moving innovations along the occupational safety and health value chain
DISCLAIMER

The findings and conclusions in this report are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health.
GARRETT BURNETT, MS, MBA

National Institute for Occupational Safety and Health, USA
Small Business Program Co-coordinator
Research to Practice Office

Special thanks to Christy Forrester (NIOSH) for assistance with this presentation
BACK OF THE NAPKIN... TO THE WORKPLACE
WORK STOOL: EXISTING TECHNOLOGY
KNEE-SAVER: EXISTING TECHNOLOGY
THE KNEEL-SIT: NEW TECHNOLOGY
THE KNEEL-SIT: NEW TECHNOLOGY
Wearable Kneel Sit Device

Did you know?

- Prolonged kneeling may increase a person’s risk of developing knee disorders.
- The discomfort from prolonged kneeling may decrease worker productivity.
With the Wearable Kneel Sit Device workers are more comfortable when they kneel and squat.

Intended Users

Workers in many occupations can benefit from using the Wearable Kneel Sit Device. Such as:

- Shipbuilding
- Plumbing
- Auto Repair
- Construction
- Carpet and Flooring Installation
- Mining

The Wearable Kneel Sit Device also has many recreational applications such as gardening.

Contacts

For additional information on this innovation or licensing opportunities, please contact:

<table>
<thead>
<tr>
<th>Scientific Contact</th>
<th>Licensing Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Wunzelbacher, Ph.D.</td>
<td>Kathleen Goedel</td>
</tr>
<tr>
<td>513.841.432</td>
<td>513.533.8686</td>
</tr>
<tr>
<td><a href="mailto:SWunzelbacher@cdc.gov">SWunzelbacher@cdc.gov</a></td>
<td><a href="mailto:KGoedel@cdc.gov">KGoedel@cdc.gov</a></td>
</tr>
</tbody>
</table>

Learn more about other partnering opportunities with the National Institute for Occupational Safety and Health (NIOSH) at http://www.cdc.gov/niosh/32p/
“If the idea seems new to the individual, it is an innovation.”
“An innovation solves a problem.”
EDWARD BULLARD: FROM HOBOKE...
...TO FRANCE
HOT RIVETS IN SHIP BUILDING
THE RIVET BUCKET
BULLARD’S “HARD BOILED HAT”
## PORTER’S VALUE CHAIN

<table>
<thead>
<tr>
<th>Support Activities</th>
<th>Firm Infrastructure</th>
<th>Human Resources Management</th>
<th>Technology Development</th>
<th>Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound Logistics</td>
<td>Operations</td>
<td>Outbound Logistics</td>
<td>Marketing and Sales</td>
<td>Service</td>
</tr>
</tbody>
</table>

### Primary Activities
“Sustaining technologies improve the performance of an established product. They already have a base of paying customers.

“Disruptive technologies usually underperform existing products, but they are typically cheaper, simpler, smaller, or more convenient to use.”
SUSTAINING INNOVATION
DISRUPTIVE INNOVATION
THE CHASM

Early Market

Innovators 2.5%
Early Adopters 13.5%
Minimum Feature Set

Mainstream Market

Early Majority 34%
Late Majority 34%
Whole Product Solution

Laggards 16%

People Who Want Newest Things

People Who Want Complete Solutions and Convenience
# PORTER’S VALUE CHAIN

<table>
<thead>
<tr>
<th>Support Activities</th>
<th>Primary Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Firm Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Human Resources Management</td>
</tr>
<tr>
<td></td>
<td>Technology Development</td>
</tr>
<tr>
<td></td>
<td>Procurement</td>
</tr>
<tr>
<td>Inbound Logistics</td>
<td>Operations</td>
</tr>
<tr>
<td>Operations</td>
<td>Outbound Logistics</td>
</tr>
<tr>
<td>Marketing and Sales</td>
<td>Service</td>
</tr>
</tbody>
</table>

Margin
CLAYTON CHRISTENSEN

“Value networks provide the context within which a firm identifies and responds to customers’ needs, solves problems, procures input, reacts to competitors, and strives for profit.”
BASIC SUPPLY CHAIN MODEL
"Direct revenue exchanges are only part of the picture. Knowledge and intangible value are of equal importance, and success depends on building a rich web of trusted relationships."
BASIC SUPPLY CHAIN MODEL
THE OCEAN’S ELEVEN THEORY
THREE CASINOS!
COORDINATED EXPERTISE
FOR MUTUAL GAIN
“THE ATOMIC”: JERRY SHERWOOD’S RESEARCH HOME
THERMAL PRECIPITATOR
An air sampler must be
- **Portable** so it can accurately measure throughout the worksite
- **Small** and **light** enough to be portable
MINIATURE DC MOTOR
SHERWOOD AND GREENHALGH'S SAMPLER PROTOTYPES
VERNA ALLEE

“Success depends on building a rich web of trusted relationships.”
SHERWOOD AND GREENHALGH’S SAMPLER PROTOTYPES
THERMAL PRECIPITATOR
FOR AIRBORNE DUST SAMPLING

Suitable for counting solid particles in any aerosol, this instrument has an efficiency approaching 100% for particles from 0.16μ up to 5.0μ and not much lower for particles of 10.0μ.

For use in laboratories, factories or mines.

Write for leaflet 776.

Also available
Jet Dust Counter
Cascade Impactor
Settlement Dust Counter

C. F. CASELLA & CO LTD
REGENT HOUSE, FITZROY SQUARE,
LONDON, W.1
Telephone: EUSTON 3944
“We embarked on a long, cooperative program of commercial instrument development that incorporated many of our basic design requirements.”
THREE KEYS FROM SHERWOOD AND THE ATOMIC

1. Protect the intellectual property
2. Validate the science
3. Maintain the relationship
"Competing in overcrowded industries is no way to sustain high performance. The real opportunity is to create blue oceans of uncontested market space."
BLUE OCEAN
RED OCEAN
OSH OCEAN
ENTERING THE OSH OCEAN

1. Identify what you do well.
2. Decide what you can contribute.
3. Improve your own value chain.
4. Notice what you don’t do well.
5. Build relationships in your network.
“If you want to move an innovation from the back of the napkin to the hands of workers, know yourself and make a few friends.”
MERCI, INRS