Radical Innovation

Human Potential of Innovation: Are We Cracking the Code?

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Story of Termites
Before the Industrial Era: Learn from Nature

- Self-organization
- Simple rules
- Profuse trial & error
- General intelligence
- Diversity of input

Survived the Great Dying
250 million years ago
AlphaGo vs. Lee Sedol
## A Whole Different Game

<table>
<thead>
<tr>
<th></th>
<th>Chess</th>
<th>Go</th>
</tr>
</thead>
<tbody>
<tr>
<td># of possible board configurations</td>
<td>$10^{120}$</td>
<td>$10^{170}$</td>
</tr>
<tr>
<td>The # of possible moves in each turn</td>
<td>35</td>
<td>250</td>
</tr>
</tbody>
</table>
Before the Industrial Era: Learn from Nature

- Self-organization
- Simple rules
AlphaGo’s Simple Rules

Source: Nature 2017
Before the Industrial Era: Learn from Nature

- Self-organization
- Simple rules
- Profuse trial & error
- General intelligence
- Diversity of input
DeepBlue vs. Gary Kasparov
Quantum Companies Learning from Nature

- Self-organization
- Simple rules
- Profuse trial & error
- General intelligence
- Diversity of input
- Principles to win in a changing environment
From Complicated to Complex:
Adapt to the Changing Environment
The Big Picture – Industrial Revolution

<table>
<thead>
<tr>
<th>Environment</th>
<th>System</th>
<th>Leadership</th>
<th>Basis of Competition</th>
<th>Structure</th>
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<tbody>
<tr>
<td>Stable</td>
<td>Complicated</td>
<td>Command &amp; control</td>
<td>Efficiency</td>
<td>One to many</td>
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</tbody>
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Industrial Era Resources & Practices

- Input:
  - Equipment
  - Raw Materials
  - People
- HR
- Legal
## The Big Picture – Digital Revolution

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<tr>
<th>Environment</th>
<th>Industrial Revolution</th>
<th>Digital Revolution</th>
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<tbody>
<tr>
<td></td>
<td>Stable</td>
<td>Unpredictable</td>
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<th>Efficiency</th>
<th>Learning and Innovation</th>
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<tbody>
<tr>
<td></td>
<td>One to many</td>
<td>Many-to-many</td>
</tr>
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### Key Points
- **Environment**: From stable to unpredictable
- **System**: From complicated to complex
- **Leadership**: From command & control to quantum
- **Basis of Competition**: From efficiency to learning and innovation
- **Structure**: From one to many to many-to-many
A Mandate for a Different Approach

- Variance: Noise vs. Essence of the Game
- No more command and control
- Provide safety, create connection and facilitate learning
My research: The New Science of Radical Innovation

**Percentage Pay Given Up / Demanded**

- Total: 39%
- Safety: 22%
- Connection: 12%
- Learning and Innovation: 5%
The Bottom Line Impact of Your Leadership

**Turnover Intent**

- Mechanistic: 61%
- Quantum: 24%

37 percentage point difference = 154% higher turnover intention = $488 million in opex; $8.7 billion in revenues
Quantum Leadership for Radical Innovation

- Reclaim humanness
  - Show authentic emotions to strengthen human connection
- Introduce more randomness among people:
  - Maximize diversity
- Tolerate failures
- Hire generalists: T pattern