Front Technologies for the SDGs and the Smart Digital Government

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- Frontier Technology: Innovative technologies that change the world in irreversible way.

- Historically
- There were four Industrial Revolution trigged by the Frontier Technologies

- 1st Frontier Technology: Steam Engine
- 2nd FT: Electricity
- 3rd FT: Computer and Internet
- 4th FT: Artificial Intelligence, IoT, Big Data

Why is the Frontier Tech. important?

- History teaches us:
- Frontier Technology created
- - new Living Space,
- - new Demand of people. New Problems
- New Demand created the new Society
- New Society pushed new Governance
- New governance pulled new

- 1st and 2nd Industrial Revolution:
- Steam Engine & Electricity: Frontier Tech.
- → City: Living Space
- → Industrial Society
- → Growth- Oriented National Development: Governance
- → Bureaucracy: Government

- 3rd Industrial Revolution:
- Computer & Internet: Frontier Tech.
- → Cyber Space: Living Space
- → Information Society
- → Brain Nation Development: Governance
- → e-Government: Government

Government Reform needed

- National development is Frontier Technology dependent
- - Frontier ICT creates new government demand
- New government demand can not be provided by existing laws and institutions
- - New administrative reform paradigm is needed
- New administrative reform paradigm is implemented by e-government

- Frontier Tech. increased well-beings of people, but
- at the same time, they produced new difficult problems.
- Problem-solving became the responsibility of national government.

- Role of UNPOG:
- Recent FT expanded the scope of problems in global scale.
- SDGs are the global scale problems-list created by FT of the 3rd Wave.
- So, problem-solving became the responsibility of UN, the global governance.

- Winner nations: successfully built innovative governance and corresponding government.
- Loser nations: caught up in the old governance and government.

- Republic of Korea:
- Loser at the 1st and 2nd Industrial Revolution period.
- Winner at the 3rd Industrial

- Mostly, SDGs reveal the symptoms of problems that Frontier Tech. of 3rd Wave made.

- Characteristics of Information Society may be the fundamental causes of the problems of SDGs.
- Understanding of the causes needed.

- Characteristics of Information Society:
- Shortened life span of information, knowledge, products, and service
- A winner takes all
- Dilemma situation of policy makers
- Governance failure: No decision, Delay of decision, Swing of decision

- * The 4th IR space inherited features of Information Society

- Frontier Tech. of the 4th Industrial Revolution

- AI : intelligent machine
- IoT: intelligent sensor
- Big Data
- Mobile
- Cloud Computing
- 3D Printing
- Block Chain

- ‘Intelligent Cyber Space’ where human and intelligent robot work together: Living Space
- ‘Intelligent Information Society’: New Society
- SNS created new Clonism Society where one person’s pains or happiness becomes all others’ pains or happiness: Society of More Empathy Relationship.

- Characteristics of the Intelligent Information Society:

- Artificial Intelligence is extending capacity of human body and brain intelligence.
- Revolutionary change of human-human, and human-machine relationship is forming.
- Intelligent machine is rapidly replacing human jobs.
- Crisis of the representative democracy prevails .

- Data becomes the source of National Wealth.

- Recently new problems have been added in the 4th IR:
- New nationalism begins to dominate the globalism,
- Conflict between market efficiency and democratic political governance is widening.
- Crisis of Global Government are apparent.
- Problems of SDGs of the 3rd IR inherited to the 4th IR problems.

- Complicated and more advanced FT results in more complex and difficult problems:

- FT of the 4th Wave creates unprecedented difficult problems.

- Reflecting of the problems of the Frontier Tech. of 4th IR, SDGs should be extended.

- Problems of the 4th IR are more complex and more difficult to solve.

- To meet the Demand and solve the problems of the 4th IR,
- Smart Digital Government should be built.

Why Smart government?

- Dumbo government:
- A government that repeats the same mistake
- Government without problem-solving ability
- Inefficient government with low output with large input
- Backward government that rushes later after an accident
- **Smart government:**
- Government with learning ability,
- Competent government,
- Effective government,
- The government preparing in advance

- Smart Digital Government of Korea:
- Citizen Participation : Platform Government
- - Prosumer Approach
- - Public-Private-Partnership
- Open Data: Data Government
- Problem-oriented policy making: Problem-solving Government
- Mobile and Responsive Government
- - Convenient form of service anytime, anywhere
- - Supplies government services like 'tap water'
- 'AI Public Officials' will help human

- Rough Roads ahead

- For Sustainable SDGS:
- National Development Paradigm should be changed: From Max. GDP to Max. Happiness
- - Constrained Growth,
- - Optimum Growth.
- - Sustainable Growth.
- Resistance of policy makers who are accustomed to high growth policy
- - lack of 'GDH mind'
- - lack of leadership

- **We see obstacles inherited from the 3rd Wave:**
- Outdated governance is no way to give up.
- - Widening gap between reality and laws
- - Governance Failure of National Assembly
- The repulsion of interest groups to government reform
- Undesirable side effects of intelligent information society prevail.
- Recent new problems:

- Problems are getting harder and harder to solve.
- Time permitted for solution is getting shorter and shorter.

Perspectives of SDGs

- Remember that problem must be solved by the creator.
- ICT has created problems of SDGs, so ICTs have to solve the problems.
- However, technology alone cannot solve the problems.

- Future of SDGs depends on success of the new Smart Digital Government based on the Frontier Technologies of the 4th Wave.

- Meanwhile:

- Because of the limited resources for SDGs, we have to focus on imminent 'critical' problems in SDGs.

For Sustainable Intelligent Information Society:

- I strongly recommend UNPOG to start discussion on the following topics immediately:

- Desirable relationship between human and intelligent machine including desirable human-machine ethics suitable at this 4th Industrial Revolution Era.
- Impact of the appearance of Artificial General Intelligence.
- Possibility of granting of legal personality status to Intelligent AI machine

- Personally, **legal personality status** should be granted to intelligent AI machine that is replacing human works these days.
- If so, human can collect tax from the intelligent robot.
- The revenue of the robot tax may solve the difficult funding problems in our effort for reaching SDGs.
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- In Summary:

- I Believe in human group intelligence.
- Human intelligence with help of machine intelligence of the 4th Wave FT will solve problems and we will reach to SDGs.
- In the journey, UNPOG will play a greater role.

- Thank you!