

Pediatric Infectious Diseases in the 21st Century

Somsak Lolekha MD, PhD



Human Civilization





- First wave 10,000 years ago: Invention of agriculture
- Second wave four hundred years ago: Industrial revolution
- Third wave : Electronic era or Information era

Alvin Toffler: The third wave

Industrial Revolution

- The First Industrial Revolution used water and steam power to mechanize production.
- The Second used electric power to create mass production.
- The Third used electronics and information technology to automate production.
- Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.

Navigating the next industrial revolution

Revolution	Year	Information	
	1	1784	Steam, water, mechanical production equipment
	2	1870	Division of labour, electricity, mass production
	3	1969	Electronics, IT, automated production
	4	?	Cyber-physical systems

The Fourth Revolution

- Fourth and distinct one: velocity, scope, and systems impact.
- The speed of current breakthroughs has no historical precedent when compared with previous industrial revolutions,
- The Fourth is evolving at an exponential rather than a linear pace.
- Moreover, it is disrupting almost every industry in every country.
- And the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance.