



Irish Manufacturing Research

Research & Technology

ADVANCED MANUFACTURING IRELAND



Irish Manufacturing Research

About us

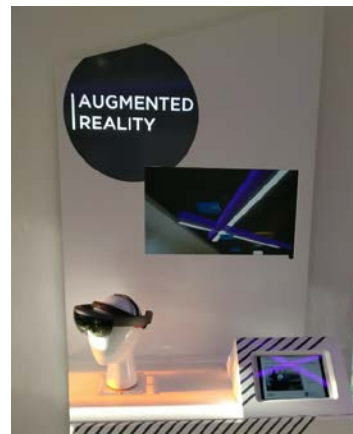


Demystify,
Derisk,
Deliver,
*Emerging technologies
for Manufacturing*

What We Offer?

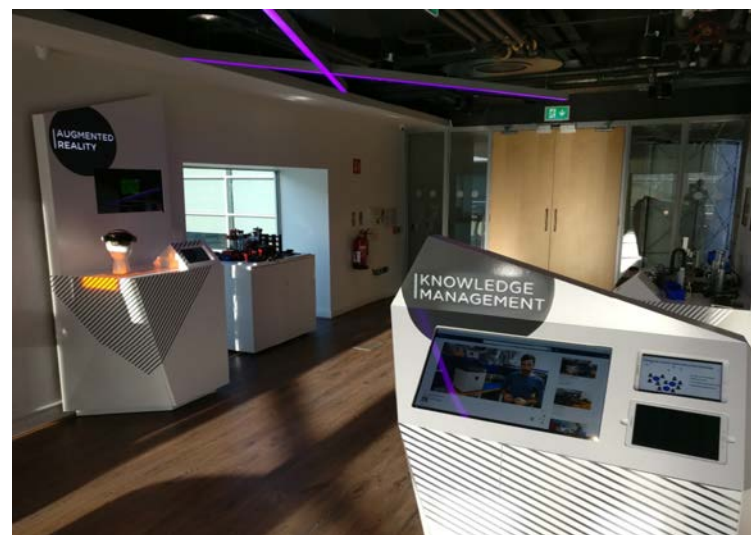
- Industrial pilot lines & test beds to Demystify / De-risk new technologies for industry
 - Research solutions to drive productivity
 - Energy Efficiency Research
 - Provide environment for B2B & shared learning with our membership network
-
- Consultations, & Audit support for factories
 - Support business model development for emerging technologies
 - Design and prototyping of products and parts
 - Specialised Training
 - Innovation Management
 - Connectivity to EU RnD

Manufacturing Innovation Centre Dublin



— Focus Areas of Research

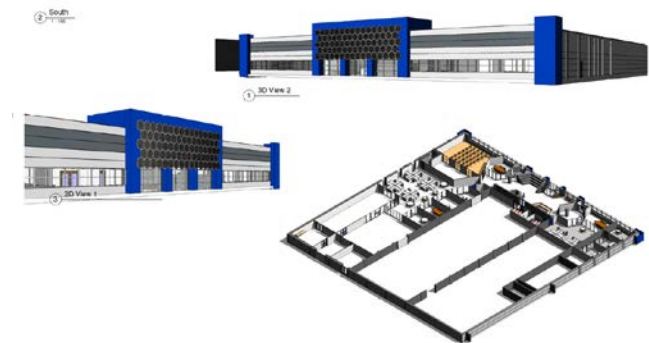
- Robotics / Cobotics
- AR/ VR
- Industry 4.0
- Energy Management
- Knowledge Management
- Additive Manufacturing



IMR Mullingar – Test Beds and Industrial Pilot Lines

R&D Test Beds, Innovation Space & Industry 4.0 National Pilot lines (Digitisation of Manufacturing)

- Pilot lines to de-risk, demystify disruptive technologies under thematic areas of Ind 4.0, Additive Manufacturing, Cobotics, Energy Efficiency
- Near to Market Focus





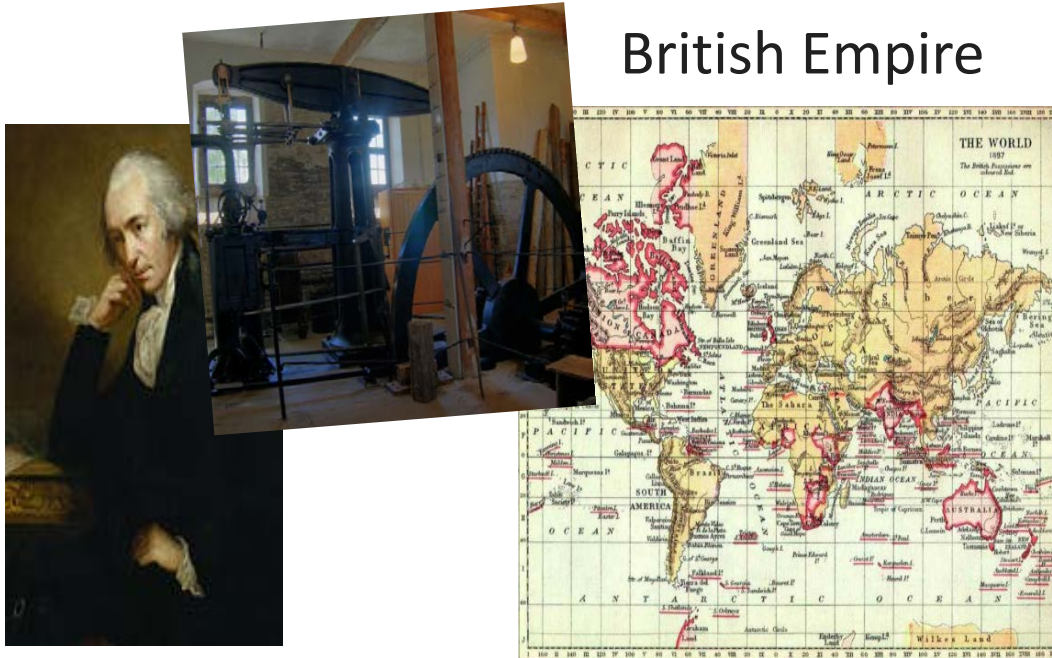
Industry 4.0

A Look at the Past, Insight to the Future?

Business Models

During the 1st Industrial Revolution

British Empire




“**Power**
belonged to
those that
controlled
the means of
production”

During the 2nd & 3rd Industrial Revolution



“The **BIG**
always
beat the
small”


4th Industrial Revolution - The Inflection Point where Technology broke the Rules




Zuckerberg
Facebook



Chen
Hurley
Karim
Youtube



Larry Page
Sergey Brin
Google



Omidyar
eBay



Williams, Stone, Dorsey
Twitter



Hoffman
Linked-In



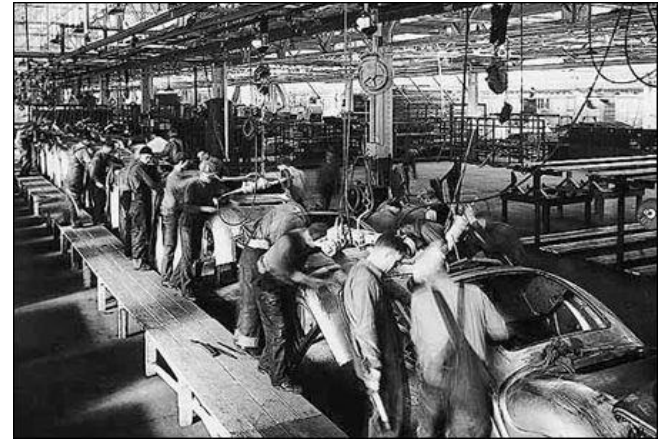
Robin Li
Baidu

Business Models Being Challenged



4th Industrial Revolution – What happens to those who do & do not Innovate/Adopt emerging technologies?

- US Detroit – Car Manufacturing, Manual Labour V's Automation & Robotics
- Germany – Continued to Innovate
- UK – Stopped, now re-emerging with high end automated factories
- US California – ICT





Manufacturing – Game Changing Technologies

What is changing for Plastic Manufacturers?

- New competitors with radically new business models
- Established companies will have to change their organisations, processes and capabilities to adapt
- Traditional industry boundaries becoming blurred
- Supplier hierarchies changing eg between Physical machine and tooling suppliers and their industry clients with advent of cyber physical systems
- All driven by new and emerging technologies



Source: Roland Berger, 2014

Artificial Intelligence

The Economist

Topics ▾

Current edition

More ▾

Smart Benefits: The Rise of AI

Monday, February 19, 2018

Rob Calsse, GoLocalPro Business/Health Expert

Artificial intelligence (AI) and robotics technologies are in use in many industries to manage tasks previously performed by people. But now it's also being used in employee benefits and HR to change the speed and efficiency of processes, gain valuable insights and boost engagement. Here are some ways new cognitive tools are impacting the industry.

- **Recruitment:** AI analytics can help with talent selection and job matching.
- **Training:** An organization's training and development goals can be analyzed with human factors like current skills and learning styles to identify the best matching training requirement for an individual.
- **Onboarding:**



Cookie Policy | Feedback | Like 14.3M | Monday, Feb 19th 2018 12PM 10°C 3PM 11°C 5-Day Forecast

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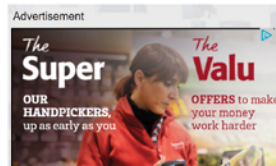
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AIG

30 DAYS COVER FOR
DRIVING ABROAD



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Robots are learning to be racist AND sexist: Scientists reveal how AI programs exhibit human-like biases

- Researcher gave AI that learns from online text word associate tasks
- Prompted it to link certain words with ones that are pleasant or unpleasant
- Then gave AI a list of white and black-sounding names for the same task
- Linked black-sounding names, like Ebony and Jamal, with unpleasant words
- White-sounding names, like Emily and Matt, were linked with pleasant ones

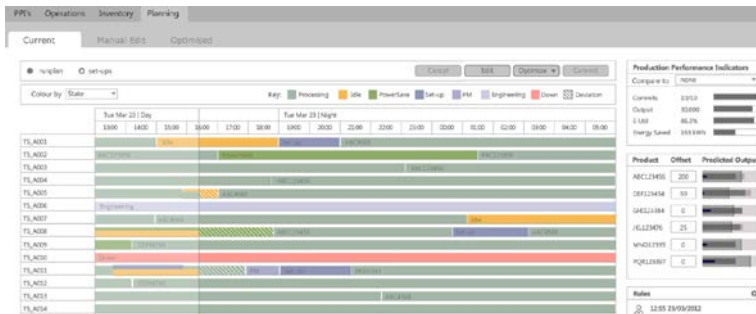
Job-stealing robots

Why scan-reading artificial intelligence is bad news for radiologists

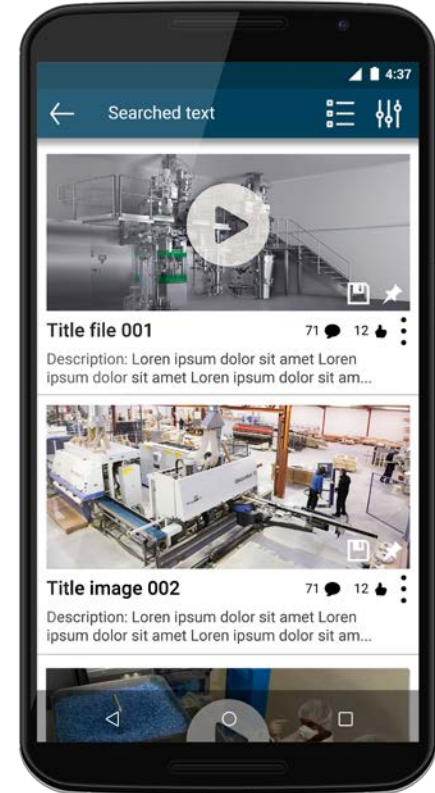
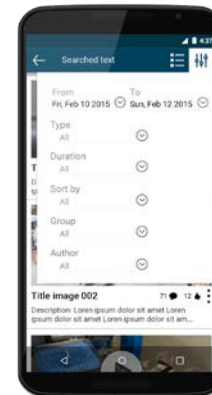
Good news for patients is bad news for medical professionals



AI - Manufacturing



IIOT and Factory Optimisation



Work Place Knowledge Management

Collaborative Robots

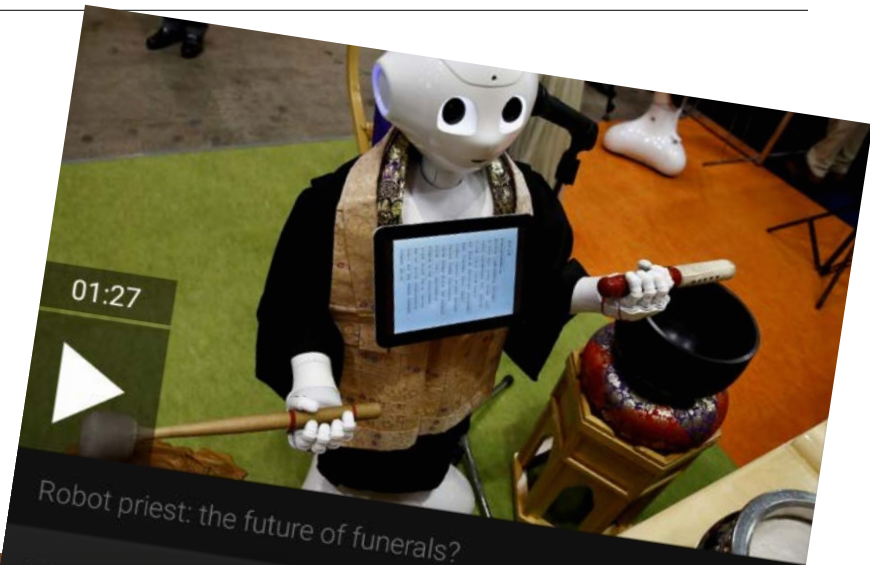
Society

Ethics

Jobs



Ref: Tech Insider



Robot priest: the future of funerals?

Robot priest: the future of funerals?

24th Aug 2017 | Asia

Developers in Japan are offering a robot "priest" to conduct Buddhist funeral rites complete with chanted sutras and drum tapping - all at a fraction of the cost of a human.

Cobotics – Big Advantages for Manufacturing



Tedious /Dangerous Tasks

Value-added Task for Humans

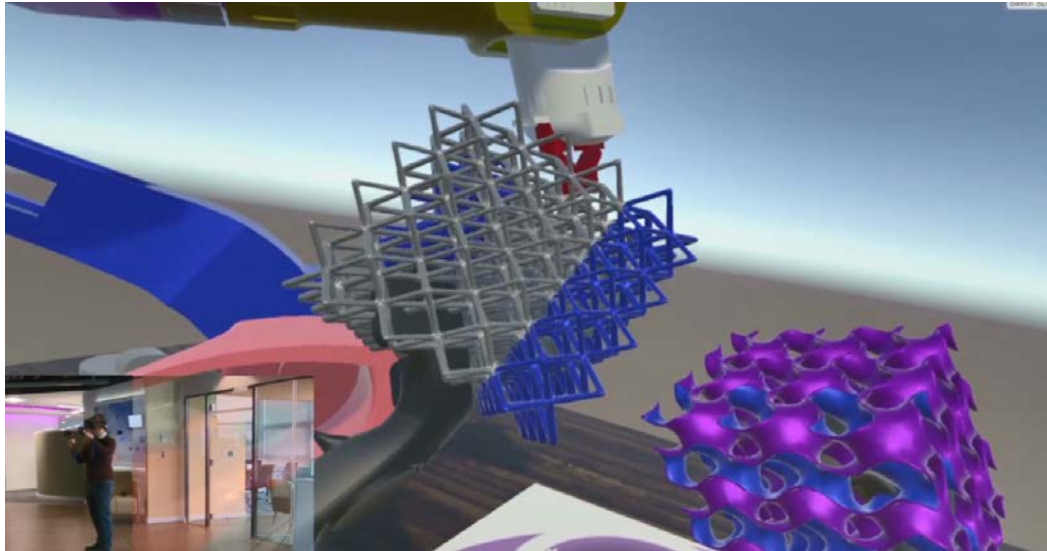
Enabling people with disabilities

Productivity Improvements

Flexible Automation, Ease of use
Assistants



AR/VR



- Training Times Reduced
- Proficiency Improvements
- Dynamic Work Instructions at point of work
- Review designs before production runs



Additive Manufacturing

