



Industry 4.0 Human Capital Initiative (IHCI)

Embarking on Your I4.0 Transformation



An Initiative by



Supported by



Anchor Partners

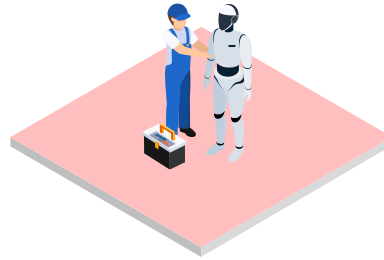


Industry 4.0 is characterised by 4 foundational technologies...



1 Connectivity, data, computational power

- Sensors
- Internet of Things
- Cloud technology
- Blockchain



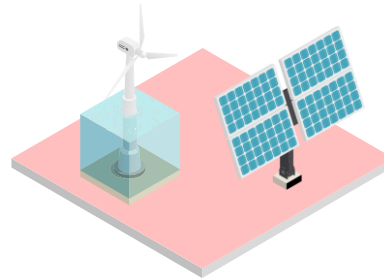
2 Analytics and intelligence

- Advanced analytics
- Machine Learning
- Artificial intelligence



3 Human-machine interaction

- Virtual and augmented reality
- Robotics and automation (collaborative robots, AGVs¹)
- RPA², chatbots



4 Advanced engineering

- Additive manufacturing (e.g. 3D printing)
- Renewable energy
- Nano-particles

...applied end-to-end along the value chain



Customer orders



Product Development



Suppliers



Procurement



Production



Outbound supply chain



Customer service

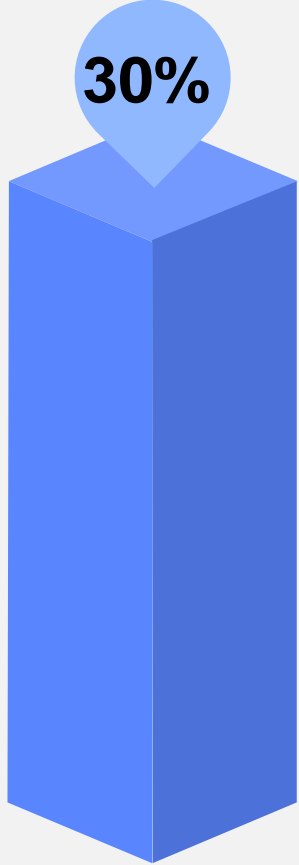
End-to-end digital thread

seamless data flow along the value chain / product life cycle

Odds of success: Digital transformation in manufacturing sectors is even harder than in traditional business transformations

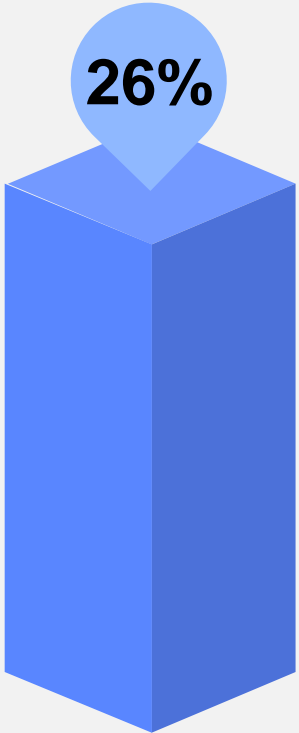


**General
transformation**

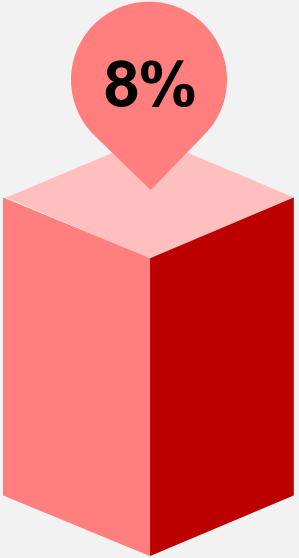


Overall

**Digital
transformation**



Digital-savvy
industries
(high-tech, media,
telecommunication)



Traditional sectors
(e.g. oil and gas,
automotive, infrastructure,
pharmaceutical)

Source: Survey, Unlocking success in digital transformations (2018), McKinsey & Company

Challenges faced by business owners



My company produces packet noodles. We have an annual revenue of ~10mil. We constantly face a manpower shortage of about 20-30 people. Labour cost also affects my margin and we want to rely less on foreign labour.

I have been shopping around for technology to make my workers more productive, but there are too many solution providers out there in the market. **I don't know which to choose and what grants are available out there to help me!**

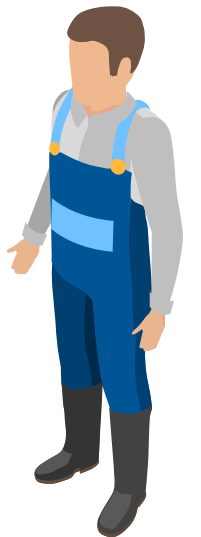
I heard that WSG has grants to train my people but I don't know how to start.

Mr Heng
Food Manufacturing

My company manufactures CNC parts for the aerospace industry with an annual revenue of ~30mil. I have a good understanding and know-how of Industry 4.0 technologies, and I am using sensors to track the performance of my equipment.

I've recently bought 10 Auk sensors for my CNC machines. The sensors can tell me the equipment efficiency or OEE is about 60% but I still **don't know how to improve** from here as the **solution does not tell me why** my CNC machines are not operating.

Mr Jacob
Precision Engineering



Challenges faced by business owners



I am a second-gen owner, and my father started our wholesale trading business selling equipment and spares for the marine & offshore industry. Our annual revenue is ~7mil but our margin is low.

We occasionally pay premium prices to purchase spare parts when we realise that we are running low on stock. The problem was due to **poor tracking of our inventory**. I want to digitalise how we manage the inventory to avoid situations where we run out of stock.

Ms Lee
Wholesale Trade



My company is a leading semiconductor testing and assembly player. As the Industry 4.0 lead, my goal is to adopt technology, and to improve equipment performance and process efficiency.

I currently face a few challenges. Firstly, there is a significant number of **legacy equipment which are difficult to digitalise**. Secondly, I find it challenging to justify investments because it is **not easy to build a business case**. Lastly, we occasionally face **challenges to get frontline operators to adopt** Industry 4.0 solutions.

Mr Raj
Semiconductor



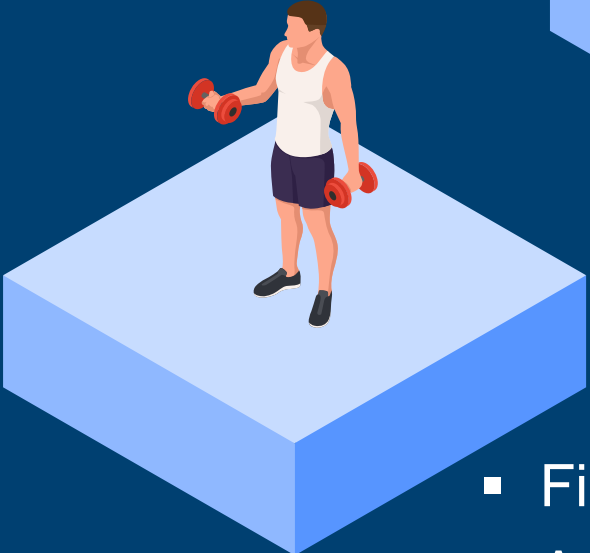
Start your Industry 4.0 transformation journey!

We will help you to...

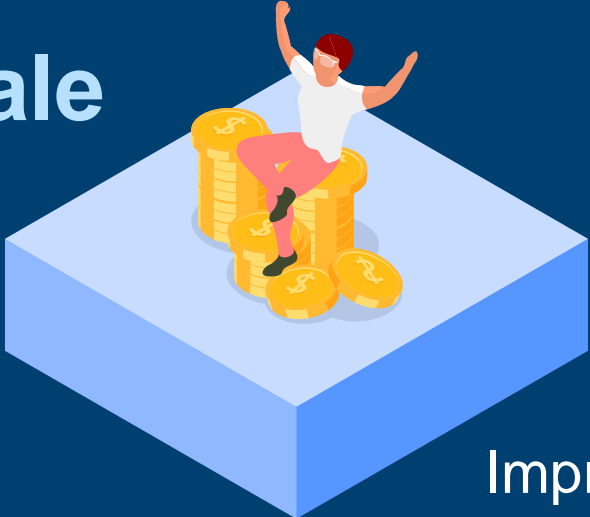
Scope



Pilot



Scale



Improve margin at scale

“Find money”

- Find solution
- Achieve productivity gain
- Plan staff upskilling

Enabler is a structured approach to set up your I4.0 plan and prepare you to scale and sustain



Awareness

Bootcamp

- Triple transformation
- Enabler program milestones



Building IOT Solutions

How I4.0 help your business

- Business context
- Aspiration
- Painpoints

Where to deploy I4.0

- Outline potential use cases
- Select pilot use cases

What is the IoT pilot

- Baseline productivity
- Identify bottlenecks
- Deploy IoT tool

How is your HR practice

- HCDT



C "See" It Yourself

IoT to capture Data

Prioritize productivity loss drivers and develop interventions

Track productivity gain

Job redesign

SIRI



Do It Yourself roadmap

Scale up

- Roll out to other equipment/processes
- Build more I4.0 solutions to address other pain points

IoT technology

Change management / JR / HC gap closure



Scale up with Ecosystem

Join Community of Practice Pathway and prepare to implement I4.0 roadmap

2-3 weeks

3-4 weeks

1-2 weeks

Company Leadership time

H

H

L

L

L

H

H

Frontline staff

L

L

H

H

H

L

L

Enabler

Commitment:

H: 3-4 hours per week

L: less than 2 hours

How we enable you to transform!



I piloted with a simple solution called Tulip. I heard it has been used by more than 40 companies in this programme.

Using Tulip, I now have data to **better understand where productivity is lost**. We can balance the workload better and simplify our current workflow. Now, the same staff can handle the orders by **30% more**.



The Enabler Programme has taught me 1 lesson, having technology alone will not automatically bring productivity gain. I learnt how to involve frontline staff to track reasons of why my CNC machines are not operating.

My supervisors, **also learnt how to analyse data and drive improvement** using the Auk dashboard. During the pilot, the IHCI team, together with my supervisors identified **improvement opportunities by 40%**. I am very happy with the outcomes of the pilot.



How we enable you to transform!



”

The IHCI team introduced a local solution, iSmart, to my warehouse manager, Ah Seng. We completely shifted our inventory data from Excel into the new system.

This gave us **full transparency of our inventory and flag up spare parts that are low in stock** so we can restock in advance.

Ah Seng is slowly **adapting to this new way of working**. The consultant also helped to redesign his role and recommended courses for him to upskill.

From a business perspective, this helped to reduce my costs and **improve my margins by 10%**. It was a great investment!

”

The IHCI Enabler Programme has helped me to address 3 of my challenges. Firstly, we were advised to use Auk sensors on our legacy equipment. Real-time performance data is now possible. As a result, these **equipment saw improvement on the OEE by 15%**.

Secondly, I also **learnt better ways to build a business case** and prioritise use cases. The IHCI team has also helped me to refresh my i4.0 roadmap.

Lastly, the IHCI team also helped me to develop change management measures and it **encouraged my frontline staff to adopt** these new technologies.



How we enable you to transform!



↑ 30%

in labour **productivity** and a rebalancing of workforce across stations



↑ 40%

in machine **throughput** and imparts analytical skills to supervisors

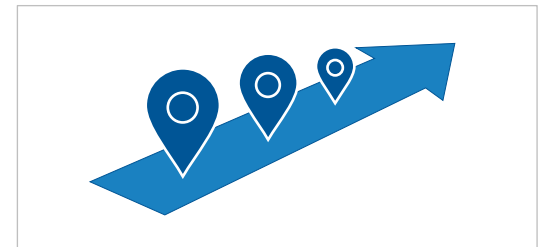


↑ 10%

in **margin** by reducing inventory cost and redesign operator's job role






Drives adoption at the shopfloor and provides a comprehensive roadmap



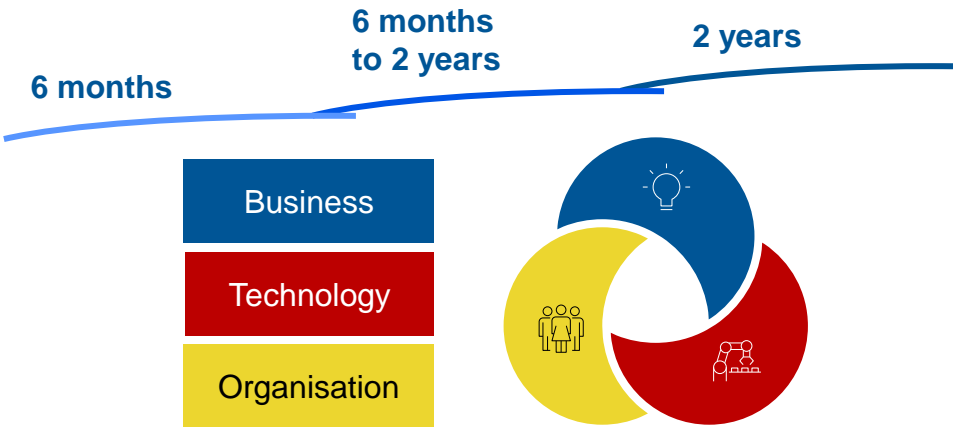
We have helped **134 companies** across more than **10 sectors!**



Results

 <p>Average annual profit uplift during Enabler</p> <p>↑\$200K¹</p>	 <p>Average productivity uplift</p> <p>↑40%</p>	 <p>Average salary uplift of impacted role</p> <p>↑16%</p>
--	---	--

Roadmap





6 months 6 months to 2 years 2 years

Business

Technology

Organisation

Assessments

<p>Human capital assessment</p>  <p>Process</p> <p>Competencies</p> <p>Practices</p> <p>HC Maturity</p>	<p>Digital maturity assessment</p>  <p>SMART INDUSTRY READINESS INDEX</p>
---	--

¹ Average across companies who joined from C4 to C5 (41 companies)

Scale up successfully after Enabler with our Community of Practice (CoP) Partners!



Tan Ru Ding
 Director
 Applied Cutting Technology Pte Ltd



Post-scaling companies are projected to see an average annual profit uplift of
↑\$350K¹ to \$700K



ROI typically happens within
1 MONTH
 of deployment

Leverage on these solution providers to scale

1. For companies with revenue size below S\$10M

Scale up successfully after Enabler with the right grant support!



Now that I have a taste of success, my company is excited to scale. We want to roll out to more stations. IHCI programme also guided me to grants I can apply for.



Leverage on these government grants for support

Enterprise Singapore

Enterprise Development Grant (EDG) and Productivity Solutions Grant (PSG) subsidises your i4.0 transformation needs up to

70%¹

1. Subject to terms and conditions

Scale up successfully after Enabler with Career Conversion Programme!



WSG team also helped me to apply for the CCP to redesign the job role of my supervisor to be better equipped to use the new technologies.



Leverage on these government grants for support



Career Conversion Programme (CCP) - where companies can leverage to hire new employees and obtain salary support up to

90%¹

1. Subject to terms and conditions

The Community of Practice (CoP) increases the chances of success of companies who graduated from the Enabler Programme when they embark on their digital transformation journey

CoP Partners curated to meet i4.0 transformation needs

Pathways

Business

Technology

Organization

The image displays a grid of logos for various CoP partners, categorized into Business, Technology, and Organization. The logos include:

- Business:** SINGAPORE BUSINESS FEDERATION (Apex Business Chamber), Workforce Singapore (wsg).
- Technology:** Auk., SIEMENS (Ingenuity for life), TULIP, GRAYMATICS, Advanced Remanufacturing and Technology Centre (ARTC), LKH (PRECICON), INNOWAVE TECH, ARCSTONE, HOMAG, Factorytalk+, MODULA, SmartFactoryWorx (EFFICIENCY IMPROVEMENT SOLUTIONS), Advent2 Labs Consultation (Your Partner in Improvement), VersaFleet™, Schneider Electric, KNOW, KONICA MINOLTA, rexroth (A Bosch Company), FLEXSPEED, Skyports.
- Organization:** SNEF, hrp (INSTITUTE FOR HUMAN RESOURCE PROFESSIONALS), JobKred, SINGAPORE POLYTECHNIC (SP), SHRI (Powering Human Capital).

What you need to kickstart your Industry 4.0 transformation journey!



Personnel involved

CEO or General Manager
Head of Operations
Head of Human Resources



Time commitment

2-4 hours per week
during the 6-8 weeks enabler



How much will it cost?

SMEs

Upfront payment	\$10,752.50
Final cost after SFEC reimbursement	\$5,060

Non-SME

Upfront payment	\$23,402.50
Final cost after SFEC reimbursement	\$13,402.50

Prices reflected above are with **fundings up till 90% from WSG** and **prevailing 7% GST**

When can you kickstart your I4.0 transformation journey:

Cohort 8

September 2022

Cohort 9

November 2022
[Tentative]