The ways and means of industrialisation

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@swardley
MAPS

INDUSTRIALISATION

IMPACT

RESEARCH

WHAT'S NEXT?
The Strategy Cycle

Sun Tzu’s five factors
John Boyd’s OODA loop
The two types of why
THESE THREE MAPS ARE DIFFERENT

THESE THREE GRAPHS ARE THE SAME
MAPS

INDUSTRIALISATION

IMPACT

RESEARCH

WHAT'S NEXT?
<table>
<thead>
<tr>
<th>Type</th>
<th>Traditional</th>
<th>Next Generation</th>
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</thead>
<tbody>
<tr>
<td>Departmental</td>
<td>Service / Cell</td>
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<tr>
<td>Inertia</td>
<td>Fluid / Game-able</td>
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<td>Profit</td>
<td>Disruption</td>
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<tr>
<td>Cost Reduction</td>
<td>Weapon</td>
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<td>Analysts</td>
<td>Ecosystem</td>
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<td>Used</td>
<td>Driven By</td>
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<tr>
<td>N+1</td>
<td>Design For Failure</td>
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<tr>
<td>Disaster Recovery</td>
<td>Chaos Engines</td>
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<td>Scale Up</td>
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<tr>
<td>Single</td>
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<tr>
<td>Change Control</td>
<td>Continuous</td>
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<tr>
<td>Enterprise Class</td>
<td>Commodity</td>
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</tr>
</tbody>
</table>

**Simon Wardley, Leading Edge Forum, CSC, 2011**
Everett Rogers
Diffusion curves

(instance of)

Uncharted
Industrialised

Genesis
Custom Built
Product (+ rental)
Commodity (+ utility)
Evolution

COMPUTE

I  II  III  IV  V  VI  VII
<table>
<thead>
<tr>
<th>&quot;Age&quot; (common name)</th>
<th>Point of Industrialisation</th>
<th>Date Range (approx.)</th>
</tr>
</thead>
</table>
| Agricultural Revolution                   | Agriculture *(Crop rotation)*
Agriculture *(Plough)*                   | 1650–1780            |
| Industrial Revolution                     | Power *(Water Mill)*
Resource *(Puddling iron)*
Manufacture *(Screw Cutting Lathe)*       | 1770–1840            |
| Age of Steam & Transport                  | Power *(Steam)*
Communication *(Postage Stamp)*           | 1830–1880            |
| Age of Electricity & Heavy Engineering    | Resource *(Bessemer)*
Power *(Electricity)*                      | 1870–1920            |
| Age of oil                                | Power *(Petrochemical)*
Communication *(Telephone)*                | 1910–1970            |
| Age of Information & Telecommunications   | Information *(Microprocessor)*                  | 1960–2000            |
| "Internet / Network" Age                  | Communication *(TCP/IP)*
Communication *(mobile)*                    | 1990–2010            |
| The “people are still coming up with names for it” Age | Information *(ubiquitous compute, utility compute)* | 2005–2025 (??)       |
Creative Destruction

The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers, goods, the new methods of production or transportation, the new markets, the new forms of industrial organisation that capitalist enterprise creates.

Joseph Schumpeter
Uncharted

new need

+New Value

Emerging Practice

+Speed

+Capital flow

+Efficiency

+Inertia

Industrialised

user

Evolution

Genesis | Custom Built | Product (+ rental) | Commodity (+ utility)
Uncharted

new need
+New Value

FORCING NEED

Emerging Practice
+Speed
+Capital flow
+Efficiency

Concept
Suitability
Technology
Attitude

+Inertia

Industrialised

user

Concept

Genius

Custom Built

Product (+ rental)

Commodity (+ utility)

Evolution
Uncharted
Industrialised

Emerging practice
+Speed
+Efficiency
+Capital flow
+Inertia

FORCING NEED
+Inertia
+Capital flow

new need

FORCING NEED
+New Value
new need

user
We do not open that we consider a source of differential advantage.
Our company deploys an open technology approach as a means of **outmanoeuvring** competitors.
<table>
<thead>
<tr>
<th>Type</th>
<th>Traditional</th>
<th>Next Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>Departmental</td>
<td>Service / Cell</td>
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<td>Culture</td>
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<td>Corporate Focus</td>
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<tr>
<td>&quot;Age&quot; (common name)</td>
<td>Organisational change (associated with)</td>
<td>Point of Industrialisation</td>
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<tr>
<td>Agricultural Revolution</td>
<td>Commercial Farmer / Markets</td>
<td>Agriculture (Crop rotation) Agriculture (Plough)</td>
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<td>Industrial Revolution</td>
<td>American System of Engineering / Time Management</td>
<td>Power (Water Mill) Resource (Puddling iron) Manufacture (Screw Cutting)</td>
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<td>Age of Steam &amp; Transport</td>
<td>Joint stock company</td>
<td>Power (Steam) Communication (Postage Stamp)</td>
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<td>Age of Electricity &amp; Heavy Engineering</td>
<td>Scientific Management / Taylorism / Hierarchy of Offices</td>
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<td>Age of oil</td>
<td>Fordism / Mass Production</td>
<td>Power (Petrochemical) Communication (Telephone)</td>
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<td>JIT / TPS</td>
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<td>&quot;Internet / Network&quot; Age</td>
<td>Web / Web 2.0</td>
<td>Communication (TCP/IP) Communication (mobile)</td>
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<td>The &quot;people are still coming up with names for it&quot; Age</td>
<td>A &quot;Next&quot; generation (??)</td>
<td>Information (ubiquitous compute, utility compute)</td>
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MAPS

INDUSTRIALISATION

RESEARCH

IMPACT

WHAT'S NEXT?
Genesis
Custom Built
Product (+ rental)
Commodity (+ utility)
Evolution

Uncharted
new need

+New Value

Emerging Practice

+Speed

FORCING NEED

+Capital flow

+Efficiency

+Inertia

user

Industrialised

War

FORCING NEED

+Inertia

+Capital flow
<table>
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<td>Wonder</td>
<td>building, construction and awareness</td>
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![Graph showing frequency over time with increasing certainty and 100% certain markers.](image-url)
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*Weak signal analysis, 2014*
Uncharted

new need

+New Value

Emerging Practice

+Speed

+Efficiency

ISOLATION ECONOMY

+Capital flow

+Inertia

user

Industrialised

War

+Inertia

+Capital flow

+Efficiency

Emerging Practice

+Speed

+New Value

user

Evolution

Genesis

Custom Built

Product (+ rental)

Commodity (+ utility)
Uncharted

Industrialised

Events

+Efficiency

Physical space

Virtual space

A

B

Genesis

Custom Built

Product (+ rental)

Commodity (+ utility)

Evolution
“We just need to survive and then it’s going back”
Uncharted

Genesis
Custom Built
Product (+ rental)
Commodity (+ utility)
Evolution

Industrialised

+New Value
Emerging Practice
+Speed
ISOLATION ECONOMY

+Inertia
+Capital flow

Biz
user
Social
Events

Physical space
Virtual space

+Efficiency

Physical space
Virtual space

+Inertia
+Capital flow

New need
"Good NEWS ...
“No-one knows yet what they are talking about”

Experience exists but most are in denial over the change

+New Value
+Speed

Emerging Practice

Good NEWS ...
“No-one knows yet what they are talking about”
MAPS

INDUSTRIALISATION

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WHAT'S NEXT?
Multiple points of industrialisation. contexts (i.e. industries). forcing functions.

5 tech WG robotics, immersion, space, manufacturing and sensors

5 industry WG healthcare, defense, gov, banking and automotive.

1 needs WG forcing functions.
Thank you

Working Groups

If you want to be involved

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david.reid@leadingedgeforum.com
or @swardley, @lefdjr

Live Event, 19th May
leadingedgeforum.com/events/responding-to-the-pandemic-an-lef-virtual-forum/