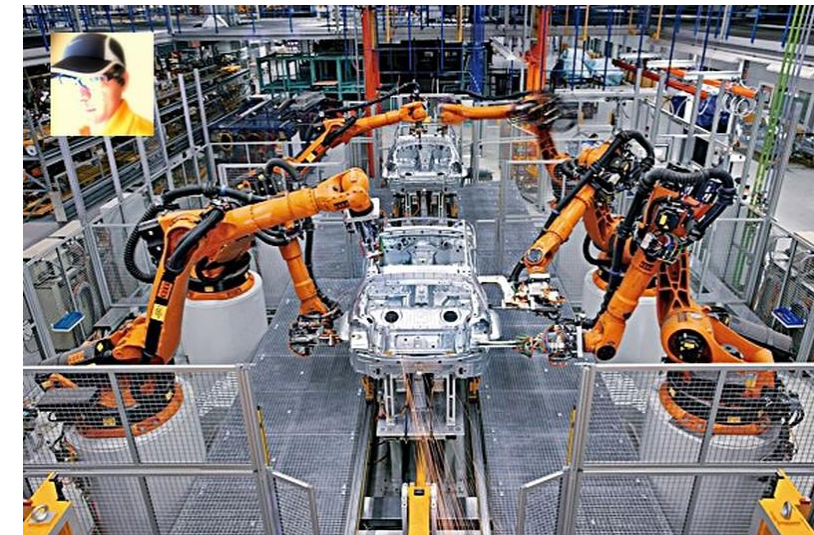


Promoting Skills for the Data-Driven Economy



Hiroyuki Morikawa
The University of Tokyo
October 3, 2014

- Process innovation
- Productivity improvement of large-scale industrial production
- Control of processes became possible via sensors and actuators
- GM introduced PLC in 1968
- Richard (Dick) Morley



Programmable Logic Controller

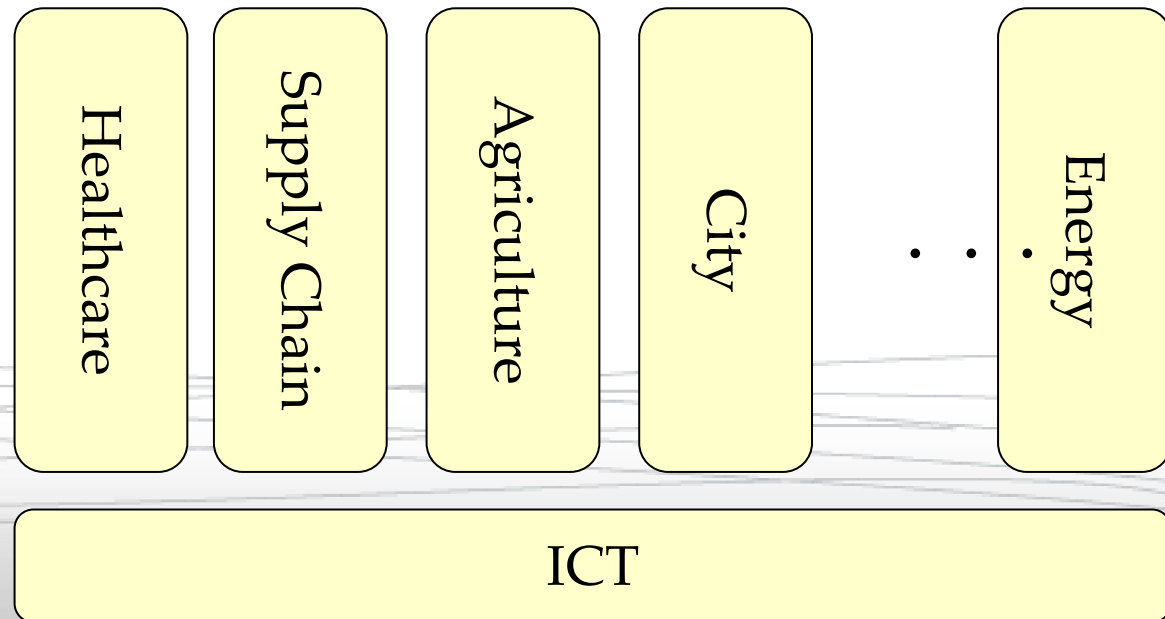
The emergence of steam engine leads to the railroad, railroad gives way to the emergence of daily paper, postal service, and banking.

by Peter Drucker



The invention of ICT leads to the broadband, broadband gives way to the emergence of OO, OO, and OO.

General Purpose
Technology (GPT)



Agriculture Environment City Transportation Healthcare Government

Application

Design of Society System

Story

Cyber Physical (CPS)

Cyber Human (CHS)

Resilient ICT

Big Data

New AI

Robotics

Knowledge

Database

IT/ICT
Architec
ture

Software

Device/HW

Network

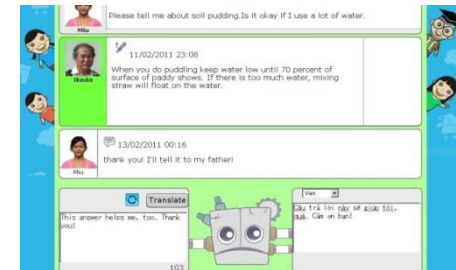
Technology

Skills for Making Stories

- Rice farming support in Vietnam
- Children sense 'weather/temperature/humidity' everyday, and 'height/color/picture/insects' of rice plant twice a week
- Upload data at community center once a week and ask questions, if necessary
- Agriculture experts in Japan guide the rice farming via 'Language Grid' translator
- Children reports the guidance to their parents



Sensing of rice plant



Note pad



Upload data



Report to parents

YMCViet Project

Education to Children

to learn agriculture, to consider future jobs, to provide chances to use ICT

Education to Parents

10% increase in rice crop, and cost reduction of agrochemical and fertilizer via the guidance from experts

Conversation in Home

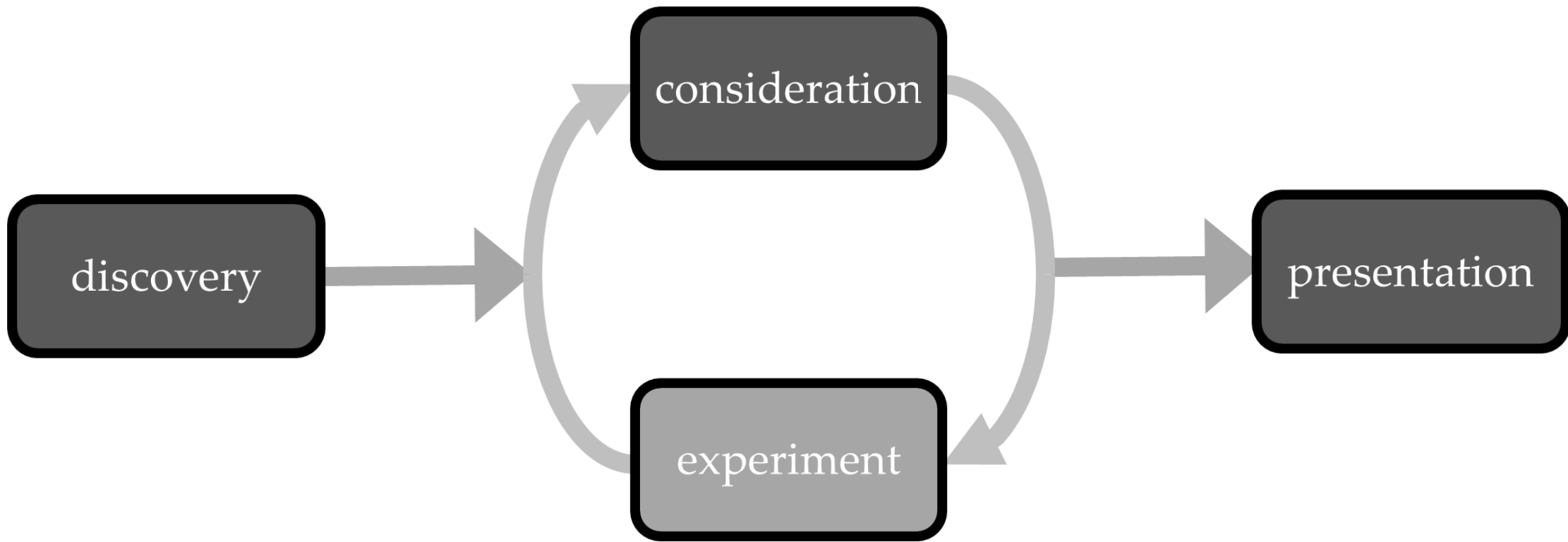
the amount of conversation within family have increased



- ICT x OO
 - » 'Field' oriented ICT
 - » Access to 'data' and 'field'
- 'Marines'-type R&D
- Making stories for ICT R&D
- Passion and dream

Field-oriented ICT and Marines-type R&D





Design Skills