Growing profit in a high cost environment

The Future of Manufacturing Forum

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Since 2008 Australia has become a high cost operating environment.
While the largest single factor driving the increase in Australia’s increased operating environment cost has been the high Australian dollar, a compounding set of factors – rising living costs and weak economy-wide productivity growth – have made Australia a ‘high cost economy’ by international standards.

Australia is today the highest operating-cost environment in the world, having surpassed Norway and Switzerland late 2012, at around 160% of the US operating cost environment level [at the C11 level it is closer to 200%].
## The Productivity Issue: Annual average 2000-2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Hourly labour productivity</th>
<th>Unit labour costs (national currency)</th>
<th>Real hourly compensation (national currency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5.2</td>
<td>-1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Japan</td>
<td>3.3</td>
<td>-3.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Finland</td>
<td>4.5</td>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td>Sweden</td>
<td>4.4</td>
<td>-1</td>
<td>1.6</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>6.6</td>
<td>1.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.2</td>
<td>-1.7</td>
<td>-0.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.8</td>
<td>0.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Denmark</td>
<td>3.1</td>
<td>1.1</td>
<td>2.1</td>
</tr>
<tr>
<td>France</td>
<td>2.5</td>
<td>0.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Germany</td>
<td>1.8</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3</td>
<td>1.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.8</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Norway</td>
<td>2.7</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Australia</td>
<td>1.9</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Canada</td>
<td>0.9</td>
<td>1.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Spain</td>
<td>1.5</td>
<td>2.2</td>
<td>1</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.1</td>
<td>3.2</td>
<td>0.9</td>
</tr>
</tbody>
</table>

This change have left us with four types of firms

Those that were set up on the premise of a low cost operating environment
  - No Future

Those, normally capital intensive, firms that were set up with the ability to operate successfully in any environment but that used the depreciation for dividends instead of keeping the plant and equipment continuously leading edge
  - Have dug their own grave

Those, normally smaller, firms that have the capacity to do well but do not know what it takes or what “good” looks like in this new operating environment
  - Need handholding and guidance

Those, normally younger or highly innovative, firms that are already doing well
  - Can do with some encouragement and recognition

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The Route to Success is Different in a High Cost Operating Environment compared to a Low Cost Operating Environment
High Operating Cost Environment requires the delivery of Value for money which requires:

- Continuous focus on cost reduction and productivity improvement
- Continuous focus on integrated innovation and productivity improvement
Continuous focus on cost reduction through application of lean and agile manufacturing principles

- In the ability to identify changes and promote rapid reactive and proactive responses
- In the abilities that produces higher productivity, efficiency and effectiveness in the firm’s operations and processes
- In the ability to produce different products and achieve different goals using the same manufacturing plant:
- In the ability to be fast

Innovation Management

Innovation Strategy & Innovation Management System

Innovation to Create Value

Through

Efficiency Improving Innovations, Technology Based Innovations, Design Based Innovations, Art Based Innovations and Hermeneutic Based Innovations

Innovation to Appropriate Value

Through

Effectiveness Improving Innovations and Business Model Based Innovations

Innovation Enablers

Monetary, Physical, Relational. Organisational effective and efficient system
## Innovation Enablers

### Resources

<table>
<thead>
<tr>
<th>MONEtary</th>
<th>Physical</th>
<th>REL.</th>
<th>ORG.</th>
<th>HUMAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment in financial instruments</td>
<td>Investment in assets</td>
<td>Investment in building links</td>
<td>Investment in brands, image and systems</td>
<td>Recruitment, training, conditions</td>
</tr>
<tr>
<td>Sales of products</td>
<td>Chemical synthesis</td>
<td>Design &amp; Chemical effect</td>
<td>New Processes</td>
<td>New Knowledge</td>
</tr>
<tr>
<td>Relationship arbitrage</td>
<td>Use of other company's assets</td>
<td>Word of mouth</td>
<td>Access to process</td>
<td>Co-learning</td>
</tr>
<tr>
<td>Sale of IP, processes &amp; knowledge</td>
<td>Produce By numbers</td>
<td>CRM</td>
<td>Systems generate IP</td>
<td>Developing competence through use</td>
</tr>
<tr>
<td>Sales of man-hours</td>
<td>Developing prototypes</td>
<td>Building &amp; developing relationships</td>
<td>Knowledge codification, new IP</td>
<td>Training</td>
</tr>
</tbody>
</table>

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An articulation of problems, as yet unsolved, that if solved would dramatically improve the performance of the firm but the firm do not know how to solve them
Innovation Management System

- STRATEGY
- Suggestions from all parts of the organisation
- Membership from all parts of the organisation
- Corporate Head of Innovation
- Innovation Office
- Innovation Meeting
- Decision
- External Proposals
- External Proposals

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## Efficiency Improving Innovations using approaches aimed at reducing transaction costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Where used</th>
<th>Focus</th>
<th>Tools</th>
<th>Benefits</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lean</strong></td>
<td>Where fast results are needed</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>High potential cash savings</td>
<td>External support required</td>
</tr>
<tr>
<td></td>
<td>Where shorter lead times and improved flexibility are critical</td>
<td></td>
<td>Statistical Tools</td>
<td>Moderate potential for soft savings</td>
<td>Moderate time from initiation to results</td>
</tr>
<tr>
<td></td>
<td>Where large numbers of front line staff work together</td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Moderate implementation costs</td>
</tr>
<tr>
<td></td>
<td>Where limited performance data is available</td>
<td></td>
<td></td>
<td></td>
<td>Significant staff engagement</td>
</tr>
<tr>
<td><strong>Six Sigma</strong></td>
<td>To reduce costs or increase volume</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>High potential cash savings</td>
<td>External support required</td>
</tr>
<tr>
<td></td>
<td>Where mature data analysis is in place</td>
<td></td>
<td>Statistical Tools</td>
<td>Moderate potential for soft savings</td>
<td>Long time from initiation to results</td>
</tr>
<tr>
<td></td>
<td>Where time exists to analyse the right data</td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Moderate implementation costs</td>
</tr>
<tr>
<td></td>
<td>Where specific training can be set up and supported</td>
<td></td>
<td></td>
<td></td>
<td>Some staff engagement</td>
</tr>
<tr>
<td><strong>BPR</strong></td>
<td>Where IT is likely to be the main driver of change</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>High potential cash savings</td>
<td>Moderate time from initiation to results</td>
</tr>
<tr>
<td></td>
<td>Change is often done out of line</td>
<td></td>
<td></td>
<td>Moderate potential for soft savings</td>
<td>High implementation costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Significant staff engagement for short periods</td>
</tr>
<tr>
<td><strong>Kaizen</strong></td>
<td>Where fast results are needed</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>High potential cash savings</td>
<td>Short time from initiation to results</td>
</tr>
<tr>
<td></td>
<td>Where the right group of people can be coordinated for a blitz approach</td>
<td></td>
<td>Statistical Tools</td>
<td>Moderate potential for soft savings</td>
<td>Low implementation costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Some staff engagement</td>
</tr>
<tr>
<td><strong>Benchmarking</strong></td>
<td>Where time exists to analyse external performance data</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>Moderate potential cash savings</td>
<td>Short time from initiation to results</td>
</tr>
<tr>
<td></td>
<td>Where other improvement strategies are required</td>
<td></td>
<td>Statistical Tools</td>
<td>Low potential for soft savings</td>
<td>Low implementation costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Some staff engagement</td>
</tr>
<tr>
<td><strong>TQM</strong></td>
<td>Where refocus on customer needs is required</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>Moderate potential cash savings</td>
<td>External support required</td>
</tr>
<tr>
<td></td>
<td>Where formal management systems are already in place</td>
<td></td>
<td>Statistical Tools</td>
<td>High potential for soft savings</td>
<td>Long time from initiation to results</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Improvement in service delivery</td>
<td>Moderate implementation costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Significant staff engagement</td>
</tr>
<tr>
<td><strong>EFQM</strong></td>
<td>Where self assessment and peer reviews are valued and repeated periodically</td>
<td>Process</td>
<td>Traditional management tools</td>
<td>Moderate potential cash savings</td>
<td>Moderate time from initiation to results</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Statistical Tools</td>
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<td></td>
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</tr>
</tbody>
</table>
Summary of value creating innovation approaches

Explanatory Models
Explaning Reality
Universal Understanding

Abstract Presentation of Insights

Science

Expressing Models
Questioning Reality
Individual Understanding

Integrative Approach

Art

Working Models
Improving Reality
Hermeneutic Understanding

Practical Presentation of Insights

Emotional Experience Practice

Exploring Models
Changing Reality
Subjective Understanding

Design

Reductionist Approach

Engineering


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Technology Based Innovation

- Trajectories of Existing Core Technologies
- Trajectories for potential substitute technologies
- Technology Convergence
Increase Value Adding on the firm Level is a combination of a mental attitude and what you know and are willing to learn

What can you do with this?
Increasing Value Adding on the firm Level is a combination of a mental attitude and what you know and are willing to learn.

- Atomic Value with Mechanical Processing + Chemical Processing + Synthetic Biology Processing [Nanocellulose Materials]
- Atomic Value with Mechanical Processing + Chemical Processing [Nanocellulose Composites]
- Molecular Value with Mechanical Processing + Synthetic Biology Processing [3rd Generation Biorefineries e.g. High Value Raw Materials]
- Molecular Value with Mechanical Processing + Biological Processing [2nd Generation Biorefineries e.g. Green Chemicals]
- Molecular Value with Mechanical Processing + Chemical Processing [1st Generation Biorefineries e.g. Vanillin]
- Energy Value with Mechanical Processing + Chemical Processing [Biodiesel]
- Energy Value with mechanical Processing [Burning Wood]
- Mass Value with Mechanical Processing + Chemical Processing [paper]
- Mass Value with Mechanical Processing [timber]
The objective of Design is to achieve behavioural change in the user which is:

- Desirable from the users point of view [i.e. they are better of in their own opinion after the change]
- Beneficial to the supplier
- Positively impacting other stakeholders

Art has numerous opportunities to add value to business. In consumer goods art can add to the perceived authenticity of the good and thereby increase its value in the eye of the consumer.

This is critical in the luxury goods end of the spectrum.