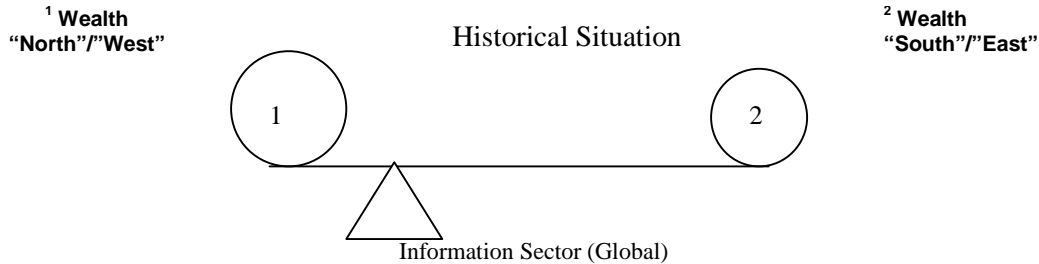
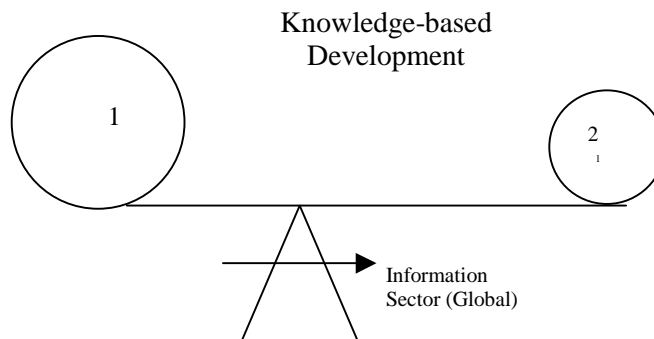


Appendix 1. Towards Sustainable Human Development

Deployment of information and communications technology in the development process is complex, but the impact of the combination of information, innovation and learning could be represented graphically in the following manner.

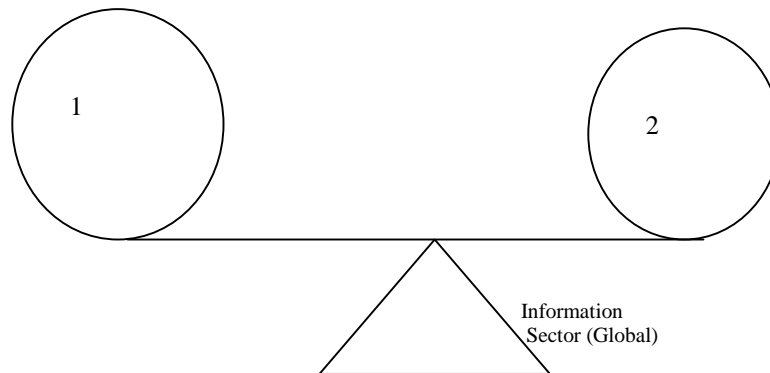


In the "historic balance": (1) the capacity to innovate and create new wealth predominate in the economies of the "North"/"West", (2) the largest part of the global information sector is in the "North"/"West", (3) the capacity to add value is larger in the "North"/"West" since the information sector is smaller in the economies of the "South"/"East", (4) there are relatively more opportunities for lifelong learning in the "North"/"West" than in the "South"/"East", (5) the "North"/"West" influence the global economic equilibrium more than do the "South"/"East", (6) the real costs of resources and environmental degradation are underestimated and (7) quantitative growth values are more important than qualitative values.



As part of a "Knowledge-based development" strategy: (1) increased global competition provides greater private sector incentives for innovation in the deployment of all resources everywhere, including expansion of the deployment of information and communications technology in the "South"/"East", (2) the information sector in the "South"/"East" grows at a faster rate than in the "North"/"West" since it has started from a smaller base than in the "North"/"West", (3) the capacity of the economies in the "South"/"East" to add value to resources increases significantly, (4) continued information sector growth in economies of the "North"/"West" contribute to increase in the size of the global information sector, (6) value added in the "South"/"East" constitutes a larger portion of the national and regional information sector growth, (5) the "South"/"East" gain greater influence in determining global economic equilibrium, (7) widespread global expansion of reforms in lifelong education and training opportunities enhance the capacity of more people in the "South"/"East" as well as in the "North"/"West" to produce and consume in a more sustainable manner than was previously possible and to improve the quality of their lives, (8) social, technological and legal safeguards are improved for financial and information transactions for all socio-economic levels, (9) qualitative values become as important quantitative values, (10) estimate improve for calculating the real costs of resources and environmental degradation and (11) terms of a new social contract begin to emerge.

Sustainable Human Development



With the expansion of sustainable human development: (1) social and economic capacity to innovate sustainably and manage change permeate ongoing development efforts at all levels, (2) more and more people have the hope and the resources to participate in and benefit from new growth opportunities is distributed more efficiently, equitably and sustainably from new opportunities, (3) the global capacity to produce, organize, process, distribute, retrieve, and access information in order to enable and empower humans to build and apply knowledge is more or less equalized, (4) a dynamic sustainable model emerges from continued expansion of the capacity to add value to resources and to produce new information about markets, production techniques and the availability of resources. (5) growth of the information sector in both the “North”/“West” and the “South”/“East” becomes a larger portion of the new wealth generated in both regions, (6) countries gain comparative advantage through competition to strengthen human skills and opportunities for them to combine information, innovation and learning to manage change, achieve sustainable growth and improve the quality of life, (7) learning defines earning and quality of life, (*) growth and competitiveness focus on improving the quality of life, (9) economic self-reliance and sustainability are achieved by continuously adding value to all resources, (10) global “equilibrium” reflects the relative ability of each region to build human capital and carry out sustainable human development (11) economic mechanisms, transactions and concepts about expanding and measuring the intangible qualities of life become more refined and operational, (12) the economics of a sustainable economy take shape and (13) greater trust gives definition to a new social contract.

Robert A. Vitro, First published in the ATAS Bulletin “New Information Technologies and Development”, United Nations Center for Science and Technology for Development, United Nations, 1988