Smart Industry Readiness Index

Invitation to Participate

Jan 2021

Ben Ong, Expert Fellow, World Economic Forum
Agenda

- What is SIRI
- SIRI Frameworks & Tools
- Taking the Official SIRI Assessment (OSA)
- Manufacturing Transformation Insights
- WEF-EDB SIRI Internationalisation Program
- Getting Involved with SIRI
What is the Smart Industry Readiness Index (SIRI)
The world’s first quantitative framework to evaluate and benchmark manufacturing facilities

The Smart Industry Readiness Index (SIRI) was created by the Singapore Economic Development Board (EDB) in partnership with a network of leading technology companies, consultancy firms, and industry and academic experts. SIRI comprises a suite of frameworks and tools to help manufacturers – regardless of size and industry – start, scale, and sustain their manufacturing transformation journeys. SIRI covers the three core elements of Industry 4.0: Process, Technology, and Organisation.
History of SIRI

- Started out as a single framework with an accompanying self-diagnostic tool

- Strong take-up, with >1,000 companies and government organisations using it for their transformation efforts

- Program expands to offer a wide range of new concepts and services, including an Official SIRI Assessment (OSA) program

- Published first Manufacturing Transformation Insights Report in 2019
The SIRI Frameworks and Tools
Whitepaper Publications

Featuring new concepts, frameworks, tools, benchmarks and insights
Designed to support manufacturers throughout their transformation journey

1. **LEARN**
   Learn key concepts and build a common language for alignment

2. **EVALUATE**
   Evaluate the current Industry 4.0 maturity levels of existing facilities

3. **ARCHITECT**
   Architect a comprehensive transformation strategy and implementation roadmap

4. **DELIVER**
   Deliver impact and sustain transformation initiatives

Catalysing the Transformation of Manufacturing
Official Introduction of the SIRI Framework: which presents the three building blocks of Industry 4.0: Process, Technology, and Organisation.

LEAD Framework: circular, continuous four-step process manufacturers can adopt in their approach towards transformation.

Assessment Matrix is the world’s first Industry 4.0 self-diagnostic tool aimed at helping companies worldwide evaluate the current state of their factories and plants.
# The SIRI Framework & Assessment Matrix Dimensions

## SMART INDUSTRY READINESS INDEX

<table>
<thead>
<tr>
<th>PROCESS</th>
<th>TECHNOLOGY</th>
<th>ORGANISATION</th>
</tr>
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<tr>
<td>Operations</td>
<td>Automation</td>
<td>Talent Readiness</td>
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<tr>
<td>Supply Chain</td>
<td>Connectivity</td>
<td>Structure &amp; Management</td>
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<tr>
<td>Product Lifecycle</td>
<td>Intelligence</td>
<td>Workforce Learning &amp; Development</td>
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<tr>
<td>Vertical Integration</td>
<td>Shopfloor</td>
<td>Inter- and Intra-Company Collaboration</td>
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<tr>
<td>Horizontal Integration</td>
<td>Enterprise</td>
<td>Leadership Competency</td>
</tr>
<tr>
<td>Integrated Product Lifecycle</td>
<td>Facility</td>
<td>Strategy &amp; Governance</td>
</tr>
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1. Vertical Integration
2. Horizontal Integration
3. Integrated Product Lifecycle
4. Shopfloor
5. Enterprise
6. Facility
7. Connectivity
8. Enterprise
9. Facility
10. Intelligence
11. Leadership Competency
12. Strategy & Governance
13. Workforce Learning & Development
14. Inter- and Intra-Company Collaboration
15. Inter- and Intra-Company Collaboration
16. Strategy & Governance
TIER Framework: Conceptual framework that underscores the 4 key principles of a holistic prioritisation

Prioritization Matrix: management planning tool, to assist companies identify the high-priority areas in which improvements will bring the most benefit
TIER Framework: four principles for holistic prioritisation exercise

**T**oday’s State
- Develop an in-depth understanding of the company’s current Industry 4.0 maturity level

**I**mpact to Bottom Line
- Analyse how distinct Industry 4.0 areas affect the company’s profits and identify those that can generate the greatest financial return

**E**ssential Business Objectives
- Determine the business objectives that are the most critical to the company to guide the selection of relevant Industry 4.0 areas

**R**eferences to the Broader Community
- Emulate successes and learn from the mistakes of the broader manufacturing community
The Official SIRI Assessment (OSA)
The Official SIRI Assessment

Performed by a Certified SIRI Assessor (CSA), the Official SIRI Assessment (OSA) is an independent assessment of a factory or plant to evaluate its current state, identify high-impact areas to focus on, and benchmark it against industry peers.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Time Commitment</th>
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<tbody>
<tr>
<td>I</td>
<td>Onboarding (Planning and Preparation) An onboarding call to prepare the company on what to expect, the materials/information to be prepared, and the key personnel to be involved</td>
<td>~1 Hour</td>
</tr>
<tr>
<td>II</td>
<td>Evaluation Workshop discussions with an on-site facility visit to evaluate the current state of the company's manufacturing facility and characterise the variables in determining the high-impact areas to focus on.</td>
<td>~1 – 1.5 days</td>
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<tr>
<td>III</td>
<td>Debrief (Analysis and Review) A debrief session to review the OSA results and interpret the findings.</td>
<td>~0.5 days</td>
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<tr>
<td>Deliverable</td>
<td>An Official SIRI Assessment (OSA) Report</td>
<td>2 days</td>
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The OSA Report

Companies will receive an official report at the conclusion of the OSA
A Certified SIRI Assessor (CSA) is a professional who has completed the CSA Programme and is formally recognised by the SIRI Institute to conduct an Official SIRI Assessment.

The CSA Programme

Established to formally qualify independent individuals who are able to professionally assess a manufacturing facility using SIRI and its accompanying frameworks and tools. The CSA Programme comprises of 2 components:

- SIRI Assessor Training Course (40-hour course)
- SIRI Assessor Certification Scheme (Theory & Practical Examination)
Manufacturing Transformation Insights
Data-backed snapshot of the current state of industrial transformation across multiple industries

Observations relating to the three building blocks on Industry 4.0 – Process, Technology and Organisation

Benchmark for manufacturers to assess and compare their Industry 4.0 maturity levels against those of their peers in the same industry
Archetypes of Transformation

Understanding the transformation profile of different manufacturing sectors

Characterising the 4 main types of transformation profiles that a manufacturing industry might follow, based on the maturity and variance of transformation within that industry.

- **Coniferous Forest**: High maturity; Low Variance
- **Rainforest**: High maturity; High Variance
- **Savanna**: Low maturity; High Variance
- **Tundra**: Low maturity; Low Variance
3B Maturity Benchmark
A whole-of-manufacturing sector benchmark for companies

Reference points of what it means for a factory or plant to be Best-in-Class, in the Broad Middle, or lagging behind in the Bottom.
Industry Performance Cards (IPC)

Industry-specific benchmarks for companies

The state of transformation can be highly industry-specific, often influenced by factors like product nature/volume, complexity of manufacturing processes, and macro-level competitive dynamics.

<table>
<thead>
<tr>
<th>The 14 Industry Groups</th>
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<tbody>
<tr>
<td>Aerospace</td>
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<tr>
<td>Automotive</td>
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<tr>
<td>Electronics</td>
</tr>
<tr>
<td>Energy &amp; Chemicals (Downstream)</td>
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<tr>
<td>Food &amp; Beverage</td>
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<tr>
<td>General Manufacturing</td>
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<tr>
<td>Logistics</td>
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<tr>
<td>Oil &amp; Gas (Upstream)</td>
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<tr>
<td>Machinery &amp; Equipment</td>
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<tr>
<td>Medical Technology</td>
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<tr>
<td>Pharmaceuticals</td>
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<tr>
<td>Precision Parts</td>
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<tr>
<td>Semiconductors</td>
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<tr>
<td>Textile, Clothing, Leather &amp; Footwear</td>
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As industry-specific benchmarks, IPCs offer a more apples-to-apples comparisons for companies to assess how they fare against their industry peers.
WEF-EDB SIRI Internationalisation Partnership
The SIRI Internationalisation Program

Objective & Vision

Proliferate the global adoption of the SIRI as a single, internationally-recognised set of frameworks and tools that the manufacturing community use to evaluate and benchmark their manufacturing facilities.
# The SIRI Internationalisation Program

## Objective & Vision

Proliferate the global adoption of the SIRI as a single, internationally-recognised set of frameworks and tools that the manufacturing community use to evaluate and benchmark their manufacturing facilities

<table>
<thead>
<tr>
<th>S/N</th>
<th>Key Milestones</th>
<th>Period</th>
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<tbody>
<tr>
<td>1</td>
<td>Train 75 of Certified SIRI Assessors (“CSA”) to provide Official SIRI Assessments to manufacturing companies from different industries and geographies</td>
<td>Q4 2020 – Q1 2021</td>
</tr>
<tr>
<td>3</td>
<td>Engage manufacturing community leaders globally to encourage their network of companies to take up the Official SIRI Assessment (OSA).</td>
<td>Through 2021</td>
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<td>4</td>
<td>Conduct 500 – 750 new OSA globally</td>
<td>Through 2021</td>
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<tr>
<td>5</td>
<td>Publish the findings of the SIRI Assessments the 2nd Manufacturing Transformation Insights Report at the 2022 WEF Annual Meeting. The whitepaper shall provide new insights relating to the digital transformation of manufacturing and reflect the updated i4.0 maturity benchmarks.</td>
<td>Q2 2022</td>
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</table>
Getting Involved with the WEF-EDB SIRI Initiative
Be a part of the SIRI Initiative

Catalyse the transformation of manufacturing

Manufacturing Companies

- Take the Official SIRI Assessment (OSA)
  - Evaluate the current state of your operations
  - Identify high-impact areas for improvement
  - Benchmark your results with industry peers

Governments & Business Associations

- Characterise the transformation profile of your manufacturing community
  - Share about SIRI with your network of stakeholders
  - Encourage your partners and companies to take the OSA

Technology & Consultancy Firms

- Join us as a partner; nominate experts to be qualified as Certified SIRI Assessors (CSA)
  - Offer OSA to your clients to accelerate their transformation journey
  - Contribute new insights towards the Manufacturing Transformation Insights Report

Catalysing the Transformation of Manufacturing
Catalysing the Transformation of Manufacturing