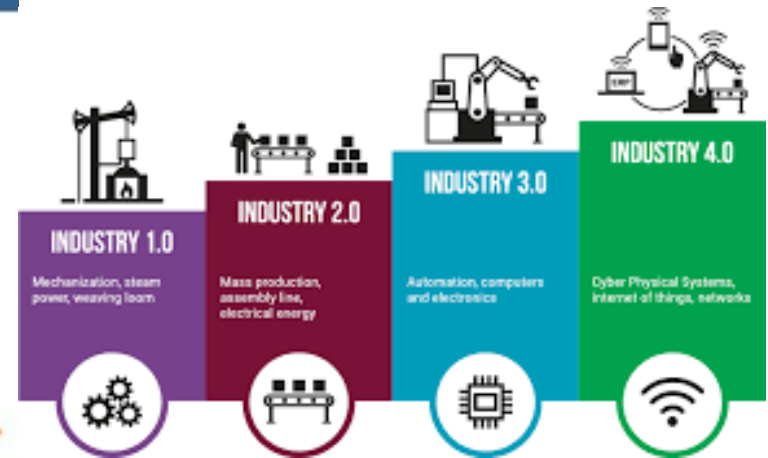
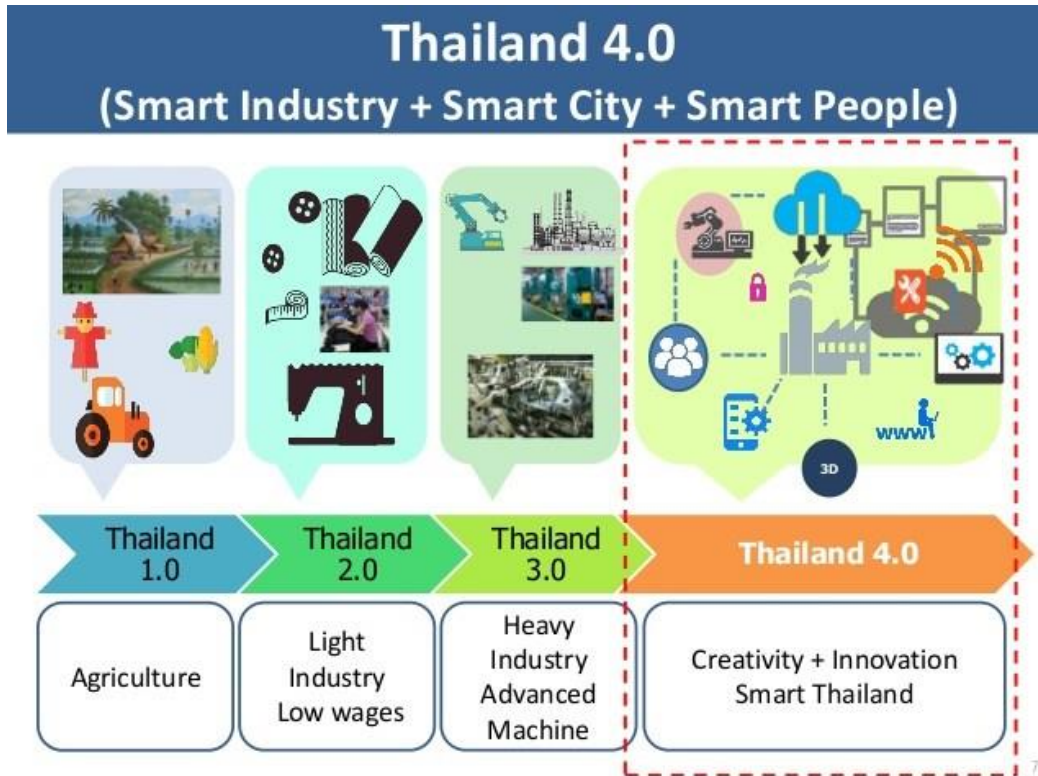


ความท้าทายของการพัฒนากำลังคนสู่อุตสาหกรรม 4.0 ในอุตสาหกรรมยานยนต์ไทย



วันพุธที่ 20 มิถุนายน 2561
ณ ศูนย์นิทรรศการและการประชุม ไบเทค



2 Qs Challenges ???



Millennials

1980 - 2000

Gen Xers

1960 - 1980

Baby Boomers

1940 - 1960

Traditionalists

1900 - 1940



4Ds Industry:

1. Dirty
2. Dangerous
3. Difficult
4. Dignity



| From Industry 1.0 to Industry 4.0

1.0 | 1784

based on mechanical production
equipment driven by water and
steam power



2.0 | 1870

based on mass production
enabled by the division of labor
and the use of electrical energy



3.0 | 1969

based on the use of
electronics and IT to further
automate production



4.0 | tomorrow

based on the use
of cyber-physical
systems



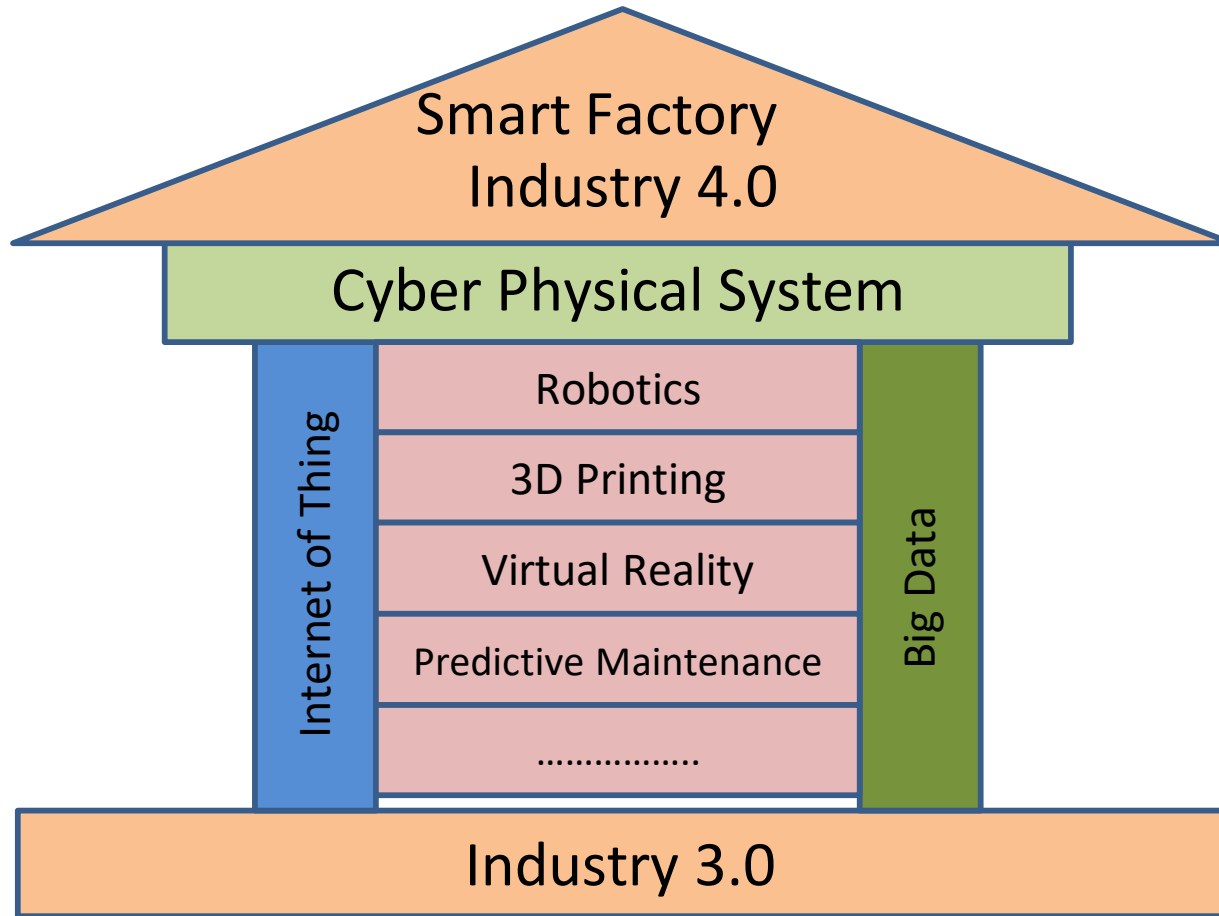
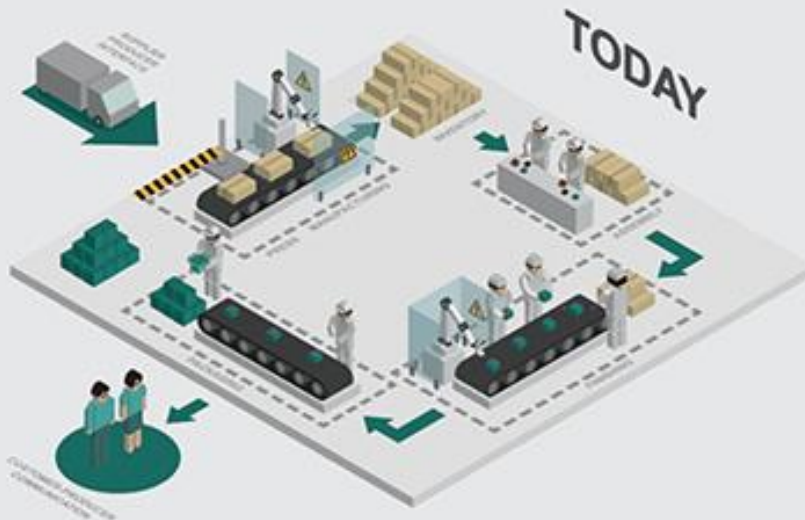


EXHIBIT 2 | Industry 4.0 Is Changing Traditional Manufacturing Relationships

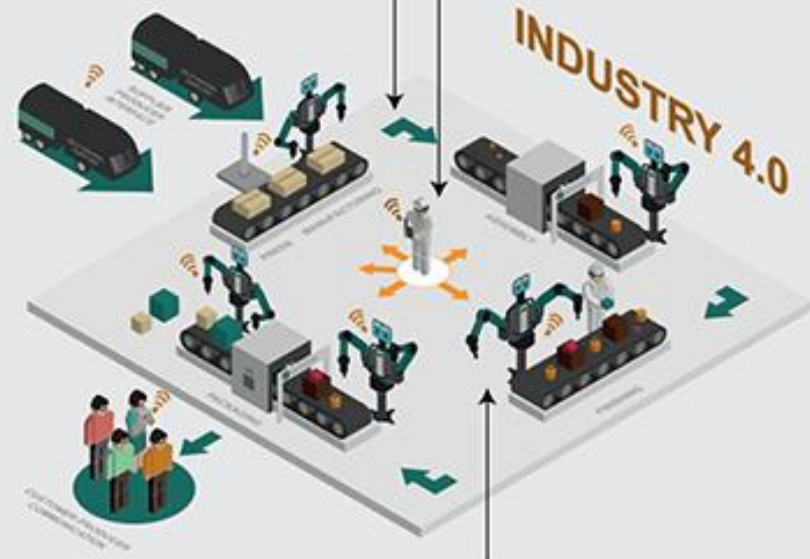
From isolated, optimized cells ...

...to fully integrated data and product flows across borders



Integrated communication along the entire value chain reduces work-in-progress inventory

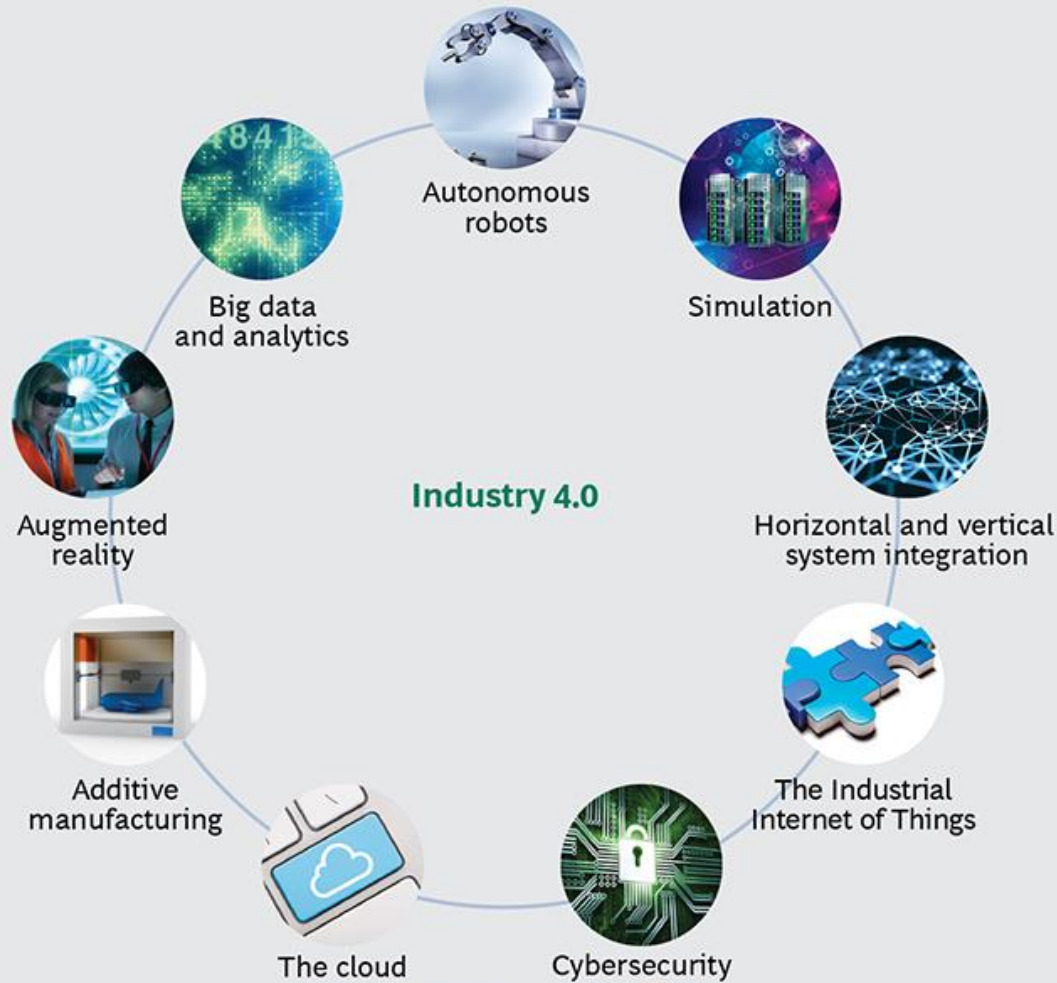
Greater automation will displace some of the least-skilled labor but will require higher-skilled labor for monitoring and managing the factory of the future



Machine-to-machine and machine-to-human interaction enables customization and small batches

Source: BCG.

EXHIBIT 1 | Nine Technologies Are Transforming Industrial Production



Industry 4.0 is the vision of the industrial production of the future

Source: BCG.

Use cases show the effect of Industrial 4.0 on the workforce



BIG-DATA-DRIVEN QUALITY CONTROL

Algorithms based on historical data identify quality issues and reduce product failures



ROBOT-ASSISTED PRODUCTION

Flexible, humanoid robots perform other operations such as assembly and packaging



SELF-DRIVING LOGISTICS VEHICLES

Fully automated transportation systems navigate intelligently within the factory



PRODUCTION LINE SIMULATION

Novel software enables assembly line simulation and optimization





SMART SUPPLY NETWORK

Monitoring of an entire supply network allows for better supply decisions


Source: BCG.


Use cases show the effect of Industrial 4.0 on the workforce

- 

PREDICTIVE MAINTENANCE
Remote monitoring of equipment permits repair prior to breakdown
- 

MACHINES AS A SERVICE
Manufacturers sell a service, including maintenance, rather than a machine
- 

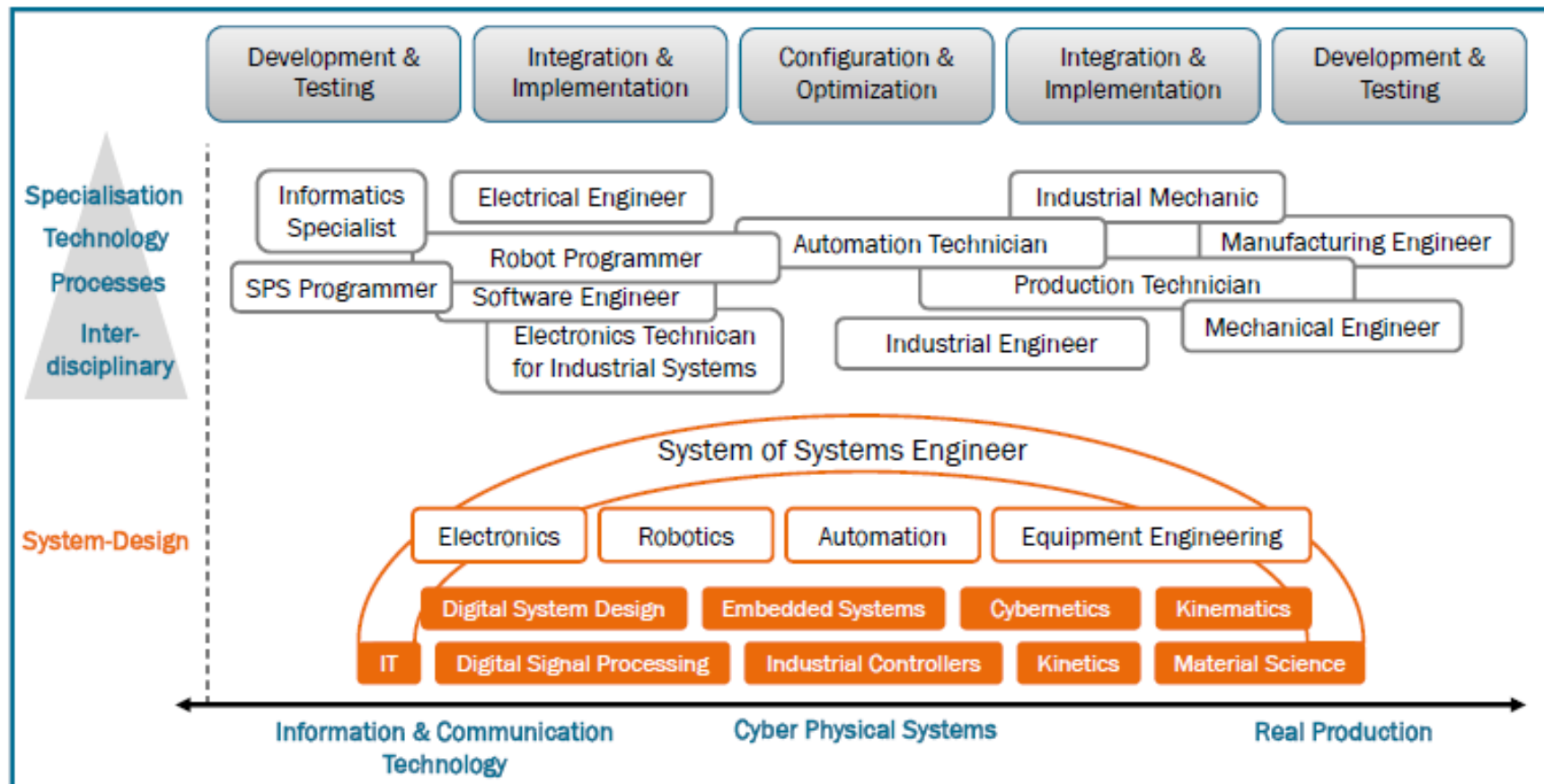
SELF-ORGANIZING PRODUCTION
Automatically coordinated machines optimize their utilization and output
- 

ADDITIVE MANUFACTURING OF COMPLEX PARTS
3-D printers create complex parts in one step, making assembly redundant
- 

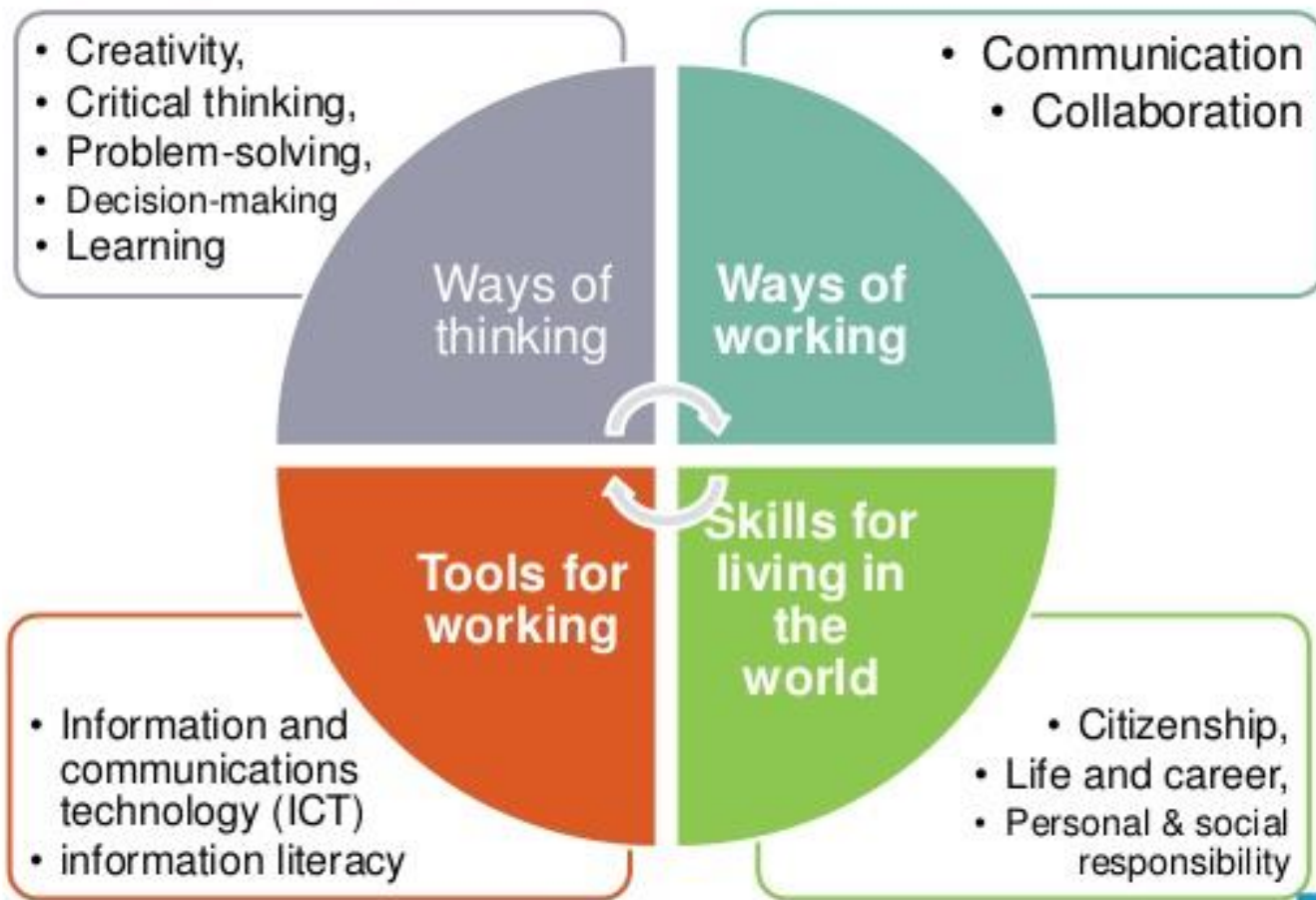
AUGMENTED WORK, MAINTENANCE, AND SERVICE
Fourth dimension facilitates operating guidance, remote assistance, and documentation

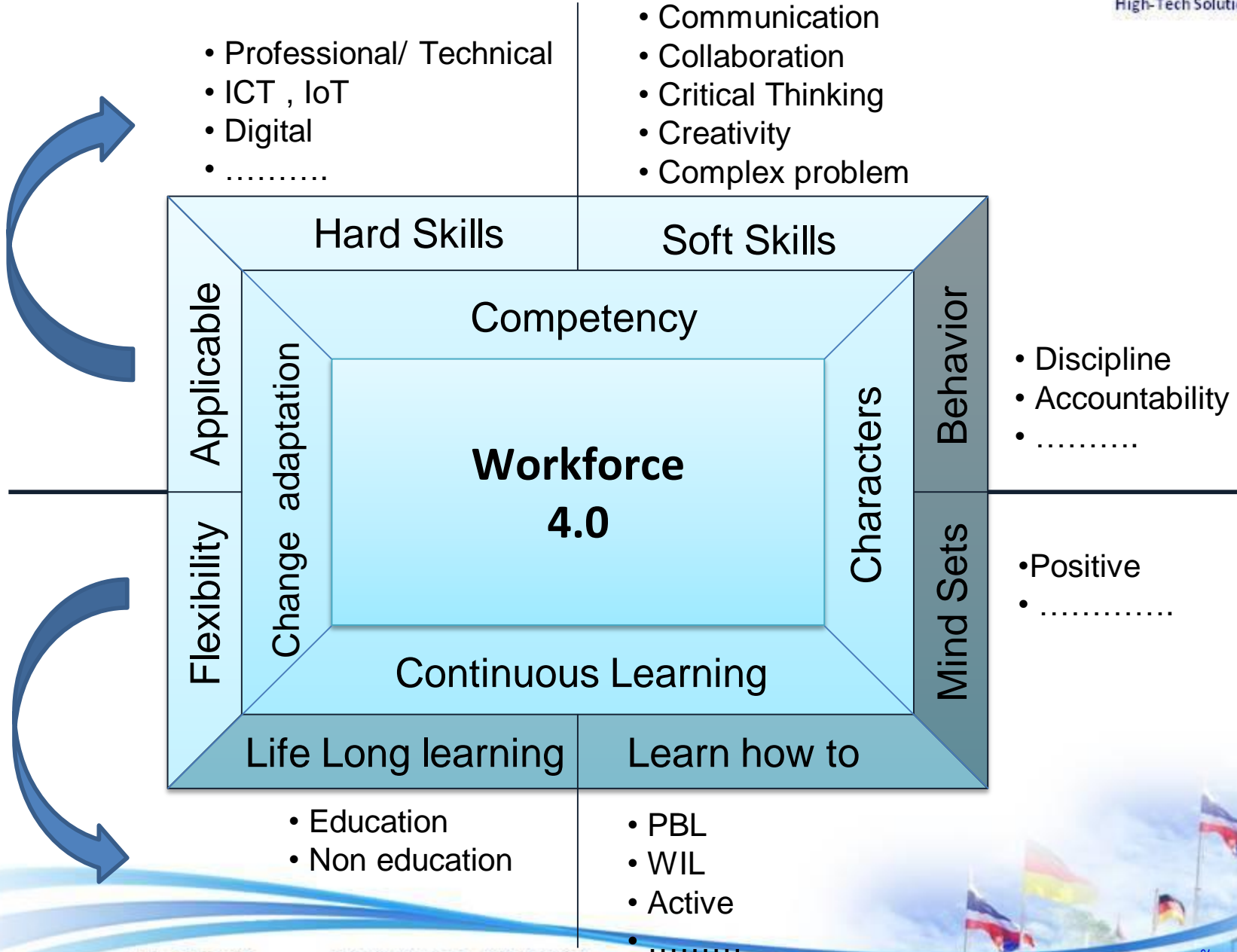
Source: BCG.

Job profiles (excerpt) for a cyber-physical working environment



FOUR CATEGORIES OF 21ST-CENTURY SKILLS





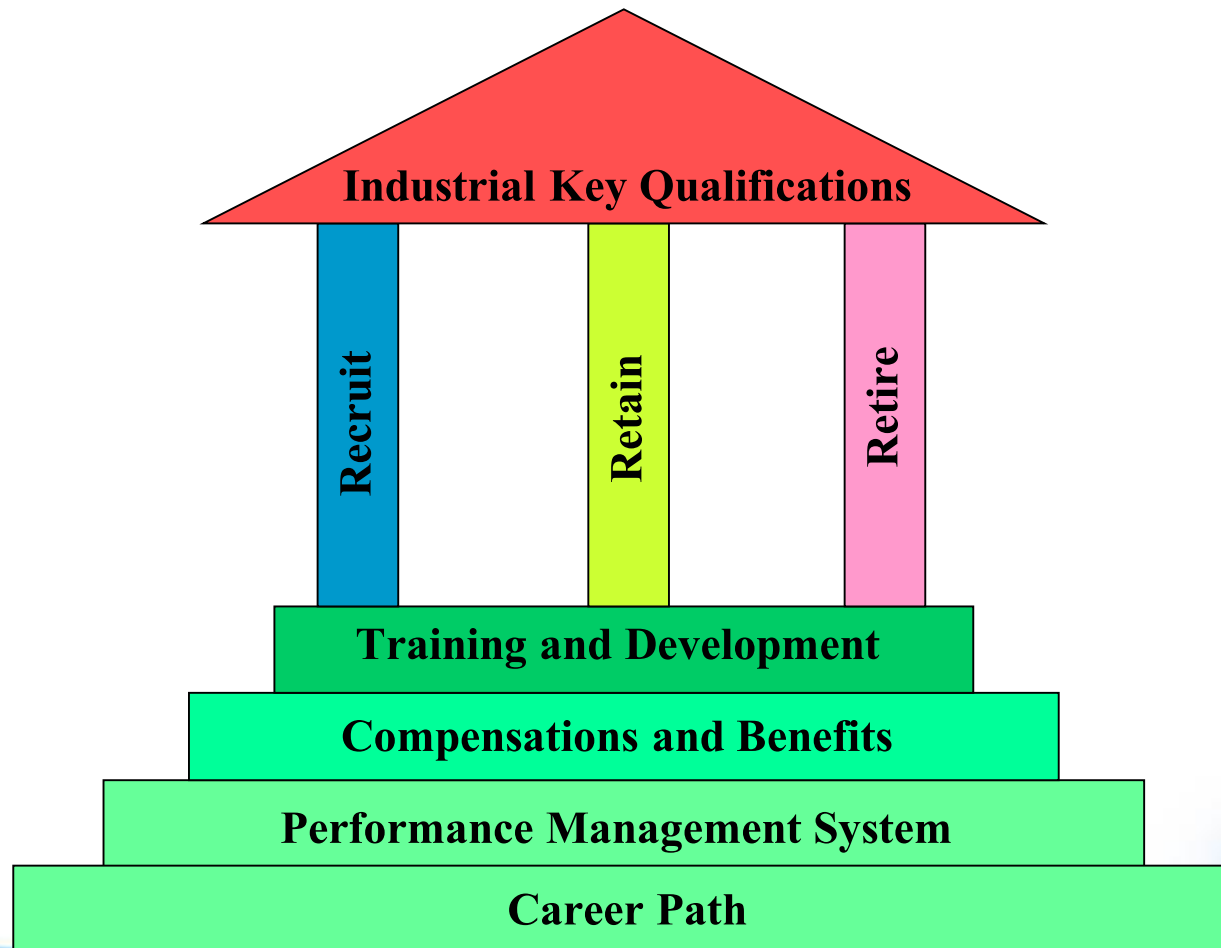
HRD Challenges

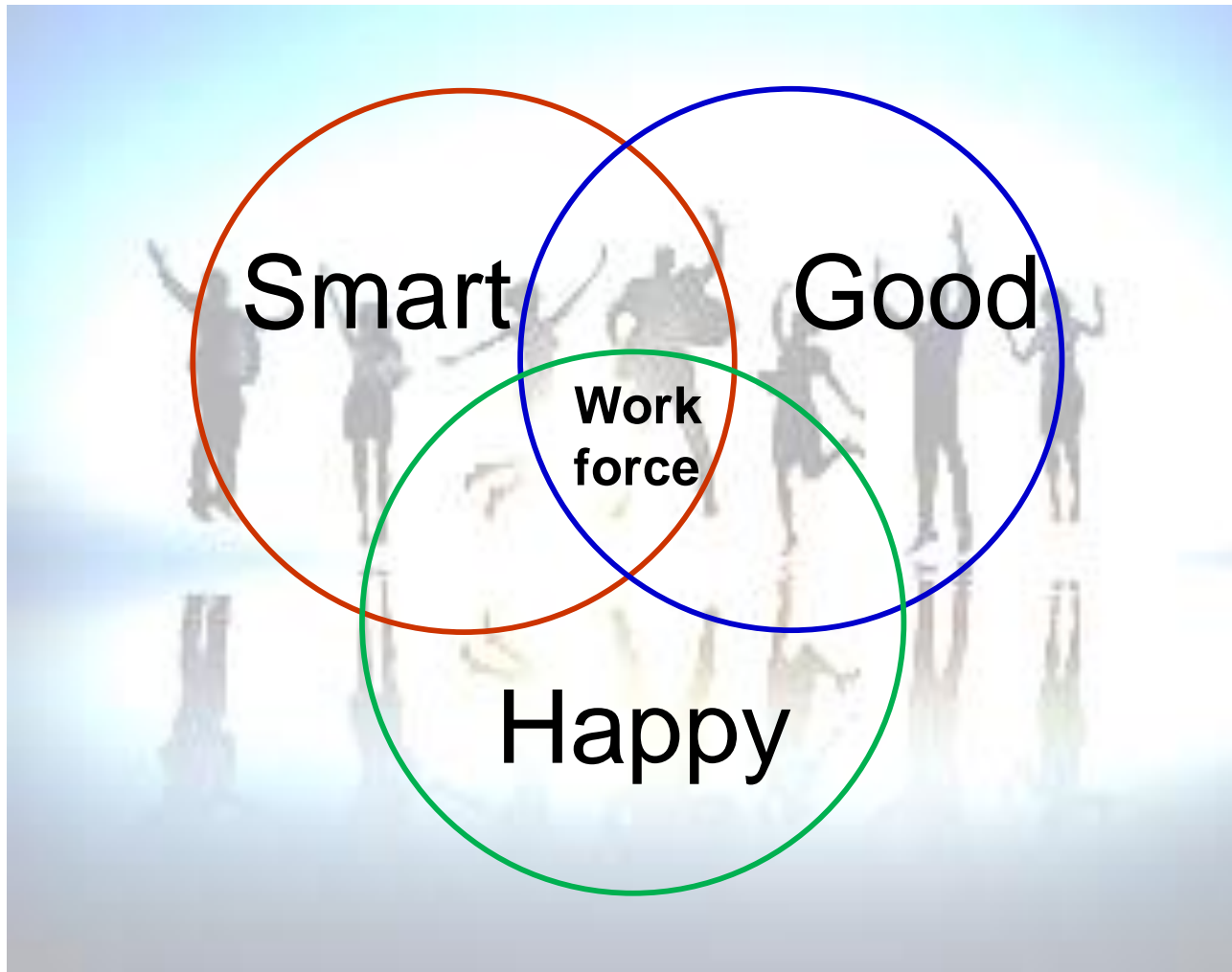
In the past: Train today for tomorrow



Nowadays: Train today for today and tomorrow

HR Main Functions

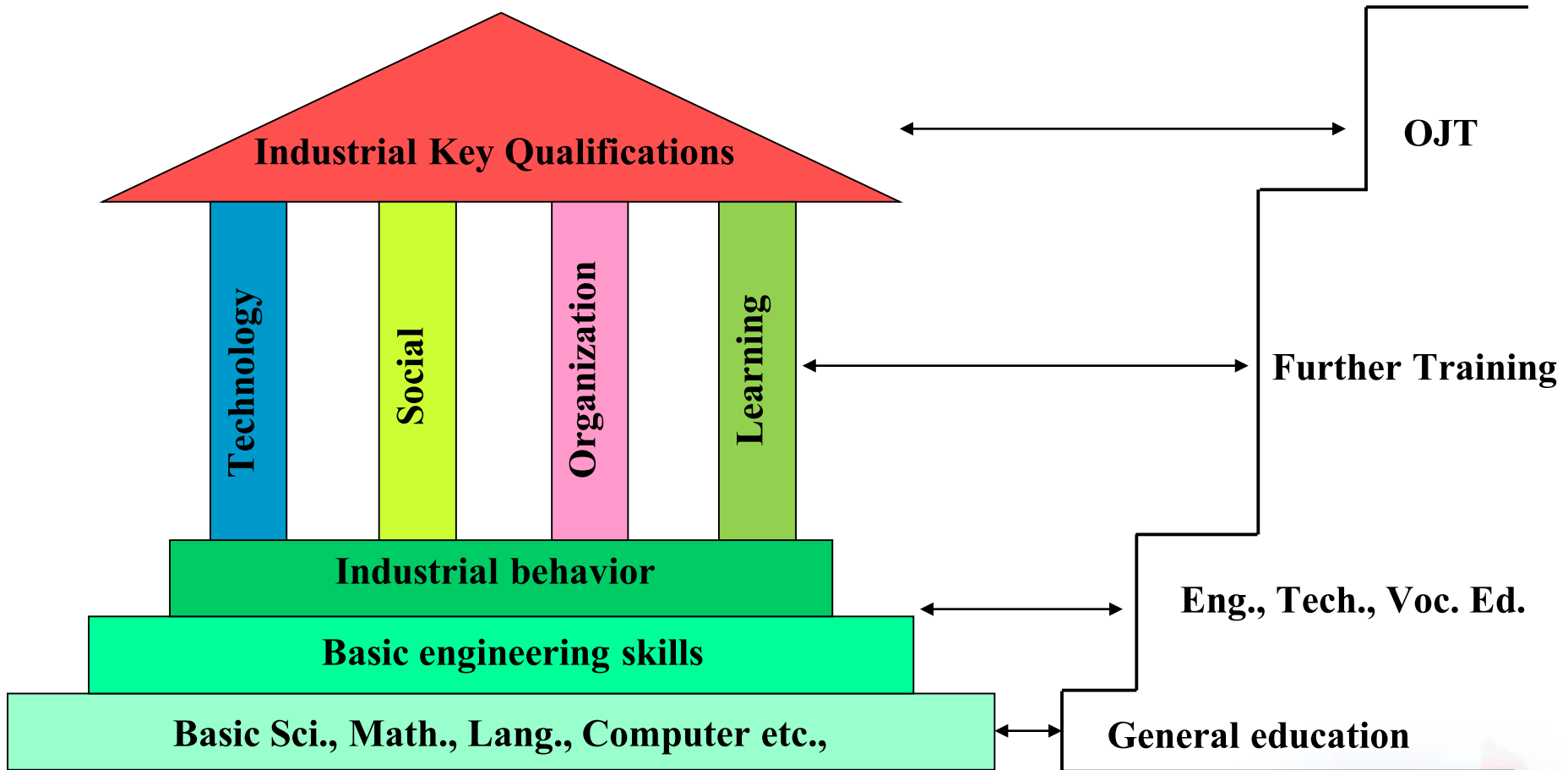




Make your people before you make your products

“If you make your people before you make your products, your people will satisfy your clients or customers; which in turn will make your organization successful; which in turn will increase the value for your shareholders or stakeholders and provide investment for growth.”

Professor Paul Turner



Project Based Training (PBT)

Target of the action process

Evaluation: The trainees and the trainer evaluate the process and the result of their work. As a consequence of this, meeting new tasks and targets will be determined and the cycle is closed

Information: Trainees work out the needed information for planning and execution of the task independently

Planning: Trainees work out the complete action plan for the task independently

Deciding: Trainees decide about the realisation of the plan with the trainer. The trainer can assess if the students gathered the needed competences.

Quality control: The trainees control and evaluate their own work result. They use the tools which they developed during the planning phase.

Realisation: The students carry out the project task. This can be done individual or in team work, according to the approved plan.

