




## 17TH TERM AFPI CONFERENCE (2016-2018) & 28TH ASIA PLASTICS FORUM

*creating sustainable value through circular economy*

**DATE:** 19 - 21 September 2018  
**VENUE:** Pullman Bangkok Grande Sukhumvit, Thailand



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- 04**  **Smart Manufacturing**  
Injection Moulding 4.0 Ready
- 03**  **Smart Automation**  
Flexible Automation
- 02**  **Smart Maintenance**  
Reliable Equipment
- 01**  **Scientific Moulding**  
Stable Process

## INDUSTRY 4.0

### for the plastics industry

www.iPlast40.com

WELCOME

# iPlast 4.0

To enable people-centric smart manufacturing for the many companies

[www.iPlast40.com](http://www.iPlast40.com)




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## Our Company

# iPlast 4.0

Our vision is to **enable people-centric smart manufacturing for the many companies**. We bring together an international team of practitioners, from retired engineers to practising professionals to young industry entrants. The team hails from both Europe and Asia, and offers great expertise and experience in enabling **Injection Moulding 4.0**.

Together with our global eco-system of renowned partners, iPlast 4.0 helps our clients to implement **Innovation Centres** and **Model Factory Cells (MFC)** that are microcosms of Industry 4.0 concepts. To ensure successful adoption by clients, these implementations combine readiness check, consulting, hardware, training and software in the fields of **Scientific Moulding, Smart Maintenance, Smart Automation** and **Smart Manufacturing**.



## OUR PRODUCTS & SERVICES

**01** Industry 4.0 Senior Management Development Programme

**02** Digitalisation and Industry 4.0 Driver Licence®

**03** Injection Moulding 4.0 Readiness Check and Digital Transformation Roadmap Development

**04** Innovation Centre

**05** Model Factory Cell


**06** TVET-Industry Model

**07** Training Programmes

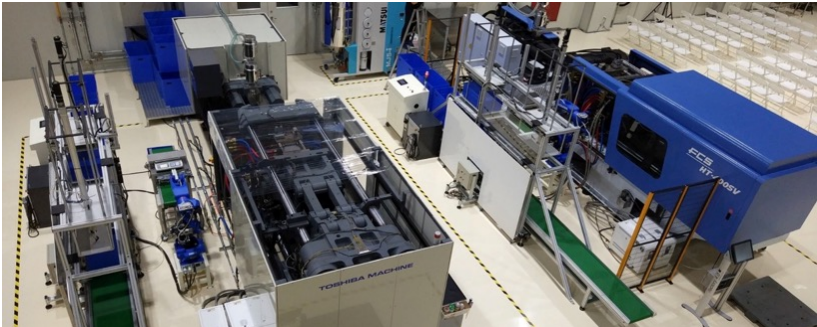

1. Scientific Moulding
2. Scientific Maintenance
3. Smart Automation
4. Smart Manufacturing

**08** Industrial Cloud Platform (Zhuge SmartCloud 诸葛云)

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## OUR PROTOTYPING

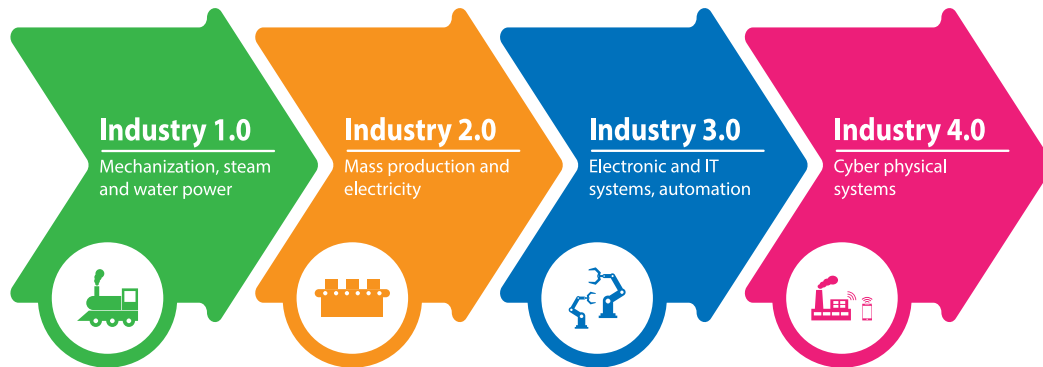



1. Innovation Centre
2. Model Factory Cell

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Source: Felli and 智人汉羅

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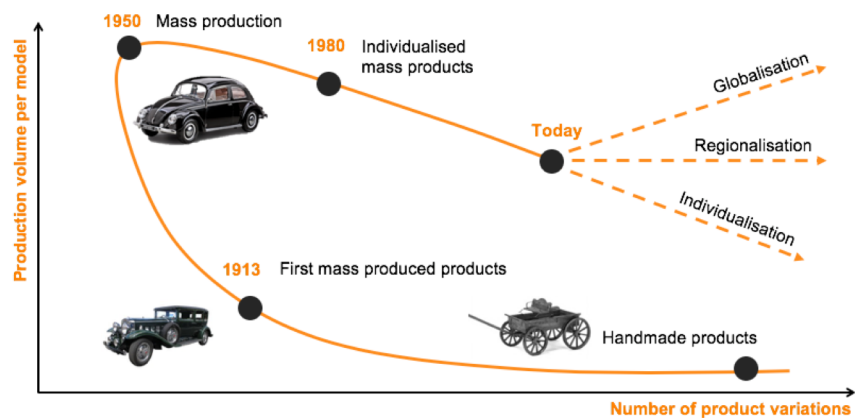
## The 4<sup>th</sup> Industry Revolution

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## Revolution in the automotive market



Source: i4.0sg

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# MASS customization

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[illegible]

# Big boys RACE

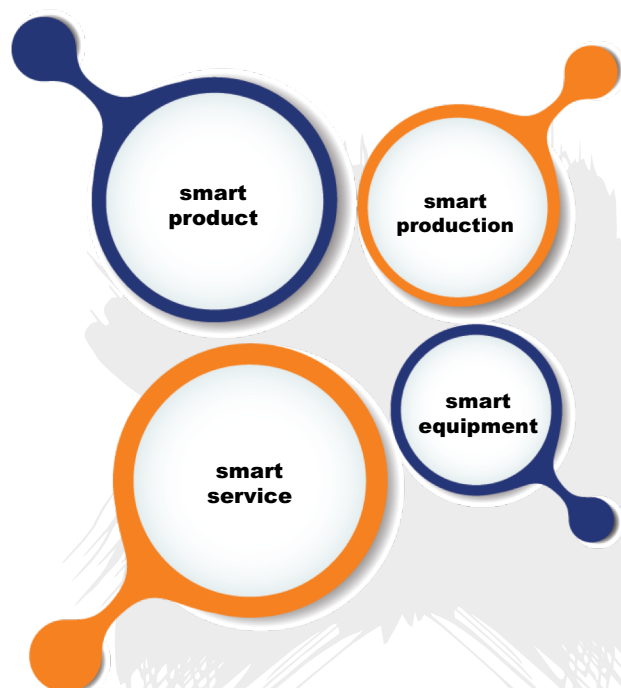


MADE IN CHINA 2025



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## Injection Moulding 4.0 Ready

Injecting the concepts of Industry 4.0 into the plastic industry



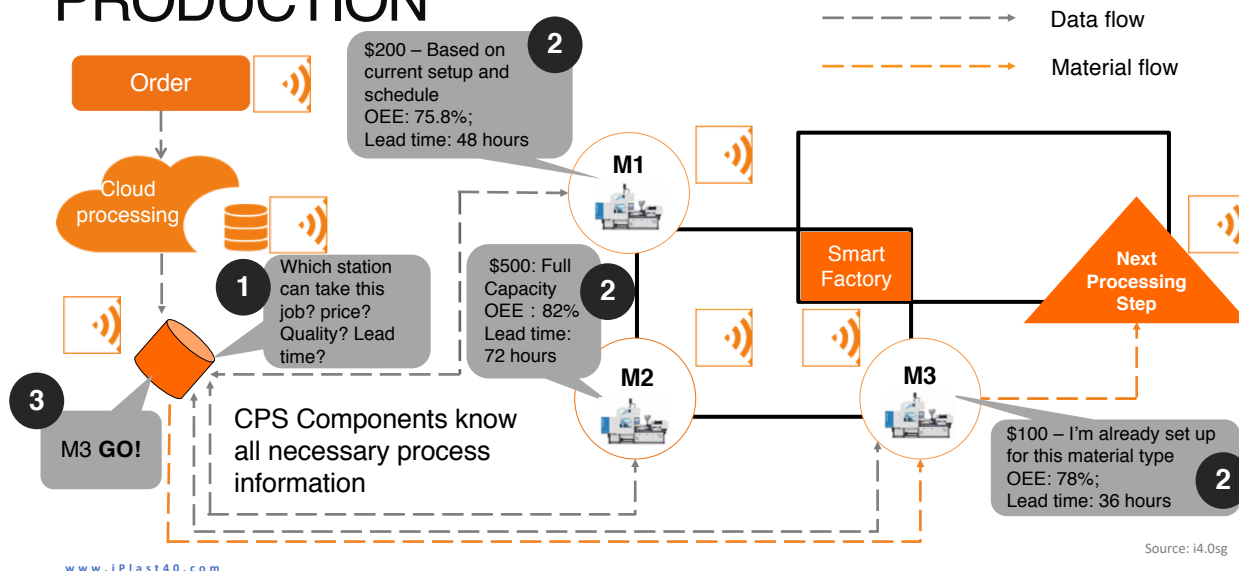
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## Smart PRODUCT



# Smart PRODUCTION

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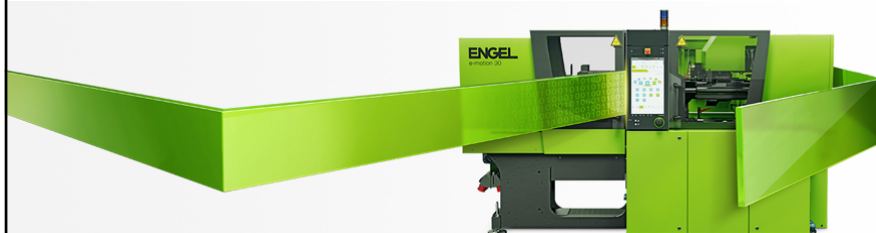


# Smart Machine

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Self-regulating processes for reproducible quality and increased efficiency

**ENGEL** INJECT 40



iQ clamp control  
iQ vibration control  
iQ flow control  
iQ weight control

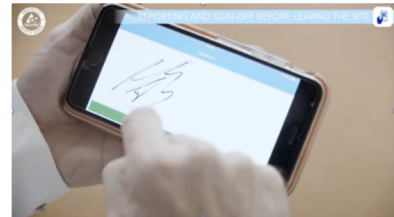
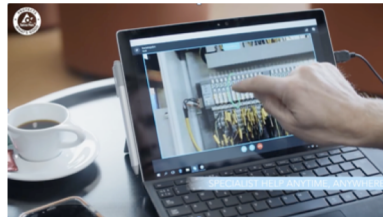
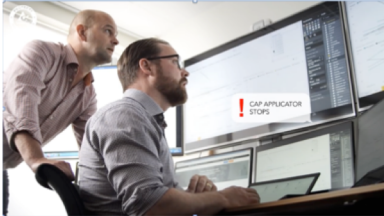


Source: Engel

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# Smart SERVICE

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Source: Tetra Pak

## Germany's Route to Industry 4.0

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Industry **2.0**  
1870-1880

Industry **3.0**  
1970-1980

Industry **4.0**  
Today

1887 ← 124 Years → 2011

Merchandise Marks Act

Industry 4.0 Plan



Inferior Quality  
Counterfeit



Value for Money



High Quality



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# Our Route to Industry 4.0?



## INDUSTRY 4.0

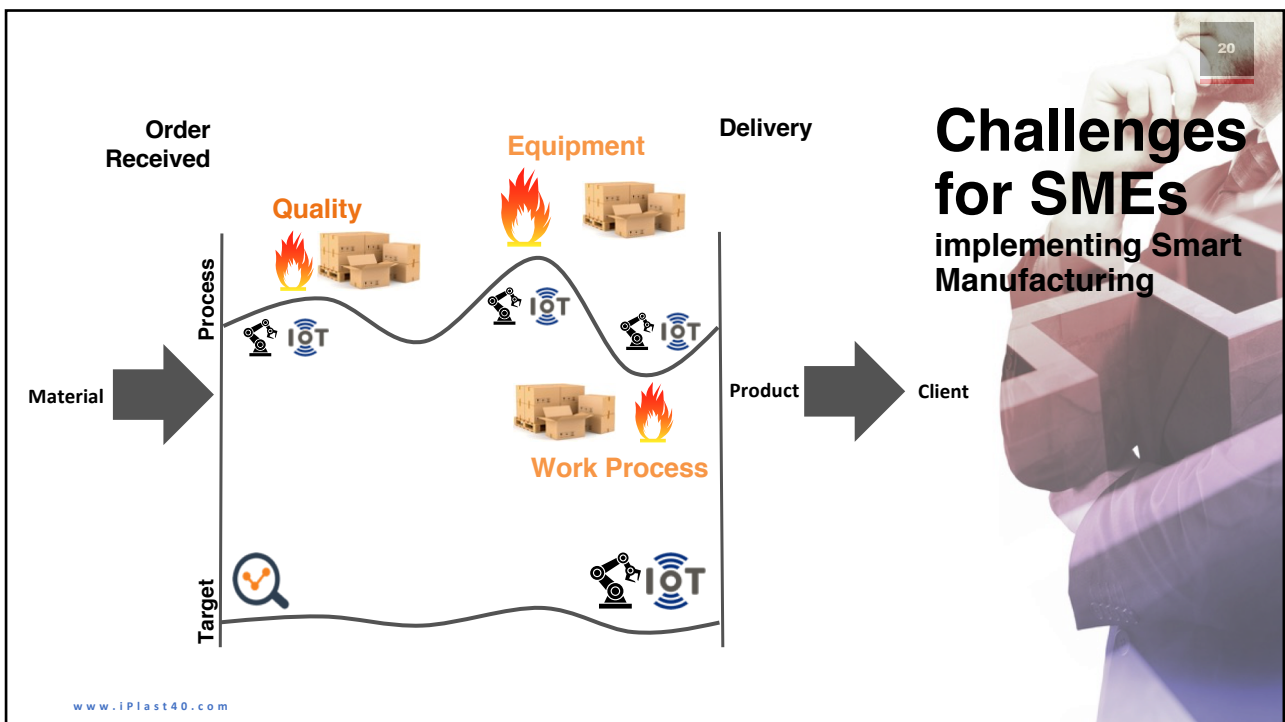
Does it matter?

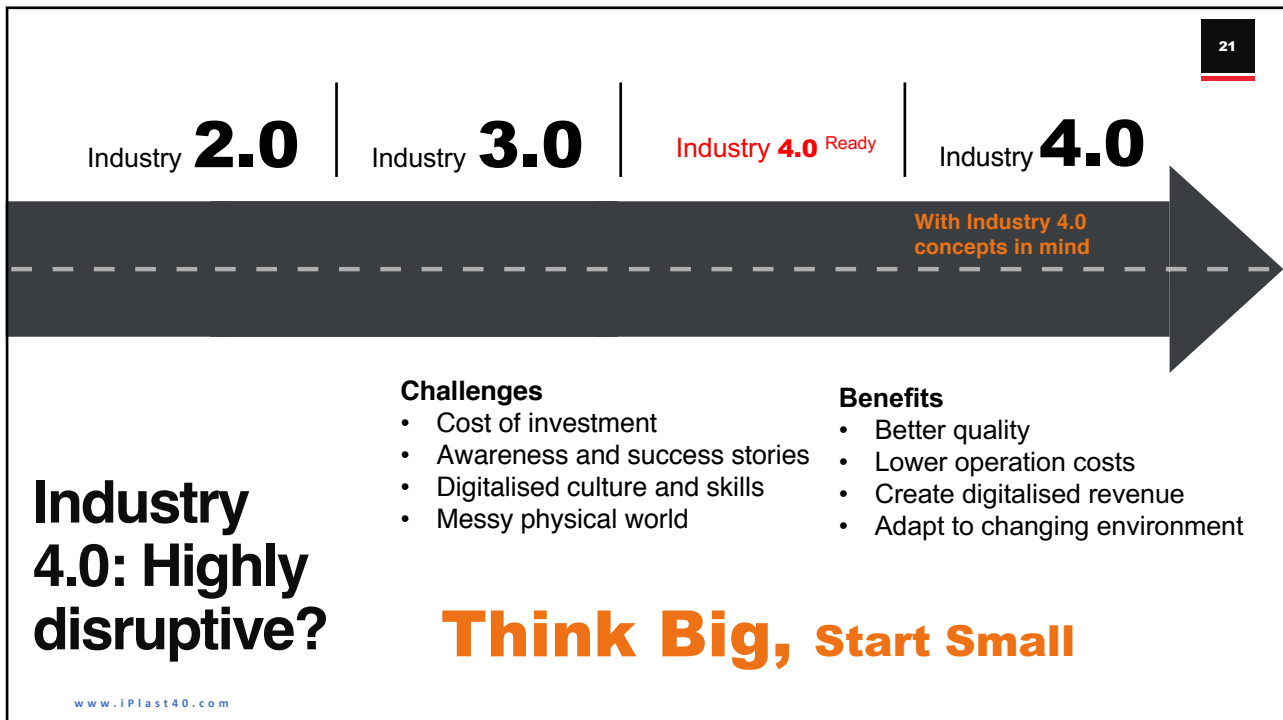


康師傅®



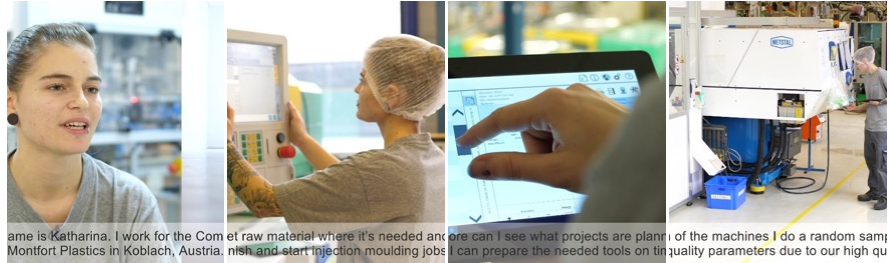
TREATS or OPPORTUNITIES?  
A choice or A MUST?





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# Machine Owner in Europe



My name is Katharina, I work for the Comet raw material where it's needed and I can see what projects are planned for the machines. I do a random sample and start injection moulding jobs. I can prepare the needed tools on time and quality parameters due to our high quality.

YouTube



Youku

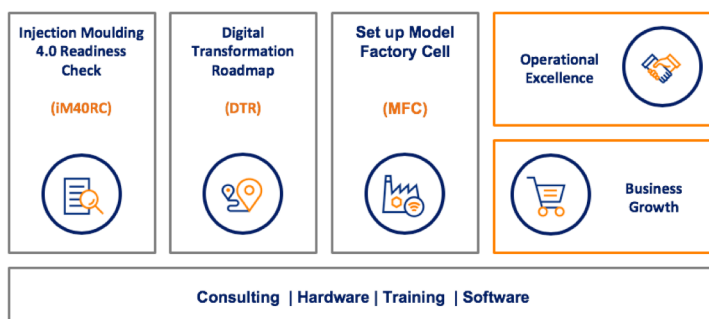


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# FIRST STEP

Injection Moulding 4.0



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# FIRST STEP

Injection Moulding 4.0



Malaysia

YouTube



Youku



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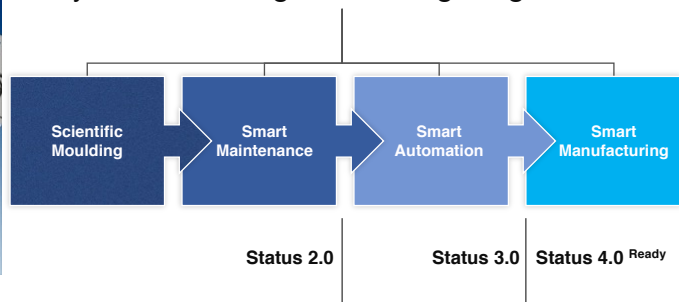
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# TRANSFERRING KNOWLEDGE

1. Existing Workforce
2. Future Talents



## Injection Moulding 4.0 Training Programmes



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# Data driven

decision  
making  
process



Control Panel

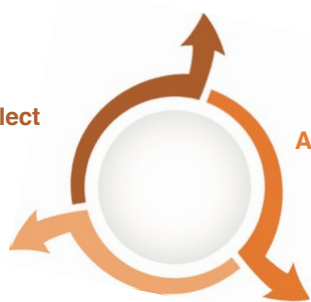


Machine



Assembly line

Collect



Analyse

Improve



Office Tool Mobile



Real time visualisation

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# Digitalized quality inspection process



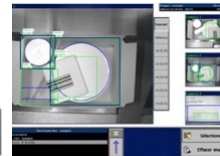
Logon with ID or  
name and automatic  
timestamp for trace  
back



Integration / cross-  
linking of measuring  
equipment

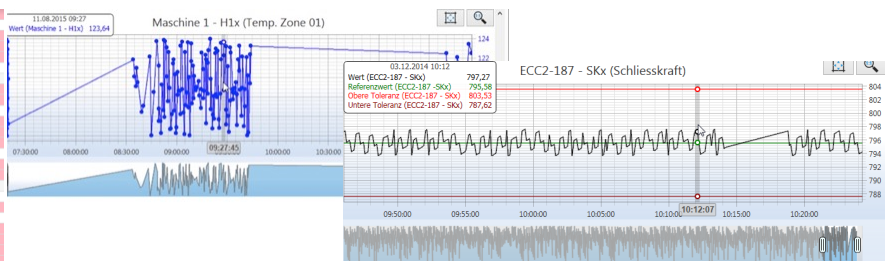


Integration / cross-  
linking of measuring  
equipment



Integration / cross-  
linking of measuring  
equipment

InjectionMelt.in_OberflaechenRauheit	5.0	2.0
InjectionMelt.in_OberflaechenRauheit	0.0	0.0
InjectionMelt.in_OberflaechenRauheit	65.0	8.0
InjectionMelt.in_dryTimeMin	0	200000.0
InjectionMelt.in_dryTimeMax	1500000	6000000.0
InjectionMelt.in_drySpeedMin	false	false
InjectionMelt.in_drySpeedMax	0	0
InjectionMelt.in_dryTimeMin	0	800000
InjectionMelt.in_dryTimeMax	1500000	1800000
InjectionMelt.in_dryTimeCounter	0	0
InjectionMelt.in_dryTimeMin	0.0	true
InjectionMelt.in_dryTimeMax	0.0	true
InjectionMelt.in_dryTimeMin	12.0	3.8
InjectionMelt.in_dryTimeMax	0.0	0.0
InjectionMelt.in_dryTimeMin	false	true
InjectionMelt.in_dryTimeMax	false	true
InjectionMelt.in_dryTimeMin	false	false
InjectionMelt.in_dryTimeMax	false	false
InjectionMelt.in_dryTimeMin	0.2	1.8
InjectionMelt.in_dryTimeMax	3	3
InjectionMelt.in_dryTimeMin	11	5
InjectionMelt.in_dryTimeMax	7	4
InjectionMelt.in_dryTimeMin	11	4
InjectionMelt.in_dryTimeMax	7	4



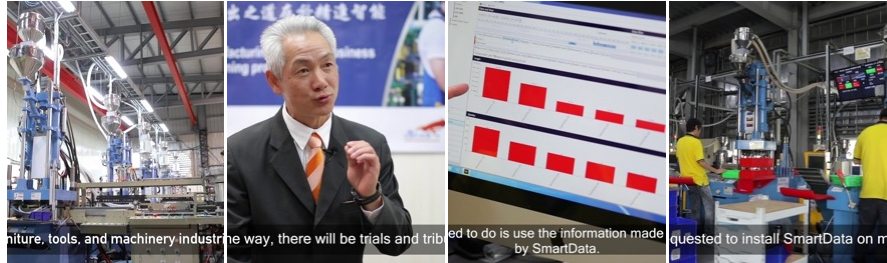
Source: T.I.G

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# FIRST STEP

Injection Moulding 4.0



Taiwan

YouTube



Youku



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**Education Revolution**  
Future Talent

**Industrial Revolution**  
Existing Worker

**TVET**  
TECHNICAL AND VOCATIONAL  
EDUCATION AND TRAINING

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## Make injection moulding **sexy** again



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1. Set up a “Smart Moulding Factory” according to the German “Industrie 4.0” concept.
2. A platform for the plastics industry, educators and students from different disciplines to come together and set new standards for the future smart production.
3. Attract and retain talents for the plastics industry.

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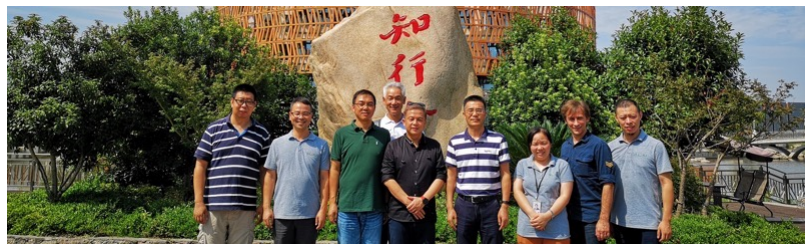
## Case study 1



### Stakeholders

1. Ningbo Supu Electronics
2. Ningbo University of Technology (NBTU)
3. iPlast 4.0

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### Project Scope

1. 8 students
2. Promotion and Selection
3. Assessment
4. Training (6 months program)
5. Examination
6. Selection and Placement

Starting Salary: RMB5,000 (>42%) as compared to an average of RMB3,500

## Case study 2

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Giving Injection Moulding  
a place in  
**TVET**  
**China**



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**Industry 4.0**  
A necessary step?

**以戰  
養戰**

Waging war to provide  
resources to face the  
next battle

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To enable people-centric smart manufacturing  
for the many companies

**Smart manufacturing  
protects business**

**Smart training  
protects people**

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Keeping Manufacturing  
Onshore

**THANK YOU**

## iPlast 4.0 Expert

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**Anston TAN**  
Principal  
[anston@i40.sg](mailto:anston@i40.sg)

Anston graduated with an Honours degree from Singapore's Nanyang Technological University in 1999. Over the course of the next two decades, he founded moulding factories in Europe and gained invaluable experience and insight into the plastics industries in Europe and Asia. He is also highly proficient in areas such as industrial process optimisation, production automation and turnkey factory design.

From 2001 to 2011, Anston led his company to become the second largest global plastic goods supplier to Sweden's foremost furniture and home furnishing company. Alongside the manufacturing business, he concurrently spearheaded the set up of a consulting arm to provide turnkey solutions to plastics companies in East Europe and Russia.

In 2014, with the emerging German Industry 4.0 concept, and building on his experience in Industry 3.0, Anston co-founded the German Training Centre for Injection Moulding (Asia), German Innovation Centre for Industry 4.0 (Asia) and the iPlast 4.0 people-centric smart manufacturing platform. He also created the Injection Moulding 4.0 development roadmap to implement smart manufacturing for numerous companies and is consequently now recognised as a pioneer in the field. Cementing this pioneer status, Anston is frequently invited to influential international conferences to speak on enabling Industry 4.0.

Today, Anston leads a global team of professionals and experts that has successfully enabled many Asian plastic moulders to embark on automated and digitised manufacturing, with the added benefit of raising their technical capabilities. He is also appointed by the Malaysian Plastics Manufacturers Association (MPMA) as their Lead Consultant for the Malaysian government's initiative to bring Industry 4.0 to the plastics industry.

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