Interfacing Techniques

Introductory Lecture

By:
Dr. Wasel Ghanem

3-D Printing

ThingIverse:http://www.thingiverse.com/

- **Digital designs for real, physical objects. A Universe of Things!**
- http://www.thingiverse.com/popular

3rd Industrial Revolution by Economies Magazine

Open Source Hardware

- Is the next revolution!!!!

The printer is open source : the hardware and the software are available

- http://www.thingiverse.com/thing:17175

Arduino

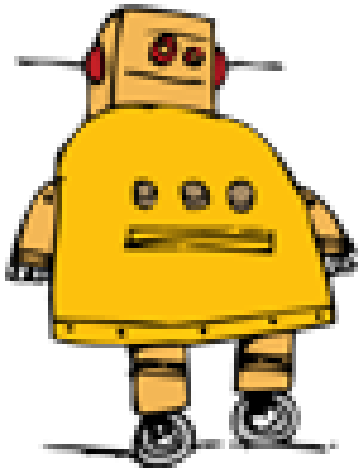
- Heart of this printer is Arduino
- http://www.arduino.cc/
- Pet-fooder

- All the design of the Arduino is available

Make magazine
:Technology on your Time
http://makezine.com/

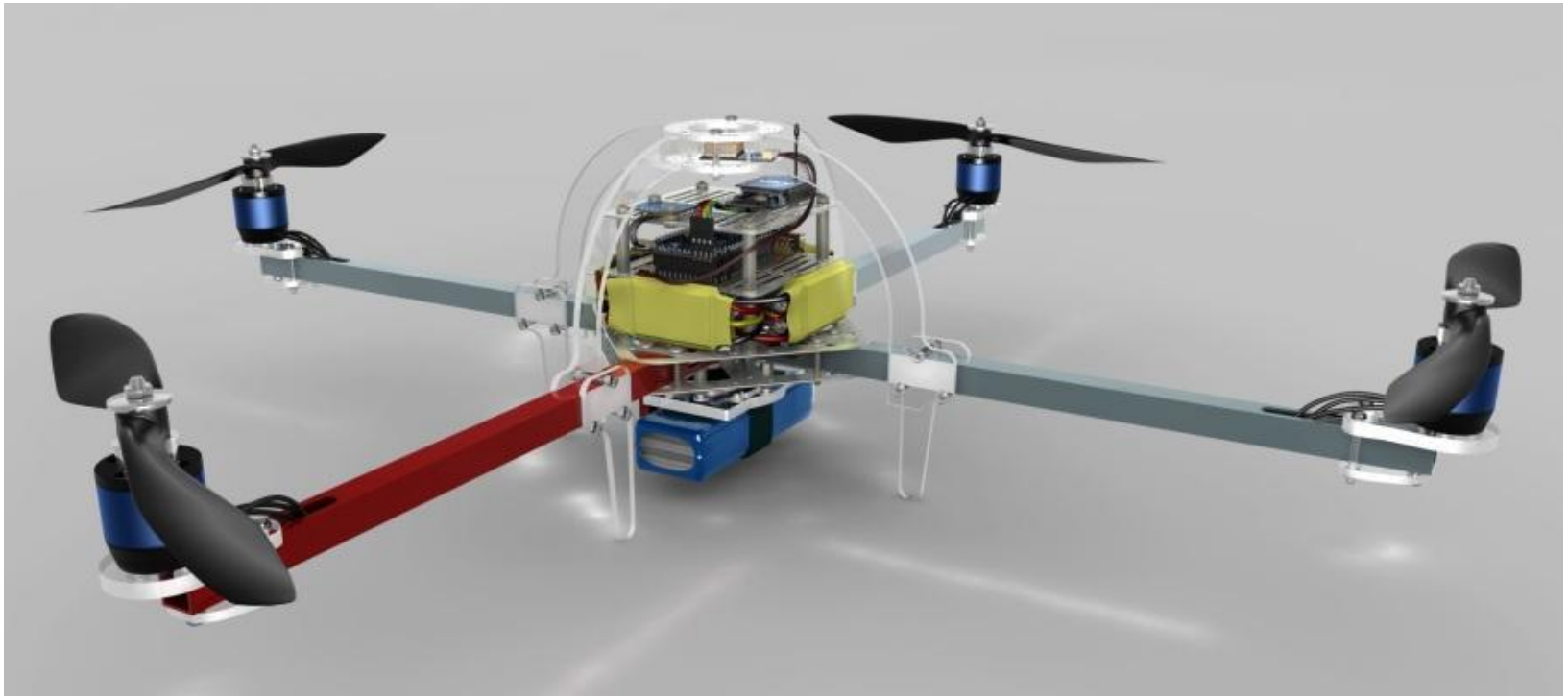
Instructable

- Instrucatable website
- http://www.instructables.com/
- Share What You Make



Arducopter

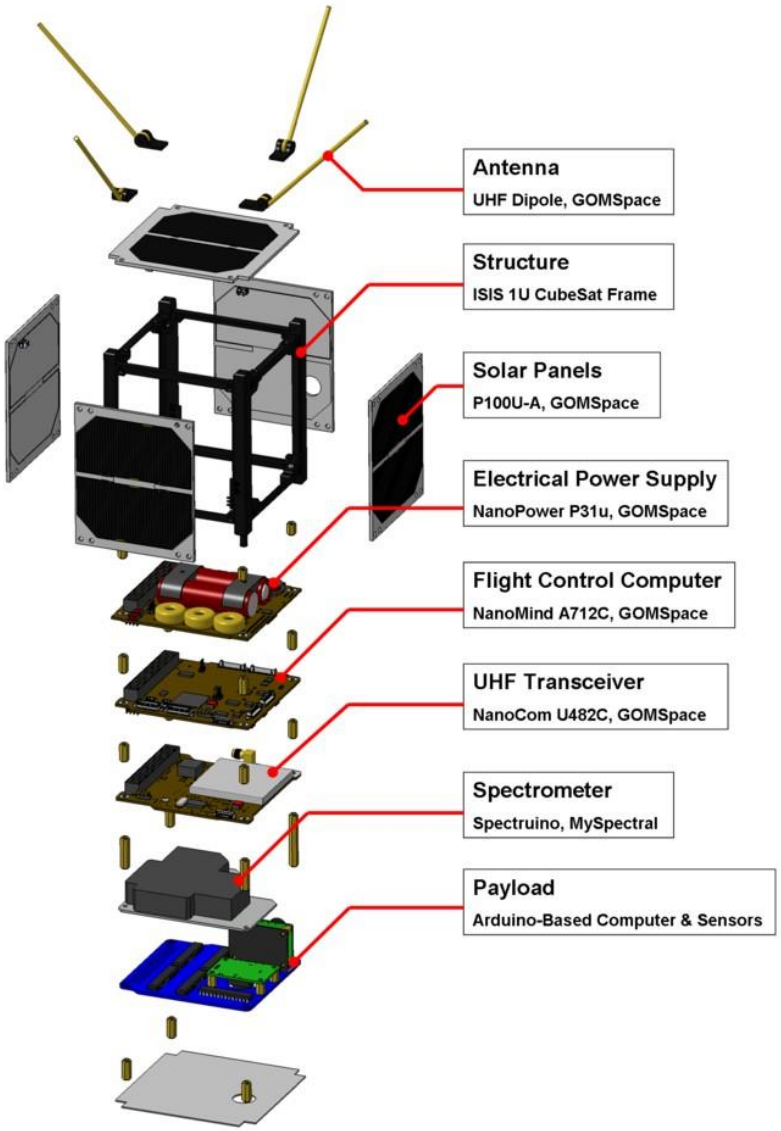
http://code.google.com/p/arducopter/



ArduSat

Your Arduino Experiment in Space

- http://www.kickstarter.com/projects/575960623/ardusat-your-arduino-experiment-in-space



The Enough Already

- http://creativity-online.com/work/matt-richardson-the-enough-already/24181

Otto

- http://www.lucaderosso.com/expo/

was an investigation into musical interfaces and on how to design new interfaces and hardwares for techniques generally used on the software side and then controlled by mouse and keyboard or universal MIDI controllers.The research was then applied to the development of a musical instrument for realtime and manual beat slicing — a well-developed technique which has never had a dedicated hardware interface.

Botanicalls

- http://www.botanicalls.com/about/

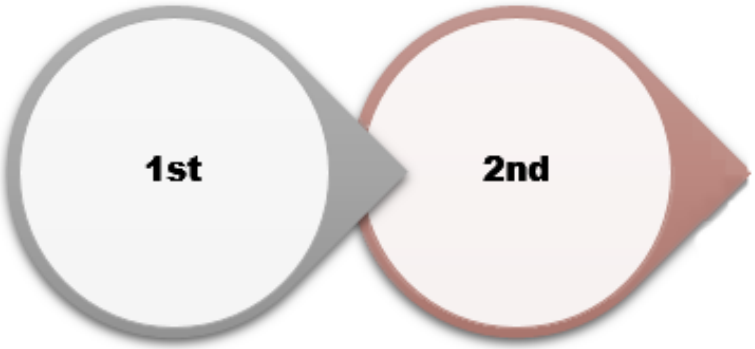
Botanicalls opens a new channel of communication between plants and humans, in an effort to promote successful inter-species understanding.
The Botanicalls project is fundamentally about communication between plants and people. We are empowering both by inventing new avenues of interaction. Plants that might otherwise be neglected are given the ability to call and text message people to request assistance. People who are unsure of their ability to effectively care for growing things are given visual and aural clues using common human methods of communication.

4th Industrial Revolution

Drawn from Life by an Officer
THE LEADER OF THE LUDDITES
Pub.d May 1812 by Mess.t Walker and Knight, Sweetings Alley Royal Exchange.

1st

- **Mechanization**
  Machines replace animal and manual labor.
  Late 18th-Early 19th Century



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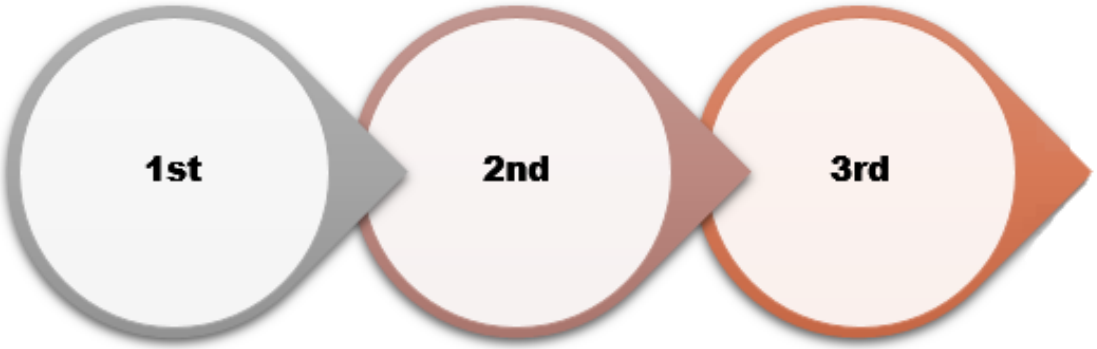
- **Mass Production**
  Mass manufacturing, machines and processes.
  Late 19th-Mid 20th Century



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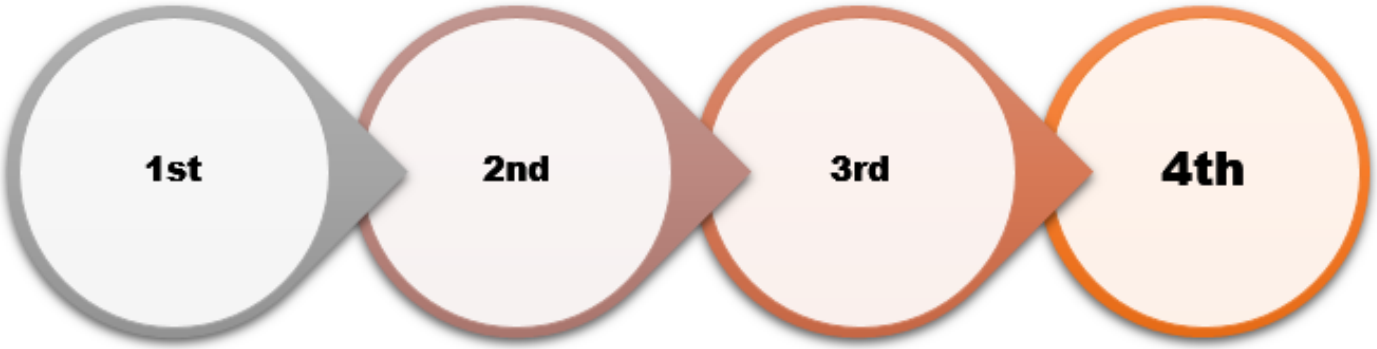
- **Digital Revoluiton and Globalization**
  Analog to digital technology.
  Internet and World Wide Web (WWW).
  Globalization.
  Second half of 20th Century-early 21st Century



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  Second half of 20th Century-early 21st Century
- **Automation, Analytics, and IoT**
  Cyber-physical devices, analytics, and Internet of Things (IoT).
  Early 21st Century-?

revolution

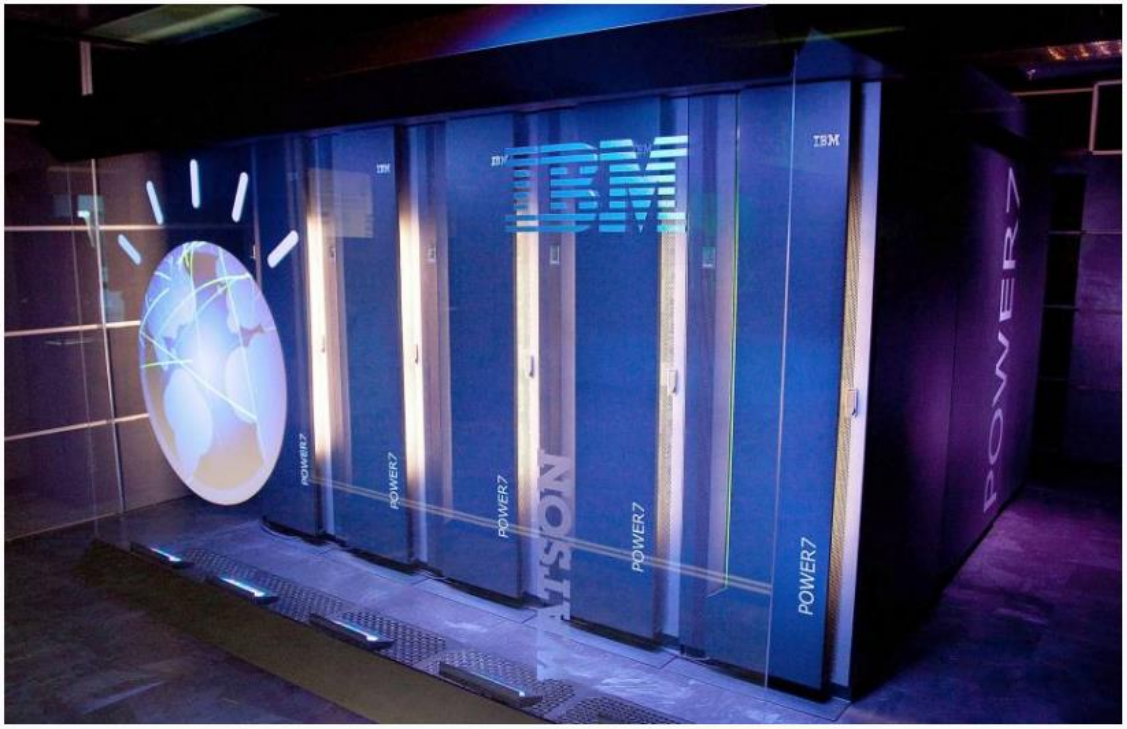
What is it?
What is the impact?
What can be done?

What is it?

AI
Robotics
Automation
genetic
engineering/biotechnology
Nano technology
AUTONOMOUS

SPEED
LIMIT
30
UBERATC.COM/CAR
UBER
ADVANCED
TECHNOLOGIES
CENTER
UBER

FUTURE TRUCK 2025
© Daimler



Doctors at the University of Tokyo's Institute of Medical Science used the Watson big-data system, seen here, to diagnose patients with blood diseases. | GETTY IMAGES / VIA KYODO

NATIONAL / SCIENCE & HEALTH

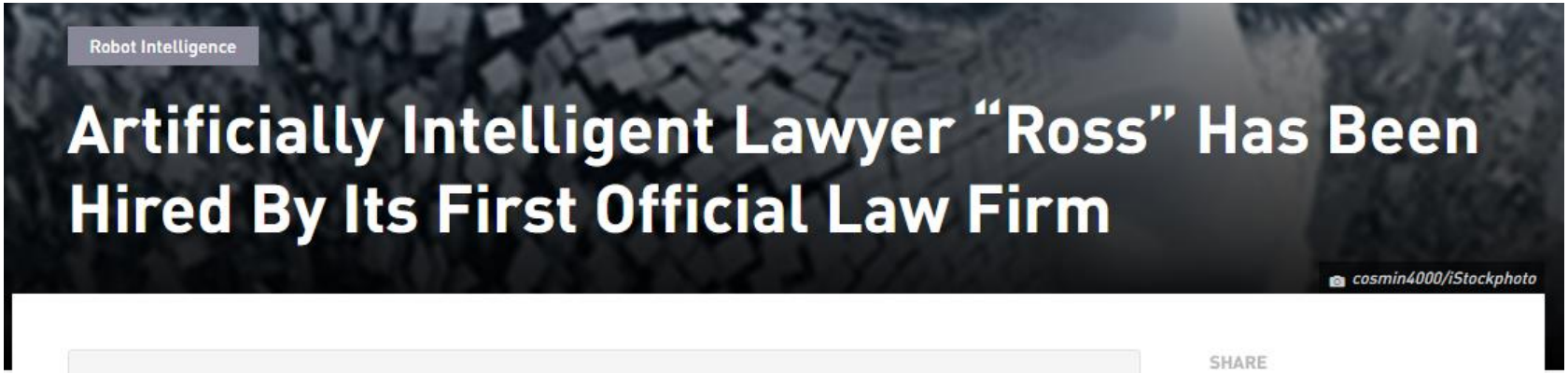
IBM big data used for rapid diagnosis of rare leukemia case in Japan

BY TOMOKO OTAKE
STAFF WRITER

THE JAPA
THE JAPAN TI

WHAT'S TR
› Duterte's threat to der
› Does Japan get enough
› Japan's men and wom against the scourge of
› Rags-to-riches Mexica Juan Gabriel, 66, dead
› Japan's super-rich: fur emulate
› Japan braces for powe
› Apology culture in Jap says sorry for adult sor
› Powerful Typhoon Lio next week

JAPAN
YEN FC



Robot Intelligence

Artificially Intelligent Lawyer "Ross" Has Been Hired By Its First Official Law Firm

cosmin4000/iStockphoto

IN BRIEF

Ross, the world's first artificially intelligent attorney, has its first official law firm. Baker & Hostetler announced that they will be employing Ross for its bankruptcy practice, currently comprised of almost 50 lawyers.

SHARE

WRITTEN BY

Cecille De Jesus

May 11, 2016

#artificial intelligent lawyer
#IBM Watson #ross

ROSS: A VERY SMART ARTIFICIAL CO-WORKER

Law firm Baker & Hostetler has announced that they are employing IBM's AI Ross to handle their bankruptcy practice, which at the moment consists of nearly 50 lawyers. According to CEO and co-founder Andrew Arruda, other firms have also signed licenses with Ross, and they will also be making announcements shortly.

Ross, "the world's first artificially intelligent attorney" built on IBM's cognitive computer Watson, was designed to read and understand language, postulate hypotheses when asked questions, research, and then generate responses (along with references and citations) to back up its conclusions. Ross also learns from experience, gaining speed and knowledge the more you interact with it.

amazon

What is the impact?

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Oxford: %47-81% of jobs under threat in 20 years

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McKinsey Quarterly: Almost half of current job activities can be automated.

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- McKinsey Quarterly:
  Almost half of current job activities can be automated.
- World Economic Forum:
  Predicts loss of 5m jobs in the next 5 years

Technology

Foxconn replaces '60,000 factory workers with robots'

By Jane Wakefield
Technology reporter

25 May 2016 | Technology

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CROSSMAN RICHARDS

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Case Study

Robot power!

Our Client

Heinz Wattie's Robotic Palletising

Project Scope

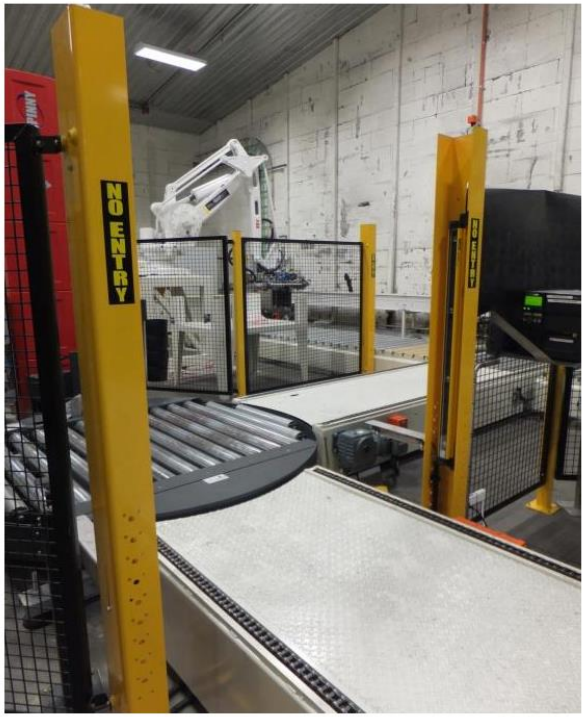
Our client needed a solution to palletise 30 different types of products from three separate lines in their central food processing facility. These products travel from a 150m conveyor system through the factory to two lines running at once to mix and match them onto the pallets. The process includes barcode scanning, sorting, palletising, stretchwrapping, print-and-apply pallet labelling and ERP integration.

The CR Solution

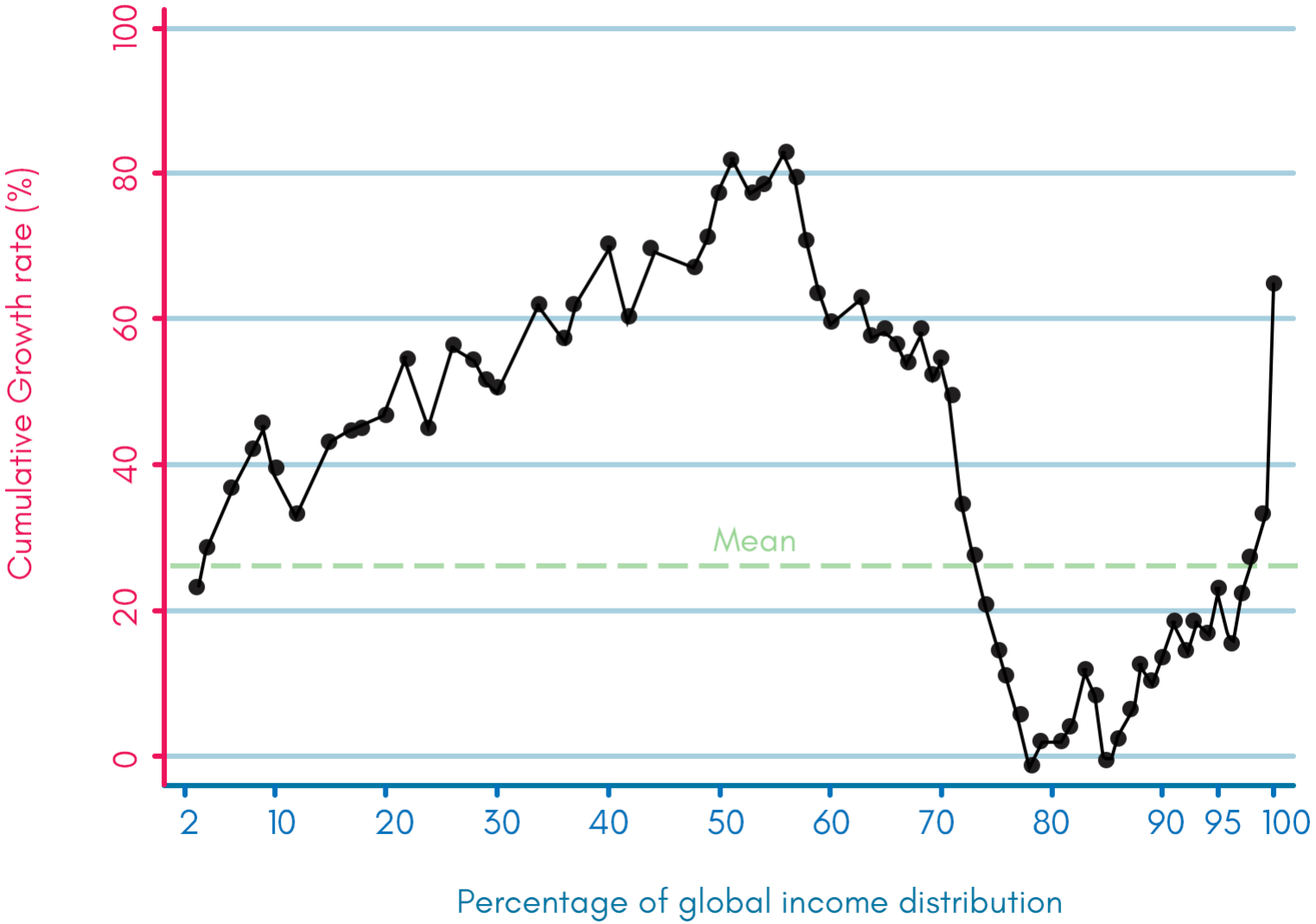
Working with our strategic partner DSK Engineering, we installed two ABB robots with a multi-zone grippers, custom designed for the wide range in pack sizes. Crossman Richards developed the PLC, robot, HMI and safety programs. We also provided the complete electrical design and installation.

The Result

A safe, reliable, easy to operate, fully integrated carton palletising system in a demanding high speed application.



Global growth incidence curve, 1988-2008



What can be done?

What can be done?

Shorter working hours

What can be done?

Shorter working hours
Universal Basic Income

What can be done?

Shorter working hours
Universal Basic Income
Education

What can be done?

Shorter working hours
Universal Basic Income
Education
Adapt

Links

@IntnlManOfCode
Links will be on
http://sourceitsoftware.blogspot.co.nz/