

ADB

So What do We Do Now?

Dr Steven McKee

8th International Skills Forum
27–29 August 2019
Asian Development Bank, Manila, Philippines



Implications of Industry 4.0 on Skills Development

**Session: 8C
August 29th**

This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.



Our Panelists

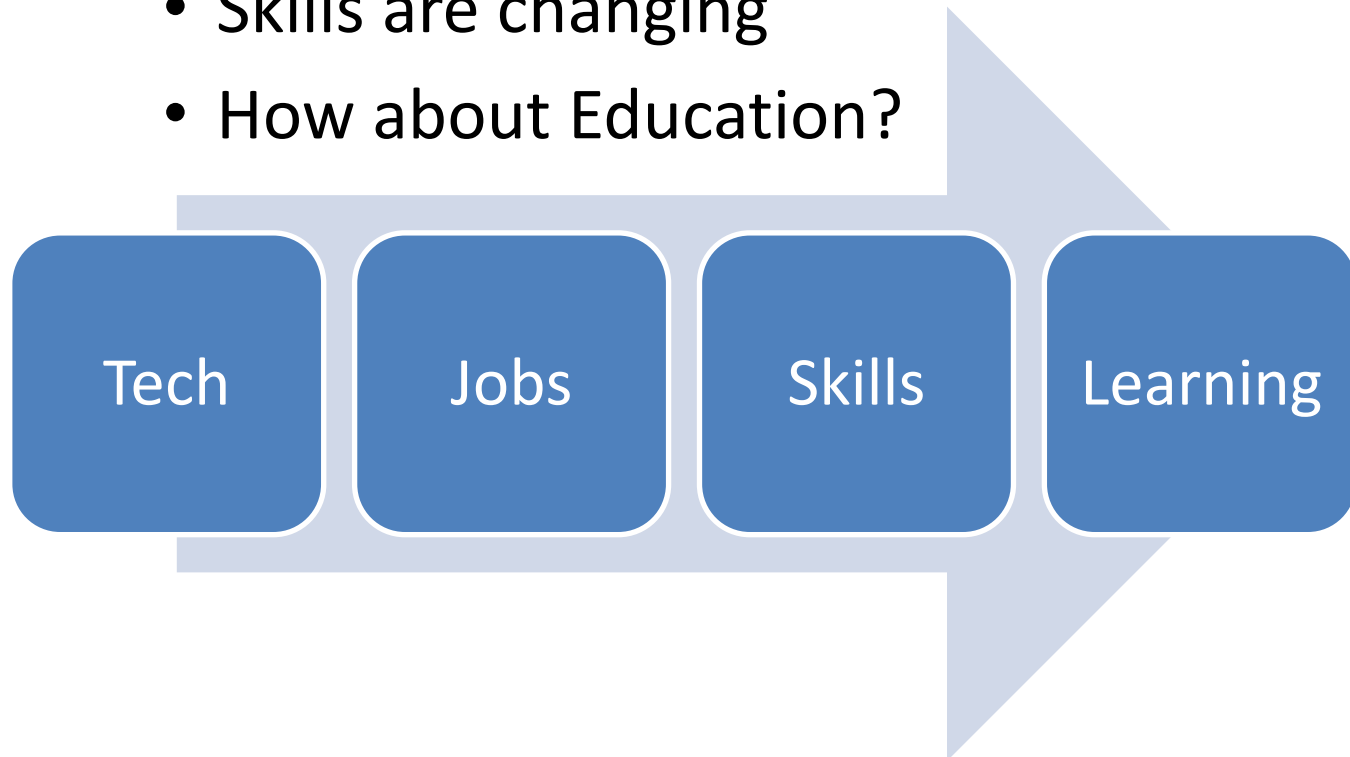
- **Danny Gauch,** **Switzerland**
 - Director General,
 - Worlddidac, Switzerland
- **Dr. Gatot Priowirjanto,** **Indonesia**
 - Recent Director General, SEAMEO
 - Current: Advisor to the Ministry of Education, Indonesia
- **Prof Dr Noraini Binit Kaprawi,** **Malaysia**
 - Director of Malaysian Research Institute of Vocational Education and Training (MYRIVET)
- **Elmer K. Talavera** **Philippines**
 - Executive Director
 - TESDA's National Institute for TESD.
- **Konstantin Matthies,** **Singapore**
- Engagement Manager, AlphaBeta, Singapore



The Future is changing

We must too

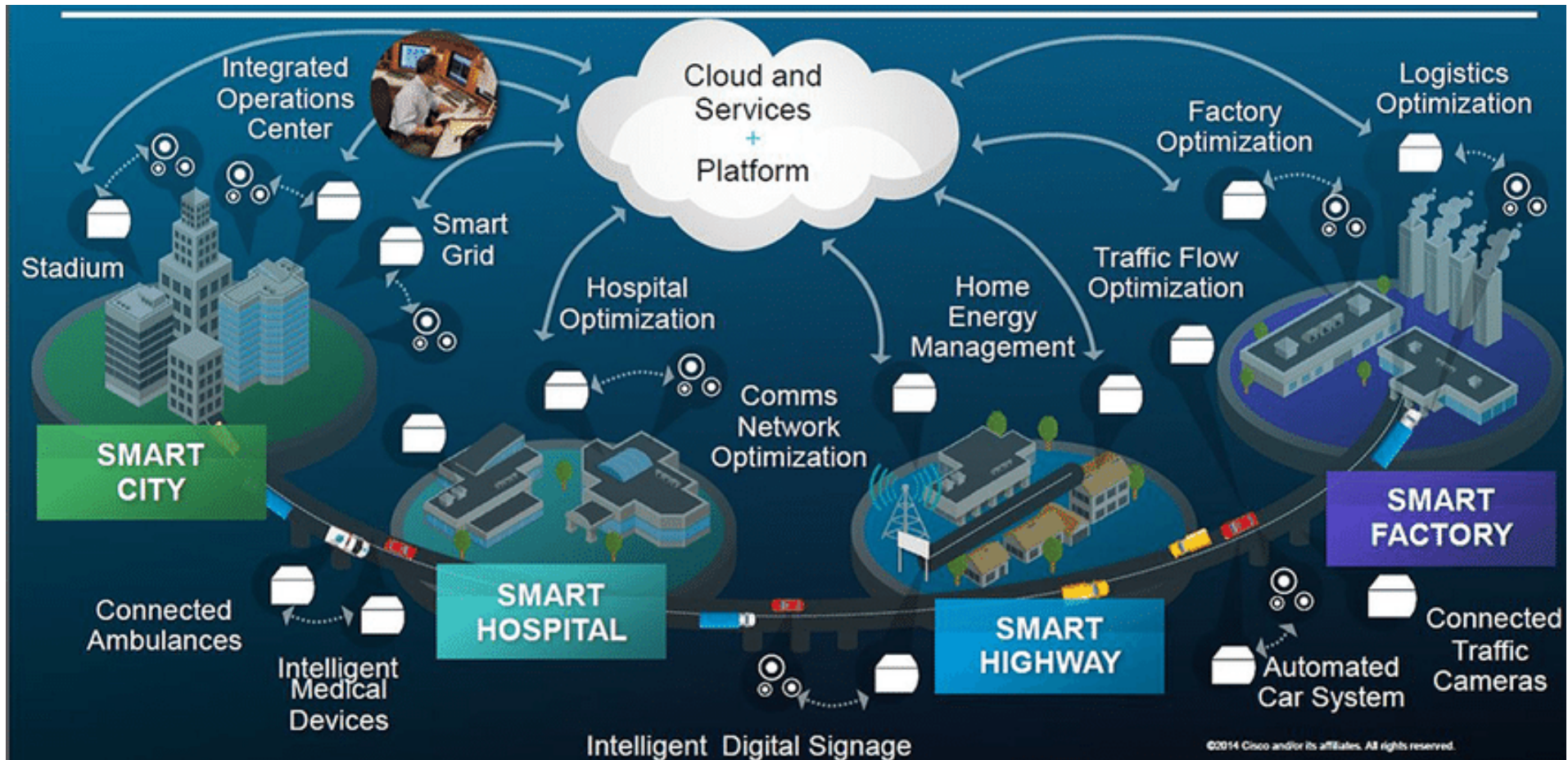
- Technologies are changing
- Jobs are changing
- Skills are changing
- How about Education?





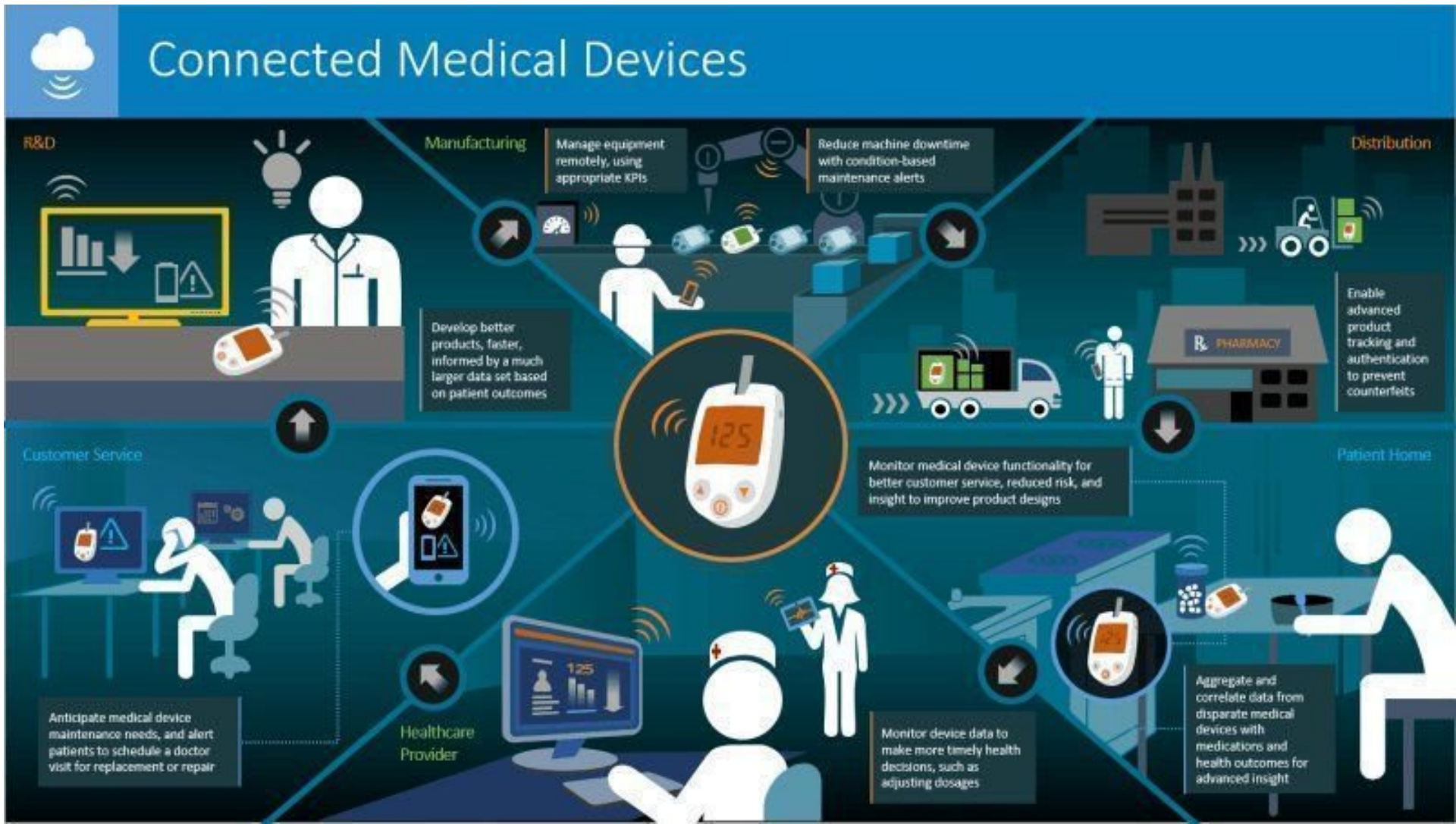
The World Around us is Transforming

Where is Smart Education?





Medical area is a close parallel Education needs a larger vision



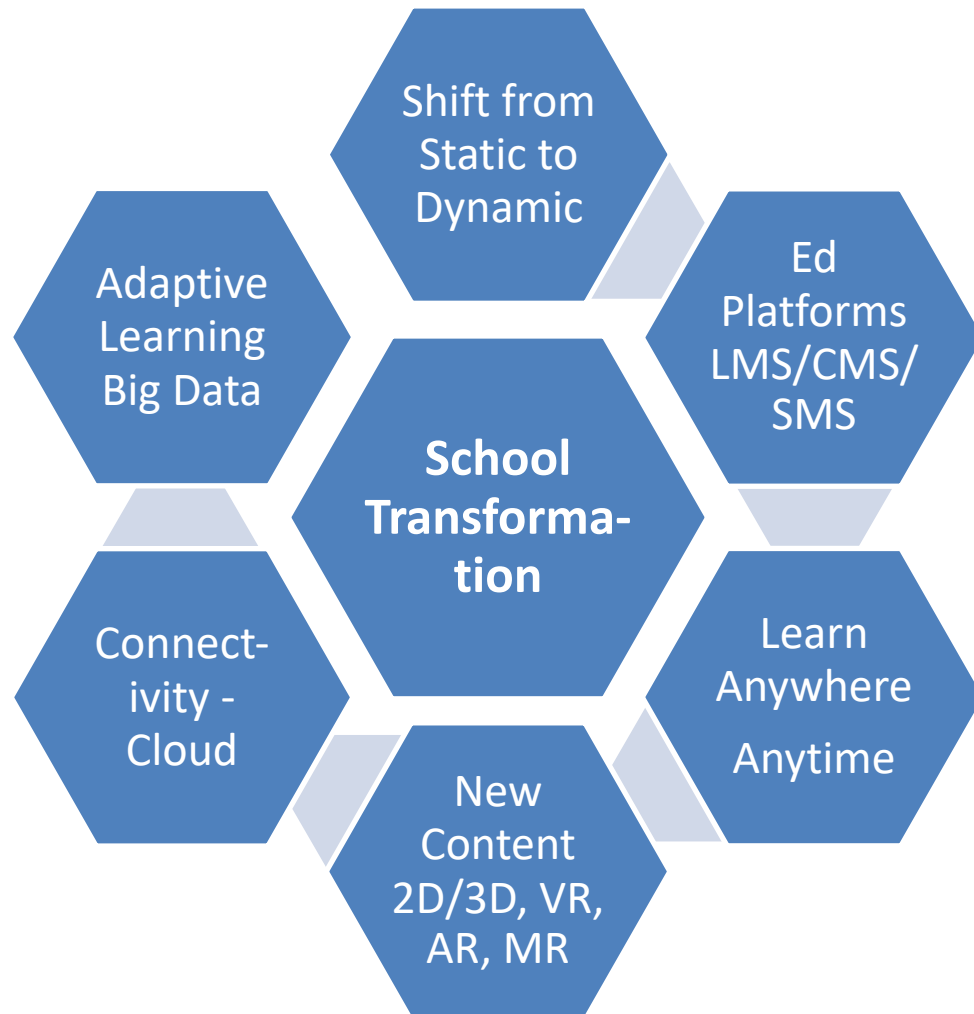


Technology Transforming Education

- Most Major industries have transformed over the past few decades through the use of technology.
- But Education has yet to transform through the use of technology for teaching & learning.
- Technology can greatly improve teaching and lower costs, especially for TVET.
- Delivery and scalability can be improved.
- Learning can be improved and adapted to student needs and delivered where and when they need it.



Converging Technologies can Transform educational Capabilities



Not just teaching technology using technology to improve both teaching and learning

- Schools can transform by using the new technologies for the benefit of :
- Teaching improvements
- Learning improvements
- Lower cost of education
- Shifting to LLL
- Keeping up to date
- Increasing throughput



Second Wave of Globalization

Industry 4.0 Disruptions

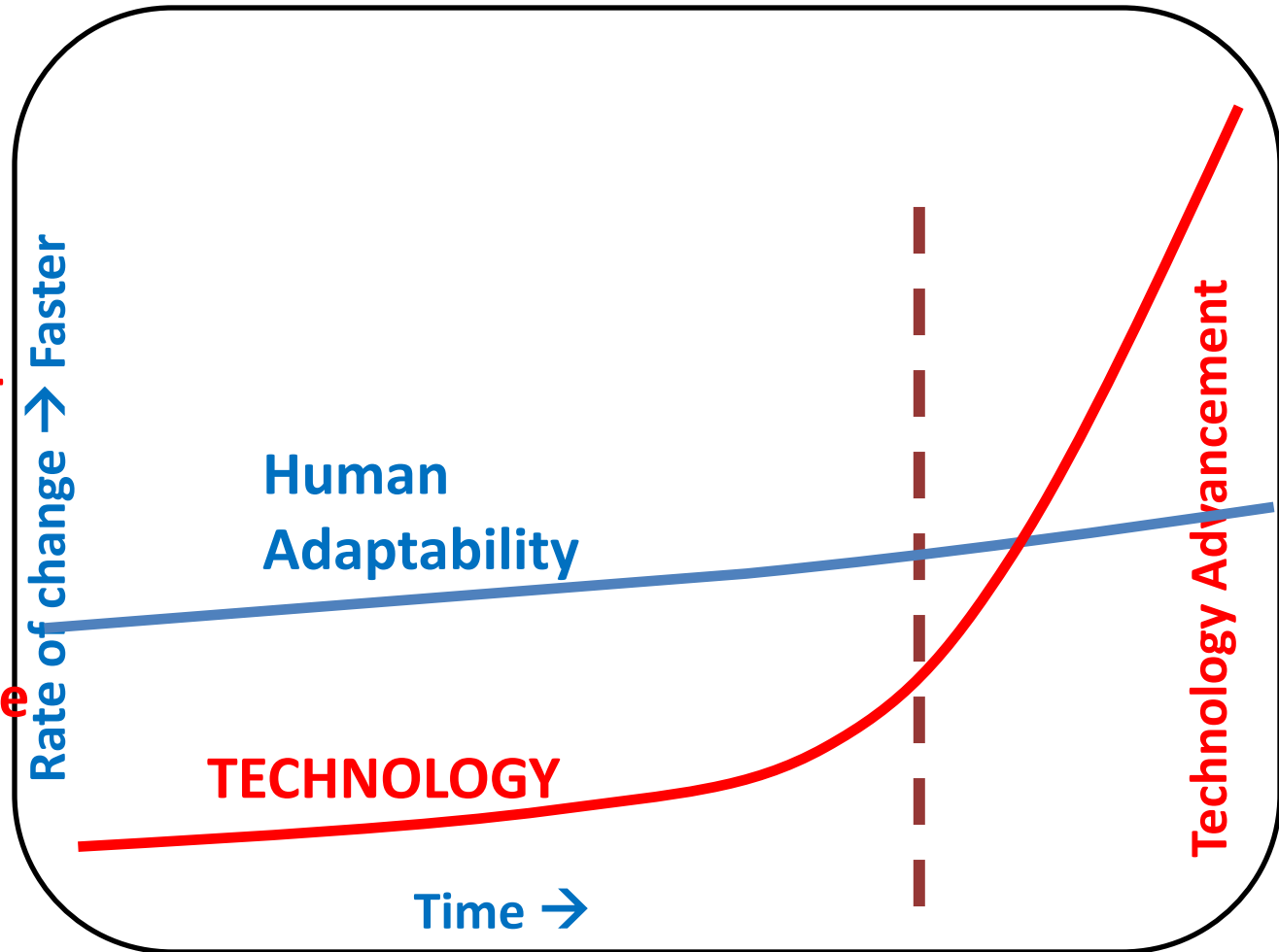
- Shifting economies and wealth
- Shifting Production
- New Jobs & Shifting jobs
- Increasing Urbanization
- Jobs and Skills mismatch
- Workers being displaced
- Relentless pace of change



Human adaptability “X” Factors

Human Adaptability

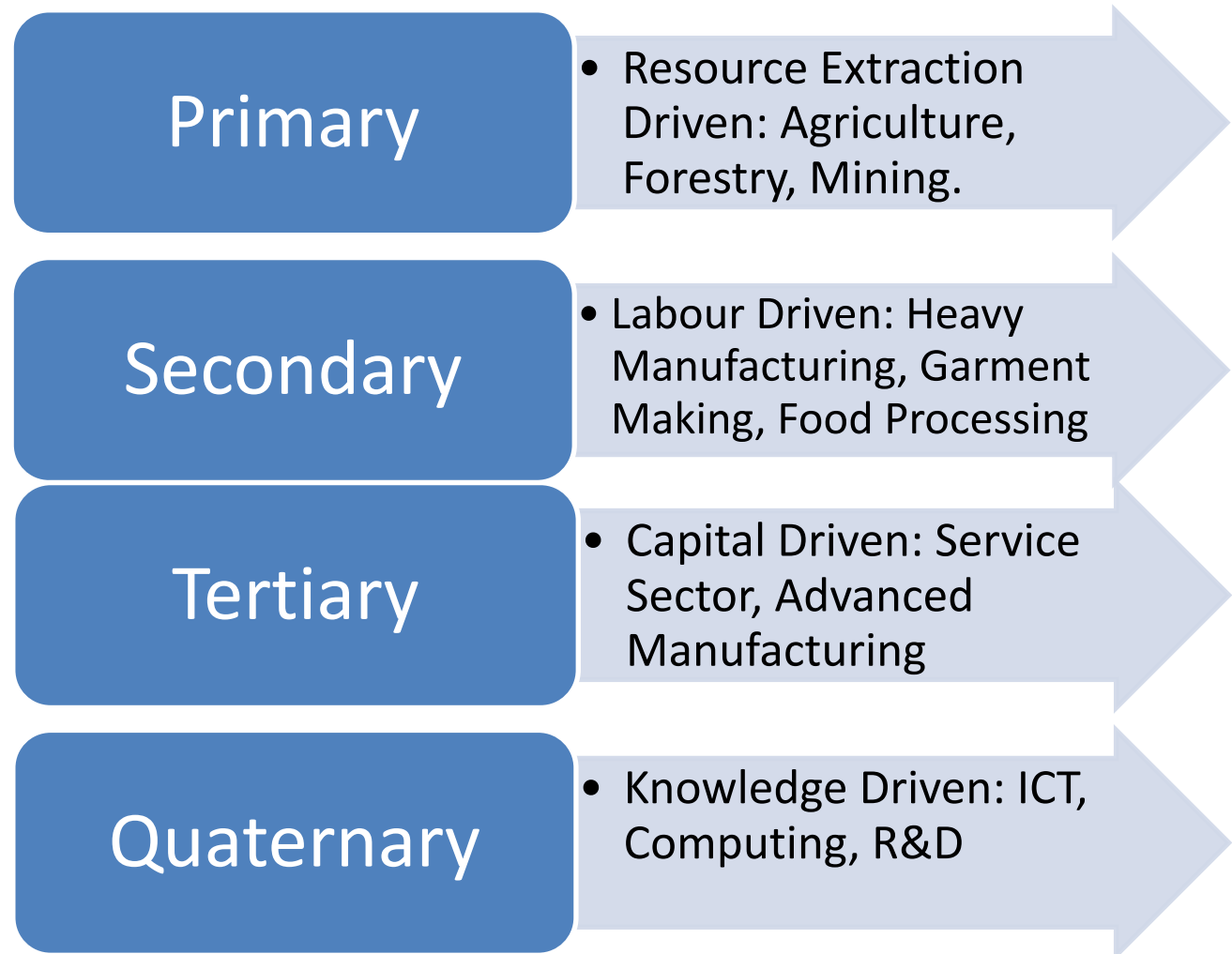
- TECHNOLOGY ADVANCEMENT
- Applications
- Faster
- More Powerful
- Widening Scope



Source: Author Thomas Freidman and Astro Teller, head of Google X

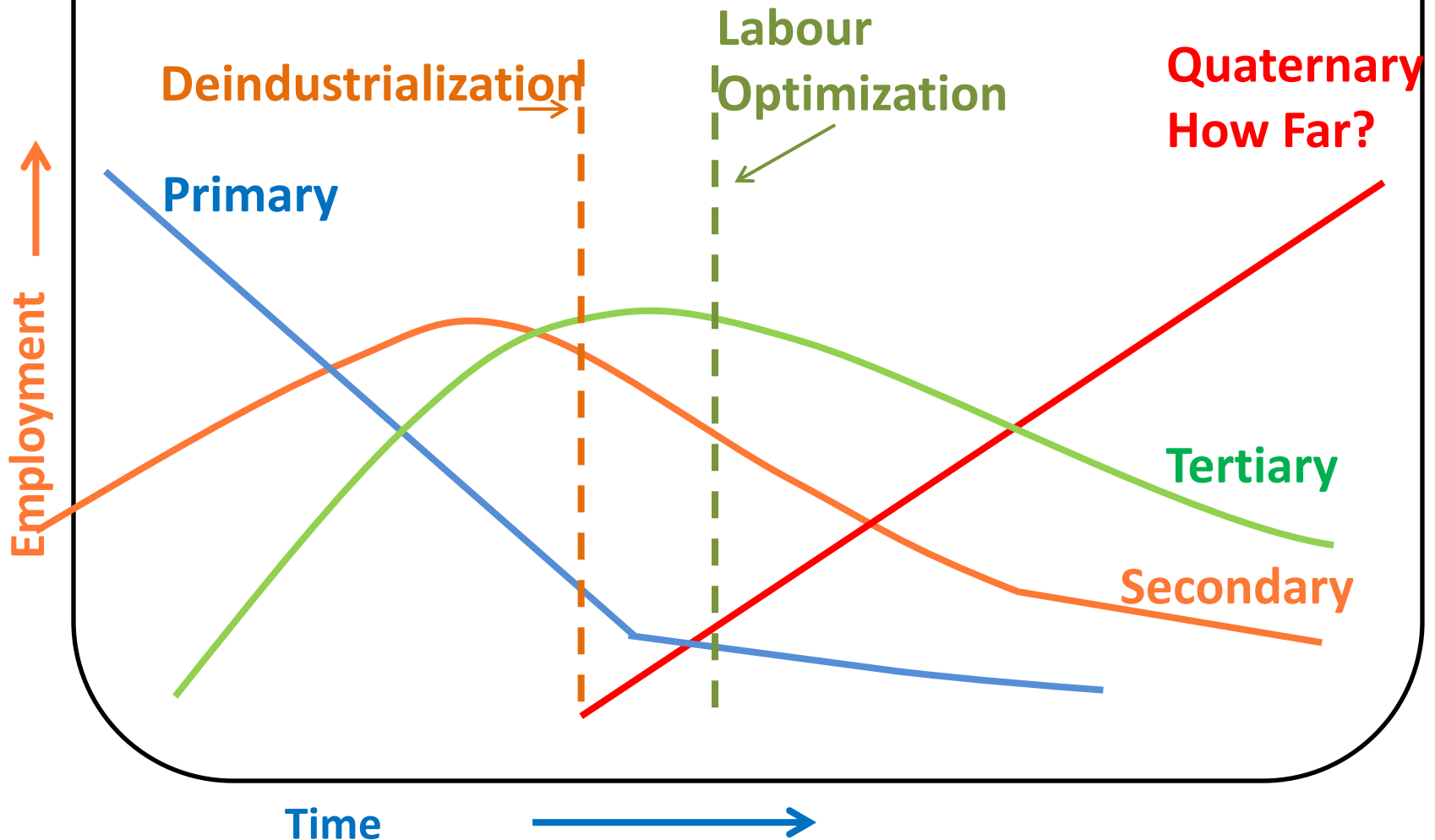


Stages of Economic Development



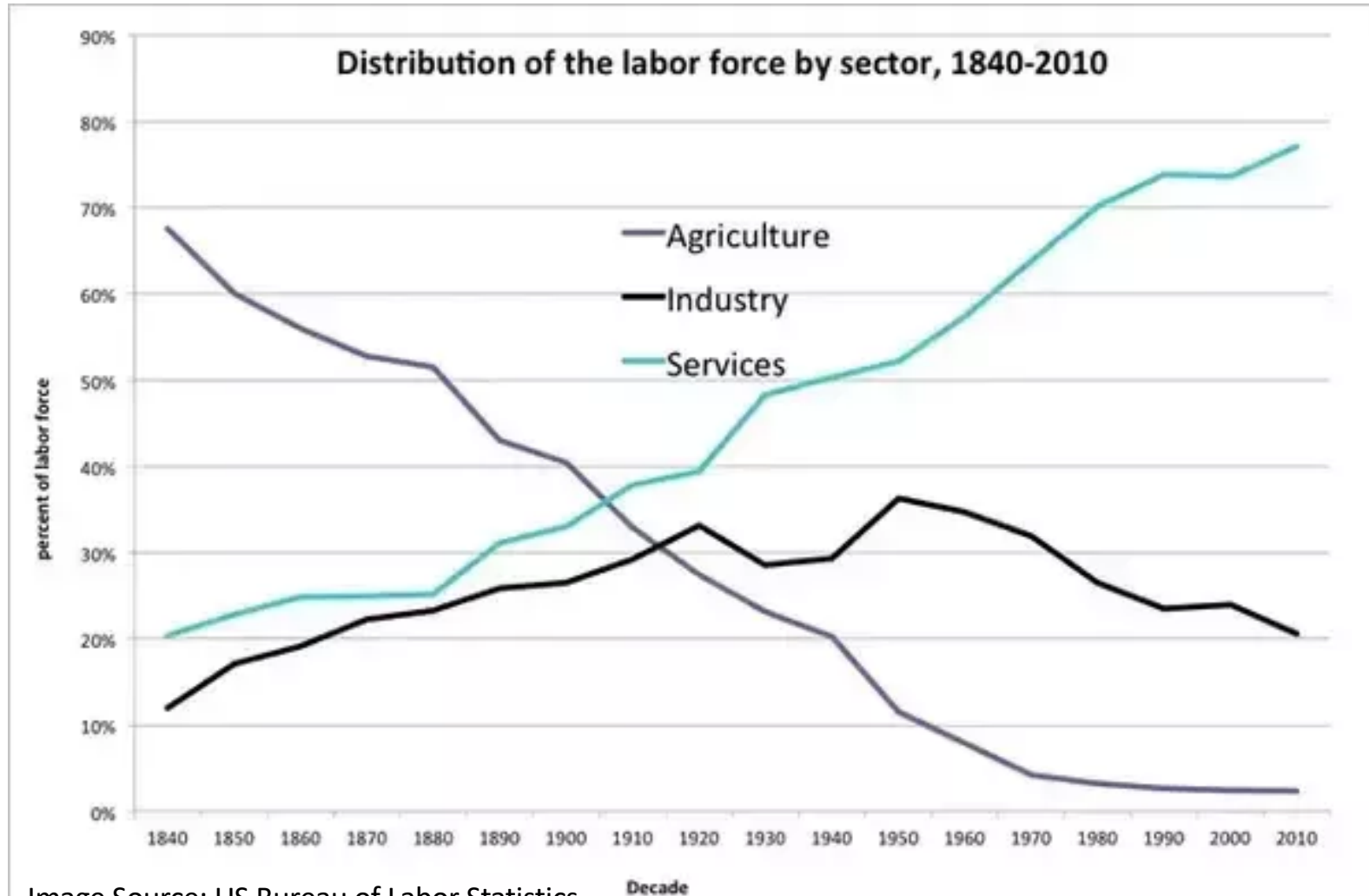


Effects of Technological Change on Economic Sectors





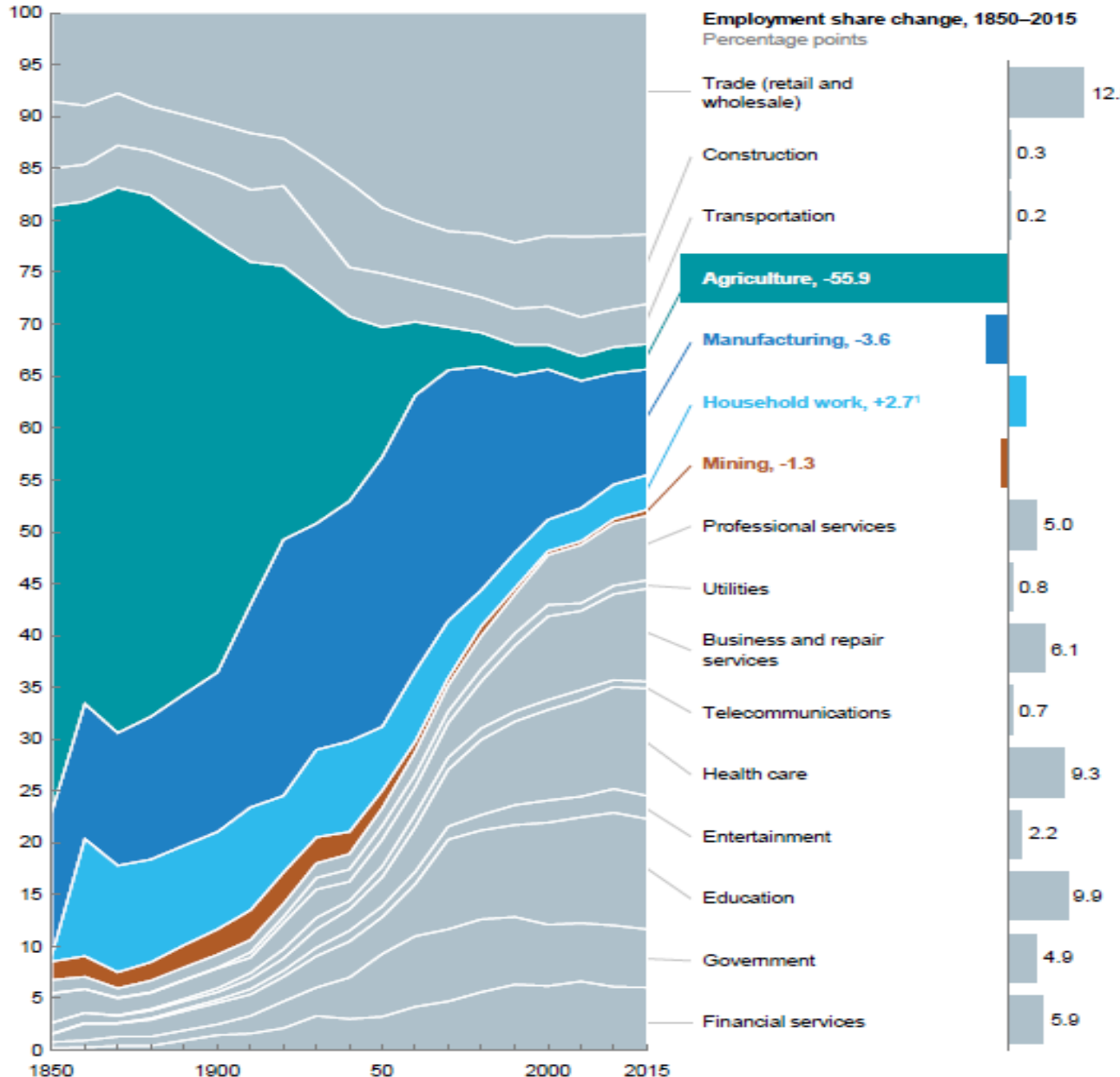
Trends in Labor Markets – reflecting development, tech and Globalization





Labour Market Dynamics

- Shifts in USA Labour over the past 150 years.
- While some sectors shrink, others grow,
- But mobility between the sectors is not always smoothly guaranteed.
- Those displaced from one sector may find it difficult to move to another desirable area
- This is especially true moving from blue collar to tech driven sectors.
- Source USA Bureau Labor statistics, MGA

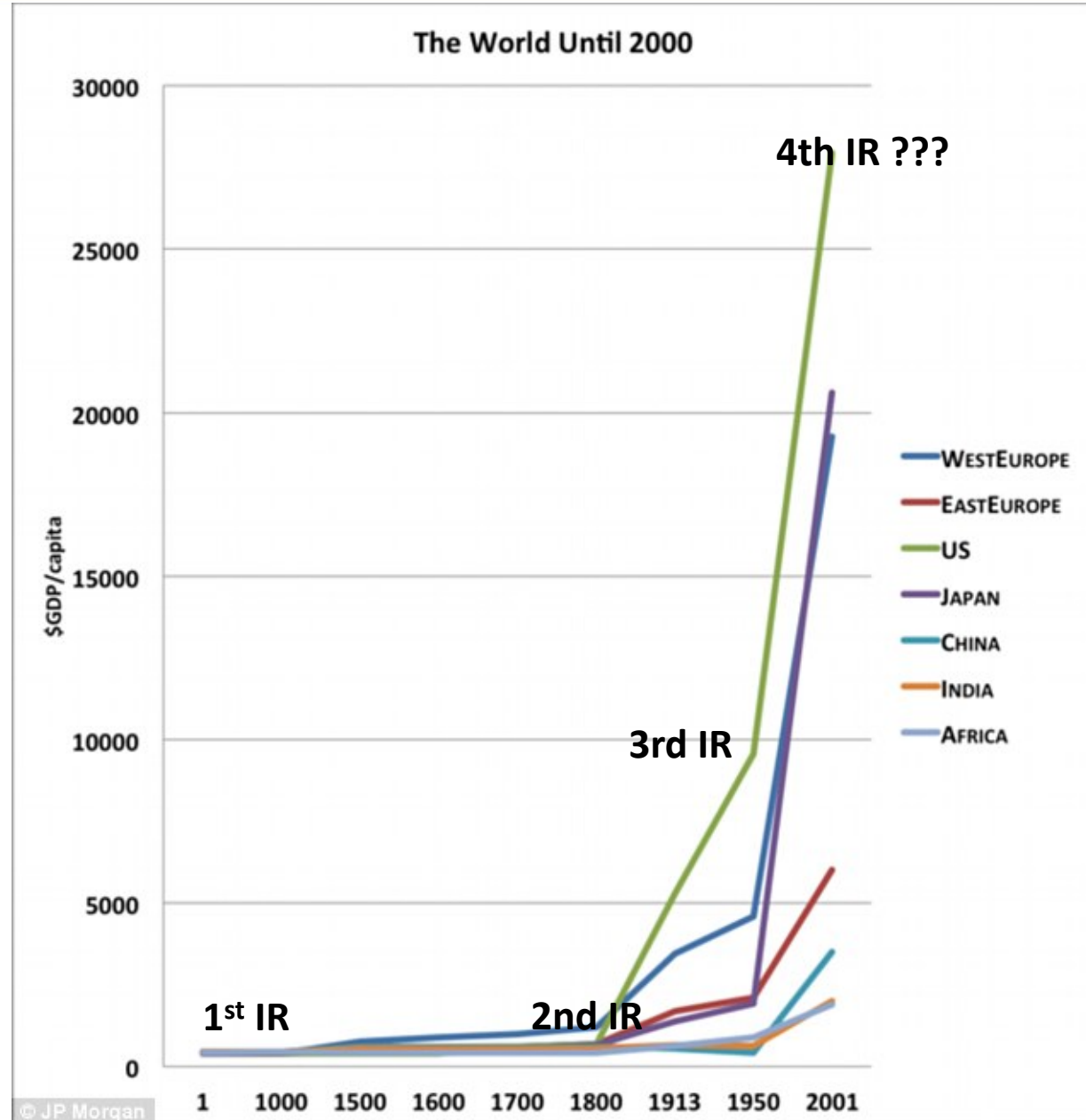




World Economic Performance The Good News!

**GDP Per Capita
Income Growth in
Western Europe,
1000 – 1999 A.D.**

**Notice the “knee
of the curve”
occurs at the
industrial
revolution, circa
1850.**





Some Big Issues

- Training Highly Skilled Workers for IR 4.0
- Developing multi skilled workforce (Cross training).
- Training for those who will be displaced – how to predict and where to shift them to
- Training for Society – infusion of technology
- How about the human considerations - to ensure that we are improving quality of life

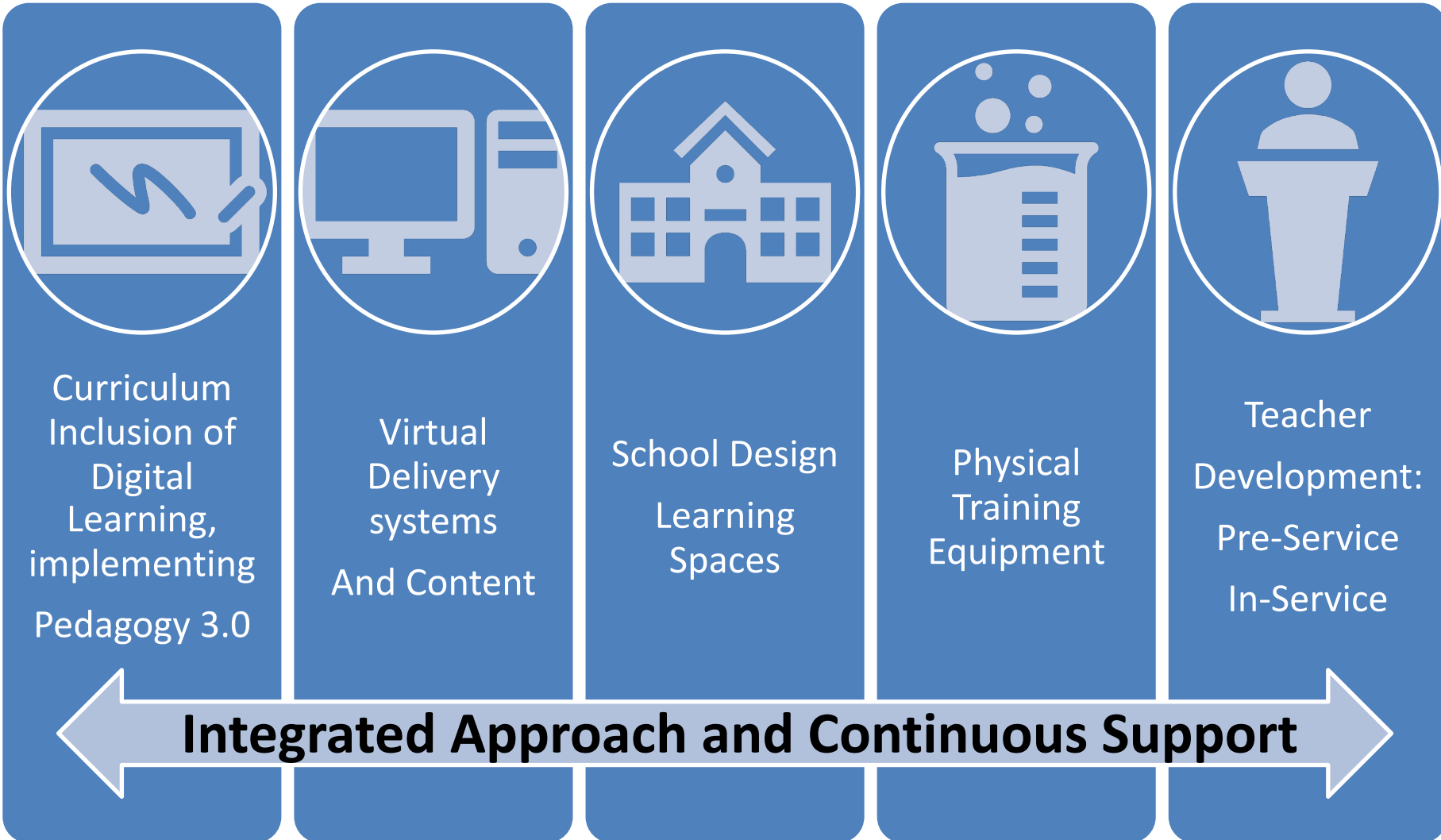


Transformational Issues

- Creating highly skilled talent to support and facilitate IR 4.0 in countries pursuing this goal.
- Should it be embedded into all schools?
- How can early preparation help (like STEM)?
- What skills are needed to deal with the integration of technology not only into industry but into our society as well.
- How do we realize systemic educational change?
- How to implement continuous education: ie transition the ed system to adult education



Integrated holistic Project Approach





How to Respond? Who shall Respond?

- Where does responsibility lie?
- With industry or government?
- Can we build costs into the process of transformation of Industry?
- The process needs to be supportive so advancement can proceed yet be fair to all, especially for the workers.
- Education systems may need to be fundamentally restructured.
- Do all countries need to follow IR 4.0?